

Engineered Access Solutions





FIRST TOUCH FIRST IMPRESSION

In today's intensely competitive market place, aesthetics and ergonomics combine with functionality to drive the ultimate purchasing decision. The smallest details like hinges and latches play a part in the initial user reaction that cannot be overlooked or underestimated. The way they perform, look and feel can influence your customers' long-term perceptions of your company and its products.

Southco's distinctive human touch point solutions are important components of products that people interact with - every day, all over the world. Locks, latches, hinges, handles - all are touch points that help enhance the end-users' perceptions of your products. They ensure a positive first impression while never overlooking the importance of optimum safety and secure operations.

As we continue to develop innovative products, Southco maintains a strong conviction to building a better, more sustainable future. Our commitment and progress towards "green manufacturing" is greater than ever, as we strive to continually refine our processes, filter our waste and ensure full compliance with environmental standards.

For over 100 years, Southco has helped customers solve and overcome engineering challenges and our passion, vision and focus today is to help customers differentiate their products' engineered touch points.

Southco is a leading global supplier with real global reach. With more than 3000 employees in over 20 countries, together with sales, distribution, engineering and customer service centers in over 30 countries and 14 manufacturing sites - Southco can support you wherever you are in the world.

GLOBAL REACH - LOCAL TOUCH

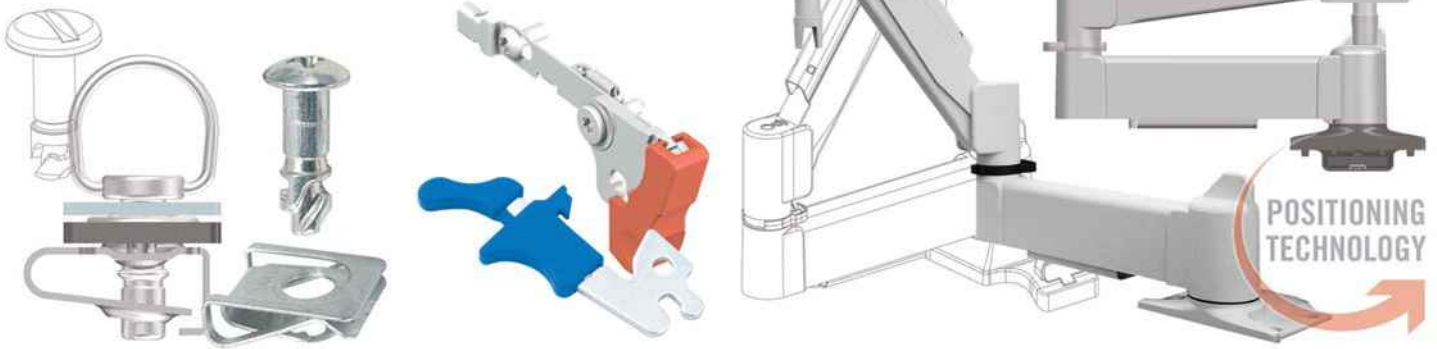


INNOVATION BY SOUTHCO

Southco has a comprehensive range of innovative latching solutions for all your application requirements. Different color or finish? No problem. Custom driver recesses and restricted access features? We will provide the ultimate solutions - because delivering customized engineered access solutions is what we do.

Innovative Technologies

Southco is passionate about driving innovation and creating added value for our customers with state-of-the-art technologies including electronic access and positioning technology solutions that seamlessly integrate into your application requirements.



■ SECURE IT

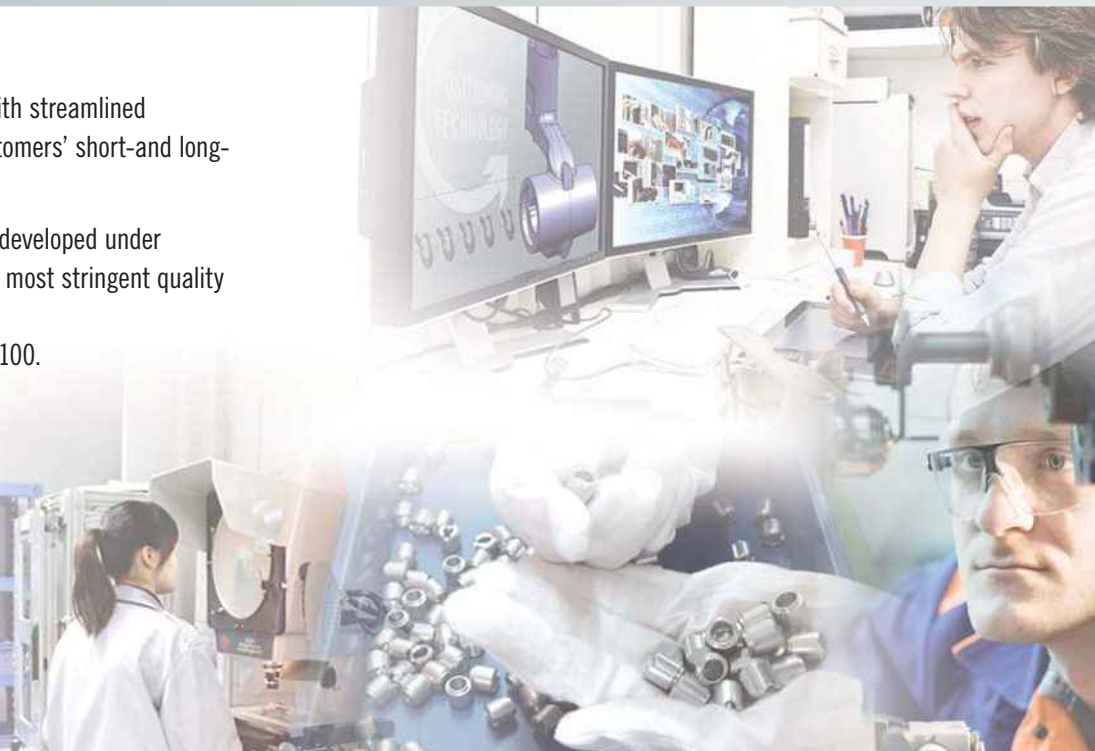
■ POSITION IT

■ CONTROL IT

Operational Excellence

Southco is a lean and agile organization with streamlined processes to respond efficiently to our customers' short-and long-term challenges, anywhere in the world.

SOUTHCO® touch points are designed and developed under systems that meet the requirements of the most stringent quality and environmental standards including ISO/TS16949, ISO9001, ISO14001 and AS9100.



PRODUCT DIRECTORY

2

Electronic Access Solutions

PAGES 14-51

- Concealed, controlled, secure access
- Vandal resistant
- Remote monitoring and operation



Display Mounts

PAGES 52-71

- Integrated positioning technology that provides precision control
- Maintenance-free performance for the lifetime of most applications
- No need for adjustment or maintenance



Compression Latches

PAGES 72-111

- Eliminate noise and rattle
- Compress gaskets to provide environmental or EMI/RFI sealing
- Many key and tool access options



Cam Latches, Swinghandles & Panel Fasteners

PAGES 112-155

- 90° Cam rotation
- Fixed and adjustable grip options
- Adaptable to multi-point latching



Cam Locks and Lock Cores

PAGES 156-171

- Multiple access control styles
- Flexible key code options
- Broad range of sizes



Multi-Point Latching Systems

PAGES 172-201

- A single user touch point operates multiple latching points
- Available for indoor and outdoor enclosures



Push-to-Close Latches

PAGES 202-251

- Simply push the door to close
- Visible and concealed styles
- Variety of operating methods



Rotary Latch Systems

PAGES 252-275

- Single or multi-point latch capability
- Compatible with wide array of actuators
- FMVSS 206 compliant products



Draw Latches

PAGES 276-317

- For co-planar and off-plane applications
- Wide variety of sizes and styles
- Draw panels tightly together to eliminate rattles and compress gaskets



Hinges

PAGES 318-371

- Provides added functionality
 - position control
 - removal capability
- Concealed and surface mount



PRODUCT DIRECTORY

4

DZUS® Quarter-Turn Fasteners

PAGES 372-433

- Provide fast access
- Suited for high-frequency, repeat access applications
- Captive to the panel; no lost hardware



Captive Screws

PAGES 434-490

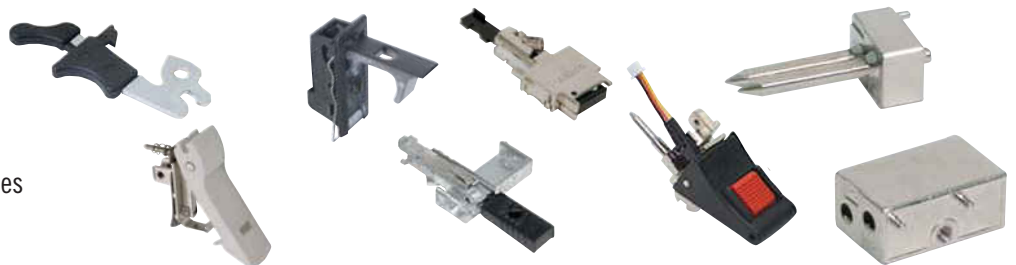
- Wide variety of styles
- Standard machine screw metric & imperial sizes
- Captive to the panel



Inject-Eject Mechanisms

PAGES 491-507

- Assist in consistent engagement or removal of electronic modules
- Various access styles and inject/eject forces



Handles & Pulls

PAGES 508-520

- Fast, easy installation
- Concealed and low profile style



Entry Door Locksets
















PAGES 521-539

- Suitable for cabin or entry door and deck applications
- Provide performance, design and styling



TABLE OF CONTENTS

Product Categories

 Electronic Access Solutions	14 - 51
 Display Mounts	52 - 71
 Compression Latches	72 - 111
 Cam Latches, Swinghandles & Panel Fasteners	112 - 155
 Cam Locks & Lock Cores	156 - 171
 Multi-Point Latching Systems	172 - 201
 Push-to-Close Latches	202 - 251
 Rotary Latch Systems	252 - 275
 Draw Latches	276 - 317
 Hinges	318 - 371
 <i>DZUS</i> [®] Quarter-Turn Fasteners	372 - 433
 Captive Screws	434 - 490
 Inject-Eject Mechanisms	491 - 507
 Handles and Pulls	508 - 520
 Entry Door Locksets	521 - 539
Warranty Statement	540
Glossary of <i>SOUTHCO</i> [®] Terms	541
Standard Finishes	542
Installation Guidelines for <i>SOUTHCO</i> [®] Self-Clinching Products	543
Product Attributes Index	544
Product Class Index	545

SOUTHCO HANDBOOK

USER GUIDE

6

Southco's broad range of Access Hardware solutions is grouped into 15 color-coded sections by product category. Most of the sections are introduced by a comprehensive selection guide, providing a convenient overview of relevant options for individual applications.

The following four indices help you find what you are looking for:

Page 2 The Product Directory provides a pictorial overview of all key product lines.



Page 5 At-a-glance summary of Southco's product categories.



Page 544 The Product Attributes Index lists key product features and applicable products.




Page 545 The Product Class Index directs you to product pages based on the part number.



Each technical product page includes key product data as well as value-added tools.

- **Icons** representing key product features.
- Product information such as material, installation instructions and sealing notes.
- Drawings illustrating the actual size of the product.
- Part numbers.

40



E3 VISE ACTION® Compression Latch
Large · Machined stainless steel housing · Tool operated · Adjustable

- Consistent pre-set compression
- Easy grip adjustment
- Premium finish and corrosion resistance

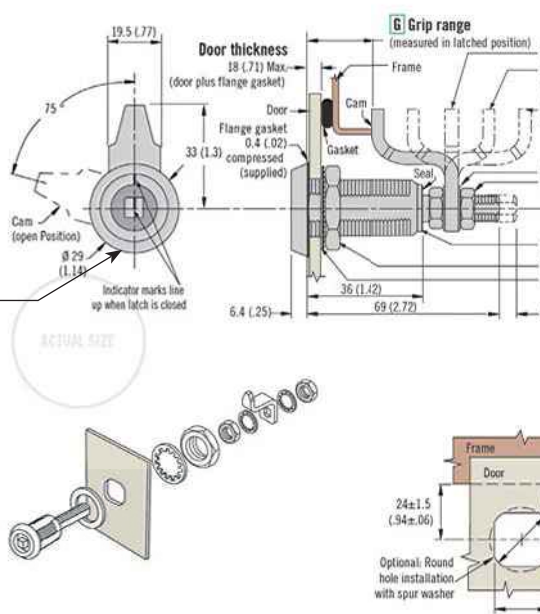
Material and Finish
Stainless steel (304 and 316 machined)

Performance Details
Max. static load: 600 N (136 lbf)


Sealing Notes
NEMA 4 and IP65 achieved using gasket supplied


Keys and Accessories
See pages 58 - 61


Installation Notes
Caution: Position cam so latching function can be achieved comfortably by hand. Recommended tightening torque for the mounting nut is 20 N·m (176 in·lbf).





H Head Styles



 3 (.11) Double bit


 7 (.28) Triangle


 SOUTHCO® Tubular key


 8 (.32) Hex recess


 Slotted recess


 Railway standard

Part Number Selection

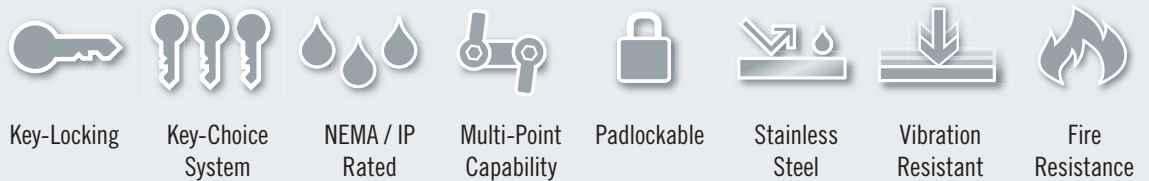
H Head style

H Head style	G Grip	Min.	Max.
1	16.4 (1.64)	32.2 (1.26)	
	71.3 (2.80)	81.2 (3.19)	
2	30.4 (1.19)	46.1 (1.81)	0
	57.6 (2.26)	73.3 (2.88)	0
3	43.9 (1.72)	59.6 (2.34)	

E3 - 1 H - G O

Dimensions in millimeters (inch) unless otherwise stated

■ **Icons**
Key product features are highlighted with distinctive icons.



DISTINCTIVE CAPABILITIES FROM SOUTHCO

8

Proven Supplier

Through our vast global presence, technical sales force and engineering experts, Southco seeks to understand the needs of its customers and meets the demanding standards of a multitude of industries.

Total Program Management

Southco offers a Total Program Management process that seamlessly integrates into your processes.

- Ensures product availability by streamlining response times
- Guarantees consistency by providing a seamless flow of information
- Our in-house design and product evaluation tools include FEA, rapid prototyping, failure analysis and mold flow analysis capability

Safety & Security

SOUTHCO[®] quality products ensure a positive first impression while providing optimum safety and secure operations. For more than 60 years, Southco has been advancing the state of secure access hardware design. Innovative designs offer unprecedented freedom for configuring and managing key code and security access capabilities.



TRUCK · OFF-HIGHWAY · AUTOMOTIVE · BUS & COACH · AEROSPACE · RAILWAY · CONSUMER ELECTRONICS

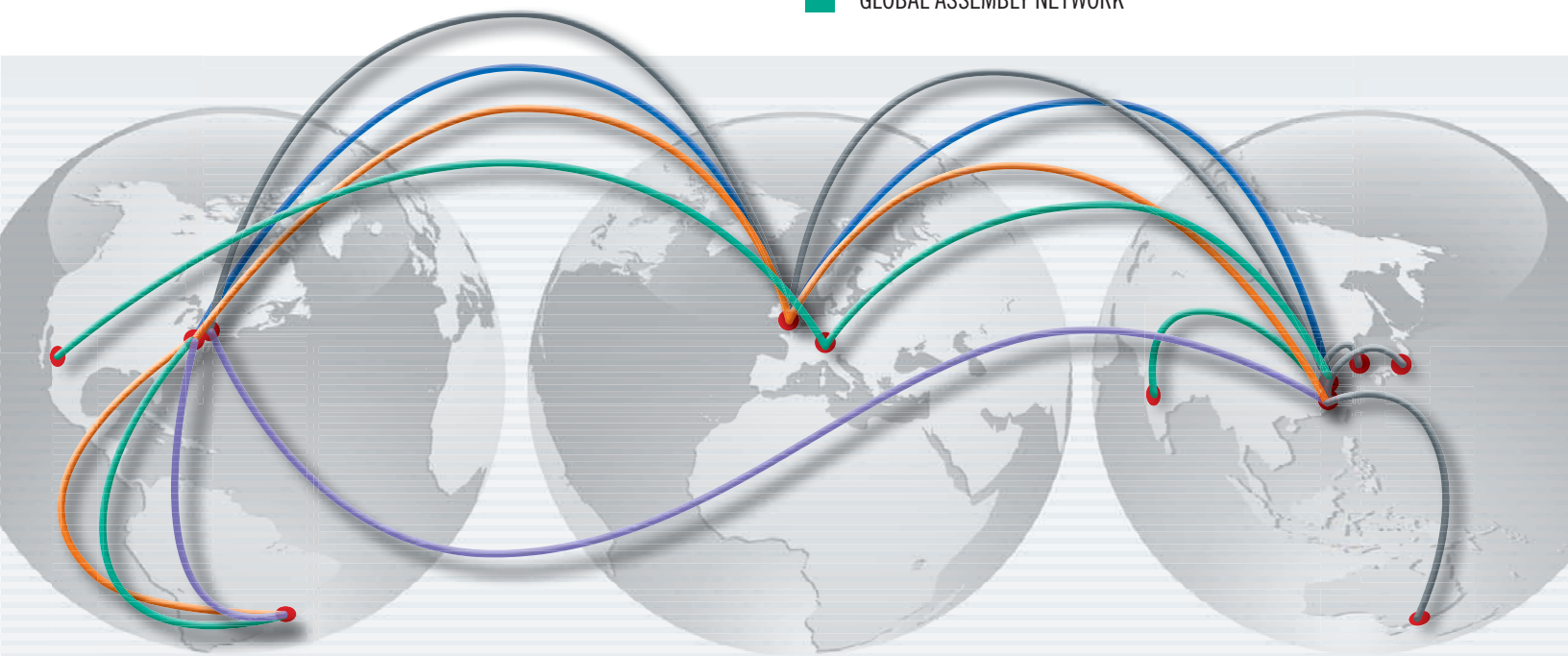
Southco's operational capabilities and geographic reach provide our customers throughout the world with a rapid and cost-effective responsiveness.

Operational Excellence

Southco's global operational reach is enhanced by the highest industry standards.

Our strategically located centers of operational excellence meet the supply chain needs of our customers.

- INJECTION MOLDING
- DIE-CASTING
- METAL FORMING & TURNING
- DISTRIBUTION NETWORK
- GLOBAL ASSEMBLY NETWORK



PROVEN SUPPLIER TO A WORLD OF INDUSTRIES

10

Southco's strong customer connectivity is a result of the passion and expertise in our two strategic business units, Diversified Markets and Transportation, serving industries such as:

Diversified Technologies

- Computer, Server, Networking & Telecom Hardware
- Data Centers
- Electrical Equipment
- Enclosures
- Healthcare
- HVAC
- Industrial & Process Equipment
- Lighting
- Self-service/Kiosks/Point-of-sale
- Staging/Displays
- Transport Cases

Transportation

- Aerospace
- Automotive
- Bus
- Marine
- Military
- Off Highway
- Railway
- Recreational Vehicles
- Truck

Innovative solutions that satisfy the diverse needs of industry specific applications and meet the requirements of many industry standards.

- Secure latching solutions help optimize safety, durability and performance
- Electronic access solutions that seamlessly integrate into your product offering remote control and monitoring of *SOUTHCO®* products
- Constant-torque position control hinges offer smooth operation, giving a feeling of precision and quality
- Quick-access latches and fasteners help minimize maintenance costs
- Versatile actuation styles and key codes for increased entry control flexibility and maintenance-friendly access
- Environmental sealing suitable for NEMA and IP applications
- Corrosion-resistant compression latches that reduce vibration and noise, and ensure durability under harsh environmental conditions

Southco Today:

Serves 70,000+ customers worldwide, in more than 70 countries. Over 3,000 talented employees (including over 100 Engineering Key Account Managers) designing, producing and selling over 100,000 items.









ELECTRONIC ACCESS



SOUTHCO® Electronic Access Solutions

Over 70 years of innovative engineered access solutions now combined with electronic actuation for remote control and monitoring of *SOUTHCO®* products.

Taking engineered access hardware to an entirely new level

-  Increased security
-  Improved access management
-  System integration
-  Industrial design



Electronic Access System



The Electronic Access System is comprised of an Access Control Device which signals the Electromechanical Latch to actuate. The Electromechanical Latch then produces an output signal to indicate latch status. A Manual Override actuates the latch in the absence of electric power.

Access Control



SOUTHCO® electromechanical latch and lock solutions can be remotely operated by a variety of **access control options** such as electronic keys, keypads, RF proximity readers, RF key fobs, biometrics and custom switches.

Electromechanical Latching



Southco's primary focus is the **electromechanical latching or locking device**, the most critical element of the electronic access system. Southco has combined electronics with our extensive knowledge of mechanical access solutions to create a set of innovative electromechanical latch and lock solutions.

Manual Override



Many electronic access control systems require an override system to provide access when power is unavailable. Southco can provide creative **mechanical and electrical override solutions** based on our extensive portfolio of mechanical access solutions.

ELECTRONIC ACCESS SOLUTIONS

Self-Contained Electronic Locking System

Pages 20 - 22



The SC Self-Contained Electronic Locking System combines an access control device, electronic lock, electrical override and power supply into a single unit. This AA battery-operated system is available with single or multipoint latching to accommodate multiple cabinets and features an attractive, ergonomic design and drop in assembly.

- Single component design enables easier integration, no wiring
- Available with keypad or RFID access control
- Programming key offers simple, quick enrollment
- Low power operation extends battery replacement interval
- LED indicator provides visual feedback during programming and operation



SC-10



SC-20



SC-11

Electromechanical Rotary

Pages 23 - 37

The R4-EM series delivers the convenience of electronic access control with the security of a proven, robust, rotary latch design in a compact, integrated package. Easy push-to-close operation and electronic actuation simplify access across a wide variety of applications. An optional microswitch provides feedback on latch status, and a full range of manual release options are available.

- 12-24 VDC operation, minimal current consumption
- Accepts control inputs from any access control device
- Operates against heavy mechanical loads
- Corrosion-resistant version available for outdoor use
- Optional door sensor



R4-EM-9



R4-EM-8



R4-EM-4, 6



R4-EM-5, 7



R4-EM-1, 2

The H3-EM series features an efficient microprocessor-controlled gear motor design that ensures minimal power consumption and provides intelligent locking and monitoring capabilities. The H3-EM can be used as a standalone system, integrated with an existing building access control system or supplied as a fully networked system enabling remote monitoring and audit trail reporting.

- Easy integration with standard rack monitoring and security systems
- Integrated sensors for lock and latch status, monitoring and alarm functions
- Efficient gear motor design for low power consumption
- Available with card reader that accepts *HID*® 125 kHz, *MIFARE*® Classic, or *HID*® *iClass*® cards
- Available with Wiegand or RS-232 output

Electromechanical Swing Handle

Pages 38 - 39



H3-EM-68



H3-EM-60

The EM series delivers enhanced access control to applications that require concealed, controlled, secure access. The EM series can be combined with a variety of door mounted mechanical latches, enabling remote electronic access while keeping existing mechanical locks as a manual override. This intelligent lock can be controlled by any input device, and features a microprocessor-controlled gear motor for actuation and push-to-close convenience.

- Concealed installation for increased security and enhanced industrial design
- Simple, quick installation and easy retrofit with existing designs
- Flexible access by varied electronic actuation sources
- Multiple mounting configurations and multi-point latching available
- Works with a variety of door-mounted mechanical latches

Electromechanical Slide Bolt

Pages 40 - 41



EM-05












EM-10



Electromechanical Latches

Selection guide

	Latch Series	Latch Type	Load Rating	Sealed Electronics	Installation	Material	Integrated Microprocessor-Based Control	Integrated Card Reader or Keypad	Nominal Voltage Range
SELF-CONTAINED ELECTRONIC LOCK PAGES 20-22	 SC	Cam	Medium		Visible	Steel and Plastic	✓	✓	4.5 VDC
ELECTROMECHANICAL ROTARY LATCHES PAGES 23-37	 R4-EM-9	Rotary Push-to-Close	Medium		Concealed	Steel and Plastic	✓		12-24 VDC
	 R4-EM-8	Rotary Push-to-Close	Medium		Concealed	Steel and Plastic			12 or 24 VDC
	 R4-EM-5 & 7	Rotary Push-to-Close	High	✓	Concealed	Steel or Stainless Steel	✓		12-24 VDC
	 R4-EM-4 & 6	Rotary Push-to-Close	Medium		Concealed	Plastic	✓		12-24 VDC
	 R4-EM-1 & 2	Rotary Push-to-Close	High		Concealed	Steel	✓		12-24 VDC
	 H3-EM-RFID	Swinghandle Cam	Light		Visible	Plastic	✓	✓	12-24 VDC
ELECTROMECHANICAL SLIDE BOLT PAGES 40-41	 EM-05	Slide cam Slide bolt Push-to-close	Medium		Concealed	Plastic	✓		12-24 VDC
	 EM-10	Slide cam Slide bolt Push-to-close	Medium		Concealed	Plastic	✓		12 or 24 VDC

CONNECTION TYPE		OUTPUT		RELOCK TYPE SEE PAGE 34 FOR MORE INFORMATION					
Integrated Connector	External Harness	Dry Contact	Transistor	Automatic	Delayed	Integrated LED Latch Status Indicator	Integrated Door Sensor	Manual Override	Electronic Unlock; Manual Door Release
✓		N/A	N/A	✓		✓		Electrical Override	✓
✓			✓	✓	✓		✓	Trigger provided	✓
✓		✓		✓			✓	Trigger provided	
	✓	✓		5 Series ✓	7 Series ✓			Trigger provided	
	✓	✓		4 Series ✓	6 Series ✓			Trigger provided	
	✓	✓		1 Series ✓	2 Series ✓			Trigger provided	
✓			✓		✓	✓		Integrated key lock	✓
✓			✓		✓	✓		Integrated key lock	✓
	✓	✓			✓			Trigger provided	
✓			✓		✓			Locking striker	



SC Self Contained Electronic Locking System

Electronic access (RFID Version)

- No wiring required
- Battery Operated (3 AA)
- Accepts *MIFARE® Classic*, *MIFARE® Plus*, *MIFARE® DESFire®* and *HID®* smart cards**
- Up to 20 unique user cards or user keys per lock
- Vertical or Horizontal user orientation
- Audit trail version available†
- Manager key with 9V battery for electrical override
- Push-to-close option available†

Material & Finish

Housing, Trim Plate, Mounting Cup: PC/ABS, Flammability rating: UL94-V0
 Knob: Zinc alloy, powder coated
 Screw, Snap Ring: Steel



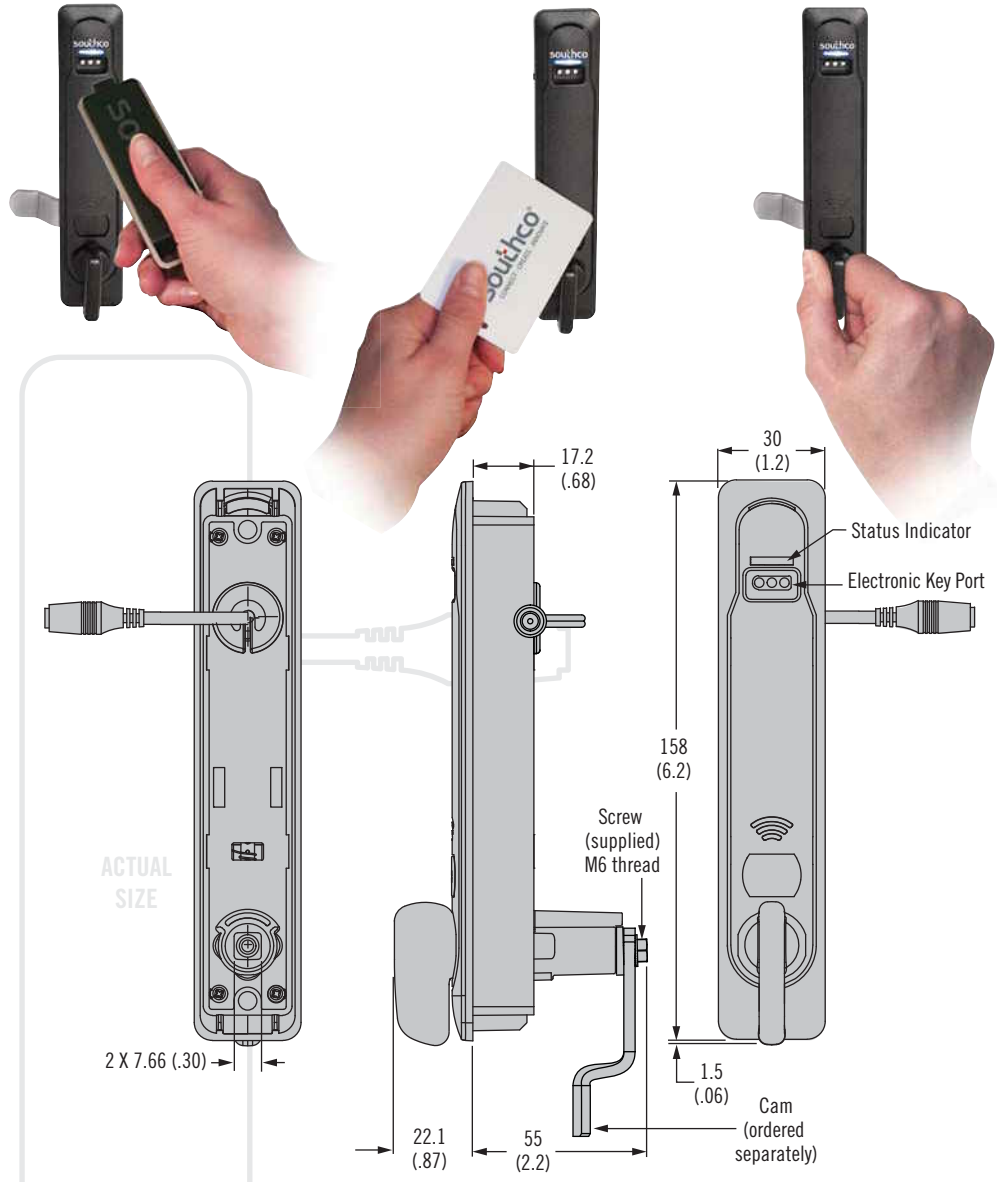
Custom colors available - Contact Southco for Details

Part Number Selection

Order latch and cam separately
 For cam see page 22

Note: Detailed instructions regarding system set-up and operation are included with each latch assembly.

† **Note:** Contact Southco for additional versions.



Latch Assembly Part Number (no cam)

SC - 20 - 100 D - 10*

D Door Thickness Range

- 0** 1 - 15 (0.04 - 0.59)
- 1** 15 - 25 (0.60 - 0.98)

***Note:** Remove '10' for latch without Southco logo.

** *MIFARE Classic*, *MIFARE Plus*, *MIFARE DESFire* are trademarks of NXP B.V.
HID is a registered trademark of HID Global Corp.

D Door Thickness			
	Door Thickness Range	Mounting Screw ¹ M5 X 0.8 thread	Cup Height see page 22
D = 0	1 - 10 (0.04 - 0.39)	Short	20 (.8)
	10 - 15 (0.40 - 0.59)	Long	
D = 1	15 - 20 (0.60 - 0.79)	Short	8 (.3)
	20 - 25 (0.80 - 0.98)	Long	

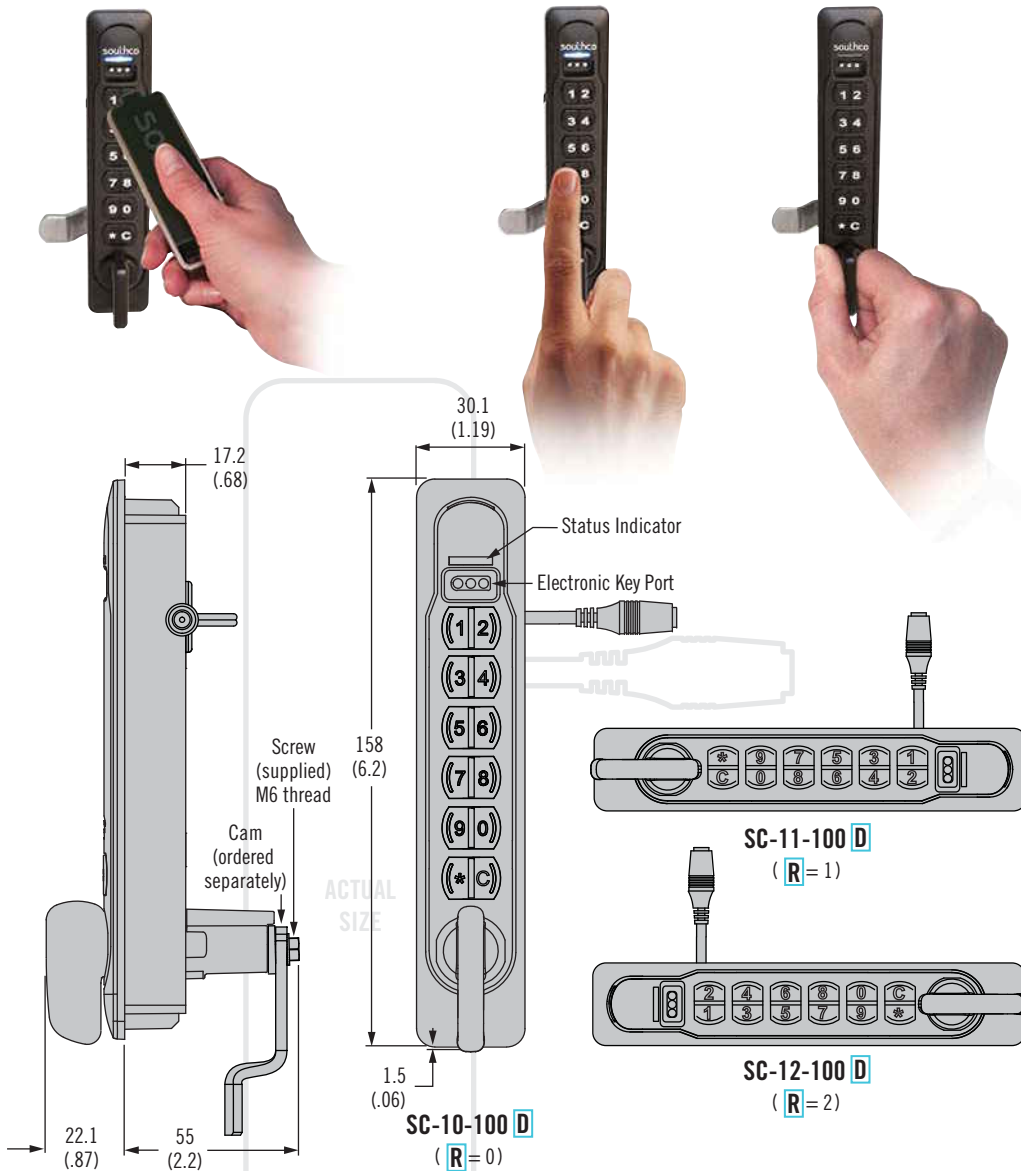
¹**Note:** Two short and two long mounting screws are provided with each latch assembly.

Cams, RFID cards, and keys ordered separately.

Dimensions in millimeters (inch) unless otherwise stated

SC Self Contained Electronic Locking System

Electronic access (Keypad Version)



- Simple Keypad Access
- Battery Operated (3 AA)
- Up to 20 unique user codes of any combination; user keys or PINs
- Vertical or Horizontal orientation (specify when ordering)
- Custom colors and logos available
- Manager key with 9V battery for electrical override
- Rod systems available for multi-point latching
- Push-to-close option available

Material & Finish

Housing, Trim Plate, Mounting Cup: PC/ABS, Flammability rating: UL94-V0
 Knob: Zinc alloy, powder coated
 Screw, Snap Ring: Steel



Custom colors available - Contact Southco for Details

Part Number Selection

Order latch and cam separately
 For cam see page 22

Note: Detailed instructions regarding system set-up and operation are included with each latch assembly.

Note: Contact Southco for additional versions.

Latch Assembly Part Number (no cam)

- D** Door Thickness Range
- 0 1 - 15 (0.04 - 0.59)
 - 1 15 - 25 (0.60 - 0.98)

SC - 1 R - 100 D - 10*

- R** Orientation
- 0 Vertical
 - 1 Horizontal, knob left
 - 2 Horizontal, knob right

*Note: Remove '10' for latch without Southco logo.

D Door Thickness			
	Door Thickness Range	Mounting Screw ¹ M5 X 0.8 thread	Cup Height see page 22
D = 0	1 - 10 (0.04 - 0.39)	Short	20 (.8)
	10 - 15 (0.40 - 0.59)	Long	
D = 1	15 - 20 (0.60 - 0.79)	Short	8 (.3)
	20 - 25 (0.80 - 0.98)	Long	

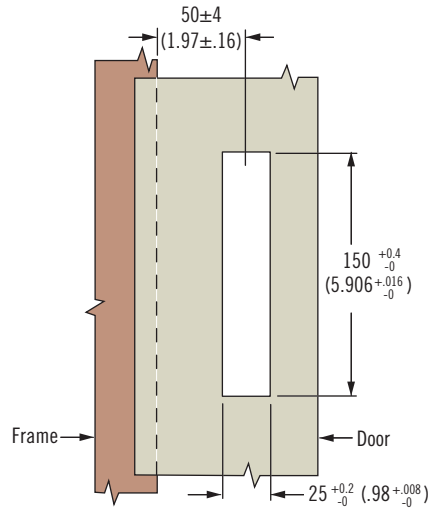
¹Note: Two short and two long mounting screws are provided with each latch assembly.
 Cams and keys ordered separately.



SC Self Contained Electronic Locking System

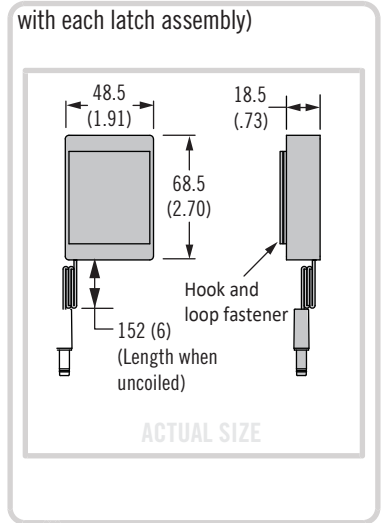
Electronic access

Installation

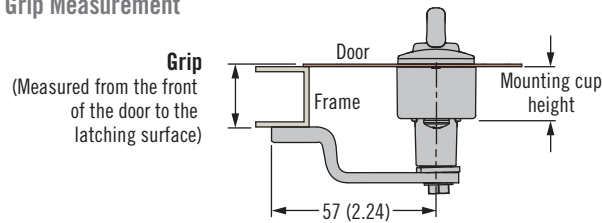


Battery Box

(Mount inside the door, included with each latch assembly)



Grip Measurement



Cam Part Numbers (Order Separately)	
Cam Part Number	GRIP mm (in)
SC-5000	42.5 (1.67)
SC-5002	40.5 (1.59)
SC-5004	38.5 (1.52)
SC-5006	36.5 (1.44)
SC-5008	34.5 (1.36)
SC-5010	32.5 (1.28)
SC-5012	30.5 (1.20)
SC-5014	28.5 (1.12)
SC-5016	26.5 (1.04)
SC-5018	24.5 (.96)
SC-5020	22.5 (.89)
SC-5022	20.5 (.81)
SC-5024	18.5 (.73)
SC-5026	16.5 (.65)
SC-5028	14.5 (.57)
SC-5030	12.5 (.49)
SC-5032	10.5 (.41)
SC-5034	8.5 (.33)
SC-5036	6.5 (.26)
SC-5038	4.5 (.18)
SC-5040	2.5 (.10)
SC-5042	0.5 (.02)

Electronic Key Part Numbers (Order Separately)			
Part Number	Description		
SC-A10-10	Programming Key	Used to enroll Manager keys and for Express Registration	
SC-A20-10	Manager Key	Used to enroll User Codes, User Keys and RFID cards. Also provides electrical override.	
SC-A30-10	User Key	Provides quick one touch access	

Note: Contact Southco for custom color/ logo options.

RFID Card and Label Part Numbers (Order Separately)	
Part Number	Description
EA-C3-101-9	Card, RFID, 13.56MHz, MIFARE® Classic, 0.8 (.03) Thick, Slot, Logo**
EA-C3-300-9	Label, RFID, MIFARE® Classic, 4 BYTE UID (Ø28mm, .2mm thick)

Note: Detailed instructions regarding system set-up and operation are included with each latch assembly.

** MIFARE and MIFARE Classic are trademarks of NXP B.V.



R4-EM-9

R4-EM-9 Series – Full-featured

The microprocessor controlled R4-EM 9 Series delivers next generation electronic rotary latching. All inputs are routed through the internal microprocessor, allowing expanded programming capability and customization of latch functionality. Extended housing provides added protection of the cam and an integrated trigger sensor provides indisputable lock/unlock status reporting. Additionally, the 9 Series offers a door retention feature which allows a door or panel to remain in the closed position until it is ready to be opened.



R4-EM-8

R4-EM-8 Series – Basic functionality

The R4-EM 8 Series combines the efficient and robust performance of a rotary latch mechanism with simplified DC motor actuation. The R4-EM 8 Series is available with or without an extended housing option to accommodate door sensing and to provide added protection of the locking cam. Additionally, the 8 Series is available with an integrated connector and mechanical override bracket, and features simple, concealed two-hole installation.



R4-EM-5 & 7

R4-EM 5 & 7 Series – Outdoor use

The R4-EM Outdoor provides reliable electronic access control in demanding environments. With its corrosion-resistant plated-steel or stainless steel outer body construction and fully-sealed internal actuator, the R4-EM Outdoor provides reliable electronic locking that is resistant to moisture and dust. The embedded electronic control allows integration with an external control system and flexible, concealed installation accommodates a variety of outdoor applications.



R4-EM-4 & 6

R4-EM 4 & 6 Series – Compact & lightweight

The R4-EM Light Duty delivers proven electronic access control in a compact, lightweight integrated package. Easy push-to-close operation and simple installation make it an ideal solution for transitioning from mechanical to electronic access. The R4-EM Light Duty is available in both auto re-lock and delayed re-lock versions for added flexibility. Multiple mounting configurations and a compact size afford easy integration into existing designs.



R4-EM-1 & 2

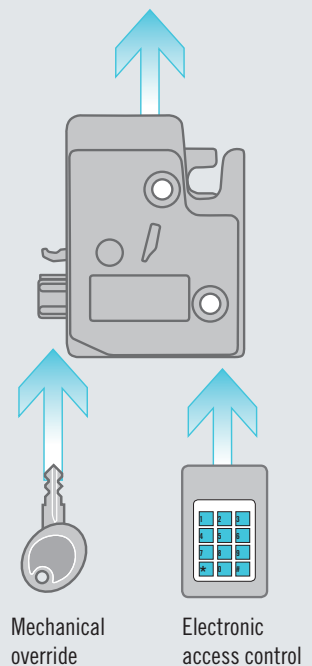
R4-EM 1 & 2 Series – All-metal construction

The original, all-metal construction R4-EM delivers the convenience of electronic access control with the security of a proven, robust, all-metal rotary latch. Easy push-to-close operation and electronic actuation simplify access across a wide variety of applications. The R4-EM series accepts access control signals from access control devices as well as networked systems. An optional internal microswitch provides an output signal to remotely monitor latch status or control external systems.

- Push-to-close, electronic release
- High electromechanical release load
- Minimal power draw
- Optional door sensor
- Mechanical over-ride
- 12V and 24V options



Latch and door status indication





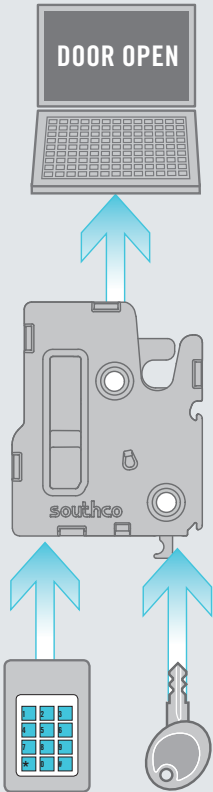
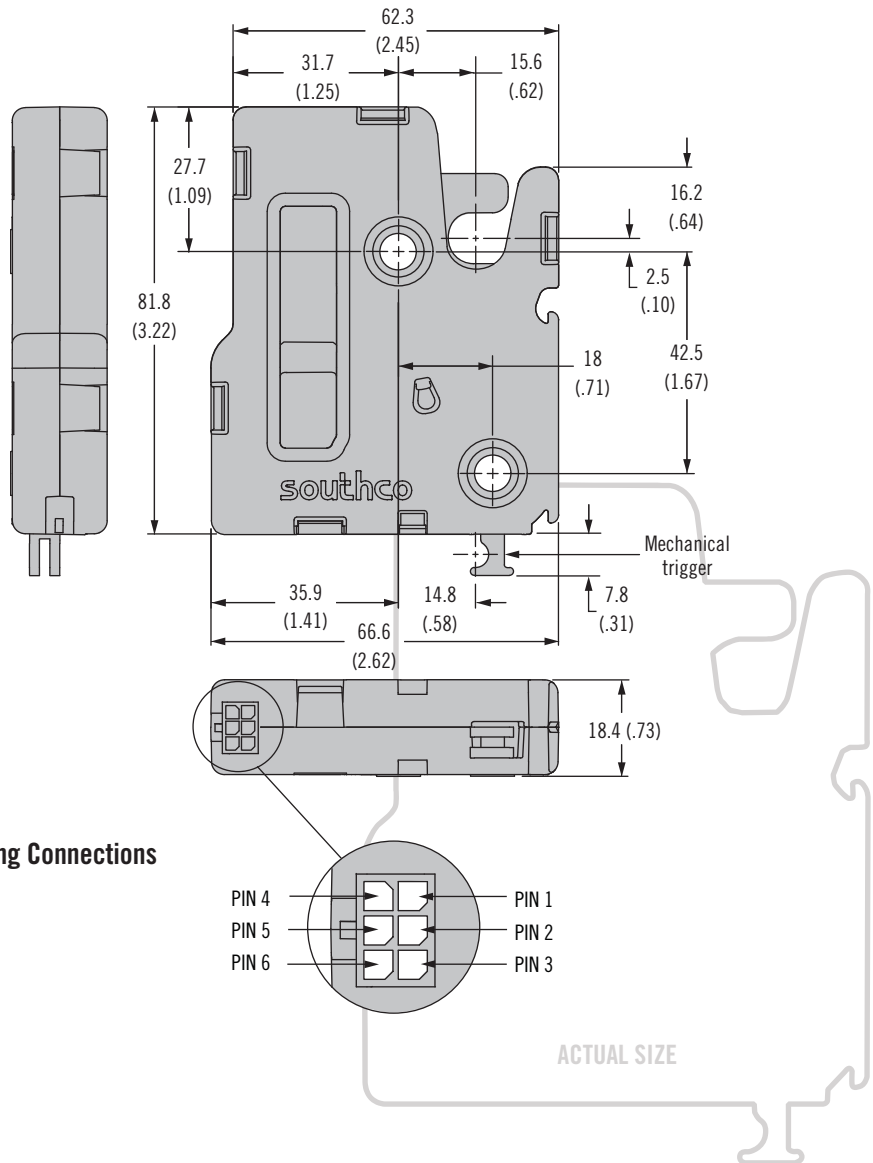
R4-EM 9 Series Electromechanical Rotary Lock

Door sensor option · Concealed cam

Electronic access with internal motor control

- Push-to-close, electronic release
- High electromechanical release load
- Minimal power draw
- Integrated connector
- Extended housing option for added security
- Optional door sensor
- Microswitch to detect latch status
- Mechanical over-ride with integrated cable bracket
- 12V to 24V operations
- Efficient DC gear motor actuation
- Detent mechanism for pull-open function
- Simple two-hole installation

12V
24V



Latch Wiring Connections

Part Number Selection

R4 - EM - 9 T B A - 1 S 0 - P

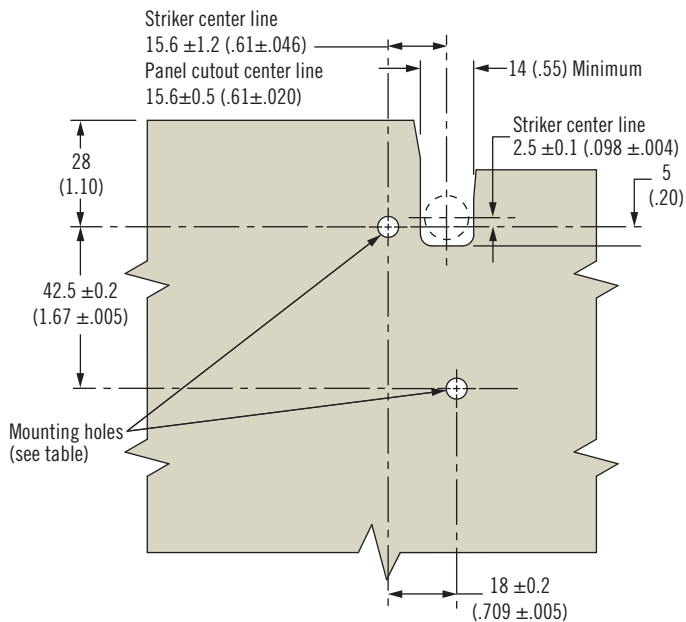
- T Trigger Styles**
 - A Auto relock, rear trigger, with kick-out spring
 - D Delayed relock, rear trigger, with kick-out spring
 - P Delayed relock, rear trigger, pull to open
- B Base Mounting Style**
 - 1 1/4 - 20 thread
 - 2 M6 thread
 - 3 Ø 7.0 (.27) thru hole
- A Alternate Configurations**
 - None Plastic housing
 - 5 Zinc alloy housing
- S Sensor**
 - 3 No Sensors
 - 4 Door Sensor Only
 - 5 Door and Trigger Sensor
 - 6 Trigger Sensor Only
- P Packaging Options**
 - None Individually packaged
 - 1 Bulk packaged

Dimensions in millimeters (inch) unless otherwise stated

Installation

Panel Preparation

Base Mounting Style	Recommended minimum mounting hole
1/4-20 thread	Ø 7.2 (.283)
M6 thread	Ø 6.9 (.272)
Thru hole	Ø 7.6 (.300)



Operation

See page 34 for operating instructions

Accessories

Striker Bolt or Cast Striker

See page 35



Cable Mounting Kit

See page 35



Material & Finish

- Top and Bottom housings: PC/ABS or Zinc alloy
- Pivot Pins: Steel, zinc plated
- Cam, Trigger: Steel, sealed
- Springs: Stainless steel passivated
- Trigger Interlock Lever: Glass-filled nylon
- Bistable Spring Retainer: Zinc Alloy
- Drive Cam: Acetal, black
- Output Cam: Acetal, white

Electrical Specifications

- Recommended Operating Voltage: 12 to 24 VDC
- Typical Operating Current : 12 V Models: Less than 500mA

Latch Connector

Pin Assignment

- PIN 1: Ground (-)
- PIN 2: Power (+)
- PIN 3: Control Signal
- PIN 4: Latch Status
- PIN 5: None
- PIN 6: Door status

Electronic Actuators

See page 42



Mechanical Actuators

See page 36



Cables

See page 272



Wiring/Junctions





R4-EM 8 Series Electromechanical Rotary Lock

Door sensor option · Extended housing option

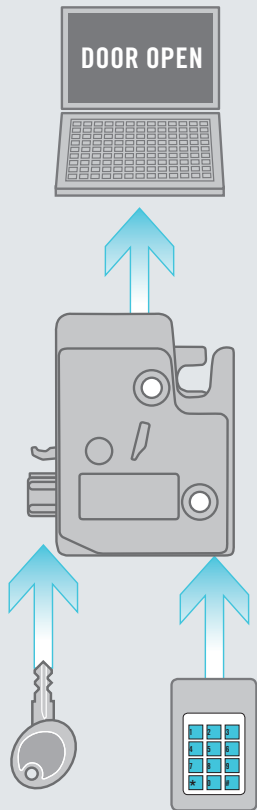
Electronic access without internal motor control

- Push-to-close, electronic release
- Auto relock functionality
- Minimal power draw
- Integrated connector
- Extended housing option for added security
- Optional door sensor
- Microswitch to detect latch status
- Mechanical over-ride with integrated cable bracket
- Efficient DC motor actuation
- Simple two-hole installation



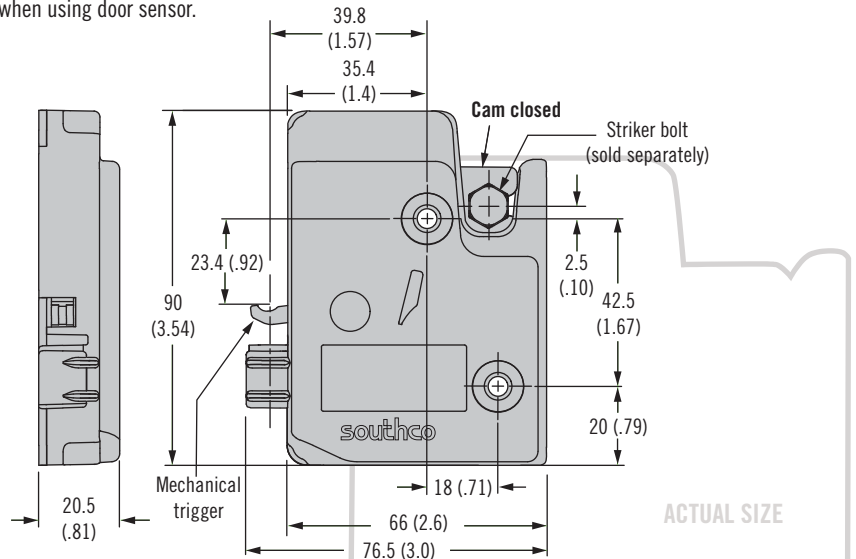
12V

24V



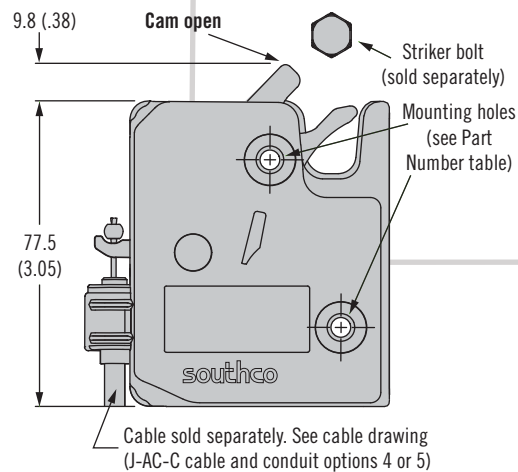
Extended Housing

This version is required when using door sensor.



Standard Housing

(Dimensions are the same as above, except as noted.)



Part Number Selection

R4 - EM - 8 B A - V S O - P

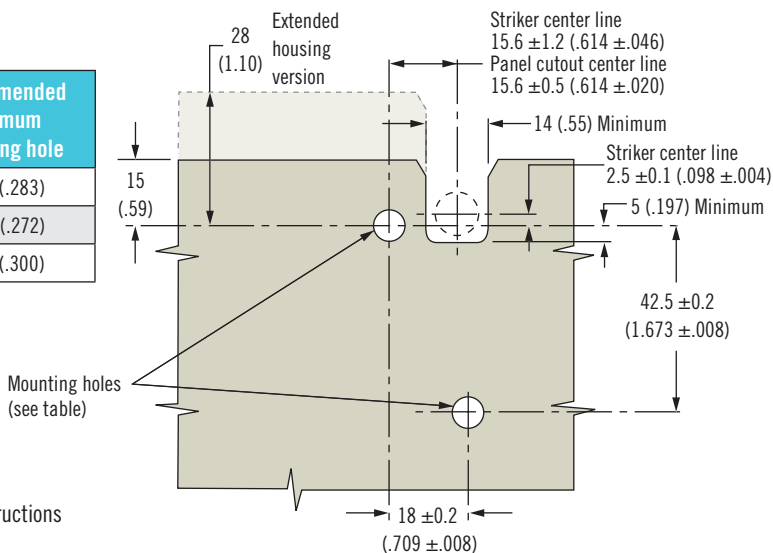
- B Base Mounting Style**
 - 1 1/4-20 thread
 - 2 M6 thread
 - 3 Ø 7.0 (.27) thru hole
- A Housing Configurations**
 - None Standard housing
 - 6 Extended housing
- V Voltage**
 - 2 24 volts
 - 3 12 volts
- S Integrated Door Sensor**
 - 3 No
 - 4 Yes (Extended housing only)
- P Packaging Options**
 - None Individually packaged
 - 1 Bulk packaged

Dimensions in millimeters (inch) unless otherwise stated

Installation

Panel Preparation

Base Mounting Style	Recommended minimum mounting hole
1/4-20 thread	Ø 7.2 (.283)
M6 thread	Ø 6.9 (.272)
Thru hole	Ø 7.6 (.300)



Operation

See page 34 for operating instructions

Accessories

Striker Bolt or Cast Striker

See page 35



Electronic Actuators

See page 42



Mechanical Actuators

See page 36



Cables

See page 272



Wiring/Junctions



Material & Finish

- Top housing: Nylon
- Gearbox cover: PC/ABS
- Bottom housing, Pivot pins, Screws: Steel, zinc plated
- Cam, Trigger: Steel, sealed
- Gears: Acetal
- Pin, Springs: Stainless steel

Electrical Specifications

- Recommended Operating Voltage:
 - 12 V Models: 8 to 14 VDC
 - 24 V Models: 21 to 26 VDC
- Typical Operating Current :
 - 12 V Models: Less than 200mA
 - 24 V Models: Less than 100mA
- Latch status switch: 1A Maximum

Latch Connector Pin Assignment

- PIN 1: Power
- PIN 2: Ground (-)
- PIN 3: None
- PIN 4: Latch status signal



12V

24V



R4-EM 5 & 7 Series Electronic Rotary Latch

Sealed motor · Stainless steel housing option

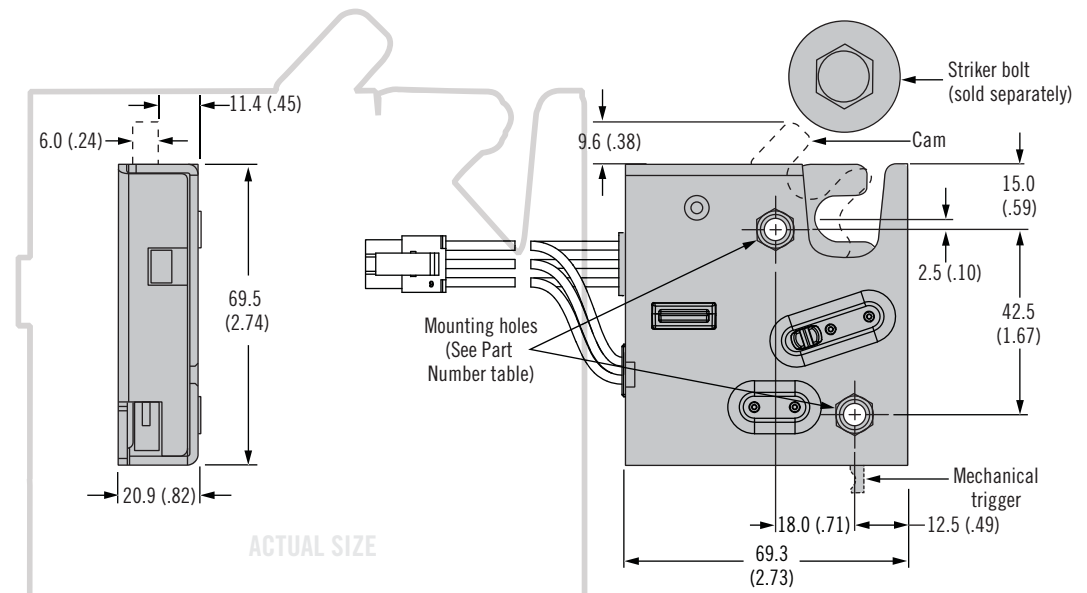
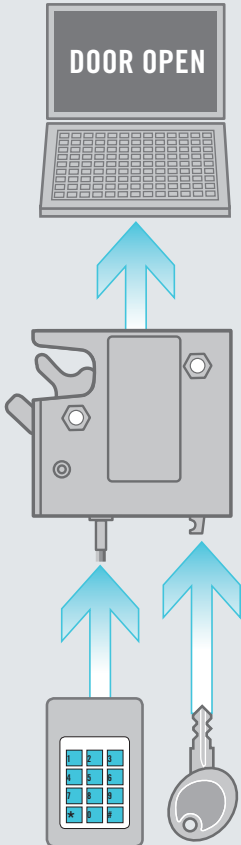
Electronic access with internal motor control



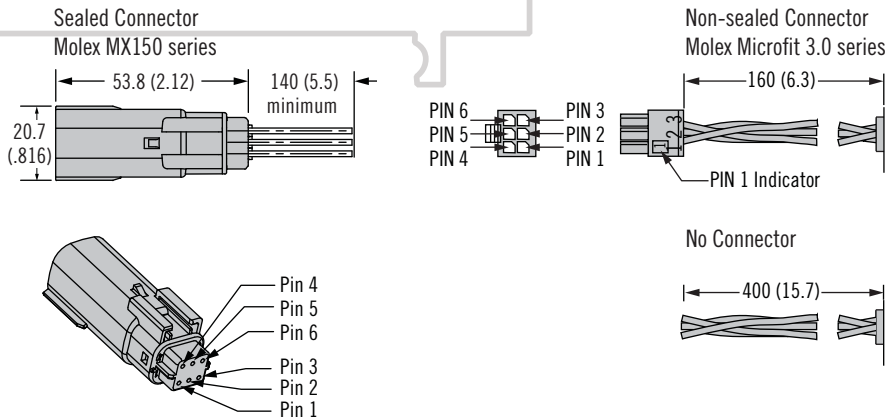
12V

24V

- Motor actuator sealed against water and dust ingress to IP56
- Corrosion resistant plated-steel and stainless steel options
- Push-to-close, electronic release
- Versatile rotary mechanism
- Concealed latching
- Microprocessor control
- Auto or delayed relock functionality
- Minimal power draw
- Optional internal micro-switch for latch status
- Simple mechanical over-ride



Latch Wiring Connections



Part Number Selection

T Trigger Style

- R5 Auto re-lock, rear trigger, with kick-out spring
- R7 Delayed re-lock, rear trigger, with light spring

C Connector Options

- 1 Non-sealed connector
- 2 No connector (stripped and tinned)
- 3 Sealed connector

P Packaging Options

- None Individually packaged
- 1 Bulk packaged

B Base Mounting Style

- 1 1/4-20 thread
- 2 M6 thread
- 3 Ø 7.0 (.27) thru hole

M Material Options

- None Steel, zinc-nickel plated
- B Stainless steel, passivated

S Switch Options

- 3 No switch
- 6 Internal latch status switch

A Alternate Configurations

- None Standard configuration
- 2 Strong (kick out) cam spring (delayed relock)
- 3 High strength cam
- 4 High strength cam with strong (kick out) cam spring (delayed relock)

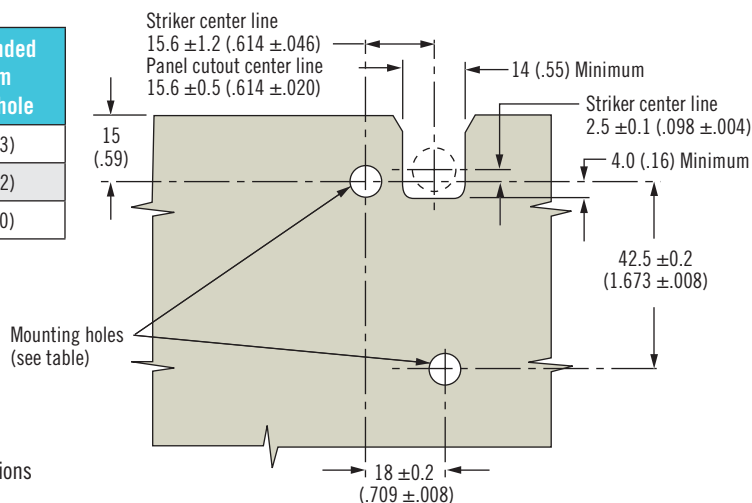
R4 - EM - T B A - 1 S C - P M

Dimensions in millimeters (inch) unless otherwise stated

Installation

Panel Preparation

Base Mounting Style	Recommended minimum mounting hole
1/4-20 thread	Ø 7.2 (.283)
M6 thread	Ø 6.9 (.272)
Thru hole	Ø 7.6 (.300)



Operation

See page 34 for operating instructions

Accessories

Striker Bolt or Cast Striker

See page 35



Cable Mounting Kit

See page 35



Electronic Actuators

See page 42



Mechanical Actuators

See page 36



Cables

See page 272



Wiring/Junctions



Material & Finish

Mechanism

Housing, Cam, Trigger, Pins: Zinc

nickel plated steel or stainless steel

Springs: 300 Series stainless steel

Electronic Actuator

Housing: PC/ABS

Bellows, Wire seal: Silicone

Perimeter Seal: Buna

Cams: Acetal

Grommet: TPE

Electrical Specifications

Recommended Operating Voltage:

12 to 24 Volt DC

Typical Operating Current (average

at no load): Less than 600mA at

12 VDC

Input Signal Current Draw: 25mA

Maximum at 24 VDC

Micro-switch Rating: 3A Maximum

at 12VDC

Wire Color Code / Connector

Pin Assignment:

PIN 1: Brown: Ground (-)

PIN 2: Red: Power 12 to 24 Volts DC

PIN 3: Orange: Control Signal

12 to 24 Volts DC

PIN 4: Black: Microswitch Common

PIN 5: Blue: Microswitch N.O.

Contact

PIN 6: Grey: Microswitch N.C.

Contact



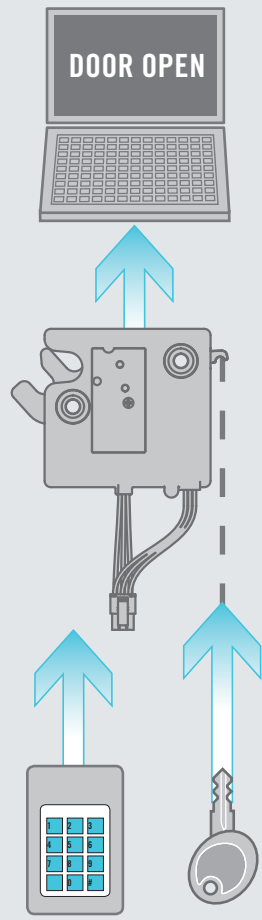
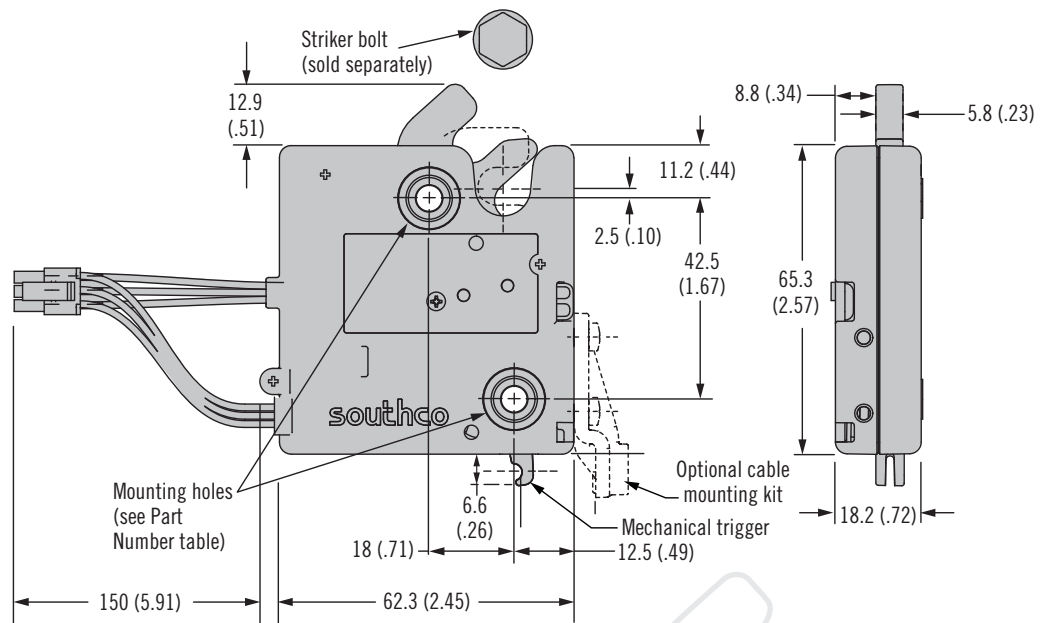
R4-EM 4 & 6 Series Electronic Rotary Latch

Compact size · Lightweight

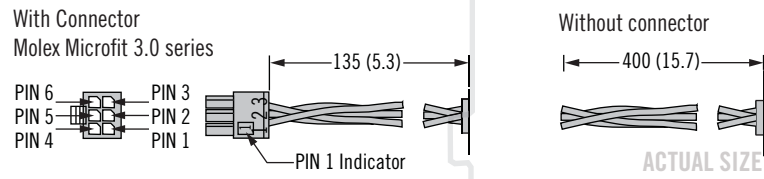
Electronic access with internal motor control

- Light weight construction
- Auto re-lock and delayed re-lock version
- Push-to-close, electronic release
- Versatile rotary mechanism
- Concealed latching
- Microprocessor control
- Minimal power draw
- Simple mechanical over-ride
- Optional internal microswitch for latch open/close output signal

12V
24V



Latch Wiring Connections



Part Number Selection

R4 - EM - T B A - 1 S C - P

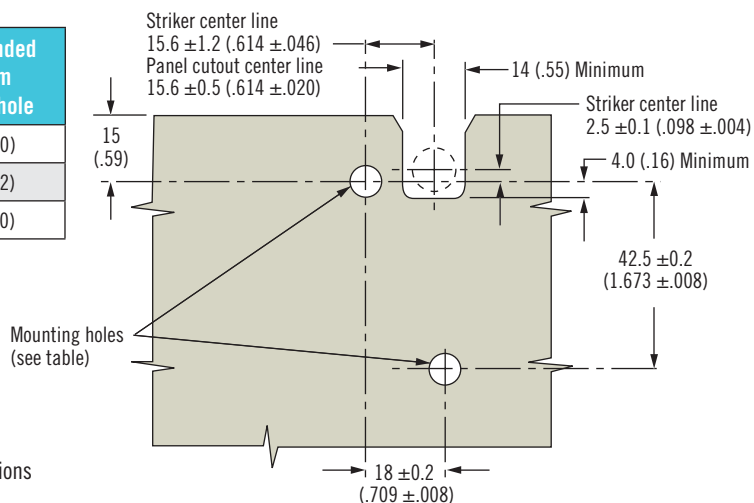
- T Trigger Styles**
 - 4 Auto re-lock with kick-out spring
 - 6 Delayed re-lock with light spring
- B Base Mounting Style**
 - 3 Ø 5.5 (.22) thru hole
 - 4 M5 thread
 - 5 10-24 thread
- A Alternate Configurations**
 - None Standard configuration
 - 2 Strong (kick out) cam spring (delayed relock)
- S Switch Options**
 - 3 No switch
 - 6 Internal latch status switch
- C Connector Options**
 - 1 With connector
 - 2 Without connector
- P Packaging Options**
 - None Individually packaged
 - 1 Bulk packaged

Dimensions in millimeters (inch) unless otherwise stated

Installation

Panel Preparation

Base Mounting Style	Recommended minimum mounting hole
10-24 thread	Ø 5.6 (.220)
M5 thread	Ø 5.9 (.232)
Thru hole	Ø 6.1 (.240)



Operation

See page 34 for operating instructions

Accessories

Striker Bolt

See page 35



Cable Mounting Kit

See page 35



Material & Finish

Housings: PC/ABS

Cam: Glass-filled nylon

Trigger: PBT

Springs: Stainless Steel

Pins: Steel, zinc plated

Electrical Specifications

Recommended Operating Voltage:

12 to 24 VDC

Typical Operating Current (average at no load): Less than 600mA at 12VDC

Input Signal Current Draw: 25mA Maximum

**Optional microswitch closes upon latch closure

Microswitch Rating: 3A Max at 12 VDC

Wire Color Code / Connector

Pin Assignment:

PIN 1: Brown: Ground (-)

PIN 2: Red: Power 8 to 26 Volts DC

PIN 3: Orange: Control Signal 8 to 26 Volts DC

PIN 4: Black: Microswitch Common

PIN 5: Blue: Microswitch N.O.

Contact

PIN 6: Grey: Microswitch N.C.

Contact

Electronic Actuators

See page 42



Mechanical Actuators

See page 36



Cables

See page 272



Wiring/Junctions





R4-EM 1 & 2 Series Electronic Rotary Latch

All-metal construction

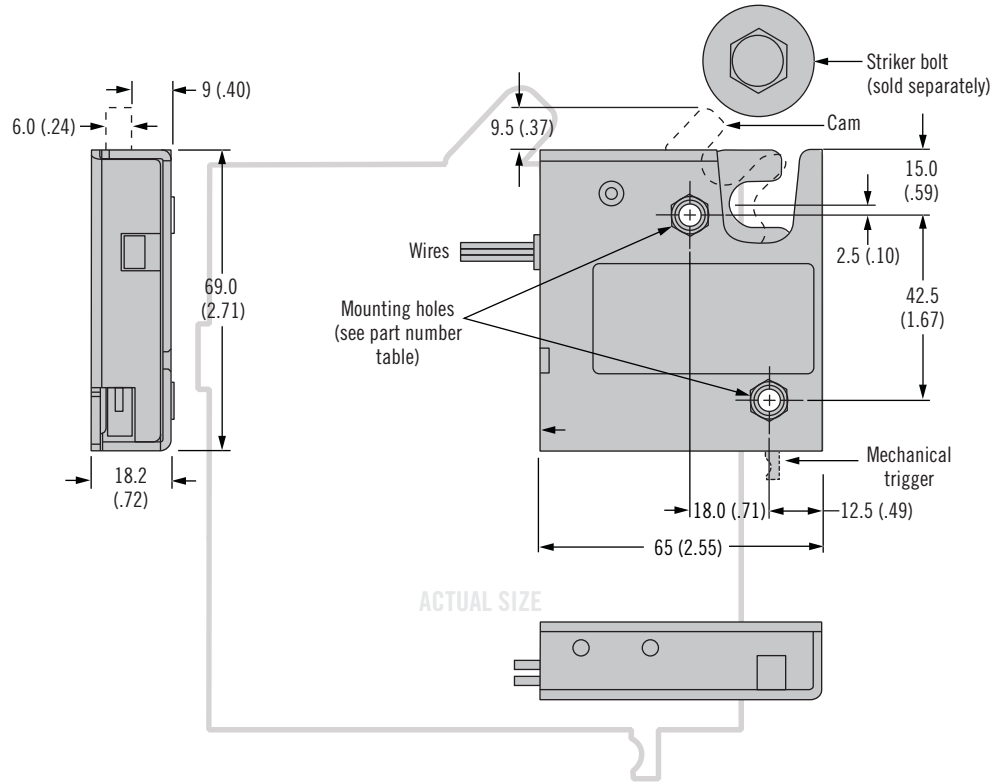
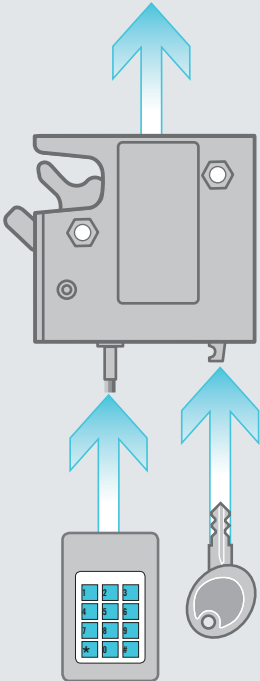
Electronic access with internal motor control

- High strength, steel construction
- Operates against high mechanical loads
- Push-to-close, electronic release
- Versatile rotary mechanism
- Concealed latching
- Microprocessor control
- Minimal power draw
- Simple mechanical override
- Optional internal microswitch for latch open/close output signal



12V

24V

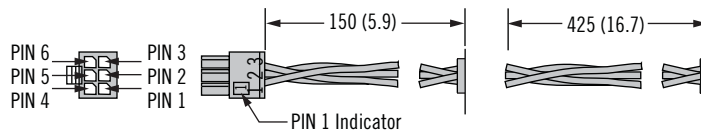


Latch Wiring Connections

With connector

Molex Microfit 3.0 series

Without connector



Part Number Selection

R4 - EM - T B A - 1 S C - P

T Trigger Styles

- R1 Auto relock, rear trigger, with kick-out spring
- R2 Delayed relock, rear trigger, with light spring

B Base Mounting Style

- 1 1/4 - 20 thread
- 2 M6 thread
- 3 Ø 7.0 (.27) thru hole

A Alternate Configurations

- None Standard configuration
- 2 Strong (kick out) cam spring (delayed relock)
- 3 High strength cam
- 4 High strength cam with strong (kick out) cam spring (delayed relock)

P Packaging Options

- None Individually packaged
- 1 Bulk packaged

C Connector Options

- 1 With connector
- 2 Without connector

S Switch Options

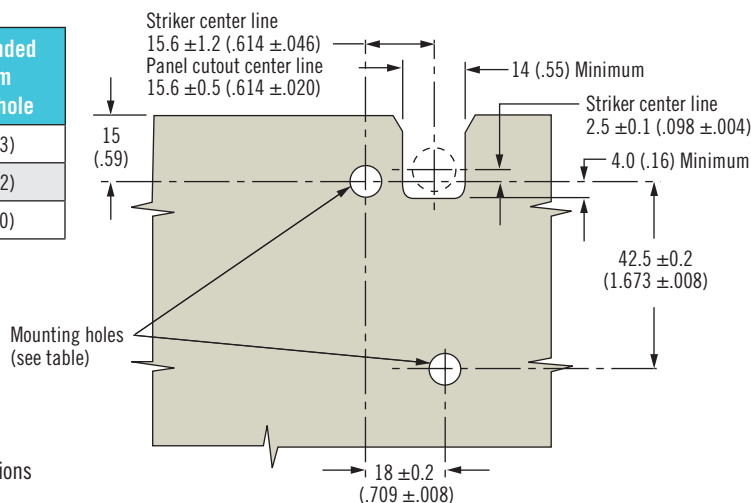
- 3 No switch
- 6 Internal latch status switch

Dimensions in millimeters (inch) unless otherwise stated

Installation

Panel Preparation

Base Mounting Style	Recommended minimum mounting hole
1/4-20 thread	Ø 7.2 (.283)
M6 thread	Ø 6.9 (.272)
Thru hole	Ø 7.6 (.300)



Operation

See page 34 for operating instructions

Accessories

Striker Bolt or Cast Striker

See page 35



Cable Mounting Kit

See page 35



Material & Finish

Mechanism

Housing: Steel, zinc plated

Cam, trigger: Steel, zinc plated

Springs: 300 Series stainless steel

Pins: Steel, zinc plated

Electronic Actuator:

Housing: PC/ABS

Cam / follower: Acetal

Electrical Specifications

Recommended Operating Voltage:

12 to 24 Volt DC

Typical Operating Current: Less than 500mA at 12 VDC

Peak/Stall Operating Current: 1 A

Standby Current: 185uA

Input Signal Current Draw: 25mA

**Optional microswitch closes upon latch closure

Microswitch Rating: 3A at

12VDC Maximum

Wire Color Code / Connector

Pin Assignment:

PIN 1: Brown: Ground (-)

PIN 2: Red: Power 8 to 26 Volts DC

PIN 3: Orange: Control Signal

8 to 26 Volts DC

PIN 4: Black: Microswitch Common

PIN 5: Blue: Microswitch N.O.

Contact

PIN 6: Grey: Microswitch N.C.

Contact

Electronic Actuators

See page 42



Mechanical Actuators

See page 36



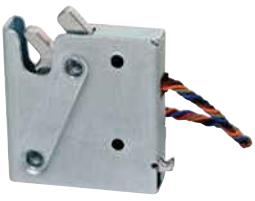
Cables

See page 272



Wiring/Junctions



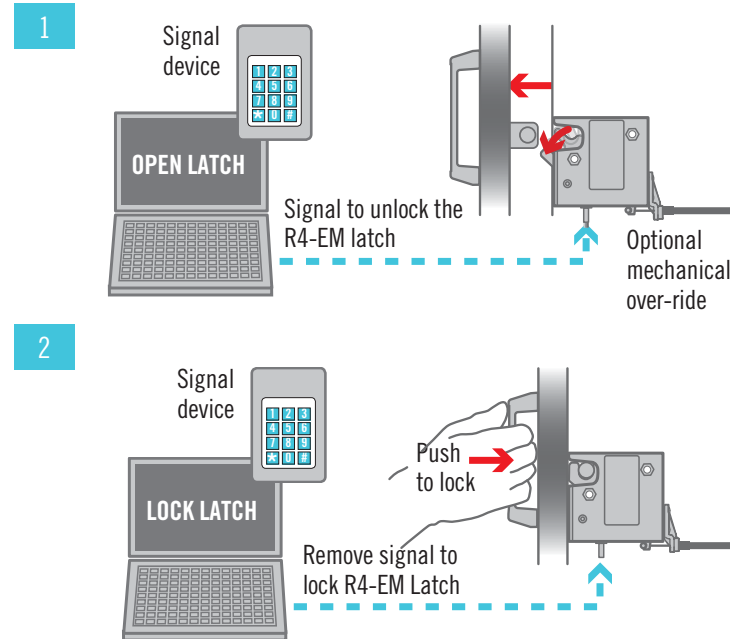


R4-EM Electronic Rotary Latch

Operating instructions

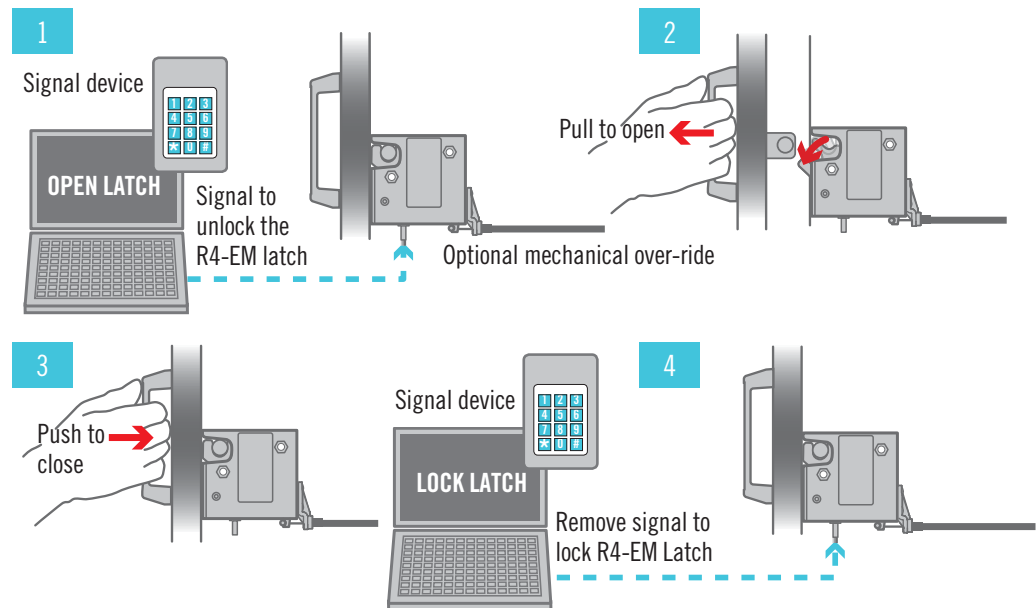
Operation - Auto relock

1. The signal unlocks the R4-EM latch and releases the spring loaded cam which rotates out to push a lightweight door open. The mechanism will cycle through unlatched then re-latched state automatically, regardless of input signal on time.
2. Push door closed to engage striker after unlock time has expired. Striker will rotate cam to closed position.



Operation - Delayed relock

1. The signal unlocks the R4-EM latch leaving a biased closed door in the closed position. The unlock time is controlled by the access control device.
2. Manually pull door/striker free from R4-EM latch.
3. Manually push door closed. Striker will rotate cam to closed position, however latch will remain unlocked and can be re-opened as long as signal is present.
4. After accessing the door, the signal can be removed to re-lock the R4-EM. This can be done with the door in the open or closed position.



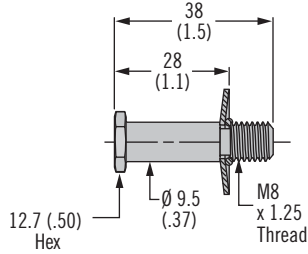
R4-EM Electronic Rotary Latch

Strikers - Cable mounting kits



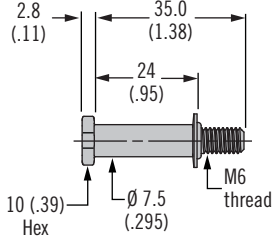
Striker Bolt - Large

Part number R4-90-121-10



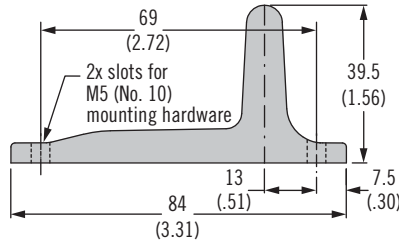
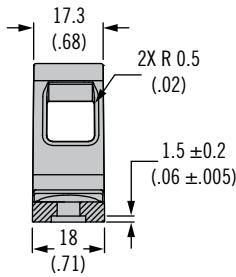
Striker Bolt - Small

Part number R4-90-511-10



Cast Striker with Door Sensor Part number R4-90-804-10*

Cast Striker without Door Sensor Part number R4-90-800-10*

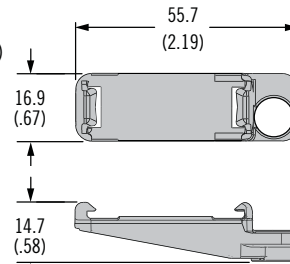
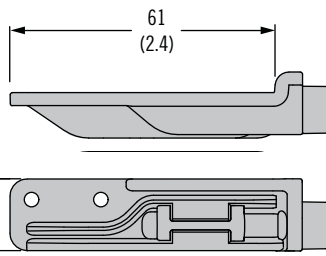
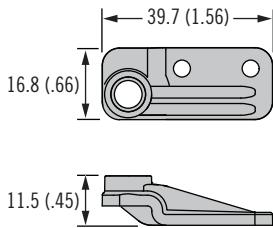







Cable Mounting Kit

Part number R4-EM-52 – Rivets included
Part number R4-EM-72 – Screws included

Part number R4-EM-87 – Rivets included

Part number R4-EM-952



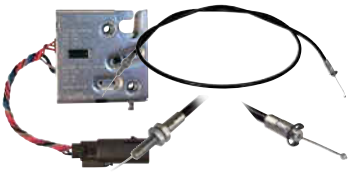
	Striker Bolt		Cast Striker		Cable Mounting Kit			
	R4-90-121-10	R4-90-511-10	R4-90-800-10	R4-90-804-10	R4-EM-52	R4-EM-72	R4-EM-87	R4-EM-952
 R4-EM-9	✓		✓	✓				✓
 R4-EM-8	✓		✓	✓				
 R4-EM-5 & 7	✓		✓		✓		✓	
 R4-EM-4 & 6		✓				✓		
 R4-EM-1 & 2	✓		✓		✓		✓	

Material and Finish

Striker bolts: Steel, zinc plated

Cast strikers: Zinc alloy

Cable mounting kits: Glass-filled nylon, black

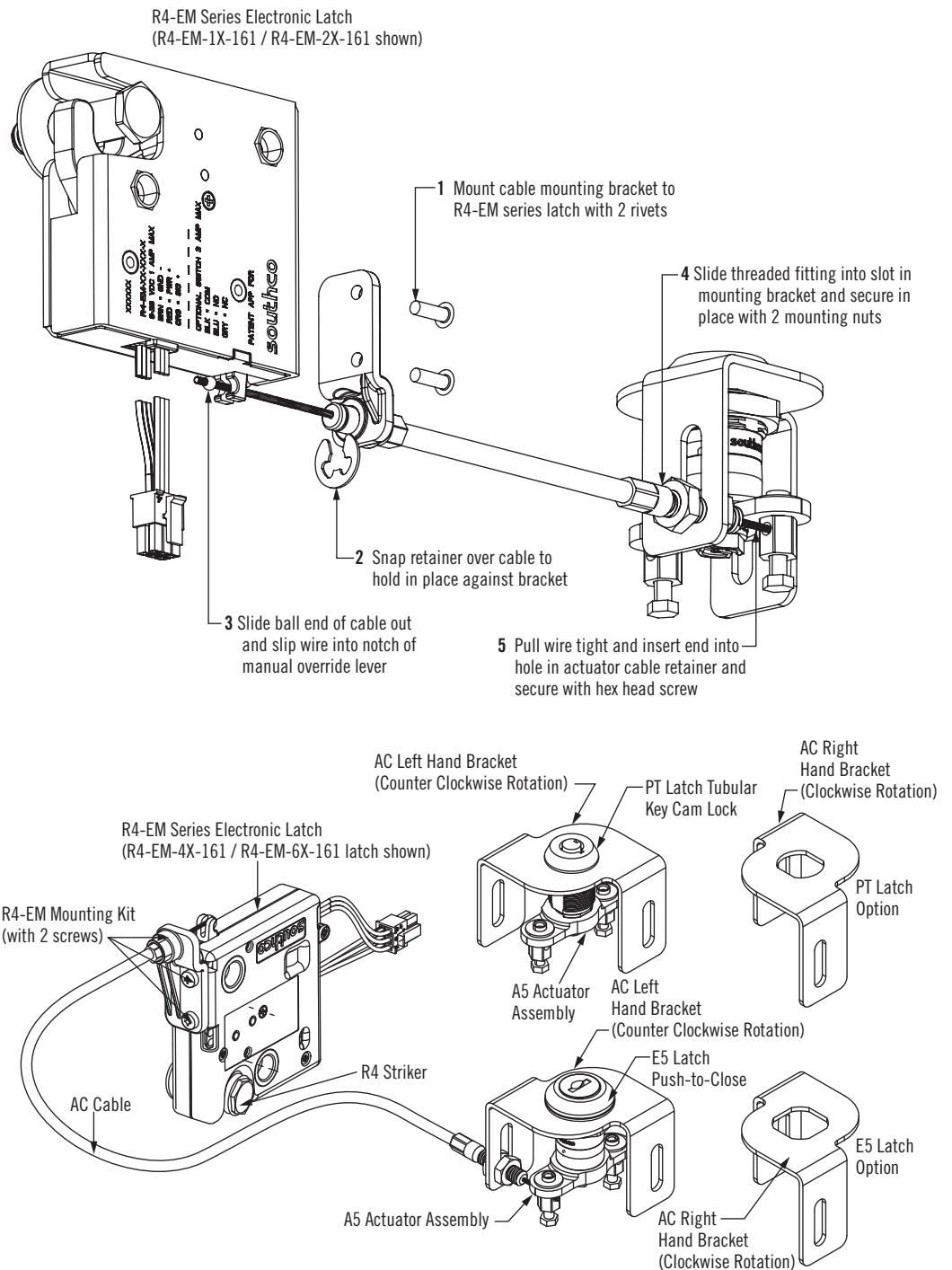


R4-EM Mechanical Override System

- Adapts to any standard Southco R4-EM Electronic Rotary Latch
- Choose from flat key or tubular key cam latch for remote key lock
- Simple installation with multiple adjustments and customized cable lengths to suit any application.
- Accommodates clockwise or counter clockwise key rotation for latch release

Southco now offers a standard solution for remote mechanical actuation of the R4-EM Electronic Rotary Latch. The cable based solution provides a simple means of mechanically releasing the electronic lock in the event of electrical power loss providing fully redundant access.


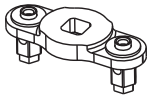
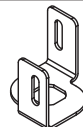

Installation


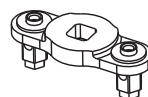




Dimensions in millimeters (inch) unless otherwise stated

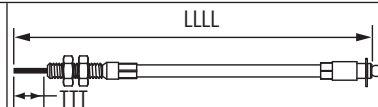
How to Order

Step 1 Select mechanical override lock and corresponding AC actuator assembly and AC cable bracket

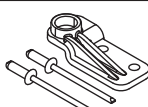
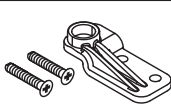
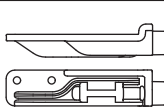
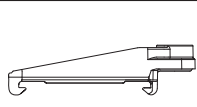
 <p>E5 Latch Push-to-Close assembly See page 128 See drawing J-E5-53-A</p>	Description	Part Number	
	A5 Actuator	A5-99-136	
	AND		
	AC Cable Bracket (Clockwise Rotation)	AC-0-49617-11-R	
OR			
AC Cable Bracket (Counter Clockwise Rotation)	AC-0-49617-11-L		

 <p>PT Latch Tubular Key cam Lock See page 170 See drawing J-PT-1</p>	Description	Part Number	
	A5 Actuator	A5-99-157	
	AND		
	AC Cable Bracket (Clockwise Rotation)	AC-0-49618-11-R	
OR			
AC Cable Bracket (Counter Clockwise Rotation)	AC-0-49618-11-L		

Step 2 Determine mechanical cable length required

<p>Mechanical Cable See drawing J-AC-C</p>	AC-C0H0-4-LLLL-TTT	<p>LLLL - Length from behind ball end to end of cable TTT - Raw cable extension portion of LLLL length</p> 
---	--------------------	---

Step 3 Order cable mounting kit (one per R4-EM latch). See page 35 to select the kit to match your application.

			
R4-EM-52	R4-EM-72	R4-EM-87	R4-EM-952



H3-EM Electronic Locking Swinghandle

RFID card reader option · Latch status indicator
Single or multi-point latching

- Remote lock and unlock
- Momentary or continuous lock actuation
- Local monitoring with multi-color LED indicator
- Lock status outputs provided for remote monitoring
- Industry standard 25x150mm panel prep
- Integral key lock for manual over-ride
- Options for combined electronic lock and RFID card reader
- Options for 125 kHz or 13.56 MHz cards
- Reader recognizes existing employee RFID cards

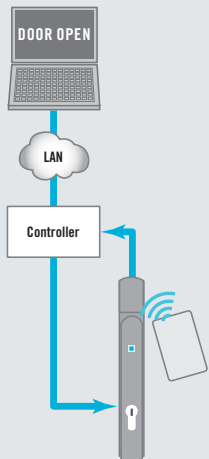
Notes

† See specific latch trade drawings for compatible card types

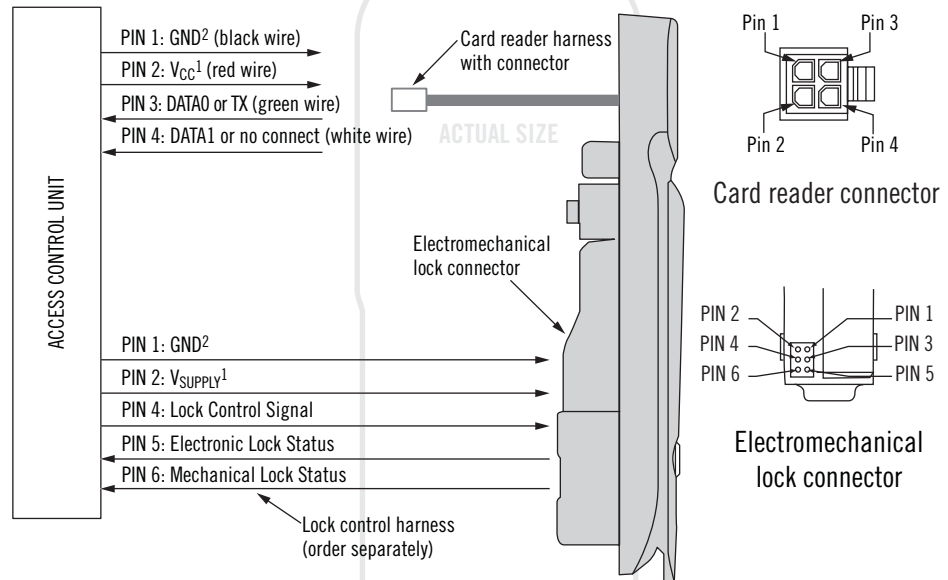
** MIFARE, MIFARE Classic, MIFARE Plus and MIFARE DESFire are trademarks of NXP B.V.

** HID iCLASS is a registered trademark of HID Global.

***Remove "-10" for latch without Southco Logo



Connection Diagram



- (1) VCC and V_{SUPPLY} may be connected together
- (2) EML and Card reader must use a common GND

5 Meter* Wire Harnesses (order separately)		
Part Number	Latch Output	Termination
EA-W01-500	From Swinghandle	to Stripped and Tinned End
EA-W23-503	From Wiegand or RS232 Output Card Reader	to Stripped and Tinned End
EA-W23-503-83	From Wiegand Output Card Reader	to EA-P1-01X (Pin/Prox Controller)
EA-W01-23-507	From Swinghandle and Card Reader	to Stripped and Tinned End
EA-W01-23-507-03	From Swinghandle and Card Reader	to Hirose 8-Pin Connector

*Contact Southco for other lengths

Electronic Swinghandle Part Number Selection

H3 - EM - 6 R - L 00 - 10***

R Card Reader type

- 0 Without card reader
- 6 MIFARE® Classic, MIFARE Plus®, MIFARE® DESFire® and HID® iCLASS® UID with Wiegand Data Output†**
- 7 MIFARE® Classic, MIFARE Plus® and MIFARE® DESFire® with Wiegand Data Output†**
- 8 HID® 125kHz RFID with Wiegand Data Output†**
- 9 HID® 125kHz RFID with RS232 Data Output†**

L Lock style

- 1 High security DIN lock
- 2 Key code CH751
- 3 Key code RS001 (Multiple RS key codes available)



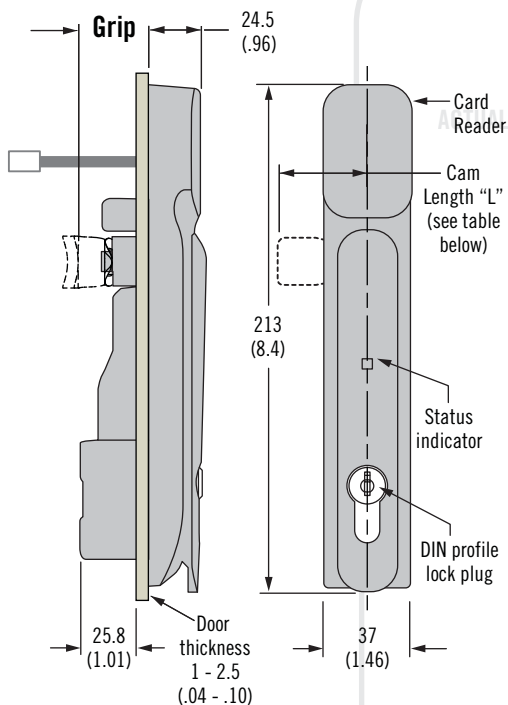
Card Part Numbers

EA-C2-021-9 (HID® 125kHz card, 26bit, 1.8 (0.07) thick)**

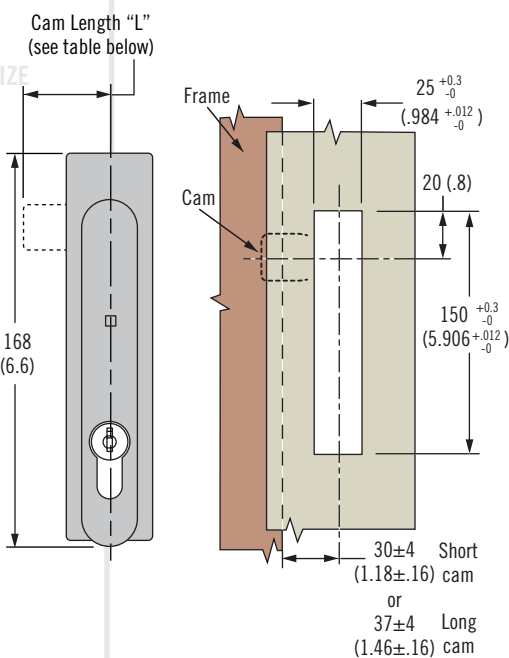
EA-C3-101-9 (MIFARE® Classic card, 4B CSN, 0.8 (0.03) thick)**

Contact Southco for custom color/logo options

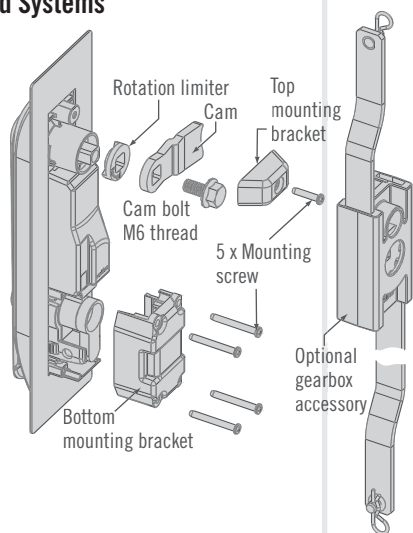
Swinghandle with Card Reader



Swinghandle without Card Reader



Rod Systems



Actuator Plate



Cam Part Number (Order separately)		
Grip	Short Cam 38 (1.5)	Long Cam 45 (1.77)
15.5 (.61)	E5-6710	-
17.5 (.69)	E5-6711	-
19.5 (.77)	E5-6712	E5-6112
21.5 (.85)	E5-6713	E5-6113
23.5 (.93)	E5-6714	E5-6114

Other additional offsets:
 (1) See Southco Drawings J-E5-67-A & J-E5-67-B
 (2) See Southco Drawings J-E5-61-A & J-E5-61-B

Rod System Part Numbers (order separately)†	
H3-61-55-33	Left Hand Gearbox (CCW to open)
H3-61-56-33	Right Hand Gearbox (CW to open)
A5-90-105-11	Actuator Plate

† For multi-point systems, select either the right or left hand gear box part number and rod adaptor (2 per door) part numbers or the actuator plate part number from table.

Material & Finish

Glass-filled nylon, PC/ABS
(UL94-V0)

Shaft, rotation limiter: Die-cast zinc,
bright sealer

Electronic Swinghandle

Recommended operating voltage:
12VDC to 24VDC

Typical operating current:

Less than 200mA at 12VDC

Peak / stall operating current: 1 Amp

Standby current: 50mA Max

Output Signal: 100mA Max load

Card Reader Module

Supply voltage: 12VDC to 24VDC

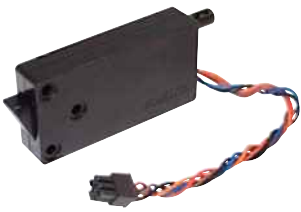
Operating current: 60mA Max

To Order:

- 1 Select required Electronic Swinghandle part number using selection guide.
- 2 Select cam part number using cam part number table.
- 3 For multi-point applications, select optional gear box / rod adaptors or actuator plate.
- 4 Select optional wire harness.
- 5 Order cards as needed.

For standalone systems order Southco EA-P1-010 controller.

Contact Southco for details on ordering networked systems.



EM-05 Miniature Electronic Slide Bolt

Push-to-close · Compact size · Mechanical override

- Simple transition from mechanical to electronic access
- Microprocessor controlled gear motor
- Minimal power draw
- Optional internal microswitch for latch open/close output signal
- Accepts signals from any electronic actuation source
- Single or multi-point latching

Material & Finish

Enclosure & Latch Bolt: Thermoplastic
 Housing Assembly Screws: Steel, zinc plated

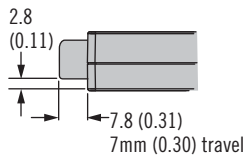
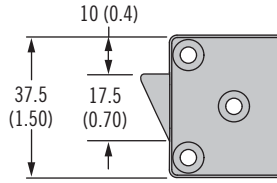
Electrical Specifications

Recommended Operating Voltage: 12-24 VDC
 Typical Operating Current: Less than 600mA at 12 VDC

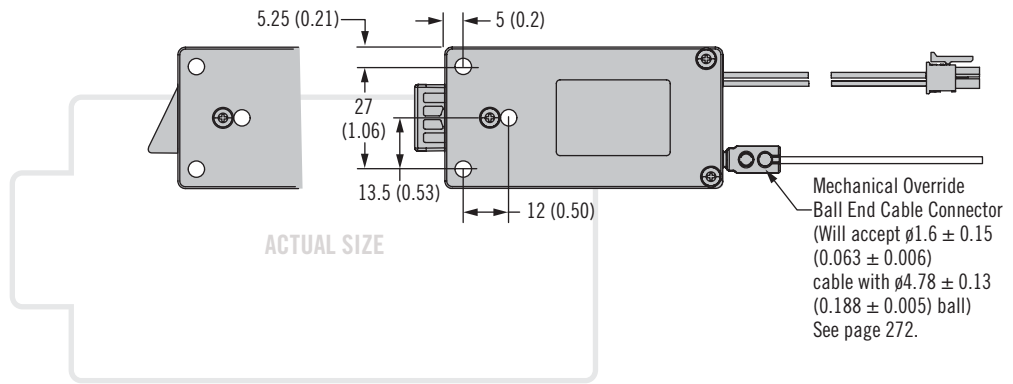
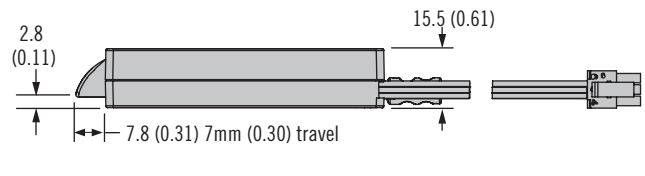
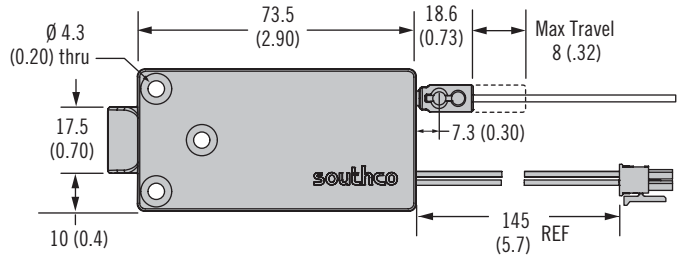
Control Input

Retracted Position: 12-24 VDC
 The latch bolt will remain retracted for as long as the signal is present or a minimum of 1 second.
 Input Signal Current: 25mA Max at 24 VDC
 Extended Position: 0 VDC

Side Mount

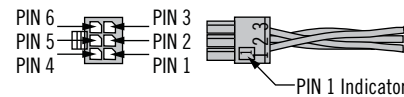


Front Mount



Latch Wiring Connection

Molex Microfit 3.0 series



Wire Color Code / Connector Pin Assignment:

- PIN 1: Brown: Ground (-)
- PIN 2: Red: Power 8 to 26 VDC
- PIN 3: Orange: Control Signal 8 to 26 VDC
- PIN 4: Black: Microswitch Common
- PIN 5: Blue: Microswitch N.O. Contact
- PIN 6: None

Miniature Electronic Keeper Part Numbers				
Type	With Mechanical Override		Without Mechanical Override	
	With Switch	Without Switch	With Switch	Without Switch
Front Mount Latch Bolt	EM-05-11-111	EM-05-11-101*	EM-05-11-110	EM-05-11-100
Side Mount Latch Bolt	EM-05-21-111	EM-05-21-101*	EM-05-21-110	EM-05-21-100

* For Mechanical Version of Front Mount Style order part number EM-05-11-001
 * For Mechanical Version of Side Mount Style order part number EM-05-21-001 (Mechanical version does not include drive motor or electronics)

EM-10 Electronic Slide Bolt

Push-to-close

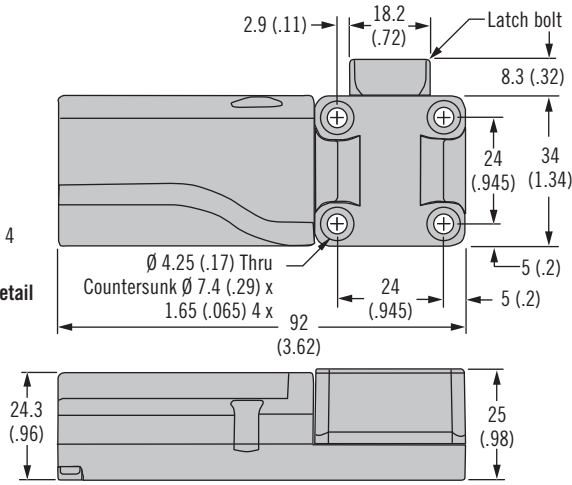
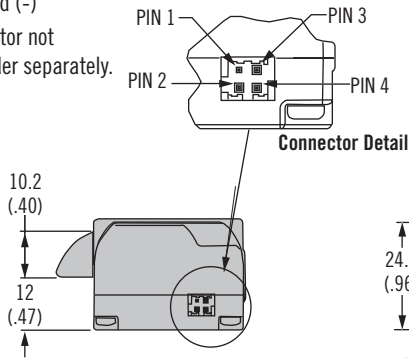


Front Mount (left version shown)

Wire Color Code / Connector Pin Assignment:

- PIN 1: Control input signal
- PIN 2: Power (+)
- PIN 3: Output signal
- PIN 4: Ground (-)

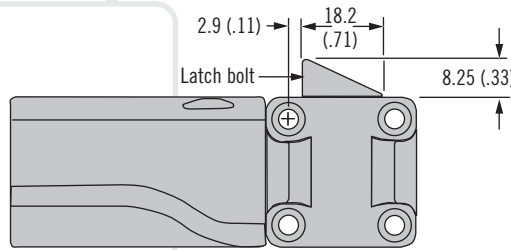
Mate connector not included, order separately.



Side Mount (left version shown)

Dimensions same as Front Mount, except as noted.

ACTUAL SIZE



Wire Harness and Connector

Part Number		Length	
Wire Harness with Mate Connector (order separately)			
EM-10-40	300 (11.81)		
EM-10-41	1000 (39.37)		
EM-10-42	2000 (78.74)		

Rotation Kit

Part Number		
Rotation Kit * (order separately)	EM-10-32-85	

VDC	Part Numbers	Side Mount Version
12VDC 24VDC	EM-10-23-310 EM-10-23-410	
12VDC 24VDC	EM-10-21-310 EM-10-21-410	
12VDC 24VDC	EM-10-32-310 EM-10-32-410	

VDC	Part Numbers	Front Mount Version
12VDC 24VDC	EM-10-13-310 EM-10-13-410	
12VDC 24VDC	EM-10-11-310 EM-10-11-410	
12VDC 24VDC	EM-10-12-310 EM-10-12-410	

- Microprocessor controlled gear motor
- Accepts signals from any electronic actuation source
- Frame side mounting simplifies wiring

Material & Finish

Enclosure & latch bolt:

Thermoplastic

Housing assembly screws:

Steel, zinc plated

Electrical Specifications

Recommended operating voltage:

12 or 24 Volt DC

No load operating current:

200 mA @ 12-24 V

Peak stall / current: 1 A

Control Input

Retracted Position: 12-24 Volt DC

The latch bolt will remain retracted for as long as the signal is present or a minimum of 1 second.

Input Signal Current: 25 mA

Extended Position: 0 VDC

Output Signal

Output Signal Rating:

450 mA Maximum load

Output will turn on when latch bolt is in retracted position. Output slow flashes On/Off when latch error occurs.

No signal at latch bolt extended position.

The Electronic Keeper is provided with a specific latch bolt orientation (Left, Right or Center). Latch bolt direction can be re-oriented using the appropriate replacement gear from the *optional rotation kit.



Electronic Access Control

Overview

- Variety of access controllers to fit most application requirements
- Control one or multiple electronic latches
- Integrate access control with existing control systems



Keypads

Southco's digital keypad solutions feature mechanical push-button and membrane switch versions for simple pin-based access control.



RFID Card Readers

Southco's card reader solutions provide access control using standard RFID proximity cards typically used for building access.



System Integration

System Integration solutions support integration between existing control systems and Southco electromechanical locks.











RF Controllers

RF technology enables wireless actuation of Southco locks using radio frequency technology for remote, wireless locking and unlocking.

Electronic Access Control

Selection Guide



Access Controller	Access Type	Number of User Codes	Output / Connections
 EA-KC2	Membrane Keypad	Up to 120 user codes	2 Independent transistor outputs
 EA-P1	RFID card / Keypad	Up to 5 user codes	1 relay output, lockout alarm, tamper switch
 EA-P3	RFID card	Dependent upon access control devices	Wiegand output, lockout alarm and tamper switch
 EA-A01	2 Wiegand Inputs	Dependent upon access control devices	Wiegand output with door status data
 EA-A06	1 USB Input	Dependent on connected computer	14 transistor outputs
 EA-A01	2 Access Controller Inputs	Dependent upon access control devices	2 Electromechanical latches
 EA-R01	RF Transmitter	up to 4 transmitters (2 supplied)	2 polarity reversing relay outputs, 1 auxillary relay output
 EA-R02	RF Transmitter	up to 4 transmitters (2 supplied)	2 user configurable lock / unlock relay outputs, 1 auxillary relay output



EA-KC2 Series Keypad Access Controller

Membrane keypad

- Simplified, secure access management
- Attractive, customizable membrane style keypad
- Programmable to accommodate multiple access arrangements
- Direct integration with electronic locks
- Controls up to two compartments independently
- Sleep mode for minimal power draw
- Up to 120 user codes
- LED indicators for keypad status & programming

Material & Finish

Membrane Keypads with Tactile Keys: Textured Polyester Film with PSA Tape for Mounting on Backside
 Controller Housing: ABS
 Controller Circuit Board: FR4

Electrical Specifications

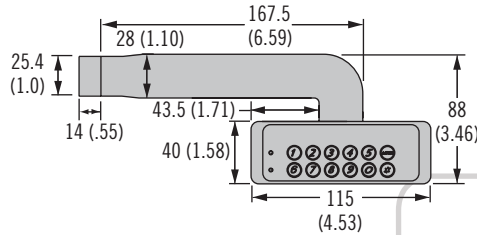
Supply Voltage: 12-24 VDC
 Stand By Current: 30µA
 Operating Current: 10mA (Typical)
 Maximum Total Output: 4 Amps (2 Amps per Output)

How to Order

1. Order one controller EA-KC2-201
2. Order standard Southco membrane keypad. Contact Southco for custom membrane keypad design.
3. Order Southco Power Supply EA-A02-002 and select the appropriate plug adapter if needed.
4. Use latch wire harness options table to select cable to accommodate Southco EML

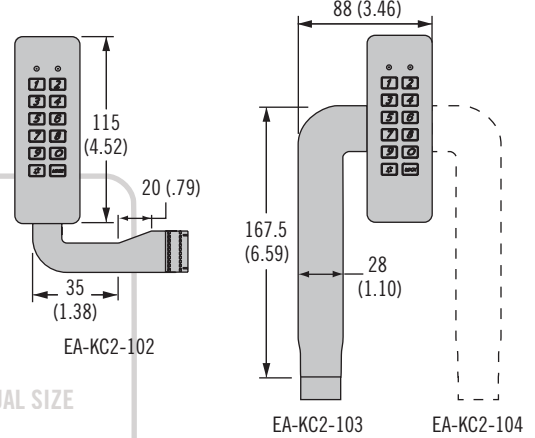
Horizontal Keypad

Part Number EA-KC2-101



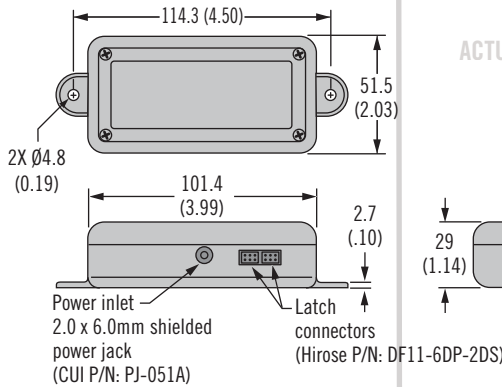
Vertical Keypad

Part Number EA-KC2-102, EA-KC2-103 & EA-KC2-104

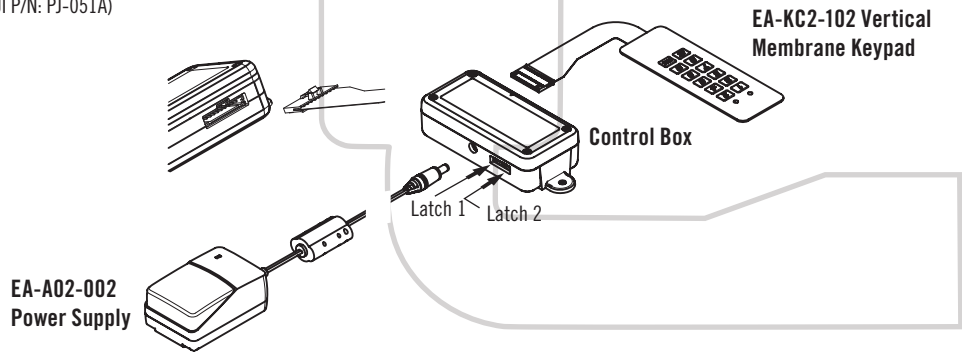


Controller Assembly

Part Number EA-KC2-201



ACTUAL SIZE



Latch Wire Harness Options

Part Number	Description	
EA-W01-200*	2 Meter Wire Harness Stripped and Tinned	
EA-W20-201-01*	2 Meter Wire Harness to Connect Membrane Controller to Miniature Electronic Keeper (EM-05-XX-XXX) and/or Electronic Rotary Latch (R4-EM-XX-XXX)	
EA-W01-200-01*	2 Meter Wire Harness to Connect Membrane Controller to Electronic Swing Handle (H3-EM-XX-XXX)	

Power Supply Plug Adapters

Part Number	Description	Function
EA-A02-002**	Power Supply with NA 2-Pin	
EA-A02-002 & EA-A02-002-2	Power Supply with Euro 2-Pin	
EA-A02-002 & EA-A02-002-3	Power Supply with UK 3 Pin	
EA-A02-002 & EA-A02-002-4	Power Supply with SAA 2-Pin	

*Contact Southco For Custom Lengths

**EA-A02-002-1 NA 2-PIN included with EA-A02-002 Power Supply.

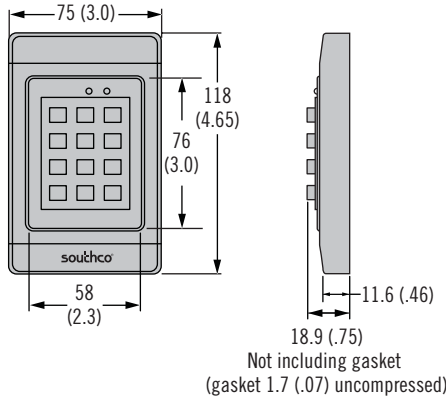
Dimensions in millimeters (inch) unless otherwise stated

EA-P1 Series PIN and RFID Access Controller

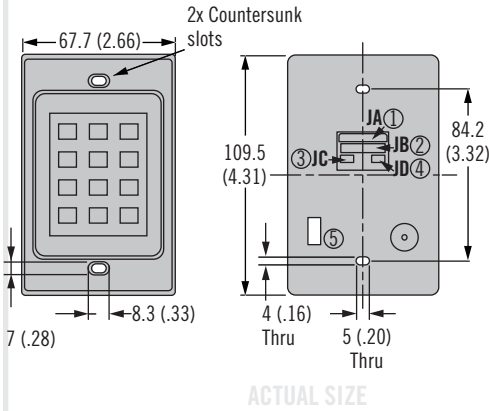
Surface or flush mounting



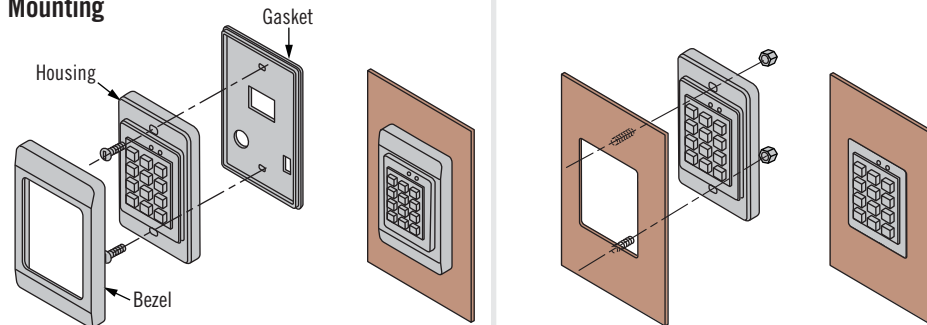
Bezel Attached



Without Bezel



Mounting



Connector Details

(Note: Mating connectors with approximately 160mm (6.3) of wiring, stripped and tinned provided with controller).



- ① **JA (Blue)**
Door access
- 1 (Red) ← +12 VDC
 - 2 (Black) ← Ground
 - 3 (Brown) → NO
 - 4 (Orange) ← COM } Relay Output A (Max. 2A / 30 VDC)
 - 5 (Yellow) → NC
 - 6 (Green) ← Auxiliary input
 - 7 (Blue) ← X
 - 8 (Purple) ← X
 - 9 (Grey) ← X



- ③ **JC (Blue)**
Tamper switch output
- J (Blue) → NC
 - K (Green) → NO
 - L (Yellow) ← COM



- ② **JB (White)**
Lockout alarm output
- E (Green) → Lockout alarm output (NO) } Relay Output B (Max. 2A / 30 VDC)
 - F (Blue) ← Lockout alarm output (COM)



- ④ **JD (White) EA-P1 only**
External Wiegand Reader
- 1 (Red) → +12VDC
 - 2 (Yellow) ← Data1
 - 3 (Green) ← Data0
 - 4 (Black) → Ground

Part Number Selection



- C** Color **L** Logo
- 0 Black
 - 1 White
 - 2 Cool gray
- Omit No logo
 - 9 Southco logo



Proximity card: EA-C1-011-9 (contact Southco for custom color and logo options)



Dimensions in millimeters (inch) unless otherwise stated

- Simple PIN programming
- LED indicator and audible feedback for programming and lock status
- 5 independent codes from 4 to 8 digits, up to 9,999 user cards
- Non-volatile memory retains data after power is removed
- Programmable door release and alarm time
- Surface or rear mount
- Custom color and logo options

Material & Finish

Polycarbonate and ABS Plastic

Electrical Specifications

PIN Code Length:

Programmable: 1 to 8 digits

Monitoring Inputs: Auxiliary, case tampering

Typical Maximum Read Range:

10cm (depending on installation)

Frequency of Operation: 125kHz

(EM), others available upon request

Modes of Operation:

- * Card-only
- * PIN and card
- * PIN or card
- * Bypass

Power: 12 VDC

80mA in standby, 105mA working current (typical)

Operating Temperature: 0-50 °C

Operating Humidity: 20-90% RH, no condensation



EA-P3 125kHz Proximity Reader

Basic Prox card reader

- Non-contact proximity based access control
- Reads HID® compatible 125kHz prox cards
- Standard 26 bit Wiegand output
- Integrated LED status indicator
- Compact, low profile design
- Simple, 3 hole installation
- Sealed weather resistant design

Material & Finish

ABS Plastic

Electrical Specifications

Supply Voltage: 12VDC +/- 10%

Operating Current: 60 mA

Maximum (No attached devices)

Operating Temperature: -15 to 55 °C

Operating Humidity: 20-90% RH, No condensation

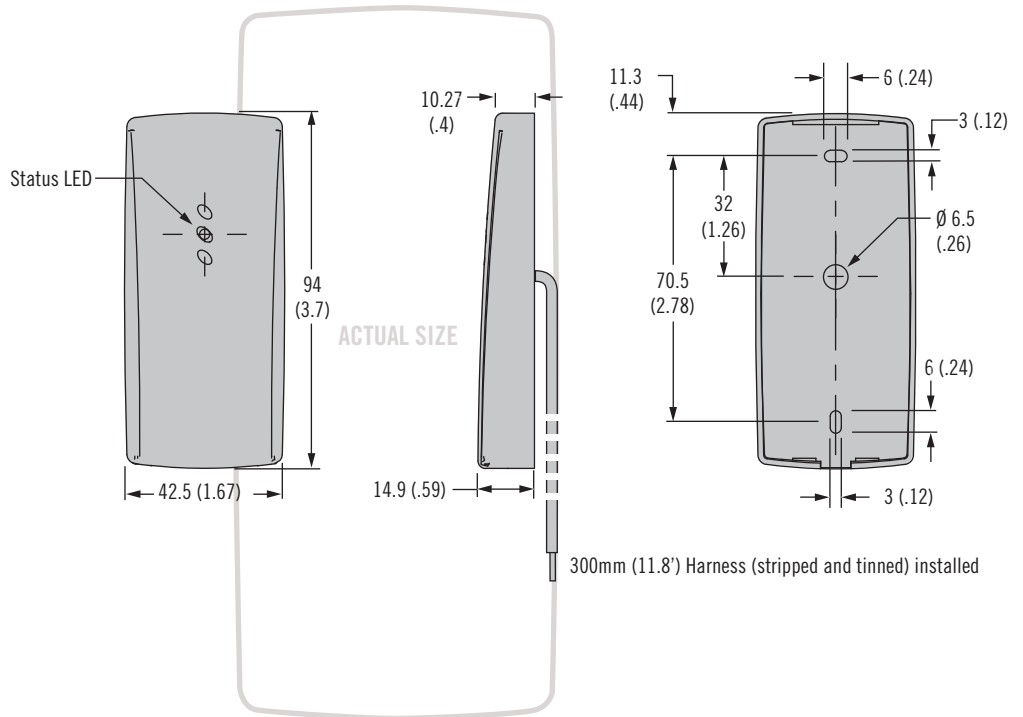
Transmit Frequency: 125kHz (FSK)

Read Range: Up to 10cm

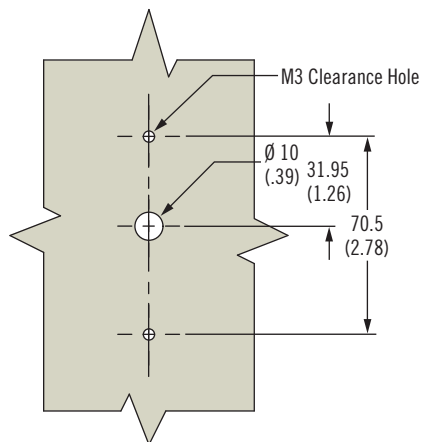
26 Bit Wiegand Output

Reader will convert the user card ID to 26 bit Wiegand format

* HID is a registered trademark of HID Global.



Panel Preparation



Wire Harness Legend	
Wire Color	Function
Red	VCC (12VDC)
Black	GND
White	Data 1
Green	Data 0
Yellow	GND
Brown	No Function
Orange	No Function
Blue	No Function

Part Number Selection	
EA-P3-101-1	Proximity Reader (Gray Enclosure*)
EA-C2-021-9	Proximity Card (With Logo*)

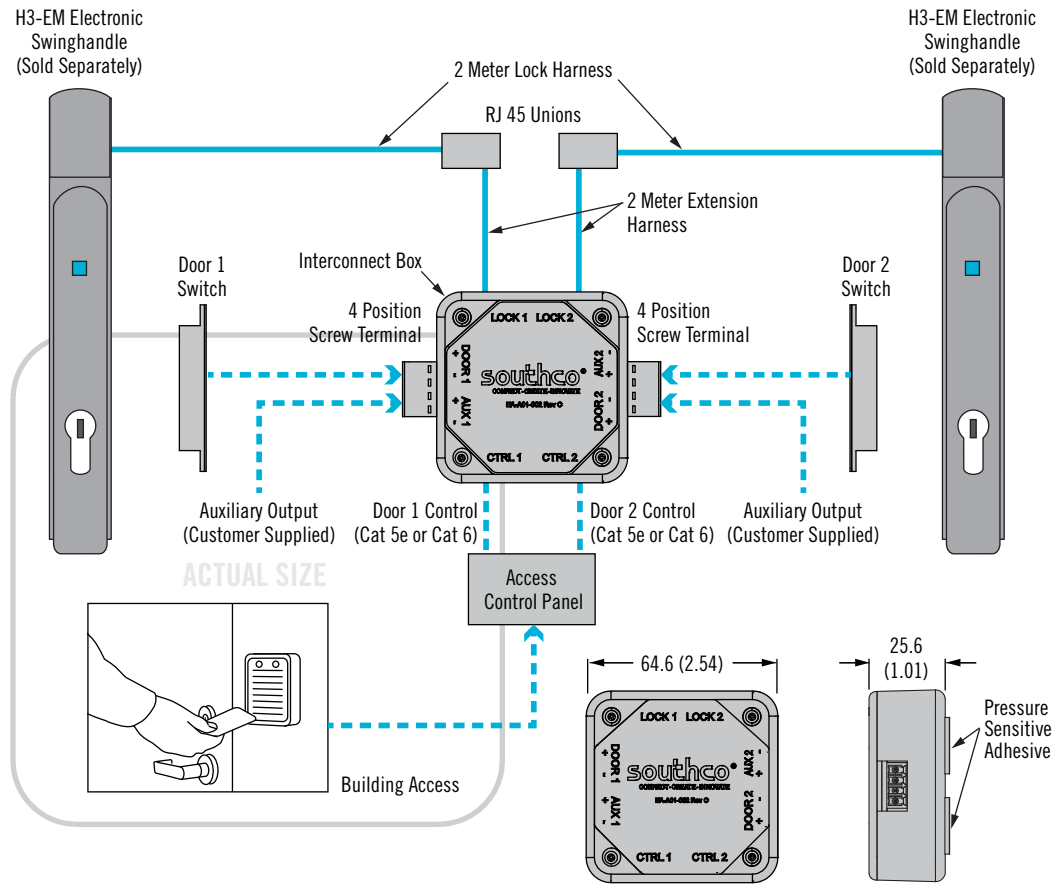
* Contact Southco for Custom Color and Logo Options

EA-A01 Security System Integration Kit

Electronic Access



Security System Integration Kit layout (Part Number EA-A01-102)



- Simplifies wiring between data center racks and remote access control panels
- Connects Southco H3-EM Electronic Swinghandle to existing access control system
- Facilitates both remote control and monitoring of H3-EM Electronic Swinghandle
- Cabinet level cables, door switches, and connectors included in kit
- System integration using standard structured cabling

Material and Finish

Housing: ABS, UL94-5VA

PCB: FR4

Specifications

RoHS Compliant

Auxiliary and Door Switch Contacts

not to exceed 0.4 A

Connects to any Wiegand based

Access Control Panel







Mounting

Interconnect Box supplied with pressure sensitive adhesive

*Note: In system layout, solid lines shown represent Southco supplied wiring; dotted lines shown represent customer supplied wiring

See Southco Trade Drawing

J-EA-A01-102 for additional wiring and pin out details

Security System Integration Kit Part Number EA-A01-102		
Includes the following:		
Quantity	Description	
1	Interconnect Box	
2	RJ45 Union (For door removal)	
2	2 Meter Extension Harness (CAT 5e cable)	
2	2 Meter Lock Harness (Custom Southco Cable)	
2	4 Position Screw Terminal (For door switch and auxiliary output connection)	
2	Magnetic Door Switch (For sensing door status. Mount using supplied adhesive or screws.) Note: cable not included	
1	User Instructions (J-EA-A01-102-M)	



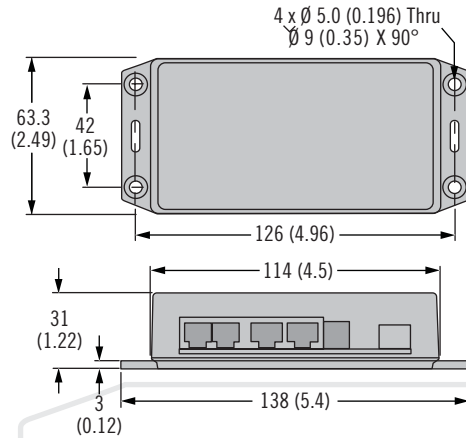
EA-A01 Standalone Junction Box

Electronic access

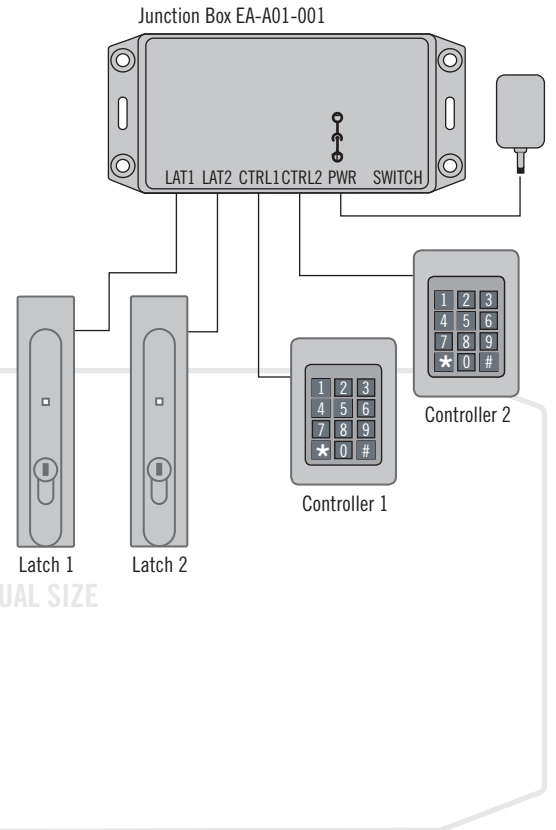
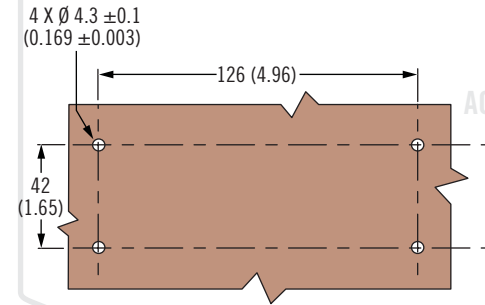
- Accommodates 2 access control devices and 2 electromechanical latches
- Labeled connections for simple setup
- Convenient centralized connection for system power
- Switches allow for any combination of access control to latch
- Use with any Southco access control to electromechanical latch combination
- Order Junction Box, cables and power supply separately

Junction Box

Part Number
EA-A01-001



Panel Preparation



Accessories Listing

Part Number	Description	Function	
EA-W02-503-51*	5 Meter wire harness -RJ12 to Hirose 4 Pin DF11-4DS-2C	Connects Junction Box to EM-10-XX-XXX Electronic Keeper	
EA-W20-501-51*	5 Meter wire harness -RJ12 to Molex 43020-0601	Connects Junction Box to R4-EM-XX-XXX Electronic Rotary Latch	
EA-W01-500-51*	5 Meter wire harness -RJ12 to Hirose 6 Pin DF11-6DS-2C	Connects Junction Box to H3-EM-60-100 Electronic Swing Handle	
EA-W52-506*	5 Meter wire harness -RJ45 to stripped and tinned end	Connects Junction Box to Customer Application	
EA-W52-506-80*	5 Meter wire harness -RJ45 to JA connector A2506H-09	Connects Junction Box to EA-K1 and EA-P1 Series Access Controllers	

*Contact Southco for custom lengths

Dimensions in millimeters (inch) unless otherwise stated

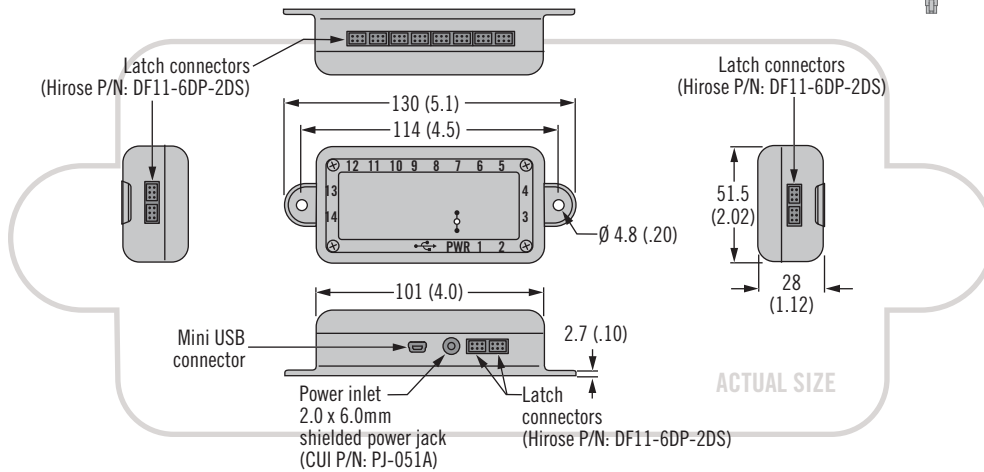
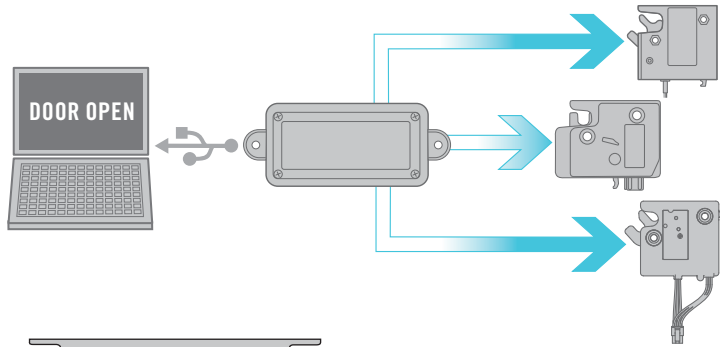
EA-A06 USB Controller

Electronic access



Controller Assembly

Part Number
EA-A06-001



1 Meter USB Cable (Included)



EA-A02-002 Power Supply (Order separately)



Wire Harness Options		
Part Number	Length	Connects to
EA-W01-200*	2 Meters	Stripped and Tinned
EA-W20-201-01*	2 Meters	
EA-W20-201-01*	2 Meters	
EA-W01-200-01*	2 Meters	
EA-W02-203-01*	2 Meters	

*Contact Southco For Custom Lengths

Power Plug Adapters

Part Number	Description	Function
EA-A02-002**	Power Supply with NA 2-Pin	
EA-A02-002 & EA-A02-002-2	Power Supply with Euro 2-Pin	
EA-A02-002 & EA-A02-002-3	Power Supply with UK 3 Pin	
EA-A02-002 & EA-A02-002-4	Power supply with SAA 2-Pin	

**EA-A02-002-1 NA 2-PIN included with EA-A02-002 Power Supply.

- Allows computer controlled electro-mechanical latch operation via USB port
- 14 Independent latch inputs / outputs
- Simple programming commands / easy program interface
- Integrate with any Southco electro-mechanical latch solution
- Labeled connections for easy set up

Material & Finish

Controller Housing: ABS
 (UL94-5VA Flammability Rating)

Electrical Specifications

Operating Voltage: 12-24 VDC
 Do Not Exceed Max Latch Voltage
 Max Output Per Latch: 2 Amps

How to Order

1. Order one Controller with USB Cable: EA-A06-001
2. Order Southco Power Supply EA-A02-002 and select the appropriate plug adapter if needed



3. Use latch wire harness options table to select cable to accommodate Southco electromechanical latches





EA-R01 RF Controller

Key fob actuator / receiver for outdoor applications

- Durable, water-proof construction
- Dual sequenced outputs minimize battery drain
- Fused 30 Amp outputs accommodate multiple latches
- Auxiliary light/horn output for visual/audible lock confirmation
- Simple transmitter programming
- Integrate with any Southco Electromechanical latch solution

Specifications

Receiver Power: 12VDC ($\pm 25\%$)

Receiver Idle Current: $\leq 10\text{mA}$

Receiver Operating Current:
 $\leq 30\text{A}$ momentary

Receiver Outputs: Output 1 & 2:
30A polarity reversing relays

Aux Output: 30A single pole relay

Operating Range:
up to 30 m (100 ft)

Operating Frequency: 340MHz

Not for use outside North America

Coding Type: Fixed Code

Enclosure Rating: IP67

Transmitter Power:

Type 23 12VDC battery

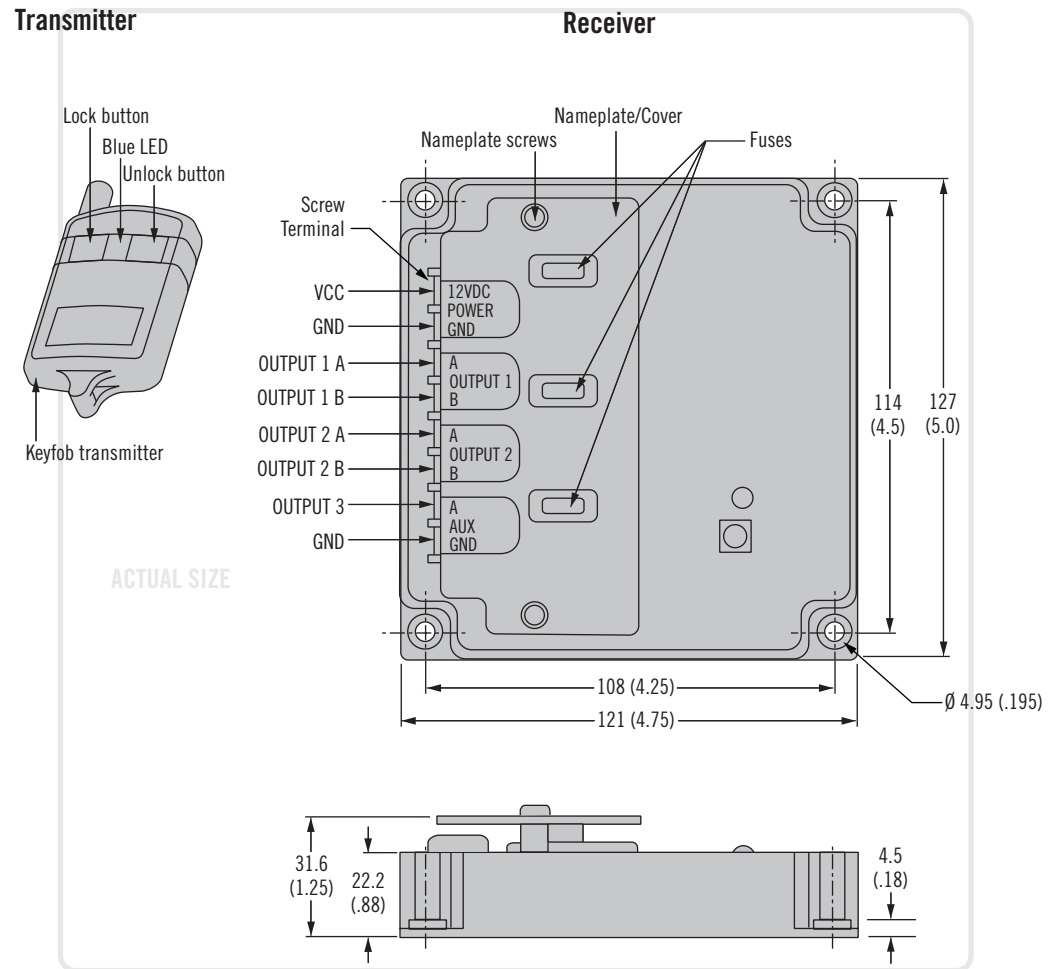
Receiver output fuses 15A Littelfuse

297 Series *MINI*[®] Fast-Acting
automotive blade fuse or equivalent.*

Connection Details

All electrical connections are made via screw terminals accessible by removing 2 screws and name plate

* *MINI* is a registered trademark of Littelfuse, Inc.



RF Controller Kit Part Number: EA-R01

Includes 1 receiver (EA-R01-201) and
2 transmitters (EA-R01-101)

Operation

Shipped with two pre-programmed transmitters

Press transmitter "UNLOCK" button Controller will produce a 12VDC pulse for 200ms on output 1 terminal A, followed by a 300ms pause followed by a 200ms 12VDC pulse on output 2, terminal A

After another 300ms pause, the controller will produce two 400ms pulses separated by a 200ms pause on the auxiliary light/horn output

Press transmitter "LOCK" button Controller will produce a 12VDC pulse for 200ms on output 1 terminal B, followed by a 300ms pause followed by a 200ms 12VDC pulse on output 2, terminal B

After another 300ms pause, the controller will produce one 400ms pulse on the auxiliary light/horn output
Simple push-button learn feature with LED feedback for enrolling transmitters. Note: EA-R01 shipped with 2 pre-programmed transmitters

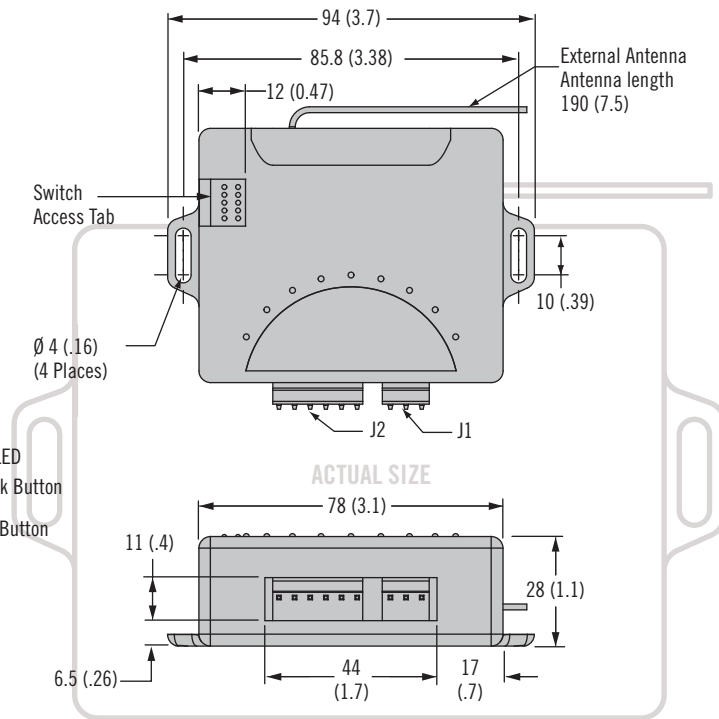
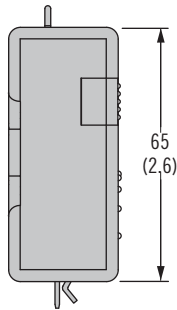
Dimensions in millimeters (inch) unless otherwise stated

EA-R02 RF Remote Control System

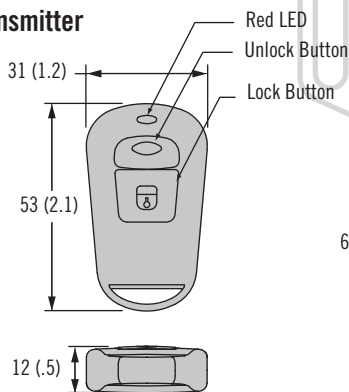
Electronic access for indoor applications



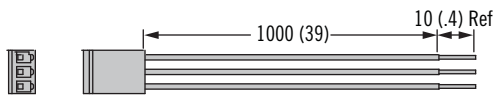
Receiver



Transmitter

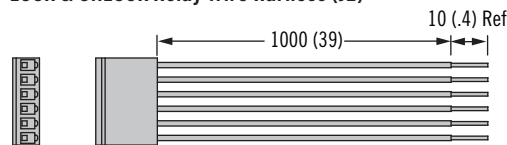


Power Supply and Auxiliary Output Wire Harness (J1)



Pin	Wire Color	Description
1	Red	VCC (+12VDC Power Supply Input)
2	Black	GND (Ground)
3	Yellow	Auxiliary Output (Vout = VCC)

LOCK & UNLOCK Relay Wire Harness (J2)



Pin	Wire Color	Description
1	Blue/Black	LOCK Relay – Normally Closed (typically connect to GND)
2	Blue	LOCK Relay – Common (typically connect to latch)
3	Blue/Red	LOCK Relay – Normally Open (typically connect to VCC)
4	Green/Black	UNLOCK Relay – Normally Closed (typically connect to GND)
5	Green	UNLOCK Relay – Common (typically connect to latch)
6	Green/Red	UNLOCK Relay – Normally Open (typically connect to VCC)

- Secure, convenient, wireless remote lock actuation
- Quick installation and setup
- Proven 433 MHz radio frequency technology
- Up to 4 transmitters per receiver
- 18 meter (60 feet) unobstructed open air operating range
- Auxiliary output for horn/light indicator output

Material & Finish

ABS Plastic

Electrical Specifications

Receiver

Power: 12VDC (±10%)

Standby Current: 10mA Maximum, No Attached Devices

Operating Current: 100mA Maximum, No Attached Devices

Outputs: Three Form C Relays, Rated 15A at 14VDC

Lock/Unlock Output Pulse Duration: 250ms or 10 sec (Selectable)

Operating Temperature: -20 to 80 °C

Operation

Operating Frequency: 433.92MHz

Not for use in Japan

Coding Type: Fixed Code (24-Bit)

Switch Access Tab

Switch 1 - Used to enroll transmitters

Switch 2 - Used to set LOCK and UNLOCK pulse duration



RF Remote Control System Part Number: EA-R02

Includes 1 Receiver, 2 Transmitters (EA-R02-102),
1 Pair Power/Auxiliary and Lock/Unlock Relay Connector Wire Harnesses and Operating Instructions

Note: Individual components can be ordered separately. Contact Southco for information.

DISPLAY MOUNTS



SOUTHCO® Display Mounts

Integrating Southco's Positioning Technology expertise into a complete line of solutions for display mounting and position control, Southco has created an entirely new class of Display Mounts.

SOUTHCO® Display Mounts are:

Reliable – With every motion, **SOUTHCO®** Display Mounts are tested to withstand 20,000 cycles of operation.

Engineered – Unlike mounts designed for home theater or light office use, **SOUTHCO®** Display Mounts are engineered with demanding designs in mind, and are proven in the toughest applications.

Intuitive – With factory-set operating efforts, **SOUTHCO®** Display Mounts provide easy display adjustment on demand, with precisely controlled holding forces to prevent display drift, and resist vibration and shock loading.

All **SOUTHCO®** Display Mounts feature our constant torque positioning technology.

- **Factory set, precisely regulated operating efforts in every axis**
- **Reposition easily by simply moving the display – no levers or knobs to adjust**
- **Hold securely under user touchscreen forces**
- **Can be matched to display size to precisely control user operating efforts**

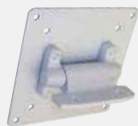


SOUTHCO® Display Mounts provide unparalleled reliability.

- ➔ Every motion tested **SOUTHCO®** display mount will hold its specified operating effort for the life of most applications without maintenance or adjustment



AV-D25



AV-D30



AV-D30



AV-D30



AV-D32



AV-D32





Display Mounts

Selection Guide

- Use this selection guide to choose the right display mount for your application

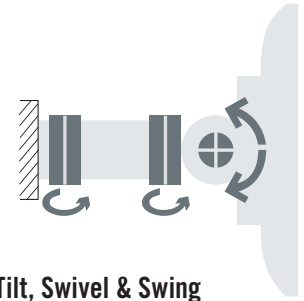
DISPLAY MOTION



Tilt
Adjust for varying user heights and lighting conditions



Tilt & Swivel
Add swivel rotation for left-right adjustment



Tilt, Swivel & Swing
Add swing to provide maximum adjustability and allow displays to fold away for storage



Tilt



Tilt & Swivel



Tilt, Swivel, Swing



Constant Torque



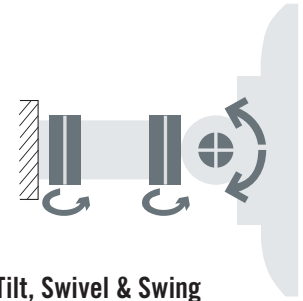


Counter-balanced Torque



VESA® MIS-D, 100, C

VESA and VESA MOUNTING COMPLIANT are registered trademarks of Video Electronics Standards Association

DISPLAY MOTION	 Tilt Adjust for varying user heights and lighting conditions	 Tilt & Swivel Add swivel rotation for left-right adjustment	 Tilt, Swivel & Swing Add swing to provide maximum adjustability and allow displays to fold away for storage
----------------	---	---	--

		DISPLAY MOTION			
		Product Number	Tilt 	Tilt & Swivel 	Tilt, Swivel, Swing 
TILT PAGES 56-59	 AV-D25	✓			
	 AV-D30 T-series	✓			
TILT & SWIVEL PAGES 60-67	 AV-C20			✓	
	 AV-D30 K-series AV-D32 K-series			✓	
TILT, SWIVEL & SWING PAGES 64-71	 AV-D30 A-series AV-D32 A-series				✓

Display Mounts

Selection Guide



TORQUE TYPE	Constant Torque Tilt Provides consistent operating efforts and the most secure hold for applications with vibration or shock loading		Counterbalanced Tilt Integrated counterbalance ensures easy operation, by minimizing user efforts, even when repositioning heavy displays	
	Counterbalanced Torque		Integrated Wire Management	Locking Storage Position

TORQUE TYPE		VESA® MIS-D, 100, C Compliant (100 mm square)	Integrated Wire Management	Locking Storage Position	PRIMARY MATERIALS	
Constant Torque 	Counterbalanced Torque 				Plastic & Stainless Steel	Aluminum & Steel
✓		✓				✓
✓	✓	✓				✓
✓					✓	
✓	✓	✓	✓			✓
✓	✓	✓	✓	✓		✓



AV Series Dynamic Mount

Tilt

- **Intuitive grab and move operation enhances the user experience**

No knobs or tools required to reposition the display

Robust positioning in compact package

Holds securely, even in applications with dynamic loading

- **Consistent repeatable operation**

- **Fully enclosed for optimum cleanability**

Installation

1. Determine desired mounting location
2. Attach using M6 screws as shown

Caution: Because of the wide variety of available materials, it is the installer's responsibility to ensure that the materials, and structure to which the tilt mount is fastened will provide adequate support.

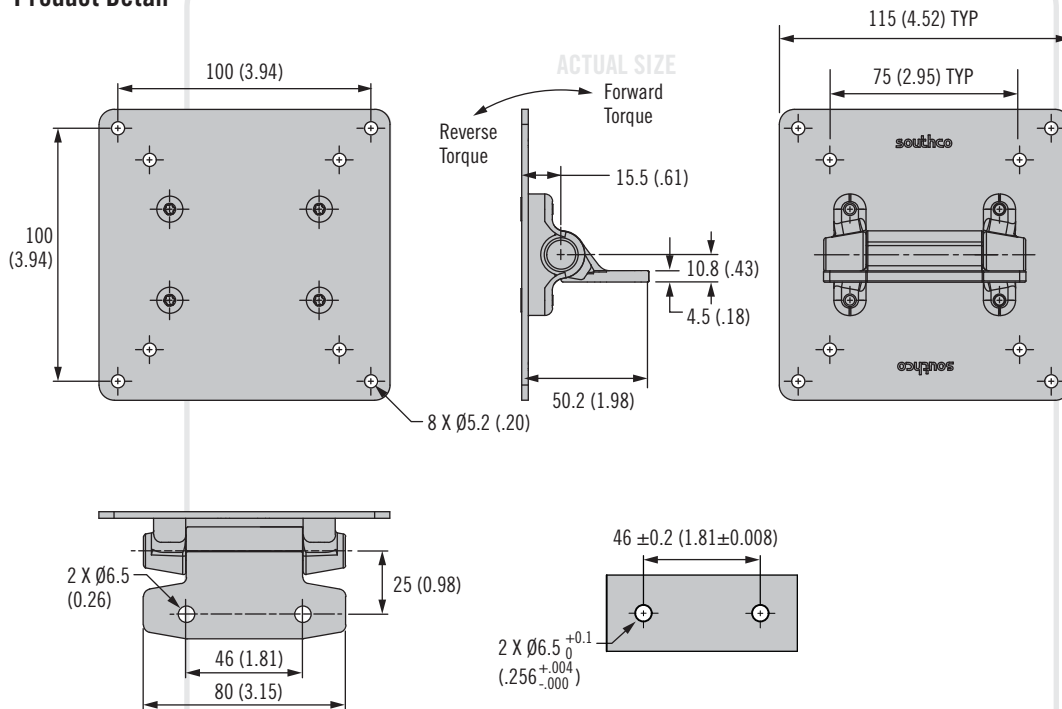
3. Attach display using manufacturer's recommended hardware



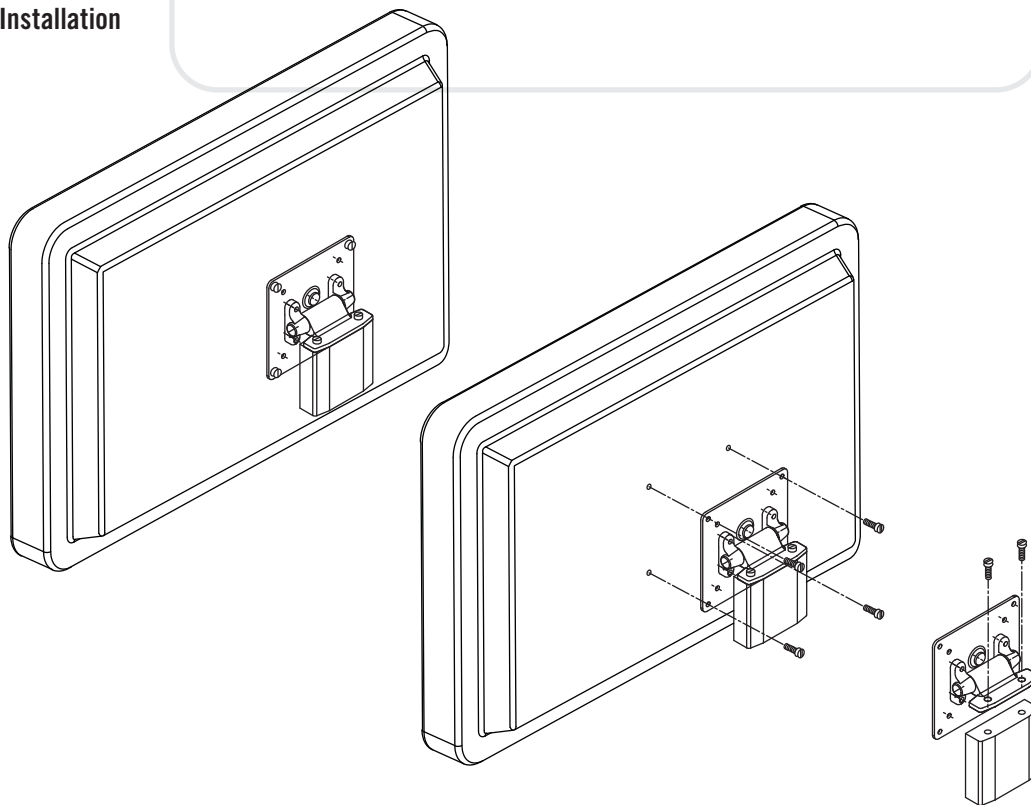
VESA® MIS-D, 100, C

VESA and VESA MOUNTING COMPLIANT are registered trademarks of Video Electronics Standards Association

Product Detail



Installation



Dimensions in millimeters (inch) unless otherwise stated

AV Series Dynamic Mount

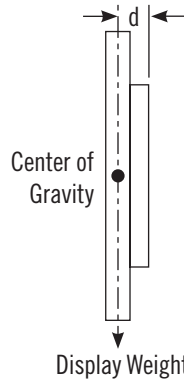
Tilt



Specification and Selection

Step 1

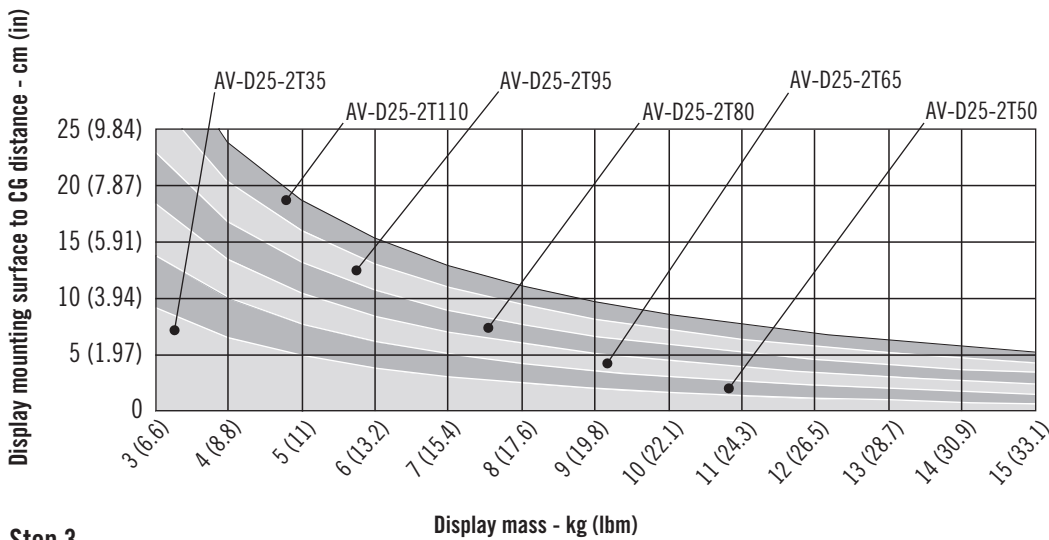
Determine display weight and distance (d) from mounting surface to center of gravity.



Step 2

Use chart below to select part number.

AV-D25 T-Series Model Selection Guide



Step 3

Complete part number by selecting color options below.

Part Numbers		FORWARD TORQUE N-m (in-lb)	REVERSE TORQUE N-m (in-lb)
BLACK	WHITE		
AV-D25-2T35F-50	AV-D25-2T35F-76	3.9 (35.0)	3.4 (29.9)
AV-D25-2T50F-50	AV-D25-2T50F-76	5.7 (50.0)	4.7 (41.9)
AV-D25-2T65F-50	AV-D25-2T65F-76	7.3 (65.0)	6.1 (54.1)
AV-D25-2T80F-50	AV-D25-2T80F-76	9.0 (80.0)	7.4 (65.9)
AV-D25-2T95F-50	AV-D25-2T95F-76	10.7 (95.0)	8.8 (77.9)
AV-D25-2T110F-50	AV-D25-2T110F-76	12.4 (110.0)	9.0 (79.8)
AV-D25-2T35R-50	AV-D25-2T35R-76	3.4 (29.9)	3.9 (35.0)
AV-D25-2T50R-50	AV-D25-2T50R-76	4.7 (41.9)	5.7 (50.0)
AV-D25-2T65R-50	AV-D25-2T65R-76	6.1 (54.1)	7.3 (65.0)
AV-D25-2T80R-50	AV-D25-2T80R-76	7.4 (65.9)	9.0 (80.0)
AV-D25-2T95R-50	AV-D25-2T95R-76	8.8 (77.9)	10.7 (95.0)
AV-D25-2T110R-50	AV-D25-2T110R-76	9.0 (79.8)	12.4 (110.0)

- Smooth operation enhances the user experience
- Adjust the display without knobs or tools
- Holds securely

Material and Finish

Steel, Aluminum alloy, powder coated

Performance Details

Cycle performance: 20,000 cycles within $\pm 20\%$ of static torque specification

Max. dynamic working load: 100 N (22.5 lb)

Average ultimate load: 1065 N (240 lb)

Part Number

See table



AV Series Dynamic Mount

Tilt

- Intuitive grab and move operation enhances the user experience**

No knobs or tools required to reposition the display

Precise control of operating effort ensures ideal “feel”

Holds securely, even in applications with dynamic loading

- Consistent repeatable operation**

- Fully enclosed for optimum cleanability**

Installation

1. Determine desired mounting location
2. Attach using M5 X 0.8 screws as shown

Caution: Because of the wide variety of available wall materials, it is the installer's responsibility to ensure that the materials, and structure to which the tilt mount is fastened will provide adequate support.

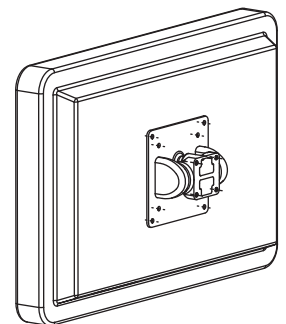
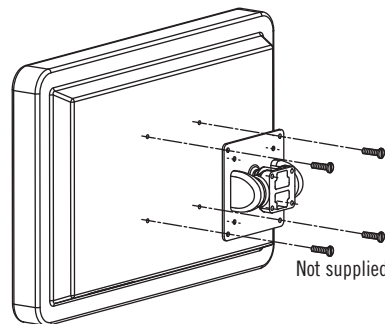
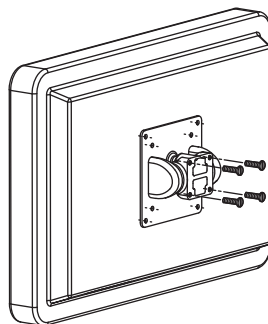
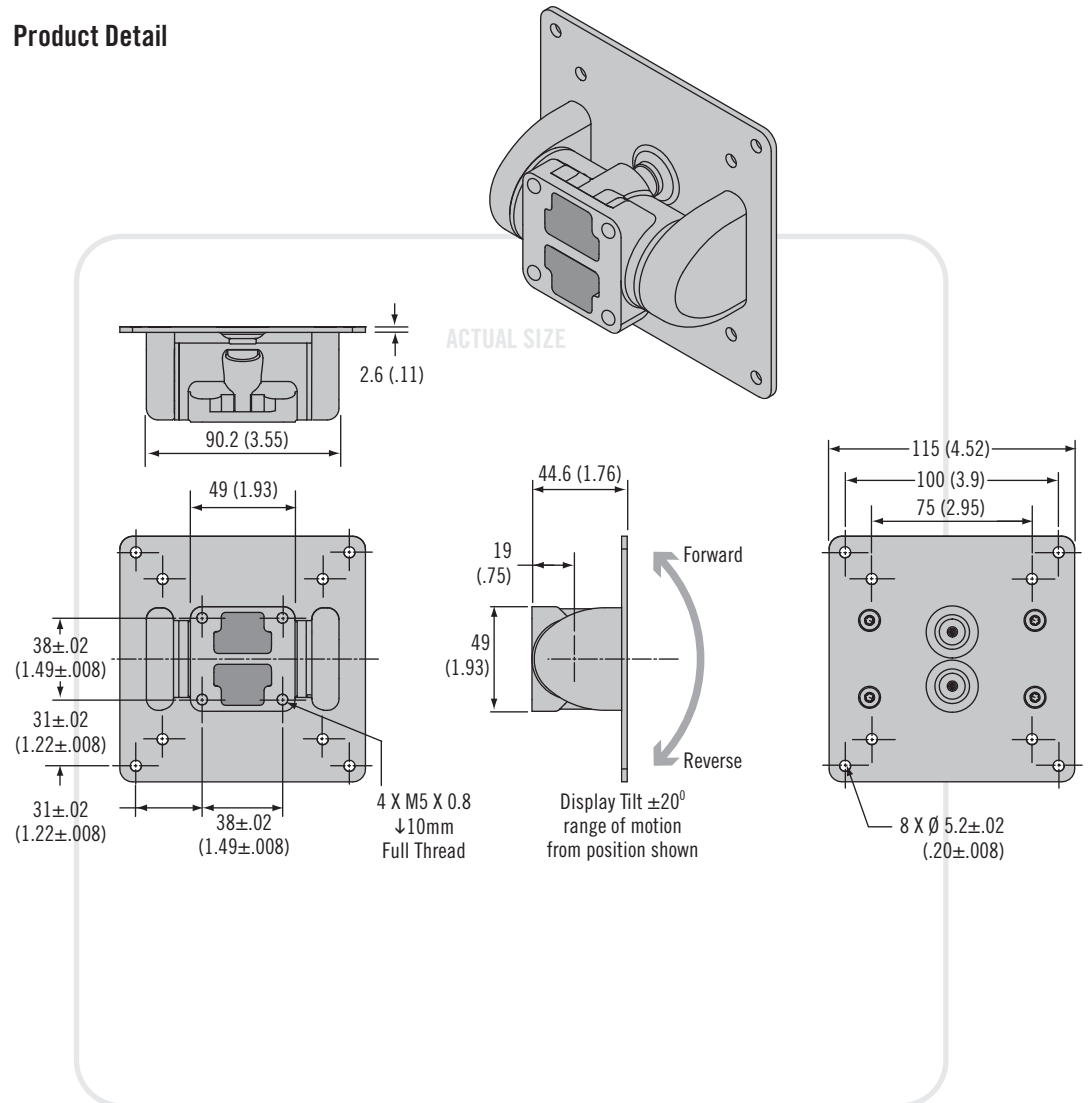
3. Attach display using manufacturer's recommended hardware



VESA® MIS-D, 100, C

VESA and VESA MOUNTING COMPLIANT are registered trademarks of Video Electronics Standards Association

Product Detail



AV Series Dynamic Mount

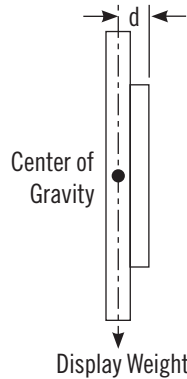
Tilt



Specification and Selection

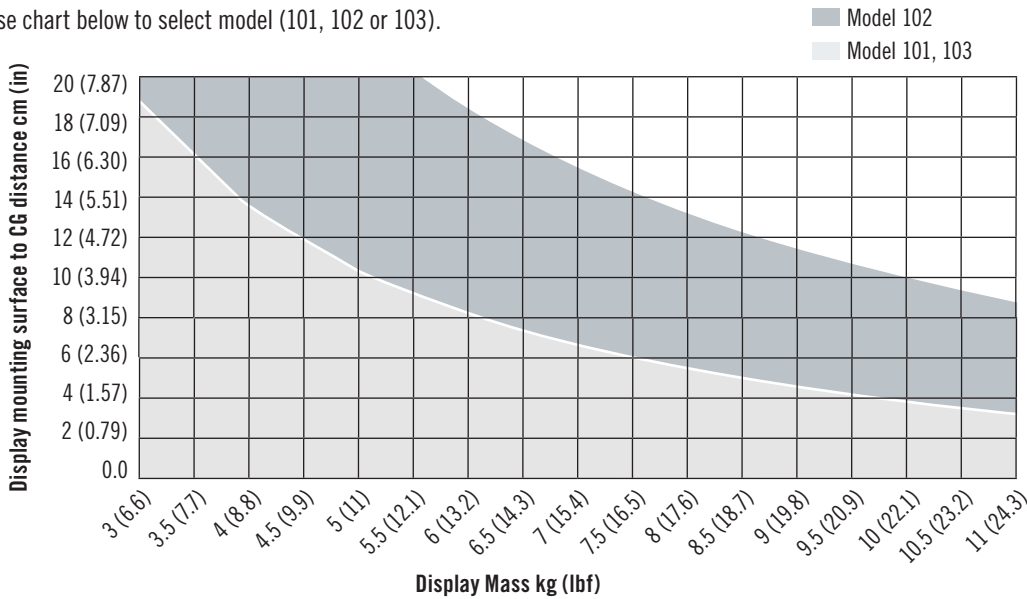
Step 1

Determine display weight and distance (d) from mounting surface to center of gravity.



Step 2

Use chart below to select model (101, 102 or 103).



Step 3

Complete part number by selecting model and color options below.

Model S	Tilt Torque N·m (in·lbf)	
	Reverse	Forward
101	7.9 (70)	2.2 (19.5)
102	15.4 (136)	2.26 (20)
103	8.6 (76)	6 (53)

F	Color
50	Black
76	White

AV - D30 - 5T **S** - **F**

- Smooth operation enhances the user experience
- Adjust the display without knobs or tools
- Holds securely

Material and Finish

Aluminum alloy, powder coated

Performance Details

Cycle performance: 20,000 cycles within $\pm 20\%$ of static torque specification

Maximum dynamic working load:
 Model 101 and 103: 70 N (15.7 lbf)
 Model 102: 100 N (22.5 lbf)
 Average ultimate load: 1845 N (414.8 lbf)

Part Number

See table

Part Number Example

AV-D30-5T101-50 = Dynamic tilt mount, Model 101, black



AV Series Dynamic Mount

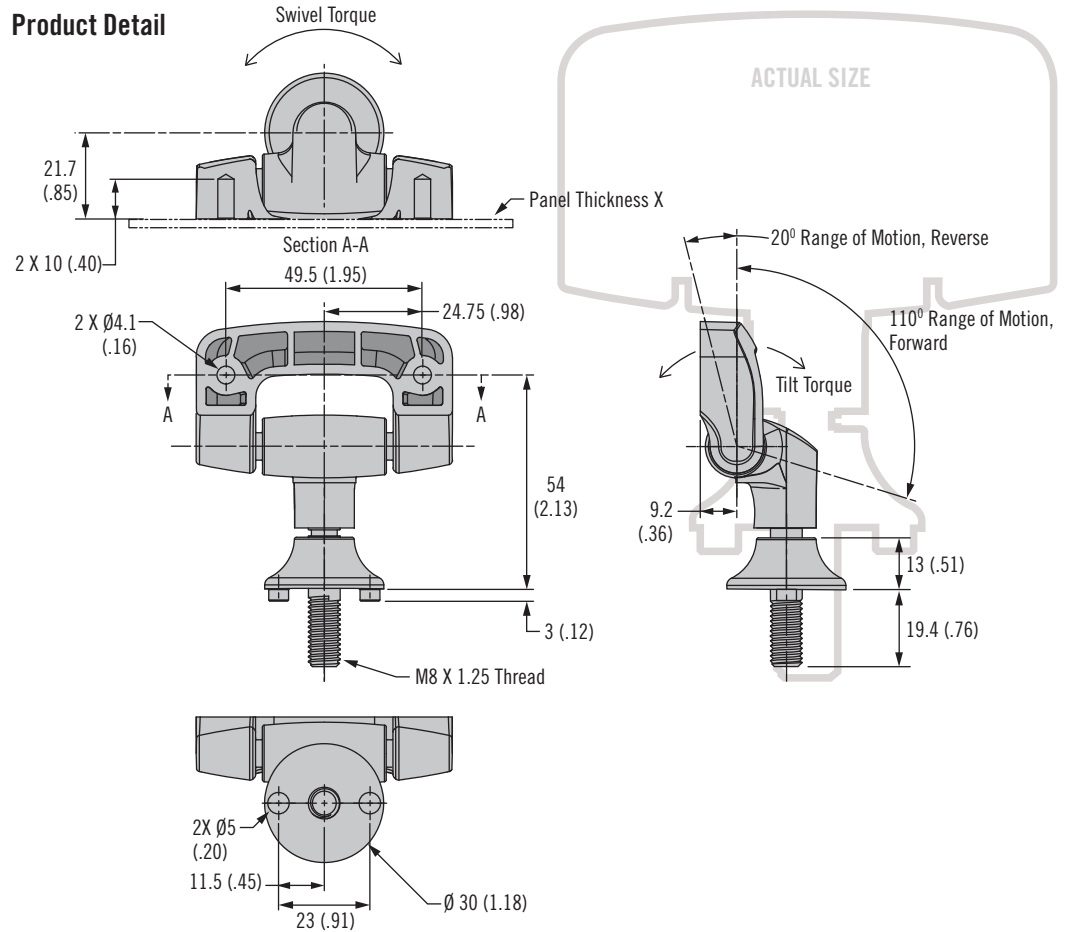
Tilt and swivel · Compact

- **Intuitive grab and move operation enhances the user experience**

No knobs or tools required to reposition the display
Consistent repeatable operation

- **Factory assembled and ready for use**

Product Detail



Installation Notes

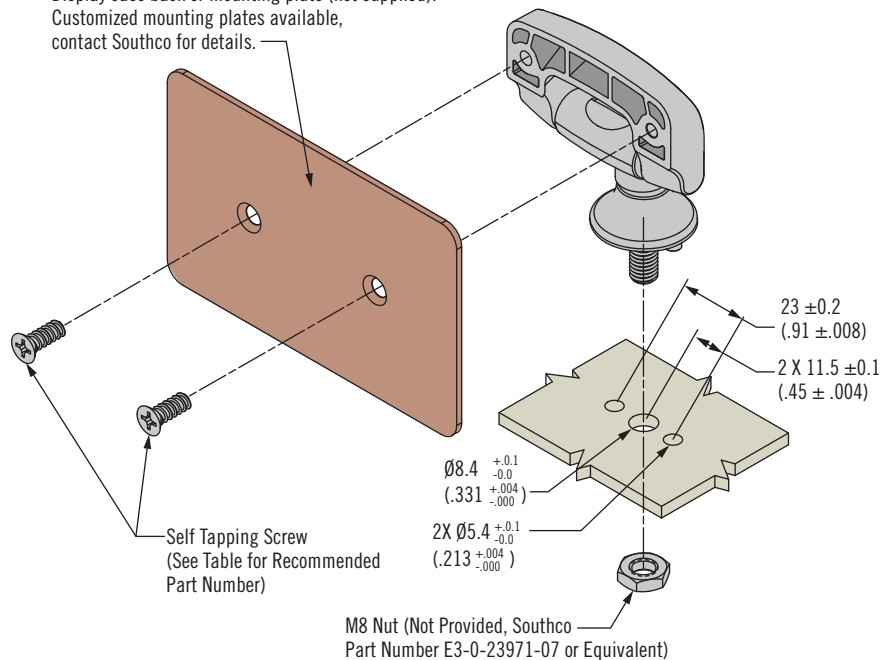
1. Determine desired mounting location
2. Attach using M8 nut (not supplied) as shown

Caution: Because of the wide variety of panel materials, it is the installer's responsibility to ensure that the materials and structure to which the product is mounted and the hardware selected will provide adequate support.

3. Attach display mounting bracket using recommended self-tapping screws or equivalent

Installation

Display case back or mounting plate (not supplied).
Customized mounting plates available, contact Southco for details.



AV Series Dynamic Mount

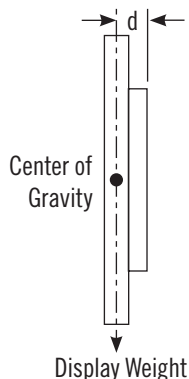
Tilt and swivel · Compact



Specification and Selection

Step 1

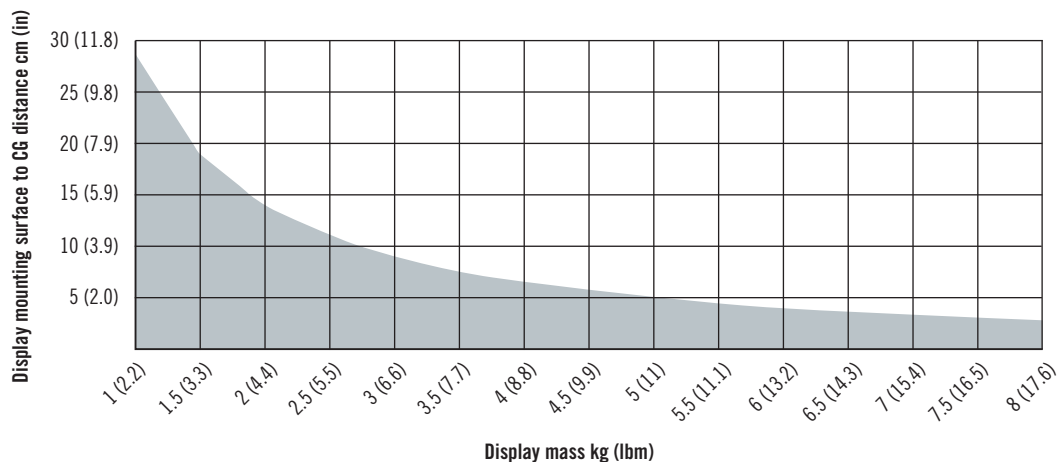
Determine display weight and distance (d) from mounting surface to center of gravity.



Step 2

Use chart below to confirm suitable display weight. For weights outside the shaded area, consider *SOUTHCO*[®] AV-D30 series display mounts.

AV-C20 Series - Capacity vs. Cg Distance



Step 3

Select part number and recommended display mounting hardware below:

Part Numbers	Tilt Torque N·m (in·lbf)	Swivel Torque N·m (in·lbf)
AV-C20-K101-20	3.62 (32.0)	2.26 (20.0)

Recommended display mounting hardware:

Panel Thickness, X (mm)	Pan-Head Screw (Southco P/N)	Flat-Head Screw (Southco P/N)
1-4	96-79-1	96-79-11
4-7	96-79-2	96-79-12

- Smooth operation enhances the user experience
- Adjust the display without knobs or tools
- Holds securely in every position

Material and Finish

Glass-filled nylon, black;
Stainless steel

Performance Details

Cycle performance: 20,000 cycles

Max dynamic working load: 100 N
(22.5 lbf)

Average ultimate load: 1000 N
(225 lbf)



AV Series Dynamic Mount

Tilt and swivel

- **Intuitive grab and move operation enhances the user experience**

No knobs or tools required to reposition the display

Precise control of operating effort ensures ideal “feel” and eliminates “drift”

Holds securely, even in applications with dynamic loading

- **Consistent repeatable operation**

- **Factory assembled and ready for use**

Installation

1. Determine desired mounting location
2. Attach using M6 X 1 screws as shown

Caution: Because of the wide variety of available wall materials, it is the installer’s responsibility to ensure that the materials, and structure to which the arm is mounted, and the hardware selected will provide adequate support.

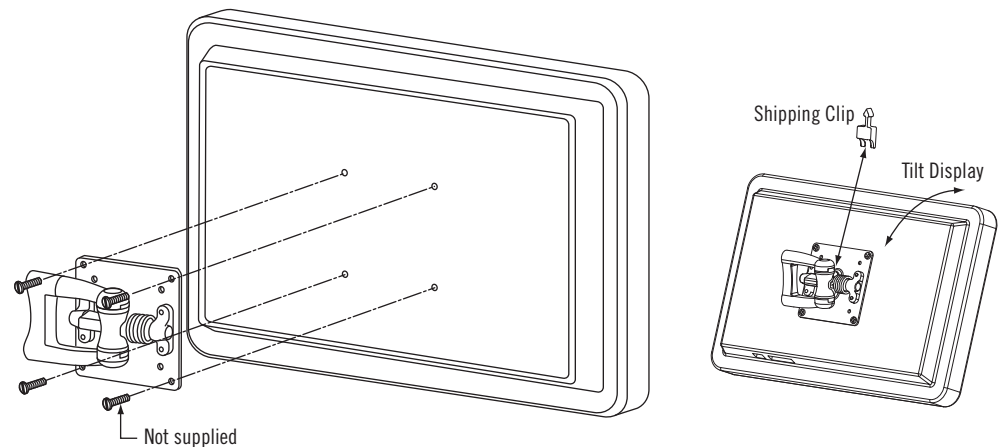
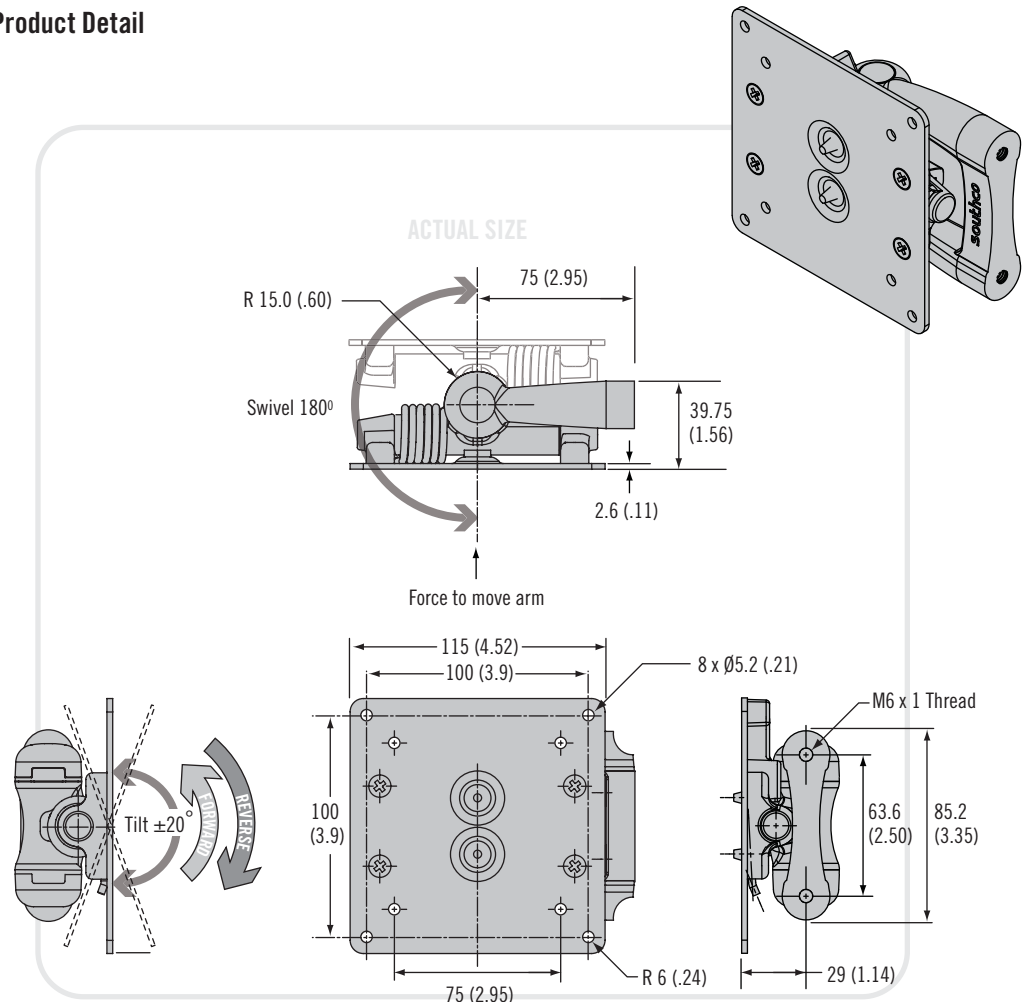
3. Attach display using manufacturer’s recommended hardware
4. Remove and recycle the shipping clip



VESA® MIS-D, 100, C

VESA and VESA MOUNTING COMPLIANT are registered trademarks of Video Electronics Standards Association

Product Detail



AV Series Dynamic Mount

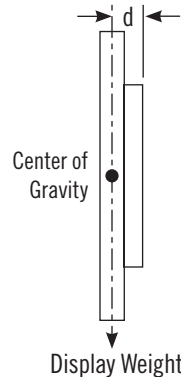
Tilt and swivel



Specification and Selection

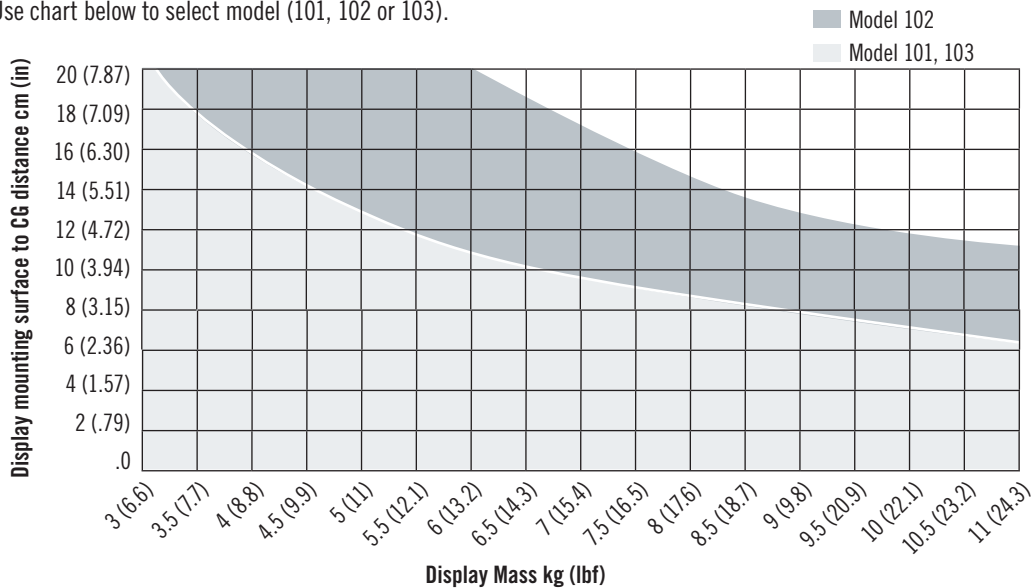
Step 1

Determine display weight and distance (d) from mounting surface to center of gravity.



Step 2

Use chart below to select model (101, 102 or 103).



Step 3

Complete part number by selecting model and color options below.

Model S	Tilt Torque N•m (in lbf)		Swivel Torque
	Reverse	Forward	
101	7.9 (70)	1.13 (10)	2.3 (20)
102	15.4 (136)	2.26 (20)	3.4 (30)
103	8.6 (76)	6 (53)	3.4 (30)

AV - D30 - 7K **S** - **F**

F	Color
50	Black
76	White

- Smooth operation enhances the user experience
- Adjust the display without knobs or tools
- Holds securely in every position

Material and Finish

Aluminum alloy, powder coated

Performance Details

Cycle performance: 20,000 cycles within ± 20% of static torque specification

Maximum dynamic working load:

Model 101 and 103: 66 N (15 lbf)

Model 102: 98 N (22 lbf)

Average ultimate load: 178 N (450 lbf)

Part Number

See table





Part Number Example

AV-D30-7K101-50 = Dynamic mounting arm, Model 101, black

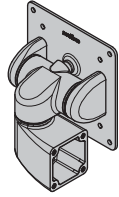


AV Series Dynamic Mounting Arm

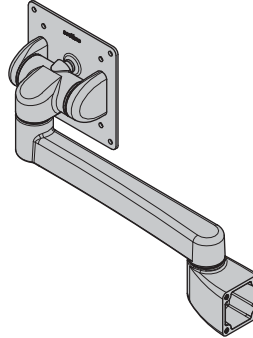
Tilt and swivel · Single arm · Double arm

- 
Intuitive grab and move operation enhances the user experience
 No knobs or tools required to reposition the display
 Precise control of operating effort ensures ideal “feel” and eliminates “drift”
 Holds securely, even in applications with dynamic loading
- 
Consistent repeatable operation
- 
Fully enclosed for optimum cleanability
- 
Snap-on wire management cover
- Factory assembled and ready for use**

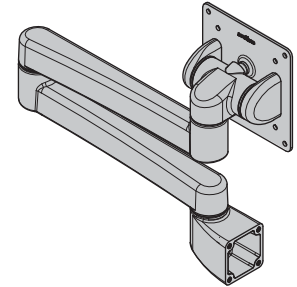
Tilt and Swivel



Single Arm



Double Arm



Mounting Options

Wall Mount

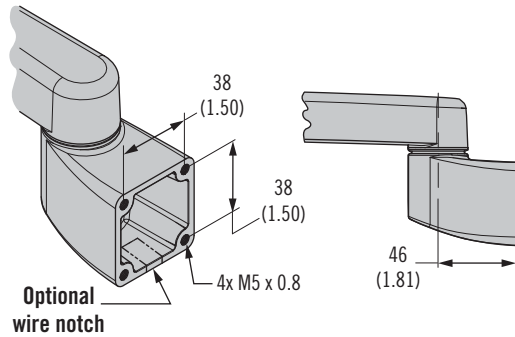
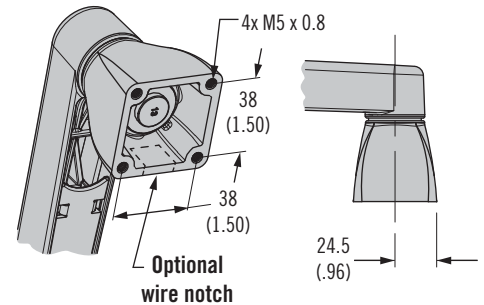
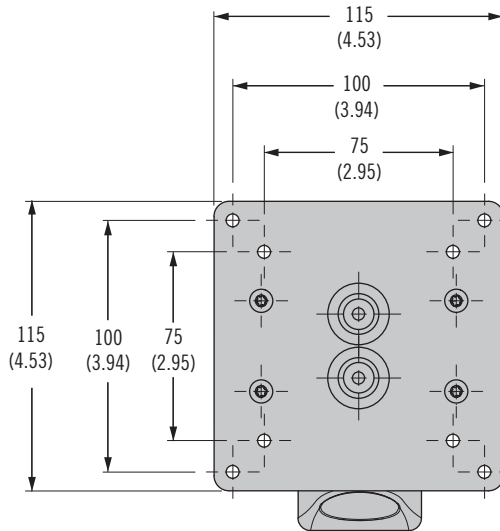


Table Mount



Display Mounting Plate



VESA® MIS-D, 100, C

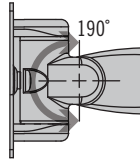
VESA and VESA MOUNTING COMPLIANT are registered trademarks of Video Electronics Standards Association

AV Series Dynamic Mounting Arm

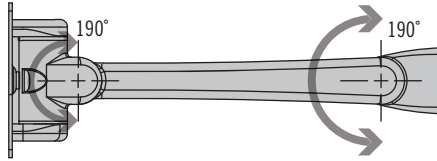
Tilt and swivel · Single arm · Double arm



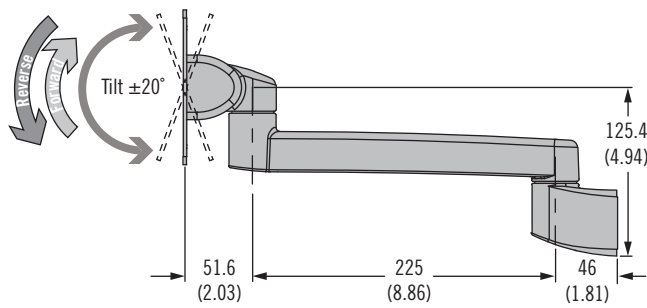
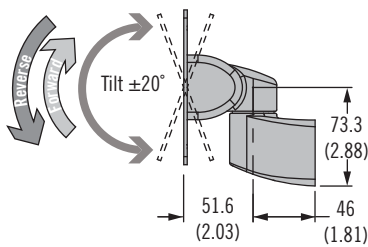
Tilt and Swivel



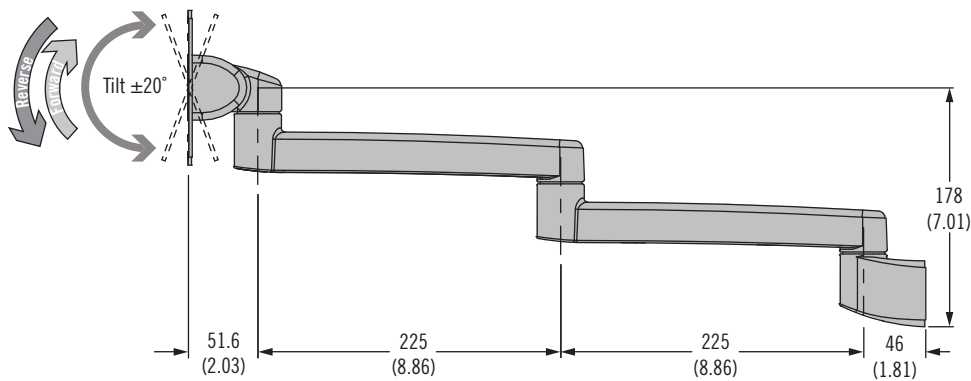
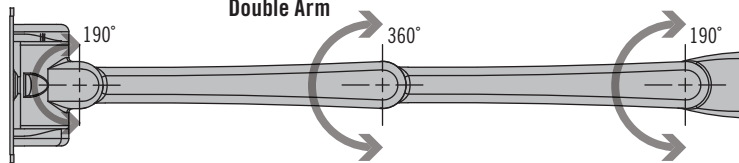
Single Arm



- Smooth operation enhances the user experience
- Adjust the display without knobs or tools
- Holds securely in every position



Double Arm





AV Series Dynamic Mounting Arm

Tilt and swivel · Single arm · Double arm

Material and Finish

Aluminum alloy, powder coated

Performance Details

Cycle performance: 20,000 cycles. See trade drawing for details.

Note: Double Arm not recommended for displays over 5.4 kg (12 lb)

Max. dynamic working load:

Model 101, 103: 70N (15.7lbf)

Model 102: 100N (22.5lbf)

Average ultimate load:

Tilt/Swivel: 1845N (415lbf)

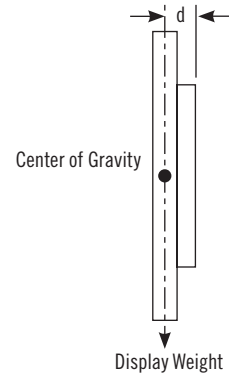
Single Arm: 1600N (360lbf)

Double Arm: 755N (170lbf)

Specification and Selection

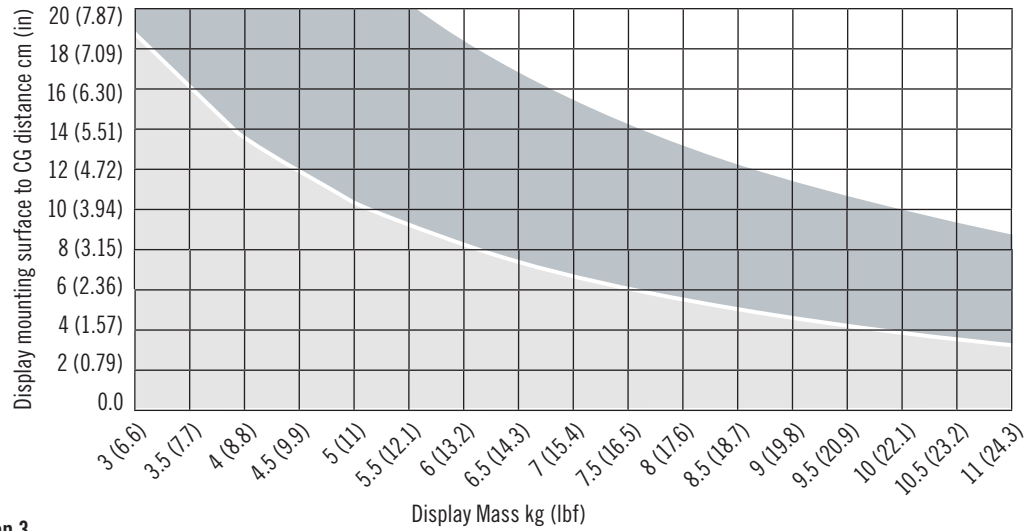
Step 1

Determine display weight and distance (d) from mounting surface to center of gravity.



Step 2

Use chart below to select model (101, 102 or 103).



Step 3

Complete part number by selecting length and color options below.

Style	Model	Tilt Torque N-m (in-lbf)		Swivel Torque N-m (in-lbf)			Part Number			
		Reverse	Forward	At Display Mount	At Wall Mount	Center Joint	Wall Mount		Table Mount	
							No Notch	Wire Notch	No Notch	Wire Notch
Tilt and swivel	101	7.9 (70)	1.13 (10)	4.3 (38)	N/A	N/A	AV-D32-10K101-XX	AV-D32-10K111-XX	AV-D32-10K121-XX	AV-D32-10K131-XX
	102	15.4 (136)	2.26 (20)	4.3 (38)	N/A	N/A	AV-D32-10K102-XX	AV-D32-10K112-XX	AV-D32-10K122-XX	AV-D32-10K132-XX
	103	8.6 (76)	6.0 (53)	4.3 (38)	N/A	N/A	AV-D32-10K103-XX	AV-D32-10K113-XX	AV-D32-10K123-XX	AV-D32-10K133-XX
Single arm	101	7.9 (70)	1.13 (10)	4.3 (38)	9.8 (87)	N/A	AV-D32-23A101-XX	AV-D32-23A111-XX	AV-D32-23A121-XX	AV-D32-23A131-XX
	102	15.4 (136)	2.26 (20)	4.3 (38)	9.8 (87)	N/A	AV-D32-23A102-XX	AV-D32-23A112-XX	AV-D32-23A122-XX	AV-D32-23A132-XX
	103	8.6 (76)	6.0 (53)	4.3 (38)	9.8 (87)	N/A	AV-D32-23A103-XX	AV-D32-23A113-XX	AV-D32-23A123-XX	AV-D32-23A133-XX
Double arm	101	7.9 (70)	1.13 (10)	4.3 (38)	9.8 (87)	9.8 (87)	AV-D32-46D101-XX	AV-D32-46D111-XX	AV-D32-46D121-XX	AV-D32-46D131-XX
	102	15.4 (136)	2.26 (20)	4.3 (38)	9.8 (87)	9.8 (87)	AV-D32-46D102-XX	AV-D32-46D112-XX	AV-D32-46D122-XX	AV-D32-46D132-XX
	103	8.6 (76)	6.0 (53)	4.3 (38)	9.8 (87)	9.8 (87)	AV-D32-46D103-XX	AV-D32-46D113-XX	AV-D32-46D123-XX	AV-D32-46D133-XX

Part Number Example

AV-D32-23A101-50 =
Single arm, Model 101, wall mount, no wire notch, black

For tilt version, see Southco AV Arm section.

XX	Color
50	Black
76	White

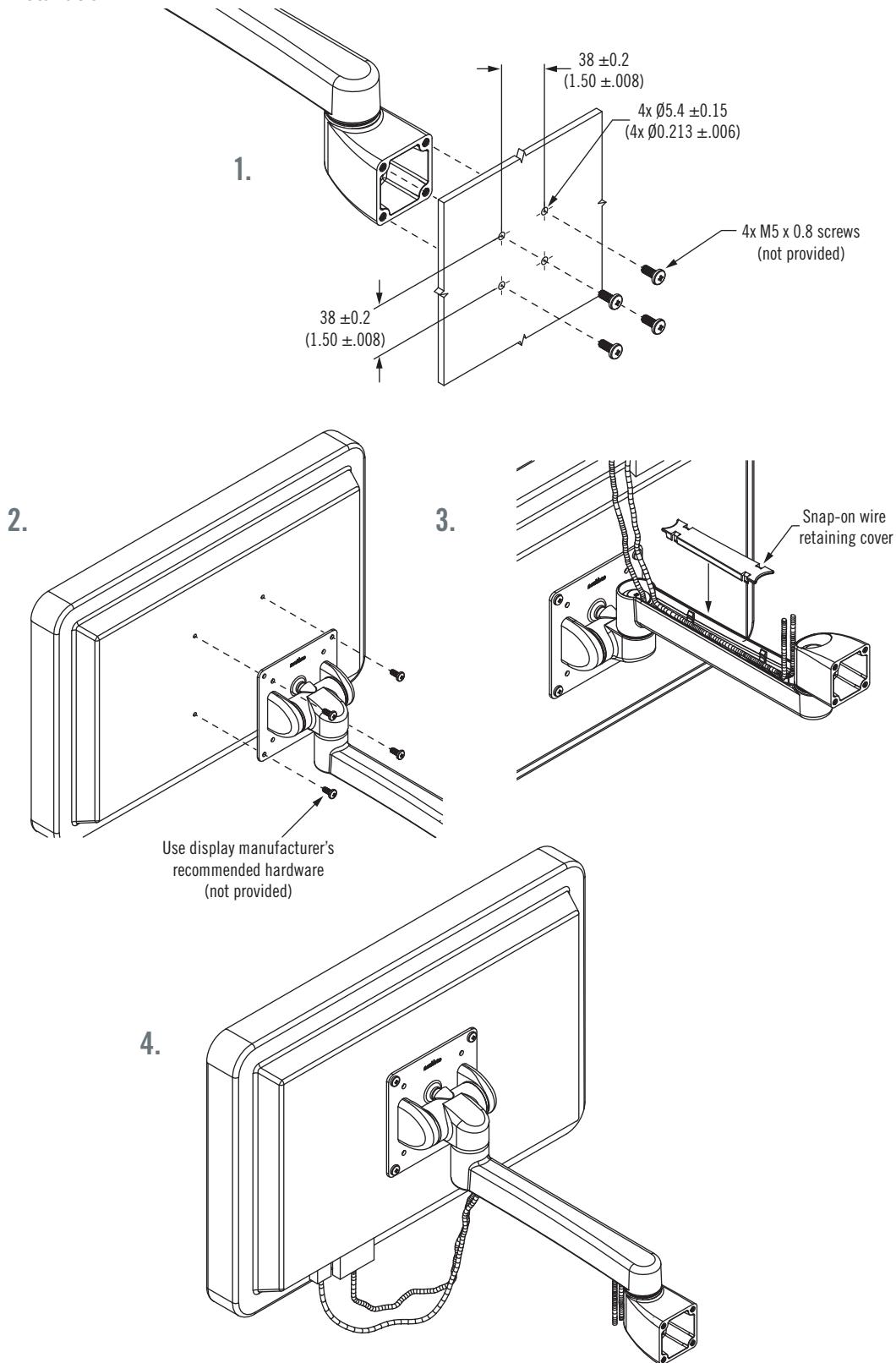
Dimensions in millimeters (inch) unless otherwise stated

AV Series Dynamic Mounting Arm

Tilt and swivel · Single arm · Double arm



Installation



- Smooth operation enhances the user experience
- Adjust the display without knobs or tools
- Holds securely in every position



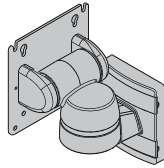


AV Series Dynamic Mounting Arm

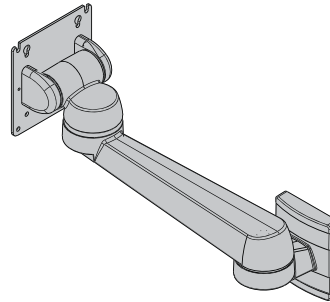
Tilt and swivel · Single arm · Double arm · Heavy Duty

- Intuitive grab and move operation enhances the user experience**
 No knobs or tools required to reposition the display
 Precise control of operating effort ensures ideal “feel” and eliminates “drift”
 Holds securely, even in applications with dynamic loading
- Consistent repeatable operation**
- Fully enclosed for optimum cleanability**
- Snap-on wire management cover**
- Factory assembled and ready for use**

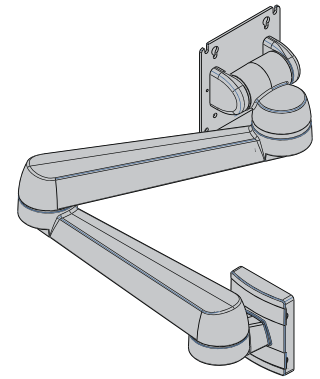
Tilt and Swivel



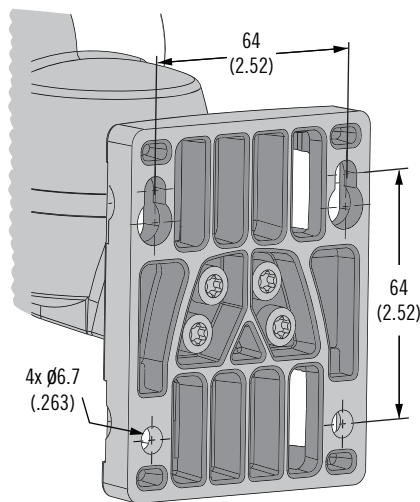
Single Arm



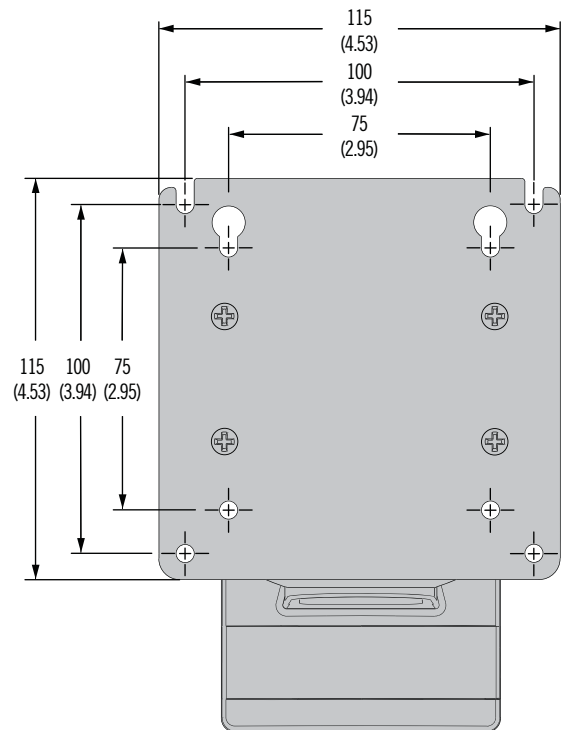
Double Arm



Mounting Pattern



Display Mounting Plate



VESA® MIS-D, 100, C

VESA and VESA MOUNTING COMPLIANT are registered trademarks of Video Electronics Standards Association

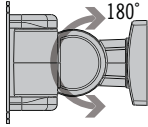
AV Series Dynamic Mounting Arm

Tilt and swivel · Single arm · Double arm · Heavy Duty

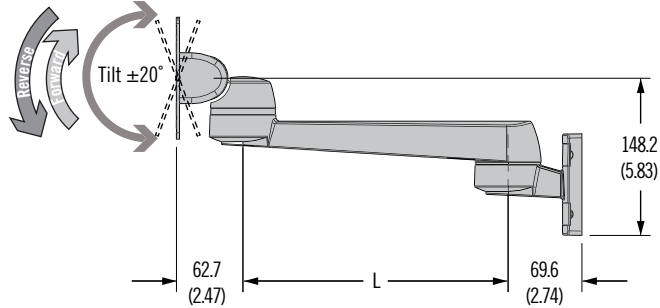
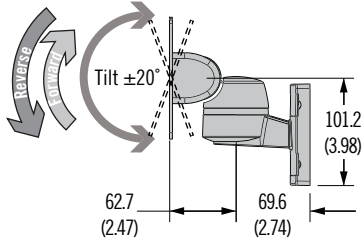
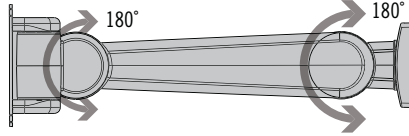


67B

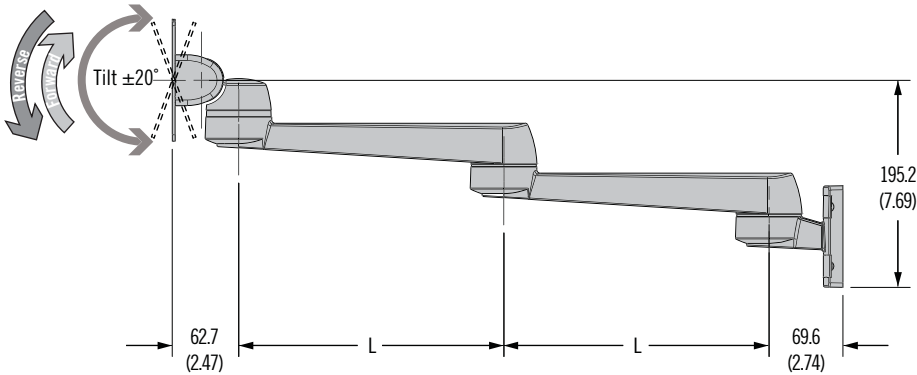
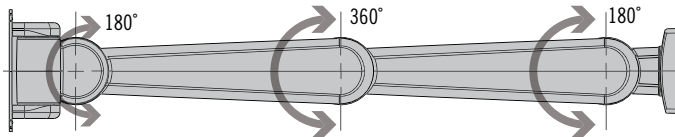
Tilt and Swivel



Single Arm



Double Arm



- Smooth operation enhances the user experience
- Adjust the display without knobs or tools
- Holds securely in every position





AV Series Dynamic Mounting Arm

Tilt and swivel · Single arm · Double arm · Heavy Duty

Material and Finish

Aluminum alloy, powder coated

Performance Details

Cycle performance: 20,000 cycles.

See trade drawing for details.

Note: Double Arm not recommended for displays over 18 kg (39 lb)

Max. dynamic working load:

Model 141, 143: 70 N (15.7 lbf)

Model 142: 100 N (22.5 lbf)

Model 144: 999 N (225 lbf)

Average ultimate load:

Tilt/Swivel: 1845 N (415 lbf)

Single Arm: 1470 N (330 lbf)

Double Arm: 1075 N (242 lbf)

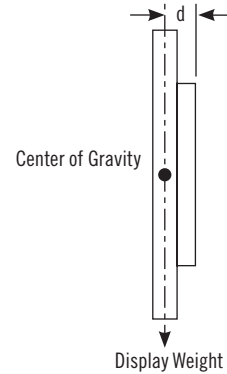
Part Number Example

AV-D40-25A142-50 = Single arm, 250mm, Model 142, black

Specification and Selection

Step 1

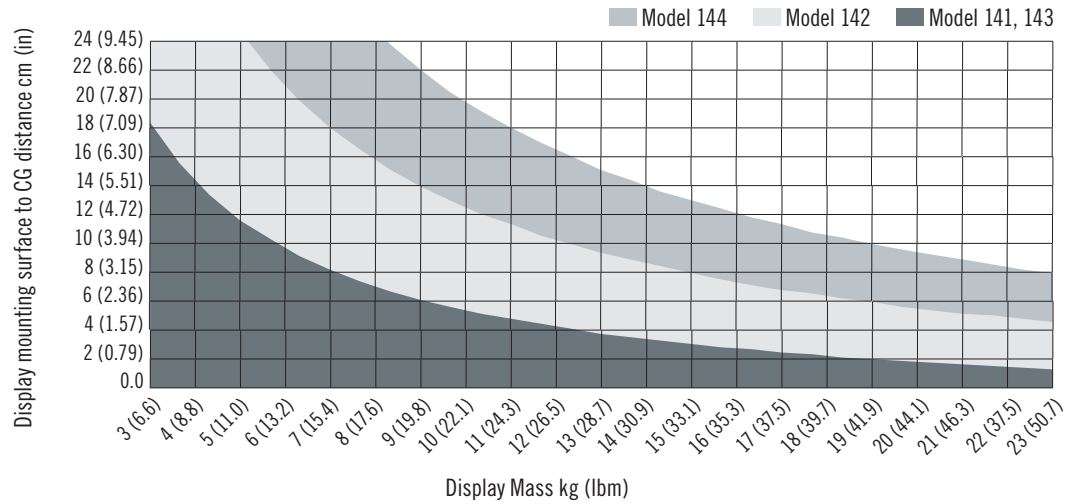
Determine display weight and distance (d) from mounting surface to center of gravity.



Step 2

Use chart below to select model (141, 142, 143 or 144).

Note: Double Arm not recommended for displays over 18 kg (39 lb)



Step 3

Complete part number by selecting length and color options below.

Style	Model	Tilt Torque N·m (in·lbf)		Swivel Torque N·m (in·lbf)			Arm Length, L		
		Reverse	Forward	At Display Mount	At Wall Mount	Center Joint	None	250 (9.8)	325 (12.8)
Tilt and swivel	141	9.7 (86)	4.2 (37)	3 (27)	N/A	N/A	AV-D40-13K141-XX	N/A	N/A
	142	17.3 (153)	3.8 (33)	3 (27)	N/A	N/A	AV-D40-13K142-XX	N/A	N/A
	143	10.9 (96)	8.4 (74)	3 (27)	N/A	N/A	AV-D40-13K143-XX	N/A	N/A
	144	23.1 (204)	7 (62)	3 (27)	N/A	N/A	AV-D40-13K144-XX	N/A	N/A
Single arm	141	9.7 (86)	4.2 (37)	3 (27)	6 (53)	N/A	N/A	AV-D40-25A141-XX	AV-D40-33A141-XX
	142	17.3 (153)	3.8 (33)	3 (27)	6 (53)	N/A	N/A	AV-D40-25A142-XX	AV-D40-33A142-XX
	143	10.9 (96)	8.4 (74)	3 (27)	6 (53)	N/A	N/A	AV-D40-25A143-XX	AV-D40-33A143-XX
	144	23.1 (204)	7 (62)	3 (27)	6 (53)	N/A	N/A	AV-D40-25A144-XX	AV-D40-33A144-XX
Double arm	141	9.7 (86)	4.2 (37)	3 (27)	6 (53)	3 (27)	N/A	AV-D40-50D141-XX	AV-D40-65D141-XX
	142	17.3 (153)	3.8 (33)	3 (27)	6 (53)	3 (27)	N/A	AV-D40-50D142-XX	AV-D40-65D142-XX
	143	10.9 (96)	8.4 (74)	3 (27)	6 (53)	3 (27)	N/A	AV-D40-50D143-XX	AV-D40-65D143-XX
	144	23.1 (204)	7 (62)	3 (27)	6 (53)	3 (27)	N/A	AV-D40-50D144-XX	AV-D40-65D144-XX

XX	Color
50	Black
76	White

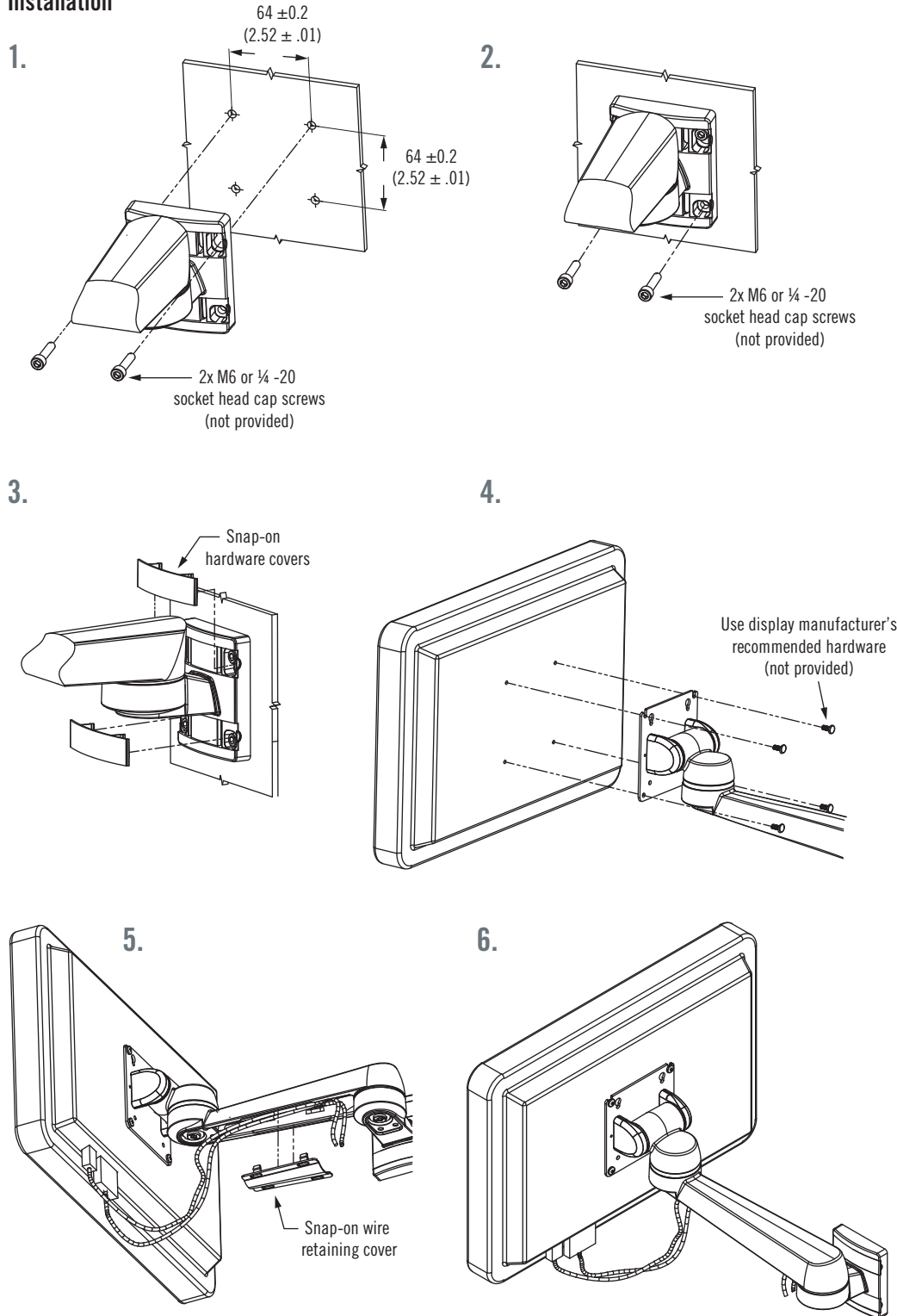
Dimensions in millimeters (inch) unless otherwise stated

AV Series Dynamic Mounting Arm

Tilt and swivel · Single arm · Double arm · Heavy Duty



Installation



- Smooth operation enhances the user experience
- Adjust the display without knobs or tools
- Holds securely in every position



Mounting screws affixing the arm to the mounting plate shall not be removed or loosened. Should removal or loosening of mounting screws occur, replace mounting screws using new M6-1.0 x 25, Class 12.9, high tensile cap head screws and plain washers, tighten to 14-16Nm. Maximum arm loading-single arm-23Kg/ double arm-18Kg. Removal or loosening, or in the event of removal or loosening and failure to replace factory installed mounting screws with manufacturer specified new mounting screws, tightened to 14-16Nm may result in catastrophic failure of bolts causing mounted equipment to fall from mounting surface causing injury to persons and property.



AV Series Dynamic Mounting Arm

Tilt, swivel and swing

- Intuitive grab and move operation enhances the user experience**

No knobs or tools required to reposition the display

Precise control of operating effort ensures ideal “feel” and eliminates “drift”

Holds securely, even in applications with dynamic loading

- Low profile in the stowed position**

Folds to within 50 mm of the wall

- Snap-open channels simplify wire management**

Easy display installation and replacement

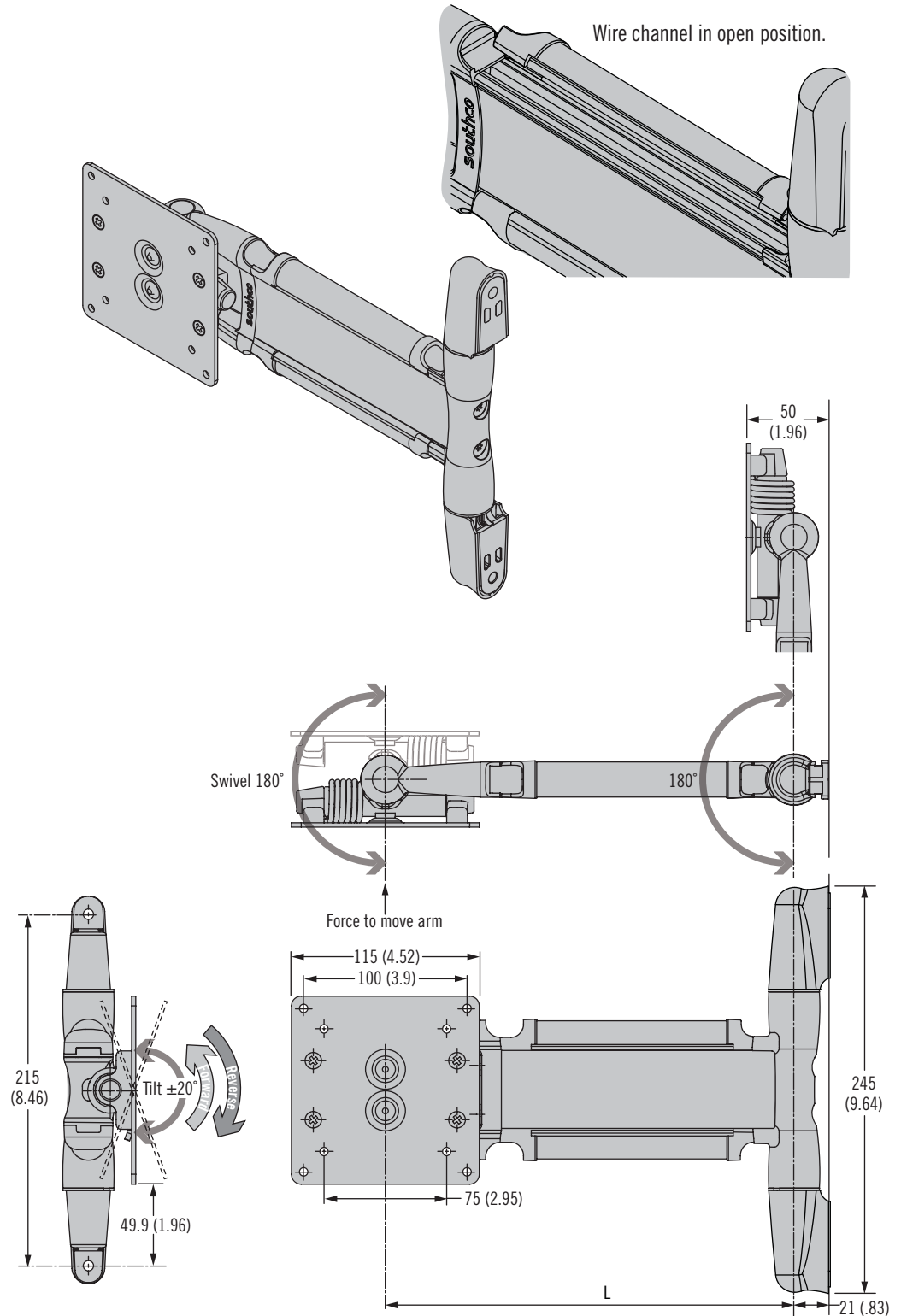
- Factory assembled and ready for use**



VESA® MIS-D, 100, C

VESA and VESA MOUNTING COMPLIANT are registered trademarks of Video Electronics Standards Association

Product Detail



Dimensions in millimeters (inch) unless otherwise stated

AV Series Dynamic Mounting Arm

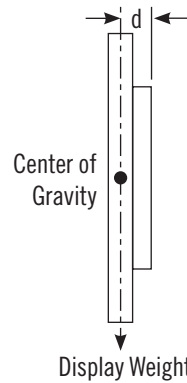
Tilt and swivel · Single arm



Specification and Selection

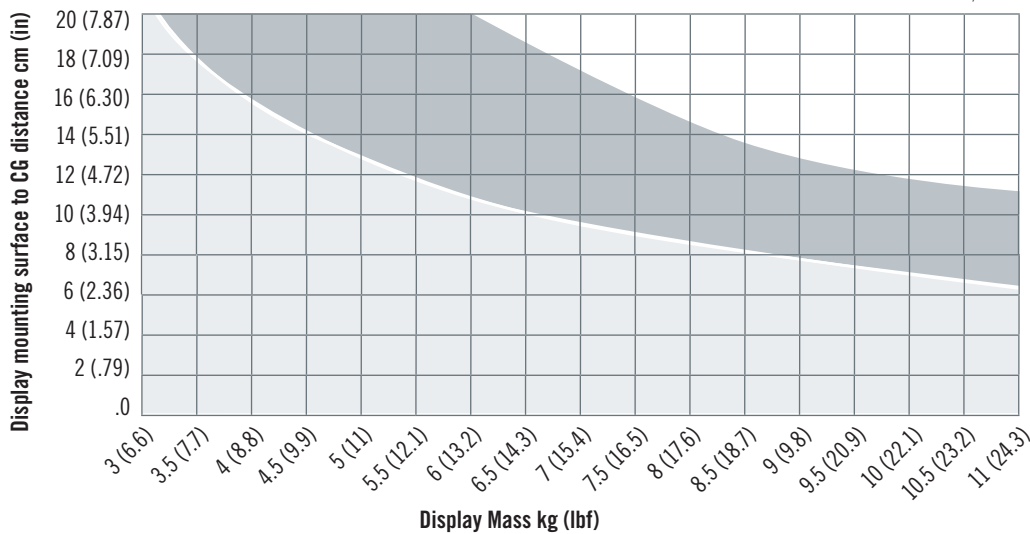
Step 1

Determine display weight and distance (d) from mounting surface to center of gravity.



Step 2

Use chart below to select model (101, 102 or 103).



Step 3

Complete part number by selecting length and color options below.

K	Length (L)	Average ultimate load N (lbf)
15	150 (5.9)	2000 (450)
25	250 (9.8)	1200 (270)
35	350 (13.8)	850 (190)
45	450 (17.7)	660 (150)

Model S	Force to move arm N (lbf)	Tilt Torque N•m (in lbf)		Swivel Torque N•m (in lbf)
		Reverse	Forward	
101	22.2 (5)	7.9 (70)	1.13 (10)	2.3 (20)
102	33.8 (7.6)	15.4 (136)	2.26 (20)	3.4 (30)
103	33.8 (7.6)	8.6 (76)	6.0 (53)	3.4 (30)

F	Color
50	Black
76	White

AV - D30 - K A S - F

- Smooth operation enhances the user experience
- Adjust the display without knobs or tools
- Holds securely in every position

Material and Finish

Aluminum alloy, powder coated

Performance Details *

Cycle performance: 20,000 cycles within ± 20% of static torque specification

Max. dynamic working load:

Model 101, 103: 66 N (15 lbf)

Model 102: 98 N (22 lbf)

Average ultimate load: See table

Part Number

See table

Part Number Example

AV-D30-25A101-50 = Dynamic mounting arm, Model 101, 250 mm Length, black

* Southco Performance and Application Guidelines are supplied as general guides only as conditions vary with each application and installation method. Represented cycle performance is not a guarantee of reliability under actual usage conditions in end user product applications. Users must test potential product solutions under the actual application conditions and environment to determine suitability of the product for the purpose and function intended by the user and to assure desired performance.



AV Series Dynamic Mounting Arm

Tilt and swivel · Single arm · Locking

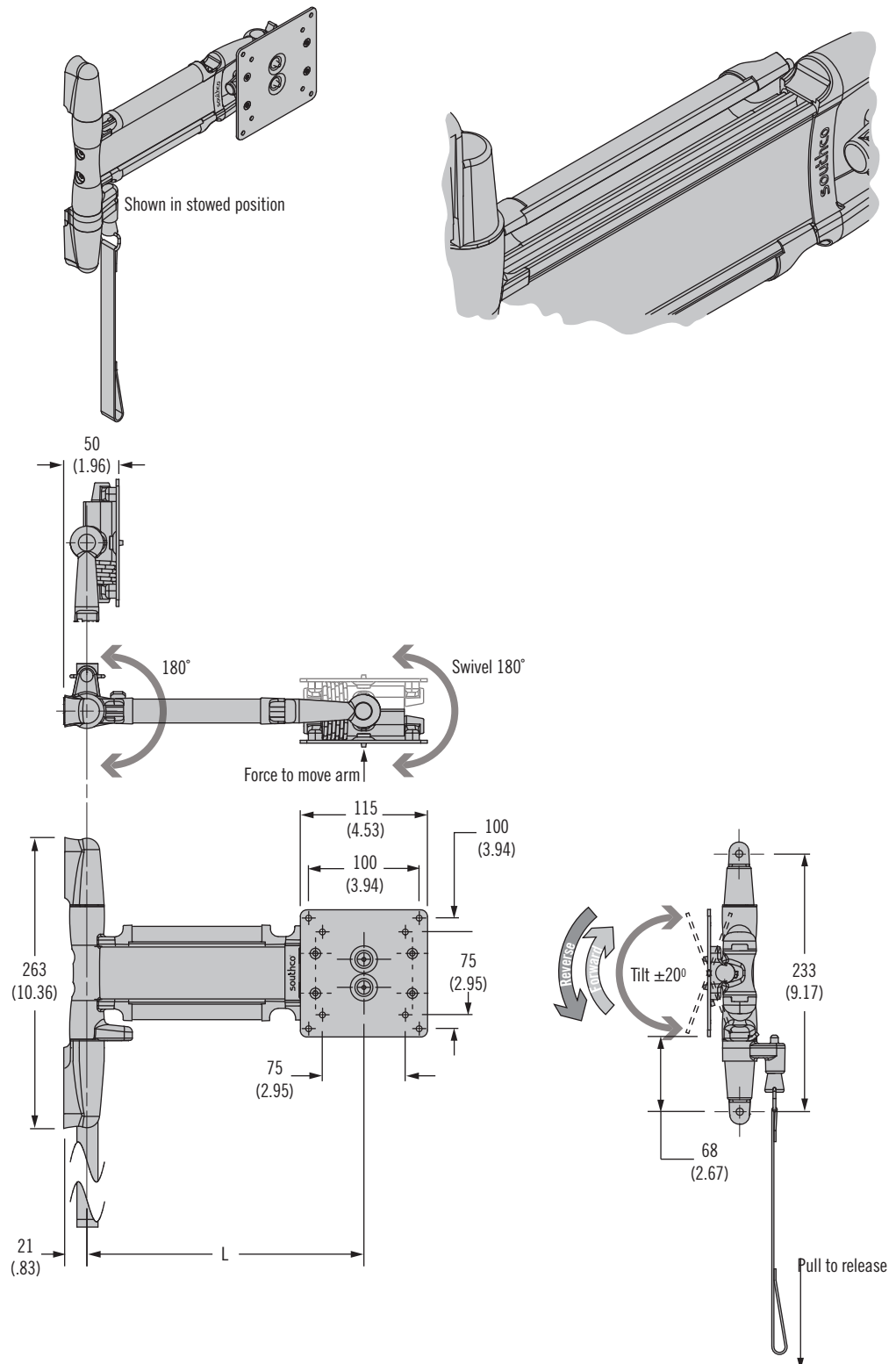
- Intuitive grab and move operation enhances the user experience**
 No knobs or tools required to reposition the display
 Precise control of operating effort ensures ideal “feel” and eliminates “drift”
 Holds securely, even in applications with dynamic loading
- Locking mechanism in stowed position**
- Low profile in the stowed position**
 Folds to within 50 mm of the wall
- Snap-open channels simplify wire management**
 Easy display installation and replacement
- Factory assembled and ready for use**



VESA® MIS-D, 100, C

VESA and VESA MOUNTING COMPLIANT are registered trademarks of Video Electronics Standards Association

Product Detail



Dimensions in millimeters (inch) unless otherwise stated

AV Series Dynamic Mounting Arm

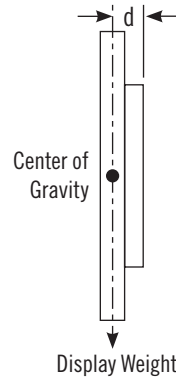
Tilt and swivel · Single arm · Locking



Specification and Selection

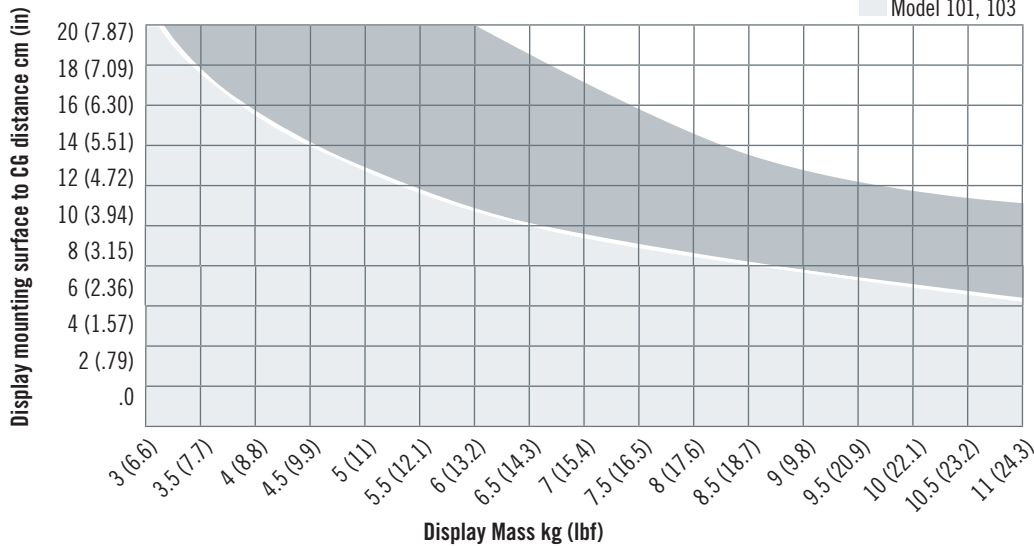
Step 1

Determine display weight and distance (d) from mounting surface to center of gravity.



Step 2

Use chart below to select model (101, 102 or 103).



Step 3

Complete part number by selecting length and color options below.

K	Length (L)	Average ultimate load N (lbf)
15	150 (5.9)	2000 (450)
25	250 (9.8)	1200 (270)
35	350 (13.8)	850 (190)
45	450 (17.7)	660 (150)

Model S	Force to move arm N (lbf)	Tilt Torque N•m (in lbf)		Swivel Torque N•m (in lbf)
		Reverse	Forward	
101	22.2 (5)	7.9 (70)	1.13 (10)	2.3 (20)
102	33.8 (7.6)	15.4 (136)	2.26 (20)	3.4 (30)
103	33.8 (7.6)	8.6 (76)	6.0 (53)	3.4 (30)

F	Color
50	Black
76	White

AV - D30 - K AC S - F

- Smooth operation enhances the user experience
- Adjust the display without knobs or tools
- Holds securely in every position

Material and Finish

Aluminum alloy, powder coated

Performance Details *

Cycle performance: 20,000 cycles within ± 20% of static torque specification

Max. dynamic working load:

Model 101, 103: 66 N (15 lbf)

Model 102: 98 N (22 lbf)

Average ultimate load: See table

Part Number

See table

Part Number Example

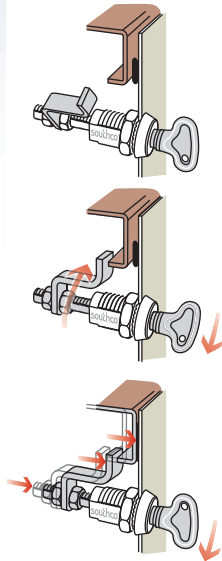
AV-D30-25AC101-50 = Dynamic mounting arm, Model 101, 250 mm Length, black, locking

Southco Performance and Application Guidelines are supplied as general guides only, as conditions vary with each application and installation method. Represented cycle performance is not a guarantee of reliability under actual usage conditions in end user product applications. Users must test potential product solutions under the actual application conditions and environment to determine suitability of the product for the purpose and function intended by the user and to assure desired performance.

COMPRESSION LATCHES

WISE ACTION® Latches

Pages 76 - 93



Reduce or eliminate noise and rattle, or compress gaskets for environmental or EMI / RFI sealing. A wide variety of compression latch styles include many secure key and tool access options.

An extensive line of premium latches built around the unique *SOUTHCO® VISE ACTION®* mechanism that provides both cam engagement and vibration-dampening compression with a continuous half-turn motion. New access styles, new materials and finish options, and expanded installation styles make this the most versatile compression latch solution.

- Up to 6.4mm (.25 ") compression
- Over-center action resists accidental opening
- Numerous hand, tool and key actuation styles
- Extensive range of body & installation styles
- Sealed versions to meet NEMA / IP standards



E3



E3



E3



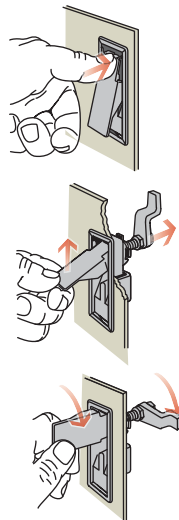
E3



E3

Lift and Turn

Pages 94 - 103



Simply lift handle to release compression, then turn handle 90° to open. Larger profile latches provide ample hand grip to unlatch and manipulate larger doors. Flush mounted and miniature styles for better aesthetics or where space is limited. Available in a wide range of materials and finishes.

- Convenience of latch and handle in one
- Choices of pre-set pull-up compression
- Includes stylish flush mount options



M1



62



62



62



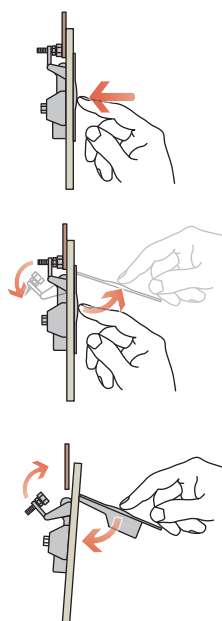
62



N2

This compression latch family includes a wide range of low profile and flush lever latch solutions, some with push-button handle release for stylized enclosures ranging from transit storage compartments to electronics cabinetry. Also includes heavy-duty latches for compressing and prying open gasketed doors in industrial strength applications such as refrigerated storage.

- ➔ Latch and handle capability in one assembly
- ➔ Over-center models provide secure closure plus opening leverage
- ➔ Accommodates a wide range of grip dimensions
- ➔ Includes stylish flush mount options
- ➔ Sealed versions to meet NEMA / IP standards
- ➔ Several tool and key access versions



Lever

Pages 104 - 107



A7



C2



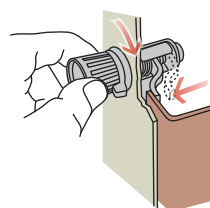
C5



C5

SOUTHCO® self-adjusting latches provide user controlled compression adjustment during each actuation. They are available in a range of styles from miniature versions to larger sizes for heavier duty applications, ranging from construction equipment to industrial enclosures. They also provide some of the quickest, most economical, and easiest to access compression solutions for quietening small access doors in vibration-prone sheet metal applications ranging from HVAC equipment to fan-cooled electronics enclosures.

- ➔ User-controlled compression
- ➔ Adjusts easily for grip setting or dimensional variations in cabinets
- ➔ Numerous actuation styles
- ➔ Accommodates a wide range of grip dimensions



Self-Adjusting

Pages 108 - 110



43



57



Compression Latches

Selection guide

Use this selection guide to choose the right compression latch for your application



Key-Locking Available



Key-Choice System



NEMA / IP Rated



Multi-Point Latching



Padlockable



Stainless Steel








Vibration Resistant



Fire Resistant

	Product class	MATERIAL			INSTALLATION		
		Stainless Steel 	Zinc and Steel	Aluminum	Round Hole Install	Flush / Low Profile	Maximum Door Thickness
WISE ACTION® LATCHES PAGES 76-93	E3 19.1mm	✓	✓	✓	✓ Use spur washer	✓	18 (.71)
	E3 13.5mm	✓	✓			✓	12.7 (.50)
	E3 3 Hole		✓		✓	✓	4 (.16)
LIFT AND TURN PAGES 94-103	N2	✓	✓			✓	12.7 (.50)
	62 Flush		✓			✓	6 (.24)
	62 Handle		✓				6 (.24)
	M1	✓			✓	✓	29 (1.14)
LEVER PAGES 104-107	C5 90mm		✓			✓	41 (1.61)
	C5 71mm		✓			✓	11 (.43)
	C2		✓			✓	8 (.32)
	A7		✓				Surface mount
SELF-ADJUSTING PAGES 108-110	27, 48	✓	✓			✓	4.8 (.19)
	43, 44, 14	✓	✓		✓	✓	Rear mount
	57	✓	✓		✓	✓	Rear mount

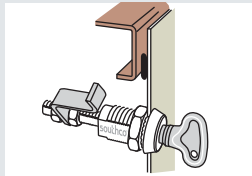
Dimensions in millimeters (inch) unless otherwise stated

	PERFORMANCE					OPTIONS				
Fire EN 45545 	NEMA / IP Rated 	Vibration Resistant 	Maximum Static Load	Compression	Grip Range	Key-Locking 	Tool Access	Key-Choice System 	Padlockable 	Multi-Point Latching 
✓	✓	✓	300 - 600 N (67 - 135 lbf)	6.4 (.25)	11.4 - 81.2 (.45 - 3.20)	✓	✓		✓	✓
✓	✓	✓	330 - 356 N (75 - 80 lbf)	4 (.17)	3.2 - 28.6 (.13 - 1.13)		✓			
		✓	450 N (100 lbf)	6.4 (.25)	7.9 - 76.2 (.31 - 3.00)	✓	✓			✓
		✓	1000 N (225 lbf)	6 (.24)	3.5 - 104 (.14 - 4.1)	✓				✓
		✓	220 - 1250 N (50 - 280 lbf)	2 - 5.5 (.06 - .22)	4.5 - 111 (.17 - 4.38)	✓	✓	✓		✓
		✓	220 - 670 N (50 - 150 lbf)	3 - 5 (.11 - .19)	0 - 55 (0 - 2.16)					✓
	✓	✓	350 - 1010 N (78 - 227 lbf)	4 - 5 (.16 - .2)	10 - 88 (.39 - 3.47)	✓				✓
	✓	✓	450 N (100 lbf)	User defined	1 - 57 (.04 - 2.25)	✓	✓	✓		
		✓	170 - 290 N (40 - 65 lbf)	User defined	1 - 30 (.04 - 1.18)	✓				
	✓	✓	1100 N (250 lbf)	User defined	1 - 46 (.04 - 1.81)	✓	✓	✓		
		✓	2200 N (500 lbf)	9.5 (.38)	Surface mount flush	✓				
		✓	155 N (35 lbf)	User defined	0.8 - 22.2 (.03 - .88)		✓			
		✓	330 - 670 N (75 - 150 lbf)	User defined	3.2 - 42.9 (.13 - 1.69)		✓			
		✓	13.4 - 137 N (3 - 31 lbf)	User defined	1.2 - 14.3 (.05 - .56)		✓			

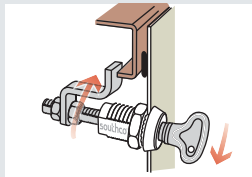


E3 VISE ACTION® Compression Latch

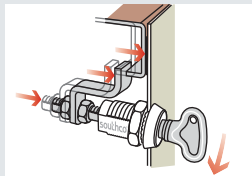
Overview



First 90° turn:
Cam rotates behind frame



The door is now **latched**
against opening



Then as you complete the
half-turn motion, the shaft
and cam compress to pull the
door snugly against the frame
or gasket into the
locked position

Versatility and simplicity in action

Every *SOUTHCO*® *VISE ACTION*® Series latch solution starts with the single-turn latching and compressing action that is built into each model. At the heart of it all is our *VISE ACTION*® design that has proven itself in millions of installations.

Product features

- Suitable for a wide range of load configurations
- Excellent corrosion resistance
- Durable and reliable operation
- Multiple size, material and access configurations
- Compression achieved with minimal manual torque
- Suitable for NEMA 4 / IP65 applications

➤ Match material and finish options for style and functionality requirements

Variety of materials and finishes to complement your application.

Die-cast zinc latch bodies standard finishes:



Stainless steel latch bodies are made by metal injection molding or precise machining.

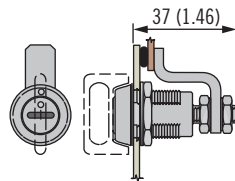
Aluminum latch bodies standard finishes:



➤ Select one of these three housing styles to fit your access requirements

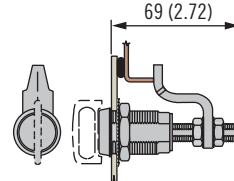
A series of basic housing styles of the *VISE ACTION*® compression latch have been developed to meet specific door configuration and mounting requirements - for depth, thickness, strength, grip dimension, and surface protrusion.

- Right and left hand actuation
- Optional pre-assembled cam for quick installation
- Wide choice of accessories



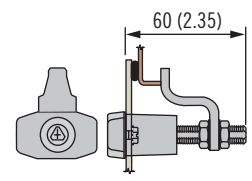
13.5mm Size

- Optimum compression for use in confined space applications



19.1mm Size

- Largest choice of head styles
- Maximum grip range in door to frame spacing
- Minimal protrusion style available



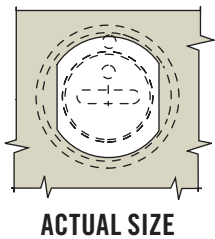
3-Hole Mount

- Simplified round-hole mounting
- Suitable for thick, soft or weak panels

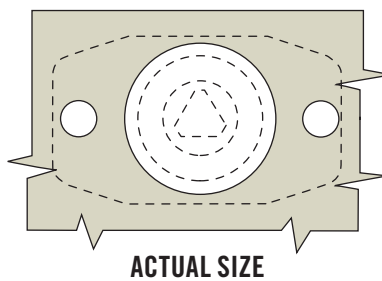
➔ Choose from a wide range of head styles to fit your application and industry requirements

- ➔ Convenient hand operated knob or T-handle styles for easy repetitive access
- ➔ Tool operated for restricted access, flush mount or low profile clearances, and industry specific standards or requirements
- ➔ Key operated for added security

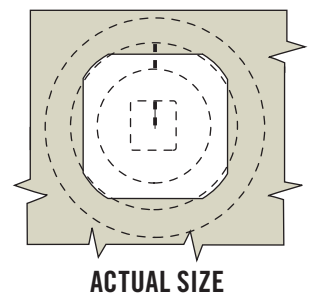
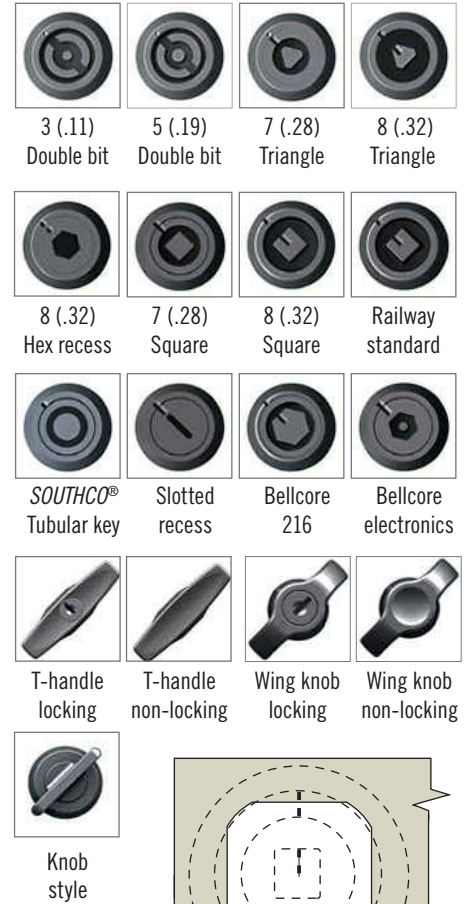
13.5mm single hole door preparation



3-Hole body door preparation



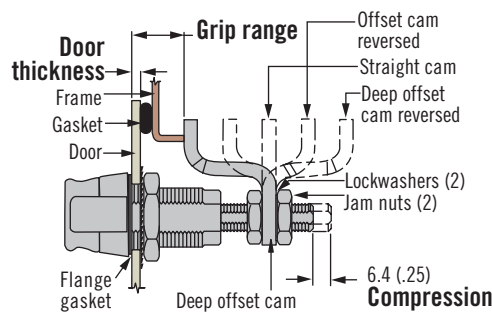
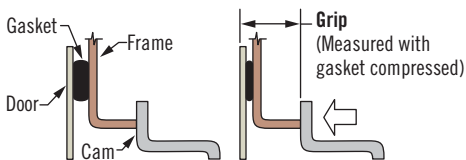
19.1mm single hole body door preparation



➔ Determine your grip options for a perfect fit

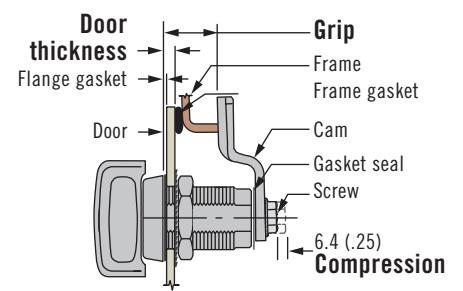
Grip dimension is an important consideration in compression latch applications involving gaskets for environmental or RFI sealing.

For gasketed doors:



Adjustable cam designs

- Maximum flexibility in tolerance or gasket compression
- Cam choice to suit a broad range of grip dimensions



Fixed cam designs

- Precise fit and minimum internal protrusion
- Wide cam selection for accurate grip dimension



E3 VISE ACTION® Compression Latch

Machined stainless steel housing · Tool operated
Adjustable grip · 19.1mm size

- Consistent pre-set compression
- Easy grip adjustment
- Premium finish and corrosion resistance
- EN 45545-3 E60 Compliant

Material and Finish

Stainless steel (304 and 316 machined)

Performance Details

Maximum static load:
600 N (136 lbf)

Sealing Notes

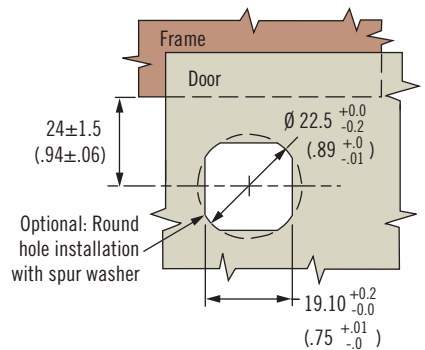
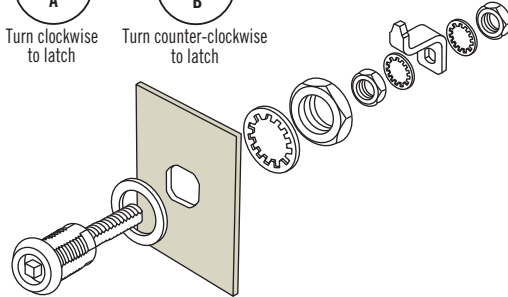
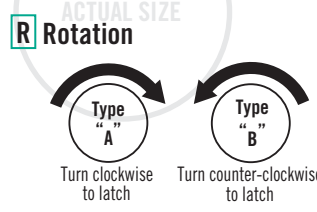
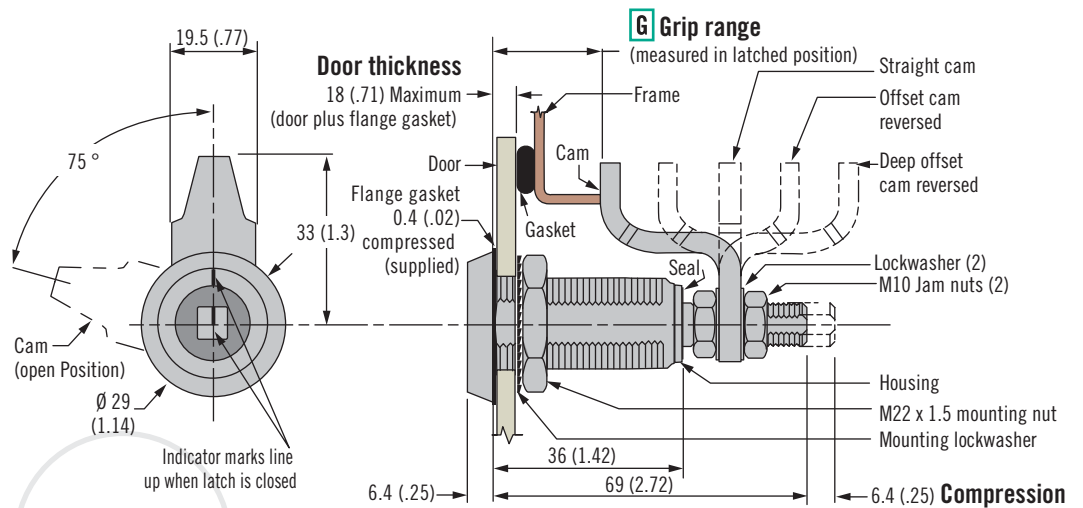
NEMA 4 and IP65 enabled using gasket supplied

Keys and Accessories

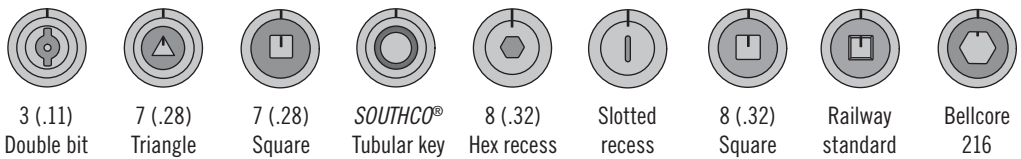
See page 90

Installation Notes

Caution: Position cam so latching function can be achieved comfortably by hand.
Recommended tightening torque for the mounting nut is 20 N·m (176 in·lbf).



H Head Styles



Part Number Selection

See table

H Head Style	R Rotation	G Grip	Minimum	Maximum	Cam Type
2 3 (.11) Double bit	9 Slotted recess	1	16.4 (.64)	32.2 (1.26)	Deep offset cam, forward
3 7 (.28) Triangle	10 8 (.32) Square		71.3 (2.80)	81.2 (3.19)	Deep offset cam, reversed
4 7 (.28) Square	11 Railway standard	2	30.4 (1.19)	46.1 (1.81)	Offset cam, forward
5 SOUTHCO® Tubular key	15 Bellcore 216		57.6 (2.26)	73.3 (2.88)	Offset cam, reversed
6 8 (.32) Hex recess		3	43.9 (1.72)	59.6 (2.34)	Straight cam

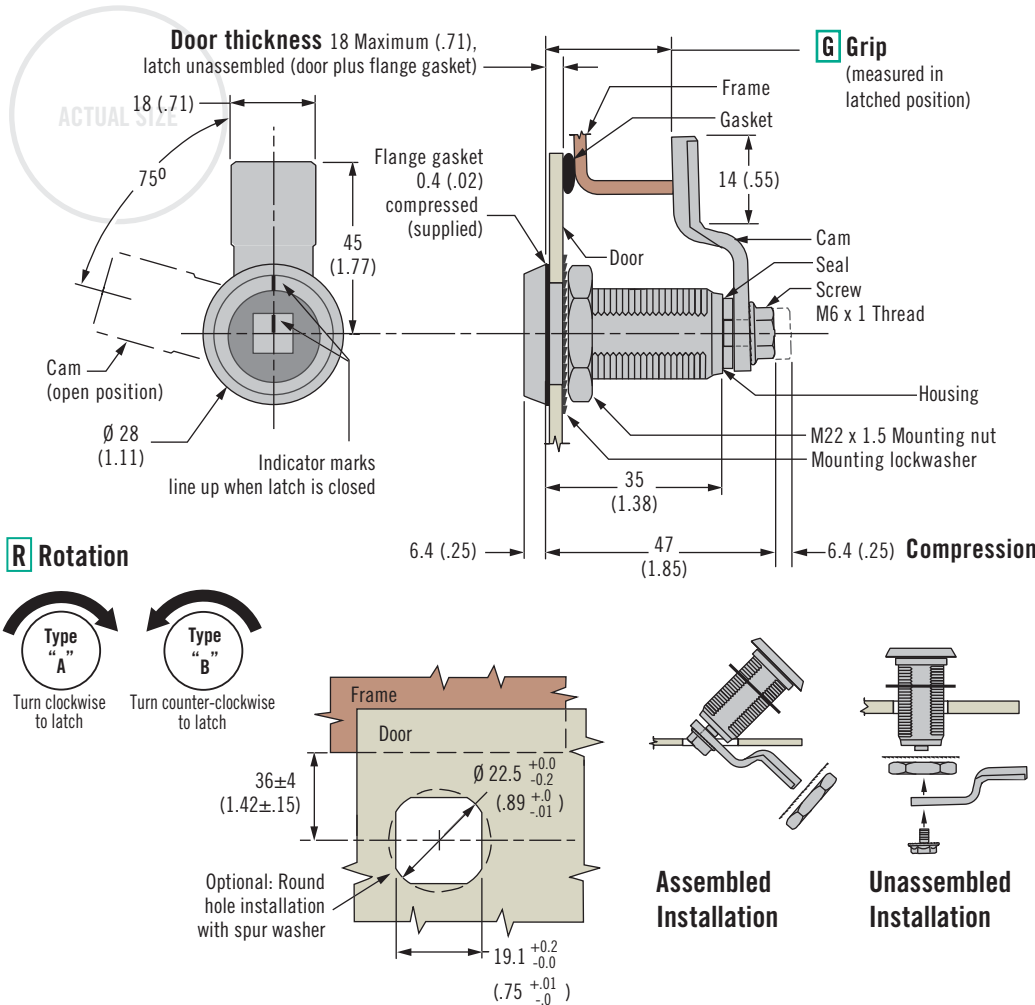
E3 - R H - G O

Dimensions in millimeters (inch) unless otherwise stated

E3 VISE ACTION® Compression Latch

Machined stainless steel housing · Tool operated

Fixed grip · 19.1mm size



- Consistent pre-set compression
- Premium finish and corrosion resistance
- Reduced internal protrusion
- EN 45545-3 E60 Compliant

Material and Finish

Stainless steel (304 and 316 machined)

Performance Details

Maximum static load:
450 N (100 lbf)

Sealing Notes

NEMA 4 and IP65 enabled using gasket supplied

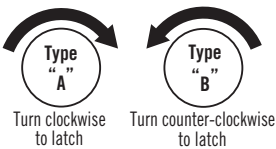
Keys and Accessories

See page 90

Installation Notes

Recommended tightening torque for the mounting nut is 20 N·m (176 in·lbf), and for the mounting screw is 10 N·m (88 in·lbf)

R Rotation



Assembled Installation

Unassembled Installation

H Head style

- 3 (.11) Double bit
- 7 (.28) Triangle
- 7 (.28) Square
- SOUTHCO® Tubular key
- 8 (.32) Hex recess
- Slotted recess
- 8 (.32) Square
- Railway standard
- Bellcore 216

R Rotation

- Type A clockwise to latch - Latch assembled
- Type A clockwise to latch - Latch unassembled
- Type B counter-clockwise to latch - Latch assembled
- Type B counter-clockwise to latch - Latch unassembled

E3 - R H - G O

G Grip Table

Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch
20 (.79)	00	1 (.04)	30 (1.18)	05	7 (.28)	40 (1.57)	10	7 (.28)	50 (1.97)	15	7 (.28)
22 (.87)	01	2 (.08)	32.5 (1.28)	06		42 (1.65)	11		52 (2.05)	16	
24 (.94)	02	4 (.16)	34 (1.34)	07		44 (1.73)	12		54 (2.13)	17	
26 (1.02)	03	5 (.20)	36 (1.42)	08		46 (1.81)	13		56 (2.20)	18	
28 (1.10)	04	6 (.24)	38 (1.50)	09	48 (1.89)	14	58 (2.28)	19			

Part Number Selection

See table
Select grip from table, if your grip is between two options choose smaller.



E3 VISE ACTION® Compression Latch

Metal injection molding stainless steel housing · Tool or hand operated
Adjustable grip · 19.1mm size

- Consistent pre-set compression
- Easy grip adjustment
- Tool or hand operated
- EN 45545-3 E60 Compliant

Material and Finish

Stainless steel 316 and 304

Performance Details

Maximum static load:
556 N (125 lbf)

Sealing Notes

NEMA 4 and IP65 enabled using gasket supplied

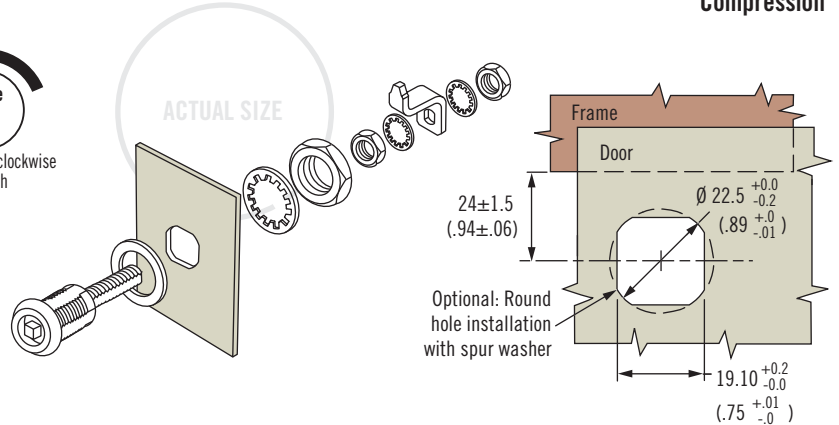
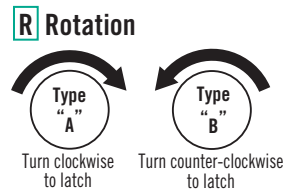
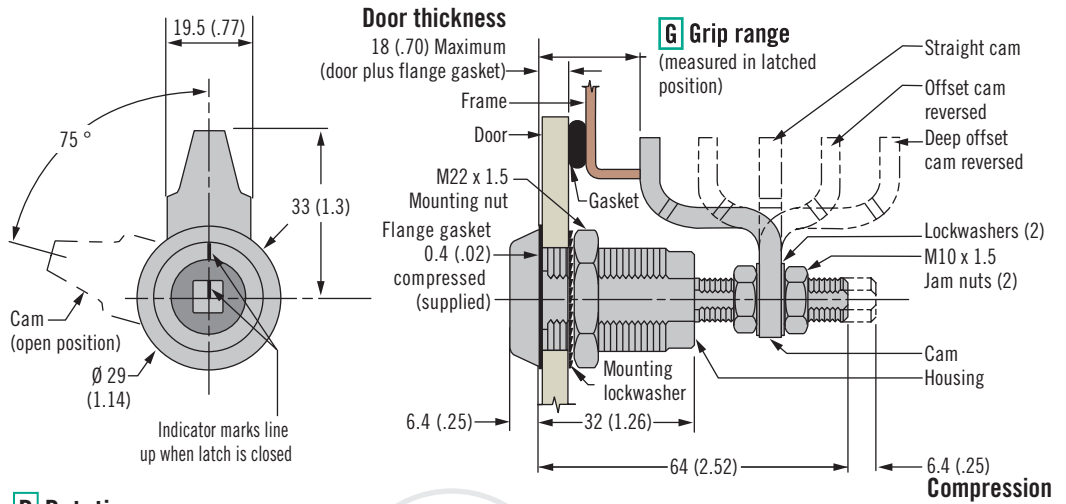
Installation Notes

Caution: Position cam so latching function can be achieved comfortably by hand.

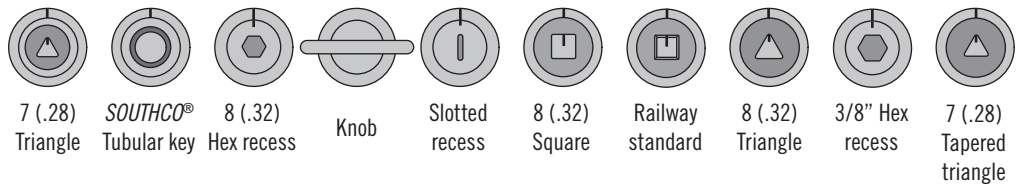
Recommended tightening torque for the mounting nut is 20 N·m (176 in·lbf).

Keys and Accessories

See page 90



H Head Styles



Part Number Selection

See table

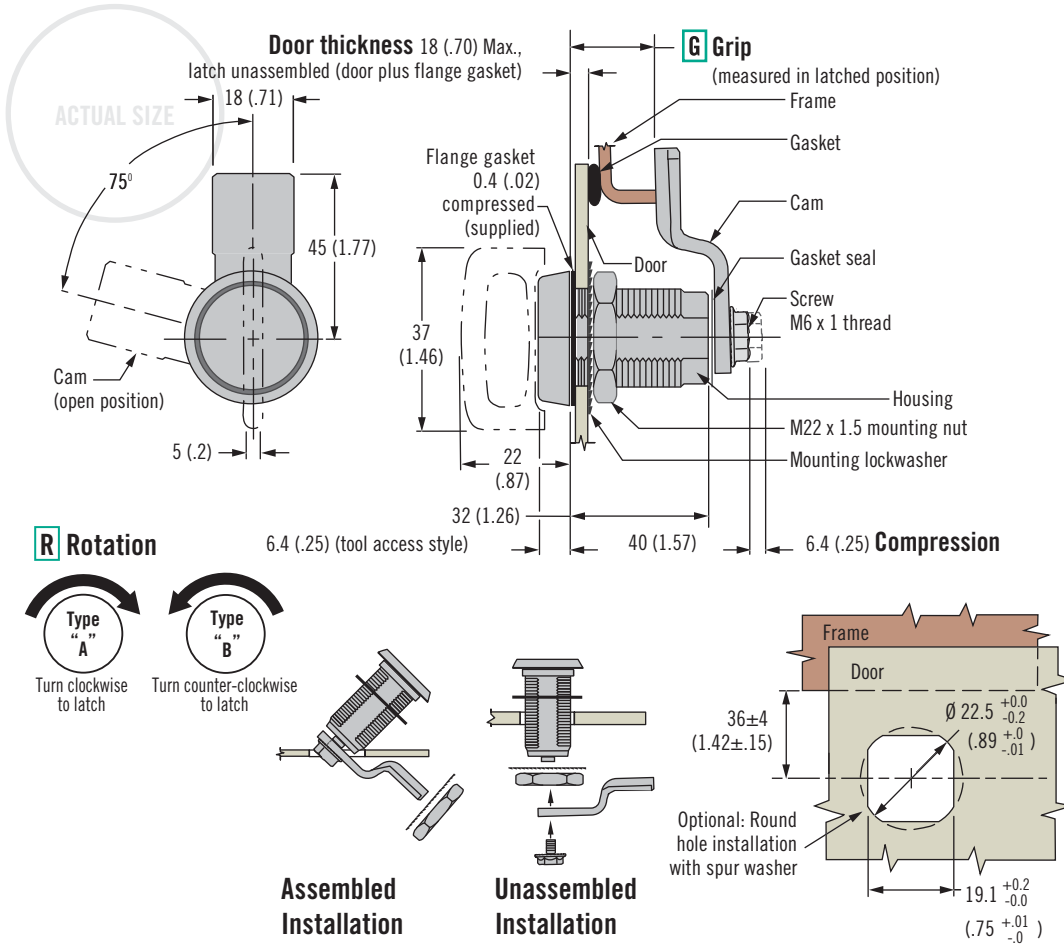
E3 - R H - G F		Grip	Minimum	Maximum	Cam Type
R Rotation 1 Type A clockwise to latch 22 Type B counter-clockwise to latch	H Head style 3 7 (.28) Triangle 5 SOUTHCO® Tubular key 6 8 (.32) Hex recess 7 Knob 9 Slotted recess	G Grip	11.4 (.45)	27.2 (1.07)	Deep offset cam, forward
			66.3 (2.61)	76.2 (3.00)	Deep offset cam, reversed
			25.4 (1.00)	41.1 (1.62)	Offset cam, forward
			52.6 (2.07)	68.3 (2.69)	Offset cam, reversed
			38.9 (1.53)	54.6 (2.15)	Straight cam
	F Finish 2 Electropolished 12 Electropolished and hand buffed (bright)				
					10 8 (.32) Square 11 Railway standard 20 8 (.32) Triangle 37 3/8" Hex recess 39 7 (.28) Tapered triangle

Dimensions in millimeters (inch) unless otherwise stated

E3 VISE ACTION® Compression Latch

Metal injection molding stainless steel housing · Tool or hand operated

Fixed grip · 19.1mm size



- Consistent pre-set compression
- Tool or hand operated
- Reduced internal protrusion
- EN 45545-3 E60 Compliant

Material and Finish

Stainless steel 316 and 304

Performance Details

Maximum static load:
450 N (100 lbf)

Sealing Notes

NEMA 4 / IP65 enabled using gasket supplied

Installation Notes

Recommended tightening torque for the mounting nut is 20 N·m (176 in·lbf), and for the mounting screw in 10 N·m (88 in·lbf)

Keys and Accessories

See page 90

Part Number Selection

See table

Select grip from table, if your grip is between two options choose smaller.

H Head style

- 3 7 (.28) Triangle
- 5 SOUTHCO® Tubular key
- 6 8 (.32) Hex recess
- 7 Knob
- 9 Slotted recess
- 10 8 (.32) Square
- 11 Railway standard
- 20 8 (.32) triangle
- 37 3/8" Hex recess
- 39 7 (.28) Tapered triangle

R Rotation

- 10 Type A clockwise to latch - Latch assembled
- 12 Type A clockwise to latch - Latch unassembled
- 27 Type B counter-clockwise to latch - Latch assembled
- 29 Type B counter-clockwise to latch - Latch unassembled

F Finish

- 2 Electropolished
- 12 Electropolished and hand buffed (bright)

E3 - R H - G F

G Grip Table

Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch
15 (.59)	00	Use unassembled	25 (.98)	05	5 (.20)	35 (1.38)	10	7 (.28)	45 (1.77)	15	7 (.28)
17 (.67)	01	Use unassembled	27 (1.06)	06	6 (.24)	37 (1.46)	11		47 (1.85)	16	
19 (.75)	02	1 (.04)	29 (1.14)	07	7 (.28)	39 (1.53)	12		49 (1.93)	17	
21 (.83)	03	2 (.08)	31 (1.22)	08		41 (1.61)	13		51 (2.01)	18	
23 (.91)	04	4 (.16)	33 (1.30)	09		43 (1.69)	14		53 (2.09)	19	



E3 VISE ACTION® Compression Latch

Metal injection molding stainless steel housing · Tool or hand operated
Adjustable grip · 13.5mm size

- Consistent pre-set compression
- Easy grip adjustment
- Tool or hand operated
- Reduced dimensions
- EN 45545-3 E60 Compliant

Material and Finish

Stainless steel 316 and 304

Performance Details

Maximum static load: 356 N (80 lbf)

Sealing Notes

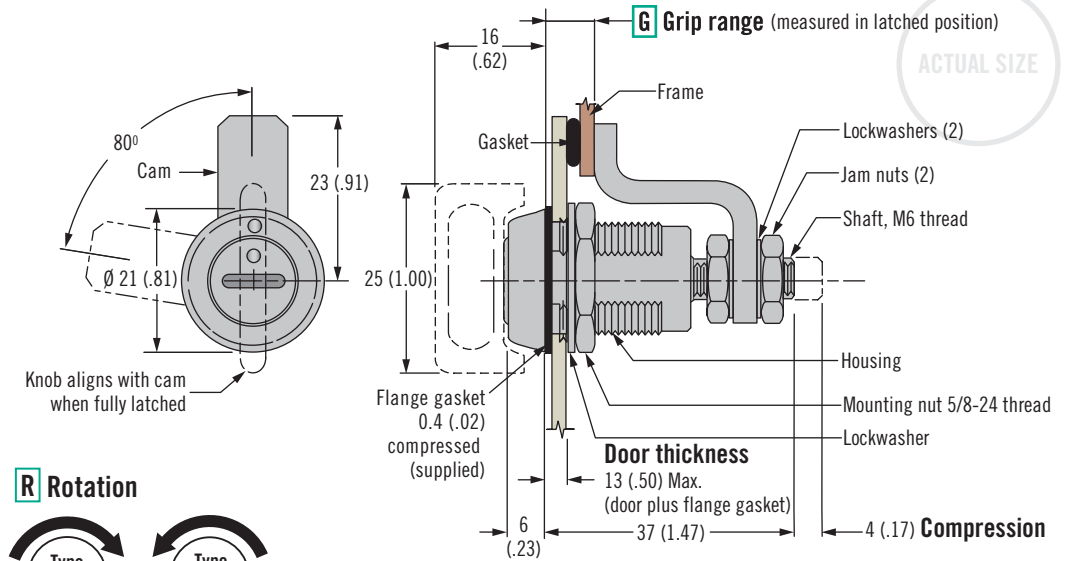
NEMA 4 / IP65 enabled using gasket supplied

Installation Notes

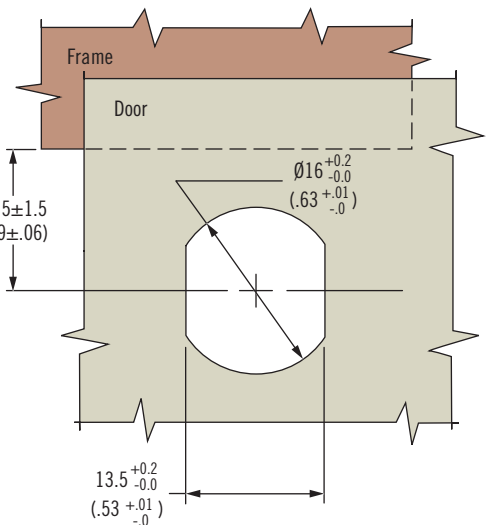
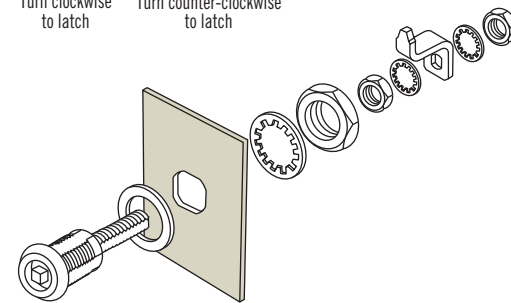
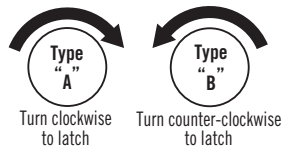
Caution: Position cam so latching function can be achieved comfortably by hand.

Accessories

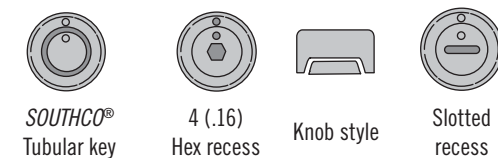
See page 90



R Rotation

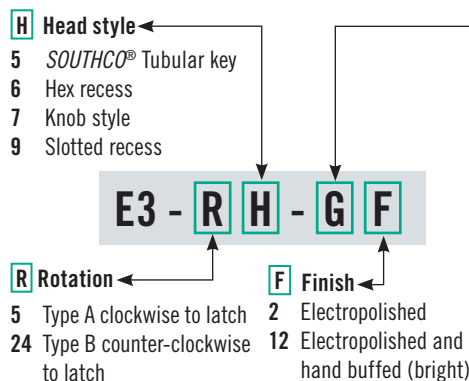


H Head Styles



Part Number Selection

See table



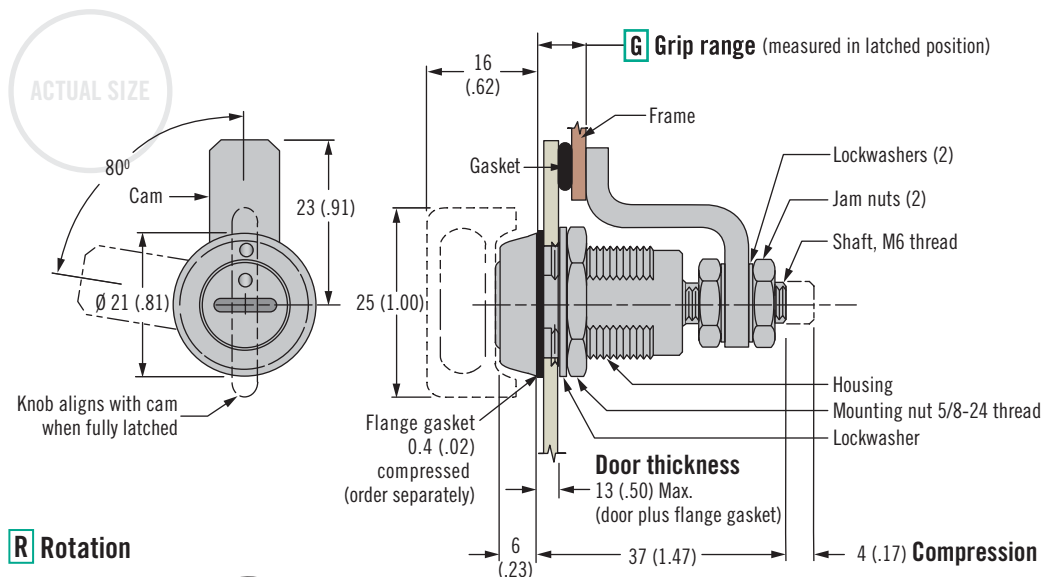
G Grip	Minimum	Maximum
1	3.2 (.13)	6.4 (.25)
2	6.4 (.25)	9.5 (.37)
3	9.5 (.37)	12.7 (.50)
4	12.7 (.50)	15.9 (.63)
5	15.9 (.63)	19 (.75)
6	19 (.75)	22.2 (.87)
7	22.2 (.87)	25.4 (1)
8	25.4 (1)	28.6 (1.13)

Dimensions in millimeters (inch) unless otherwise stated

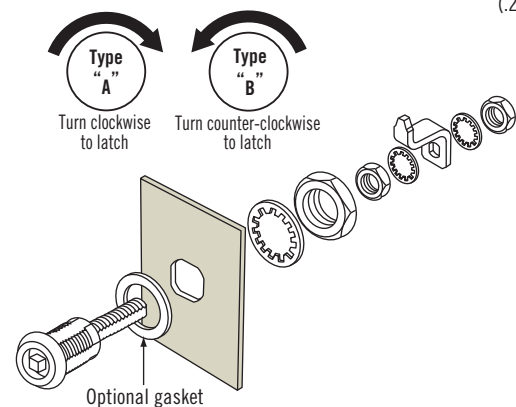
E3 VISE ACTION® Compression Latch

Zinc and plated steel · Tool or hand operated

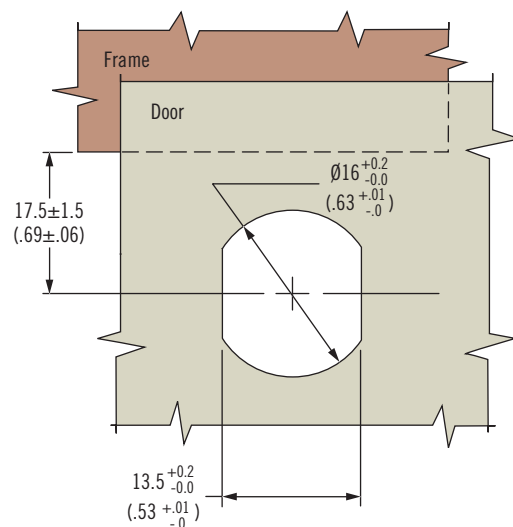
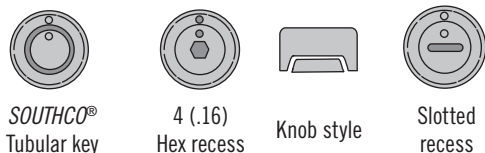
Adjustable grip · 13.5mm size



R Rotation



H Head Styles



- Consistent pre-set compression
- Easy grip adjustment
- Tool or hand operated
- Reduced dimensions
- EN 45545-3 E10 Compliant

Material and Finish

Zinc alloy, powder coated and steel, zinc plated

Performance Details

Maximum static load: 330 N (75 lbf)

Sealing Notes

NEMA 4 / IP65 sealing is enabled by using optional flange gasket. Flange gasket part number: E3-0-30268-02

Installation Notes

Caution: Position cam so latching function can be achieved comfortably by hand.

Accessories

See page 90

H Head style

- 5 SOUTHCO® Tubular key
- 6 Hex recess
- 7 Knob style
- 9 Slotted recess

R Rotation

- 5 Type A clockwise to latch
- 24 Type B counter-clockwise to latch

F Finish

- 1 Chrome plated
- 5 Black powder coated
- 7 Silver powder coated

E3 - R H - G F

G Grip	Minimum	Maximum
1	3.2 (.13)	6.4 (.25)
2	6.4 (.25)	9.5 (.37)
3	9.5 (.37)	12.7 (.50)
4	12.7 (.50)	15.9 (.63)
5	15.9 (.63)	19 (.75)
6	19 (.75)	22.2 (.87)
7	22.2 (.87)	25.4 (1)
8	25.4 (1)	28.6 (1.13)

Part Number Selection

See table



E3 VISE ACTION® Compression Latch

Zinc and plated steel · Tool or hand operated
Adjustable grip · 19.1mm size

- Consistent pre-set compression
- Easy grip adjustment
- Tool operated for security
- EN 45545-3 E10 Compliant

Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Maximum static load:
450 N (100 lbf)

Sealing Notes

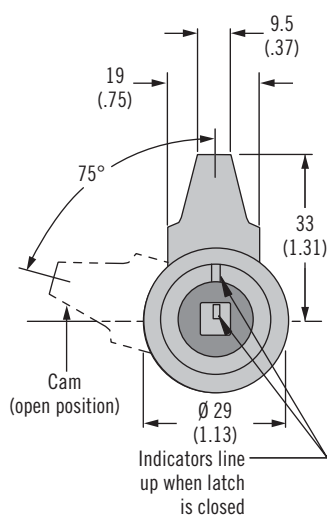
NEMA 4 / IP65 sealing is enabled by using optional flange gasket. Flange gasket part number: E5-17

Installation Notes

Caution: Position cam so latching function can be achieved comfortably by hand. Recommended tightening torque for the mounting nut is 20 N·m (176 in·lbf).

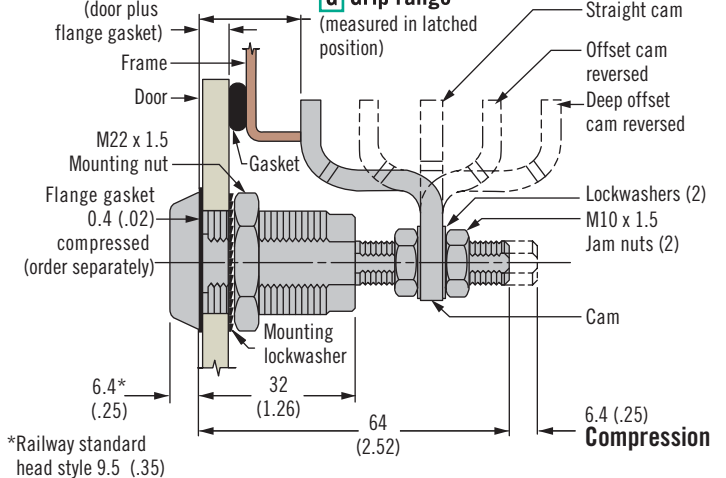
Keys and Accessories

See page 90

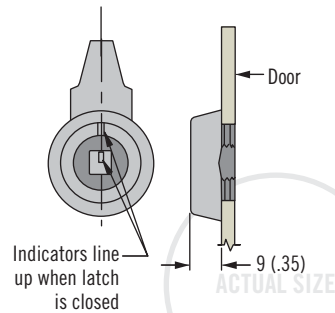


Door thickness

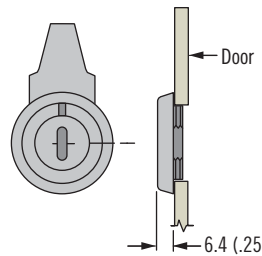
18 (.70) Maximum (door plus flange gasket)



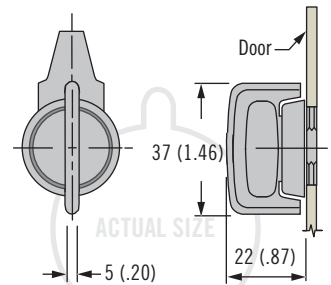
Railway Standard - Bellcore 216



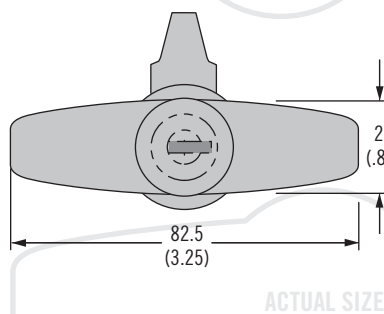
Other Tool Head Styles (slotted recess shown)



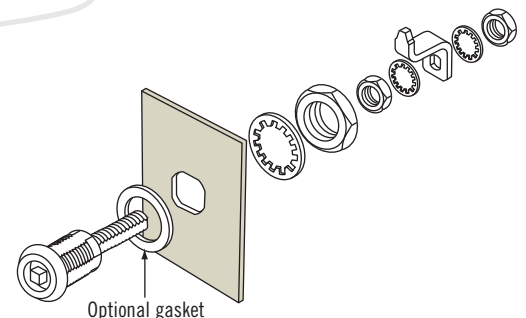
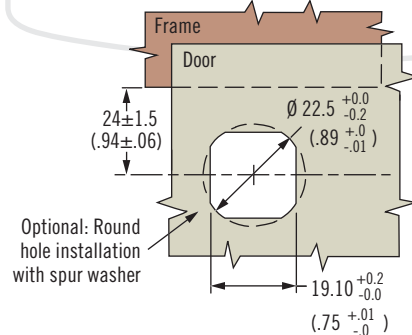
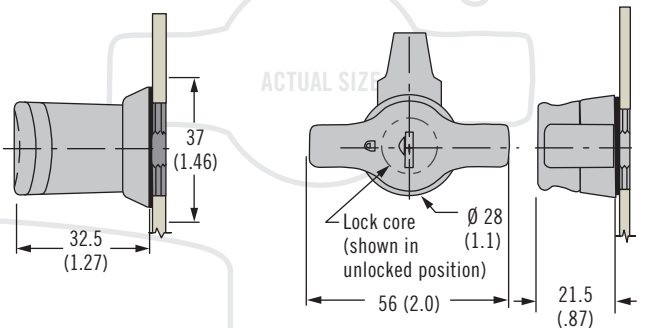
Knob Style



T-Handle Style



Wing Knob Style

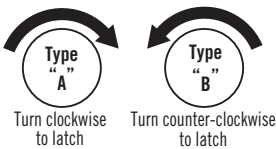


Dimensions in millimeters (inch) unless otherwise stated

H Head Styles (other head styles available)



R Rotation



Part Number Selection
See table

E3 - R H - G F

R Rotation

- 1 Type A clockwise to latch
- 22 Type B counter-clockwise to latch

H Head style

- 1 T-handle, non-locking
- 2 3 (.11) Double bit
- 3 7 (.28) Triangle
- 4 7 (.28) Square
- 5 SOUTHCO® Tubular key
- 6 8 (.32) Hex recess
- 7 Standard knob
- 8 T-Handle, key-locking keyed CH751 (two flat keys supplied)
- 9 Slotted recess
- 10 8 (.32) Square driver
- 11 Railway standard
- 15 Bellcore 216
- 16 Bellcore electronics
- 20 8 (.32) Triangle
- 48 5 (.19) Double bit
- 50 Wing knob, non-locking
- 51 Wing knob, key-locking, keyed CH751 (1 overmolded key supplied)
- 58 Wing knob, key-locking, keyed R001 (1 overmolded key supplied)
- 59 Wing knob (no lock)

F Finish

- 1 Chrome plated
- 5 Black powder coated
- 7 Silver powder coated

G Grip	Minimum	Maximum	Cam Type
1	11.4 (.45)	27.2 (1.07)	Deep offset cam, forward
	66.3 (2.61)	76.2 (3.00)	Deep offset cam, reversed
2	25.4 (1)	41.1 (1.62)	Offset cam, forward
	52.6 (2.07)	68.3 (2.69)	Offset cam, reversed
3	38.9 (1.53)	54.6 (2.15)	Straight cam





E3 VISE ACTION® Compression Latch

Zinc and plated steel · Tool or hand operated

Fixed grip · 19.1mm size

- Consistent pre-set compression
- Quick install
- Reduced internal protrusion
- EN 45545-3 E10 Compliant

Material and Finish

Zinc alloy, powder coated or chrome plated and steel plated

Performance Details

Maximum static load: 300 N (67 lbf)

Sealing Notes

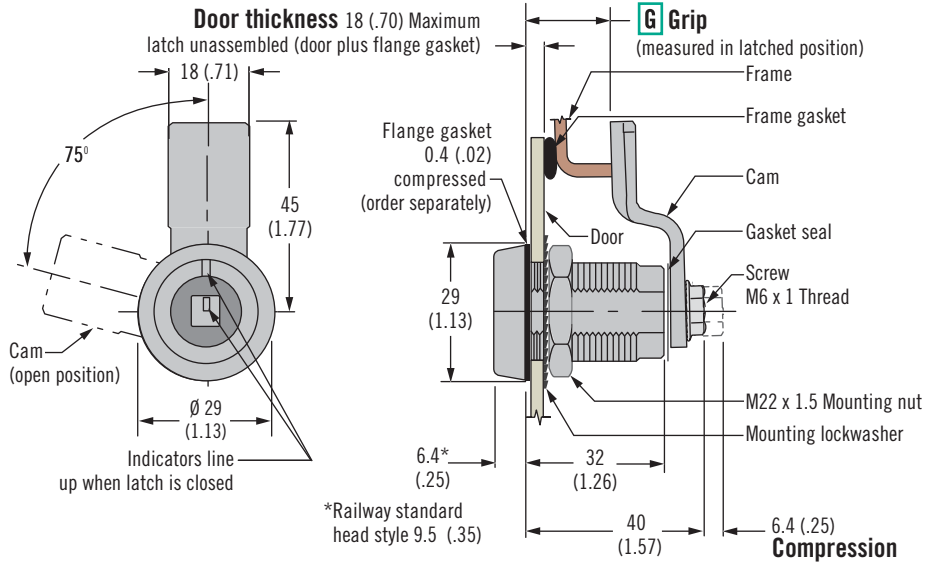
NEMA 4 / IP65 sealing is enabled by using optional flange gasket. Flange gasket part number: E5-17

Installation Notes

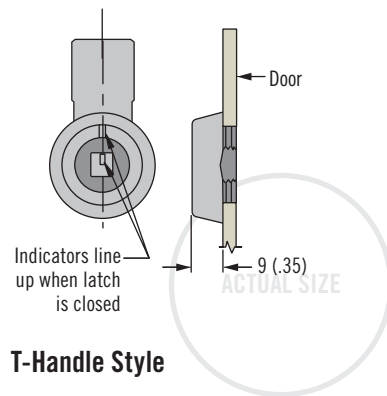
Recommended tightening torque for the mounting nut is 20 N·m (176 in·lbf), and for the mounting screw in 10 N·m (88 in·lbf)

Keys and Accessories

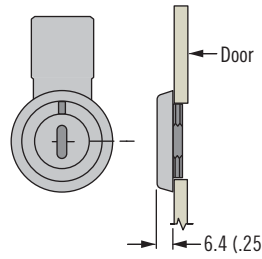
See page 90



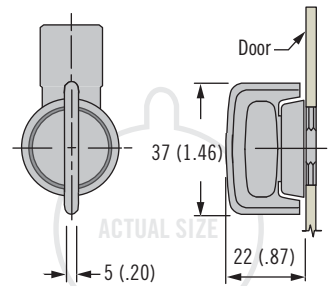
Railway Standard - Bellcore 216



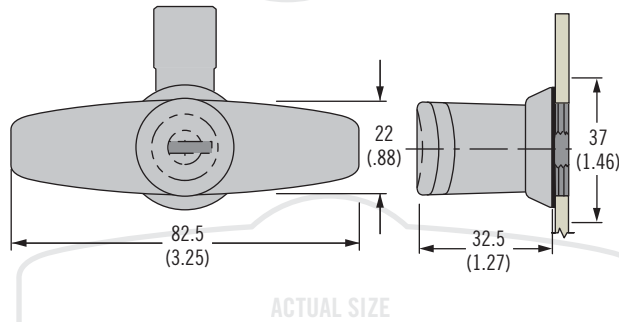
Other Tool Head Styles (slotted recess shown)



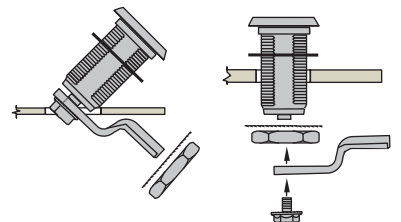
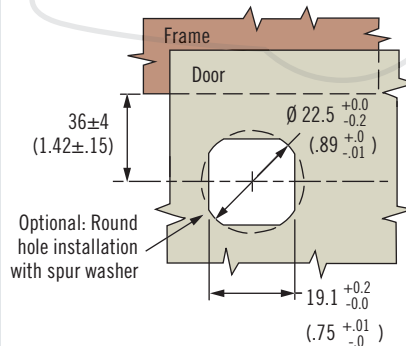
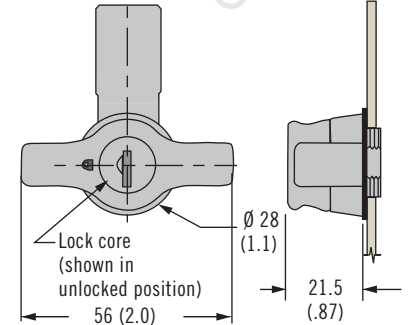
Knob Style



T-Handle Style



Wing Knob Style



Assembled Installation

Unassembled Installation

Dimensions in millimeters (inch) unless otherwise stated

H Head Styles (other head styles available)



Part Number Selection
See table

E3 - R H - G F

- R Rotation**
- 10 Type A clockwise to latch - Latch assembled
 - 12 Type A clockwise to latch - Latch unassembled
 - 27 Type B counter-clockwise to latch - Latch assembled
 - 29 Type B counter-clockwise to latch - Latch unassembled

- F Finish**
- 1 Chrome plated
 - 5 Black powder coated
 - 7 Silver powder coated

- H Head style**
- 1 T-handle, non-locking
 - 2 3 (.11) Double bit
 - 3 7 (.28) Triangle
 - 4 7 (.28) Square
 - 5 SOUTHCO® Tubular key
 - 6 8 (.32) Hex recess
 - 7 Standard knob
 - 8 T-Handle, key-locking keyed CH751 (two flat keys supplied)
 - 9 Slotted recess
 - 10 8 (.32) Square driver
 - 11 Railway standard
 - 15 Bellcore 216
 - 16 Bellcore electronics
 - 20 8 (.32) Triangle
 - 48 5 (.19) Double bit
 - 50 Wing knob, non-locking
 - 51 Wing knob, locking, keyed CH751 (1 overmolded key supplied)
 - 58 Wing knob, locking, keyed R001 (1 overmolded key supplied)
 - 59 Wing knob (no lock)

Total Grip		G	Maximum Door Thickness for Assembled Latch	Total Grip		G	Maximum Door Thickness for Assembled Latch
15 (.59)	00		Use unassembled	35 (1.38)	10	7 (.28)	
17 (.67)	01		Use unassembled	37 (1.46)	11		
19 (.75)	02		1 (.04)	39 (1.53)	12		
21 (.83)	03		2 (.08)	41 (1.61)	13		
23 (.91)	04		4 (.16)	43 (1.69)	14		
25 (.98)	05		5 (.20)	45 (1.77)	15	7 (.28)	
27 (1.06)	06		6 (.24)	47 (1.85)	16		
29 (1.14)	07		7 (.28)	49 (1.93)	17		
31 (1.22)	08			51 (2.01)	18		
33 (1.30)	09			53 (2.09)	19		



E3 VISE ACTION® Compression Latch

Zinc and plated steel · Tool or hand operated

Three hole mount · Adjustable grip · 19.1mm size

- Consistent pre-set compression
- Easy grip adjustment

Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Maximum static load:
450 N (100 lbf)

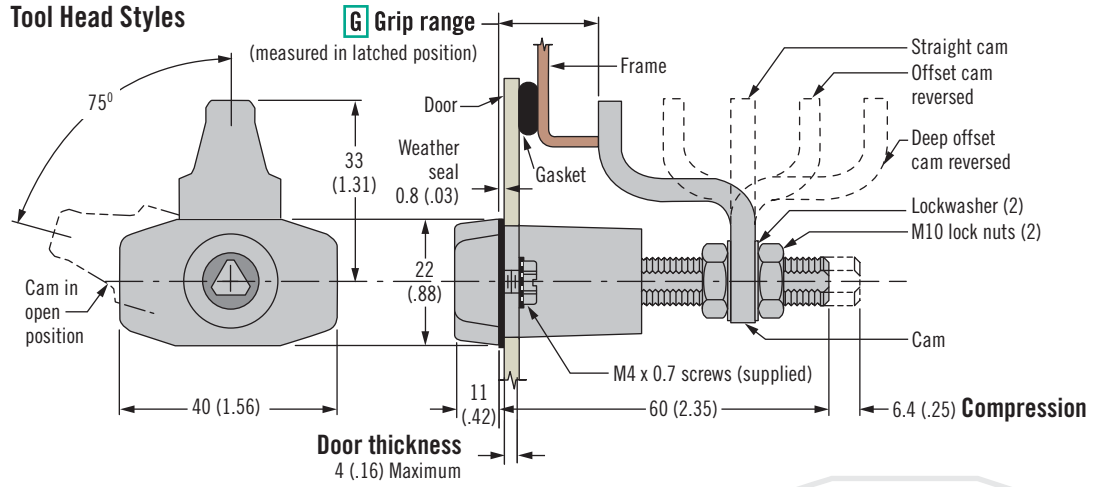
Installation Notes

For door thickness greater than 4 (.16) calculate screw length using the following formula:
Door thickness + 6 (.24)

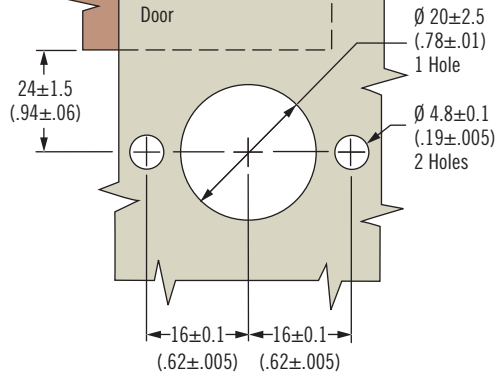
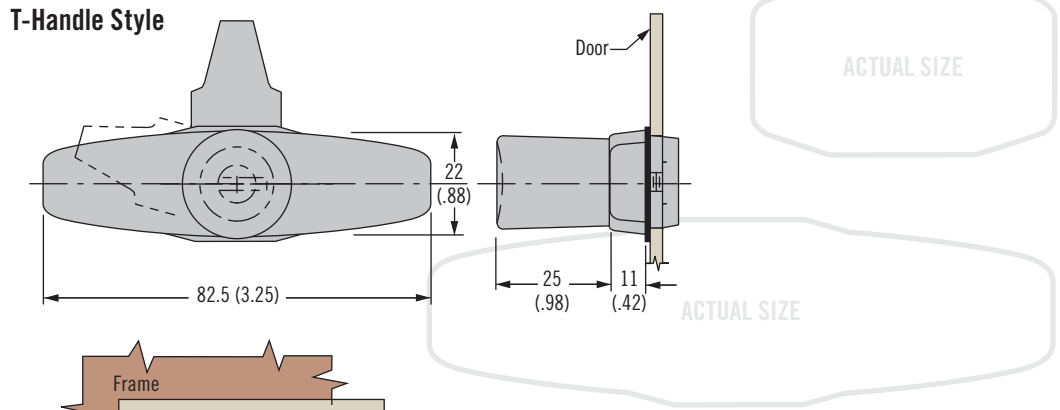
Keys and Accessories

See page 90

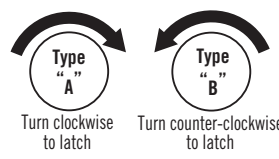
Tool Head Styles



T-Handle Style



R Rotation



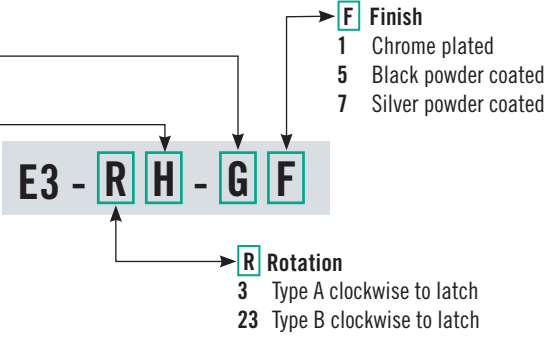
Part Number Selection

See table

G Grip	Minimum	Maximum	Cam Type
1	7.9 (.31)	23.6 (.93)	Deep offset cam, forward
	62.7 (2.47)	76.2 (3.00)	Deep offset cam, reversed
2	21.8 (.86)	37.3 (1.47)	Offset cam, forward
	49 (1.93)	64.8 (2.55)	Offset cam, reversed
3	35.3 (1.39)	51 (2.00)	Straight cam

H Head style

- 1 T-handle non-locking
- 2 3 (.11) Double bit
- 3 7 (.28) Triangle
- 4 7 (.28) Square
- 5 SOUTHCO® Tubular key
- 6 8 (.32) Hex recess
- 8 T-Handle locking keyed CH751 (two flat keys supplied)



F Finish

- 1 Chrome plated
- 5 Black powder coated
- 7 Silver powder coated

R Rotation

- 3 Type A clockwise to latch
- 23 Type B clockwise to latch

Dimensions in millimeters (inch) unless otherwise stated

E3 VISE ACTION® Compression Latch

Aluminum · Tool Operated · Fixed grip
19.1mm size



- Light Weight
- Premium finish and corrosion resistance
- Reduced internal protrusion
- EN 45545-3 E30 Compliant

Material and Finish

Aluminum, Anodized or Powder Coated.

Black hard anodized assembly - Stainless Steel cam and hardware
All other finishes - Steel Cam and hardware

Performance Details

Maximum static load: 450 N (102 lbf)
Complies with DIN EN 61373 vibration standard

Sealing Notes

NEMA 4 and IP65 achieved using gasket supplied

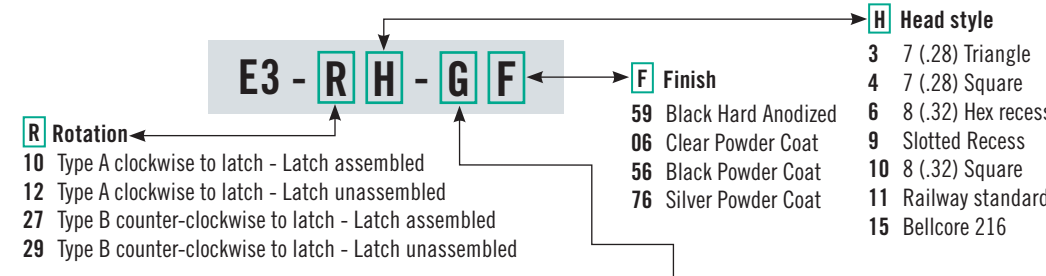
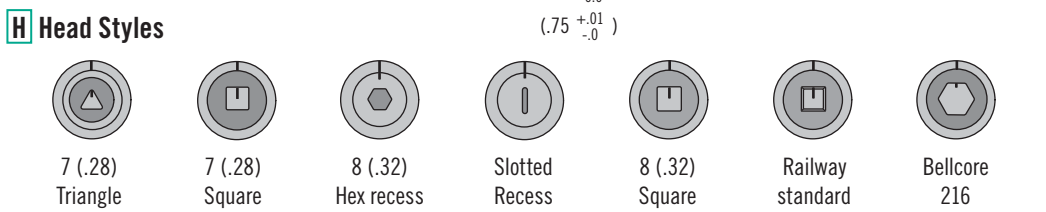
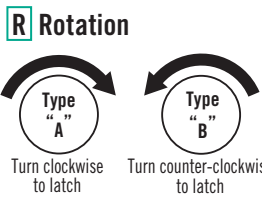
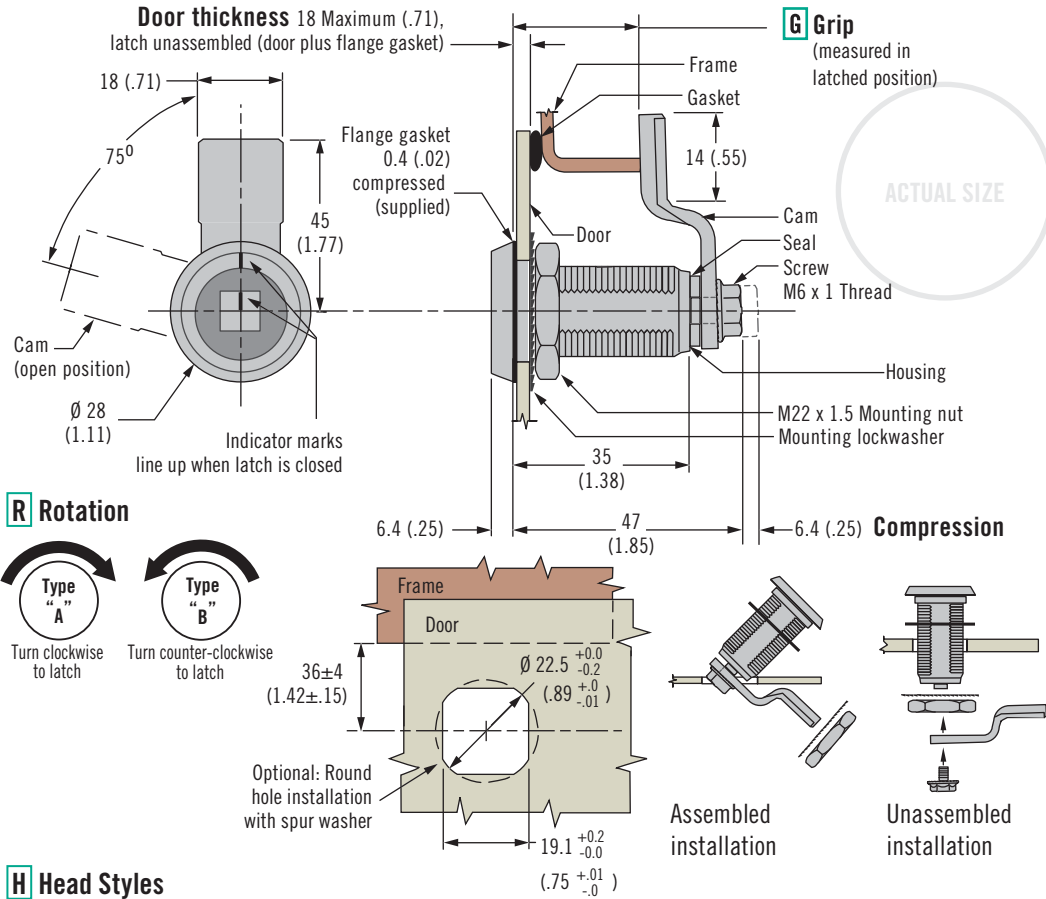
Installation Notes

Recommended tightening torque for the mounting nut is 20 N·m (176 in·lbf), and for the mounting screw is 10 N·m (88 in·lbf)

Keys and accessories see page 90

Part Number Selection

Select grip from table, if your grip is between two options choose smaller.



- R** Rotation
- 10 Type A clockwise to latch - Latch assembled
 - 12 Type A clockwise to latch - Latch unassembled
 - 27 Type B counter-clockwise to latch - Latch assembled
 - 29 Type B counter-clockwise to latch - Latch unassembled

- F** Finish
- 59 Black Hard Anodized
 - 06 Clear Powder Coat
 - 56 Black Powder Coat
 - 76 Silver Powder Coat
- H** Head style
- 3 7 (.28) Triangle
 - 4 7 (.28) Square
 - 6 8 (.32) Hex recess
 - 9 Slotted Recess
 - 10 8 (.32) Square
 - 11 Railway standard
 - 15 Bellcore 216

G Grip Table											
Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch	Total Grip	G	Max. Door Thickness for Assembled Latch
20 (.79)	00	1 (.04)	30 (1.18)	05	7 (.28)	40 (1.57)	10	7 (.28)	50 (1.97)	15	7 (.28)
22 (.87)	01	2 (.08)		06		42 (1.65)	11		52 (2.05)	16	
24 (.94)	02	4 (.16)		07		44 (1.73)	12		54 (2.13)	17	
26 (1.02)	03	5 (.20)		08		46 (1.81)	13		56 (2.20)	18	
28 (1.10)	04	6 (.24)		09		48 (1.89)	14		58 (2.28)	19	



E3 VISE ACTION® Compression Latch Accessories

Keys

Material and Finish

Steel, zinc plated

Part Number

Steel tubular key (order separately)
 Small E3 latches: E3-26-819-15
 Large E3 latches: E3-5-15

Material and Finish

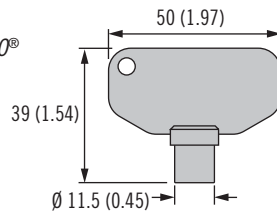
Zinc alloy or nylon

Notes

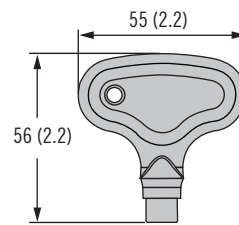
*Does not work with 7mm tapered triangle

Keys - Steel

For latches with *SOUTHCO*®
 Tubular key head styles



Keys - Zinc or Nylon



- H** Head style
- 2 3 (.11) Double bit
 - 3 7 (.28) Triangle*
 - 4 7 (.28) Square
 - 7 8 (.32) Triangle
 - 8 8 (.32) Square recess
 - 9 5 (.19) Double bit (nylon only)
 - 10 8 (.32) Square male (zinc only)
 - 11 Bellcore electronics
 - 12 Bellcore 216 (zinc only)

- F** Finish
- 1 Plated zinc
 - 2 Natural zinc
 - 3 Nylon black

E3 - **H** - **F**

Key Styles

- 2 3 (.11) Double bit
- 3 7 (.28) Triangle
- 4 7 (.28) Square
- 7 8 (.32) Triangle
- 8 8 (.32) Square recess
- 9 5 (.19) Double bit
- 10 8 (.32) Square male
- 11 Bellcore electronics
- 12 Bellcore 216

Part Number

Overmolded key CH751:
 Single: PK-10-10-05
 Pair: PK-10-01-05

Overmolded key R001:
 Single: PK-10-10-05-KR001
 Pair: PK-10-01-05-KR001

Flat key
 Pair: PK-10-01

Overmolded Keys

Key CH751
 PK-10-10-05

Key R001
 PK-10-10-05-KR001



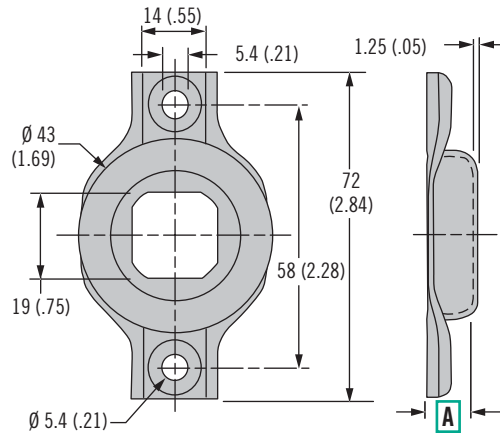
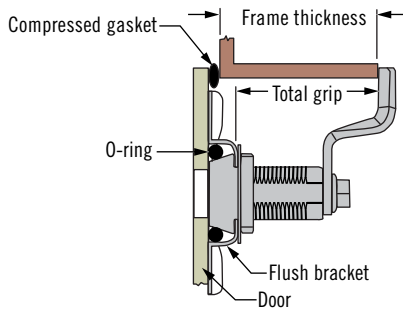
Flat Keys

Key CH751
 PK-10-01



E3 VISE ACTION® Compression Latch Accessories

Fixed bracket for flush mounting



A	Part Number	Material
6.6	E3-77-251-12	Galvanized steel
*9.3	E3-77-252-12	Galvanized steel
6.6	E3-77-251-24	304 Stainless steel
*9.3	E3-77-252-24	304 Stainless steel
* For use with Railway standard or Bellcore 216 style only		

To calculate the **Total Grip**, use the following formula:

Frame Thickness + Compressed Gasket - A

Use this **Total Grip** with the appropriate E3 tables in the *SOUTHCO® Handbook* to determine cam type.

Material and Finish

Stainless steel or galvanized steel with rubber o-ring

Sealing Notes

Environmental sealing is achieved by using latch with flange gasket (optional or included with latch see pages 78-89) and sealing the mounting screw threads.

Notes

For use with 19.1mm size single hole mount tool operated E3 VISE ACTION® compression latches, see pages 78-81, 84-87, 89

Door preparation

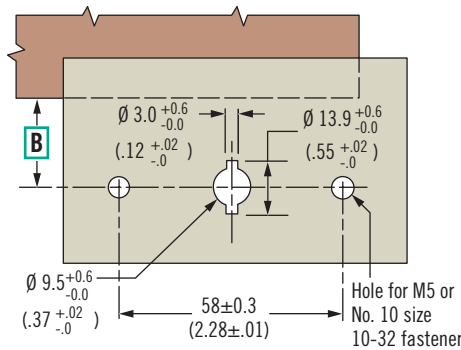
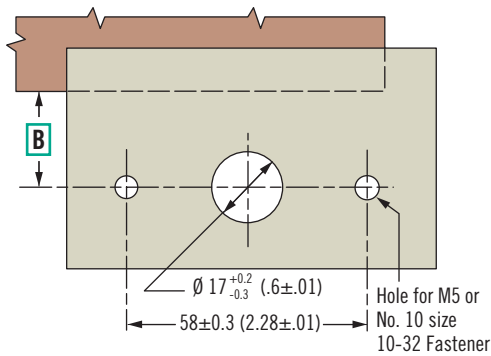
For **B** dimensions:

Large adjustable grip 24 ± 1.5 (.94 ± .06)

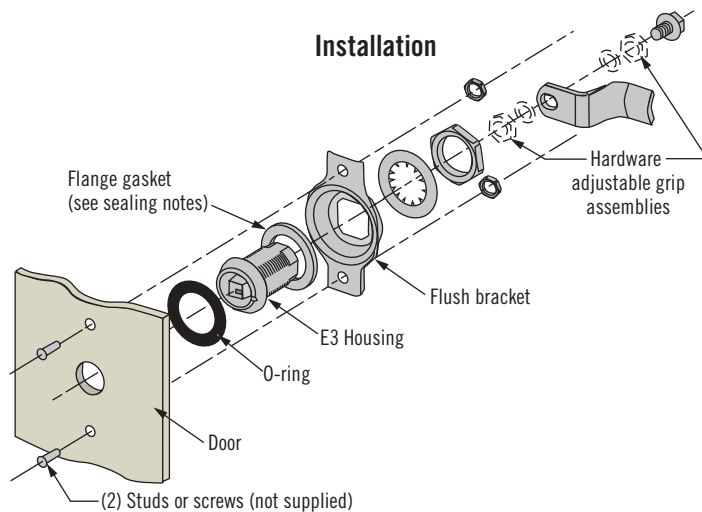
Fixed grip 36 ± 4 (1.42 ± .15)

Double bit (key retained style)

Key can only be removed in the latch closed position.



Installation





E3 VISE ACTION® Compression Latch Accessories

Sealing & spur washers · Sealing covers · Sleeve nut

Material and Finish

Sealing washers: Neoprene, natural

Spur washer: Steel, zinc plated

Sealing cover: Thermoplastic elastomer, black

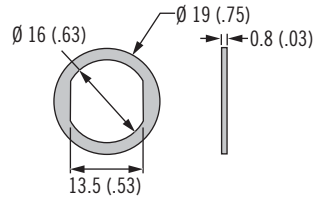
Notes

Spur washer provides for round hole installation in wood and similar materials of low density

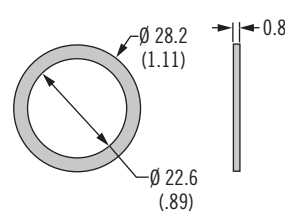
Sealing cover cannot be used with Railway standard or Bellcore 216 styles

Sealing Washers

13.5mm size

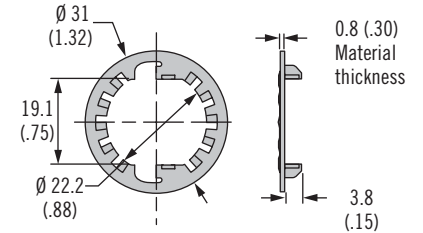


19.1mm size

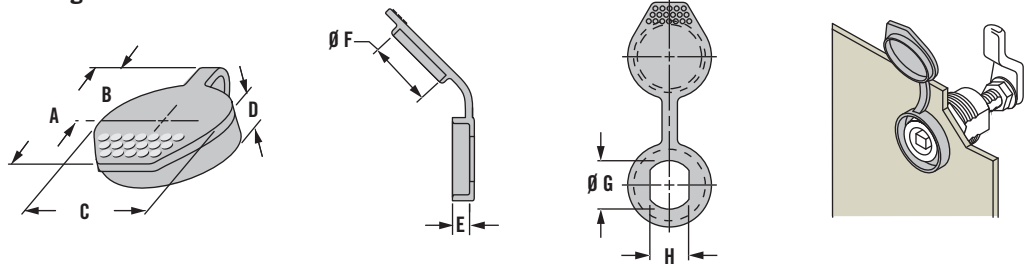


Spur Washer

19.1mm size



Sealing Cover



Latch Installation Hole Size		Dimensions					
Ø G	Distance across flat H	A	B	Ø C	D	E	Ø F
16 (.63)	13.5 (.53)	40 (1.58)	20 (.85)	29 (1.13)	10.5 (.42)	6.1 (.24)	22.3 (.88)
22.5 (.88)	19.6 (.77)	47 (1.84)	28 (1.09)	35 (1.38)	11.7 (.46)	6.9 (.27)	28.7 (1.13)

Part Number

See table

Type	Part Number	Adjustment Formula
Sealing washer 13.5mm size	E3-0-30268-02	Add 0.4 (.02) to door thickness
Sealing washer 19.1mm size	E5-17	Add 0.4 (.02) to door thickness
Spur washer 19.1mm size	90-6-875	Add 0.8 (.03) to door thickness
Sealing cover 13.5mm size	90-1	Add 2.3 (.09) to door thickness
Sealing cover 19.1mm size	90-3	Add 2.3 (.09) to door thickness

Material and Finish

Zinc alloy

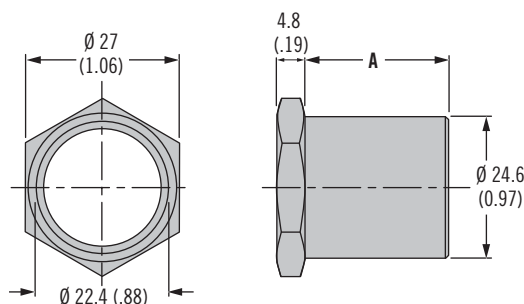
Installation Notes

For use in double skin doors. Produce standard panel cutout in outer door and for the inner door produce 25 (.98) hole for sleeve nut.

Part Number

See table

Sleeve Nut M22 Thread (for 19.1mm size E3 only)



A	Part Number
12.7 (.50)	E3-34-263-36
25 (.98)	E3-34-264-36

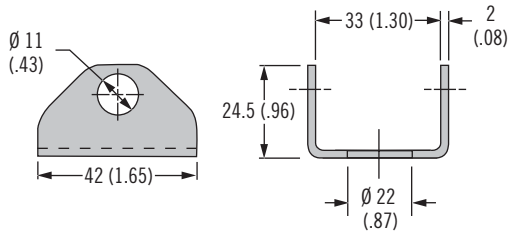
Dimensions in millimeters (inch) unless otherwise stated

E3 VISE ACTION® Compression Latch Accessories

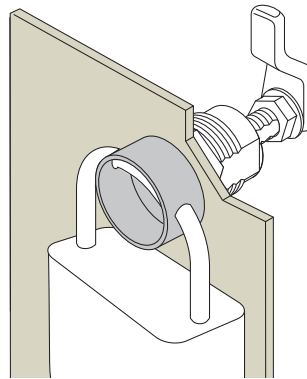
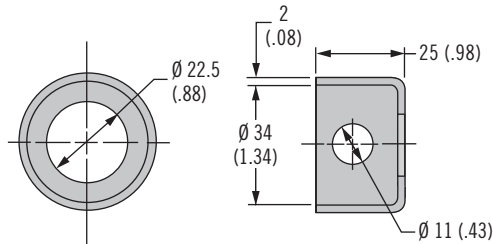
Padlock brackets · Finger pulls



Padlock Bracket (Square)



Padlock Bracket (Round)



Material and Finish

Padlock bracket: Stainless steel, black powder coated
 Pull tab: Nylon, black

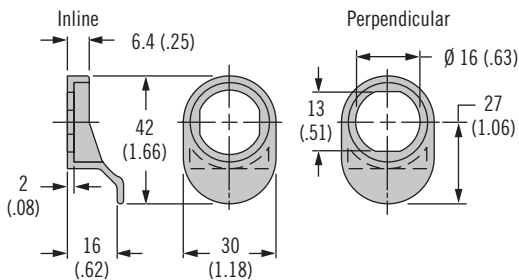
Sealing Notes

To provide sealing use two flange gaskets and add compressed thickness of each flange gasket and bracket thickness to your door thickness.

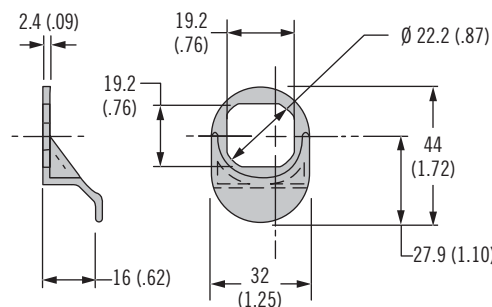
Notes

Padlock bracket: For 19.1mm size single hole mount tool operated only
 Only unassembled styles can be used with round padlock bracket

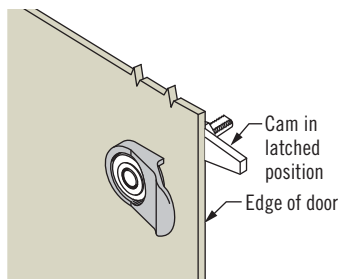
Pull Tab (13.5mm size)



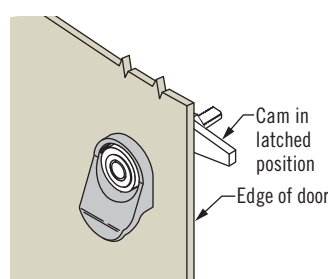
Pull Tab (19.1mm size)



Pull tab in-line with cam



Pull tab perpendicular to cam



Type	Part Number	Adjustment Formula
Padlock bracket square	E3-77-101-31	Add 2 (.08) to door thickness
Padlock bracket round	E3-77-102-31	Add 2 (.08) to door thickness
Pull tab 13.5mm size - In-line	E3-27-61	Add 2 (.08) to door thickness
Pull tab 13.5mm size - Perpendicular	E3-27-62	Add 2 (.08) to door thickness
Pull tab 19.1mm size	E3-27-1	Add 2.4 (.09) to door thickness

Part Number

See table



N2 Compression Latch

Lift & turn series · Folding T-handle · Flush cup style · Adjustable grip

- Heavy-duty performance
- Flush profile when latched
- Easy grip adjustment
- Intuitive operation

Material and Finish

Stainless steel, aluminum, black powder coated and plated steel

Performance Details

Maximum static load:
1000 N (225 lbf)

Installation Notes

1. Insert latch and tighten 4 mounting nuts.
2. With latch in closed position, adjust jam nuts to position cam at correct grip.
Maximum tightening torque:
20 N•m (177 in•lbf)

Keys

See page 90

Notes

N2 product family:
See opposite page for details

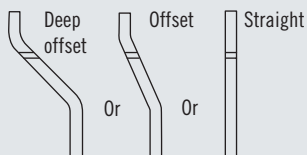
Part Number Selection

See table

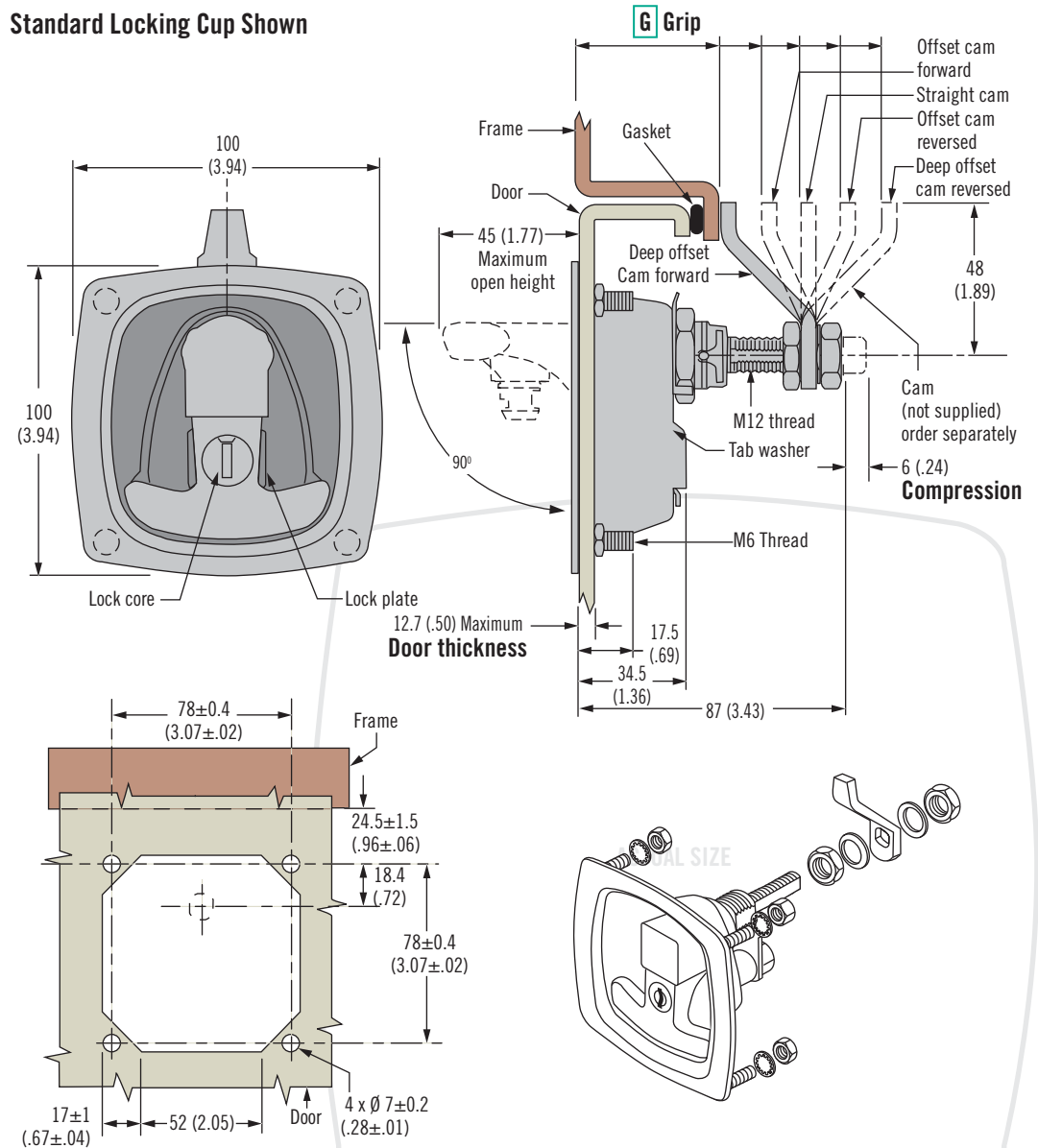
Order both parts separately

Choose latch body style

Choose cam (see table)



Standard Locking Cup Shown



Latch part number (no cam)

N2 - 2 - C 0 L - 01 - F

- C** Cup style
 - 3 Standard cup
 - 5 Medium cup
 - 7 Large cup
- L** Locking style
 - 0 Non-locking
 - 1 Key-locking keyed alike CH751 (2 keys supplied)
- F** Finish
 - 5 Black powder coated
 - 20 Polished stainless

Cam Part Number Table (order separately)

Part Number	Grip		Cam Type
	Minimum	Maximum	
N2-21-101-12	28 (1.10)	43 (1.69)	Deep offset cam, forward
	88 (3.46)	104 (4.09)	Deep offset cam, reversed
N2-21-102-12	43 (1.69)	58 (2.28)	Offset cam, forward
	73 (2.87)	88 (3.46)	Offset cam, reversed
N2-21-103-12	58 (2.28)	73 (2.87)	Straight

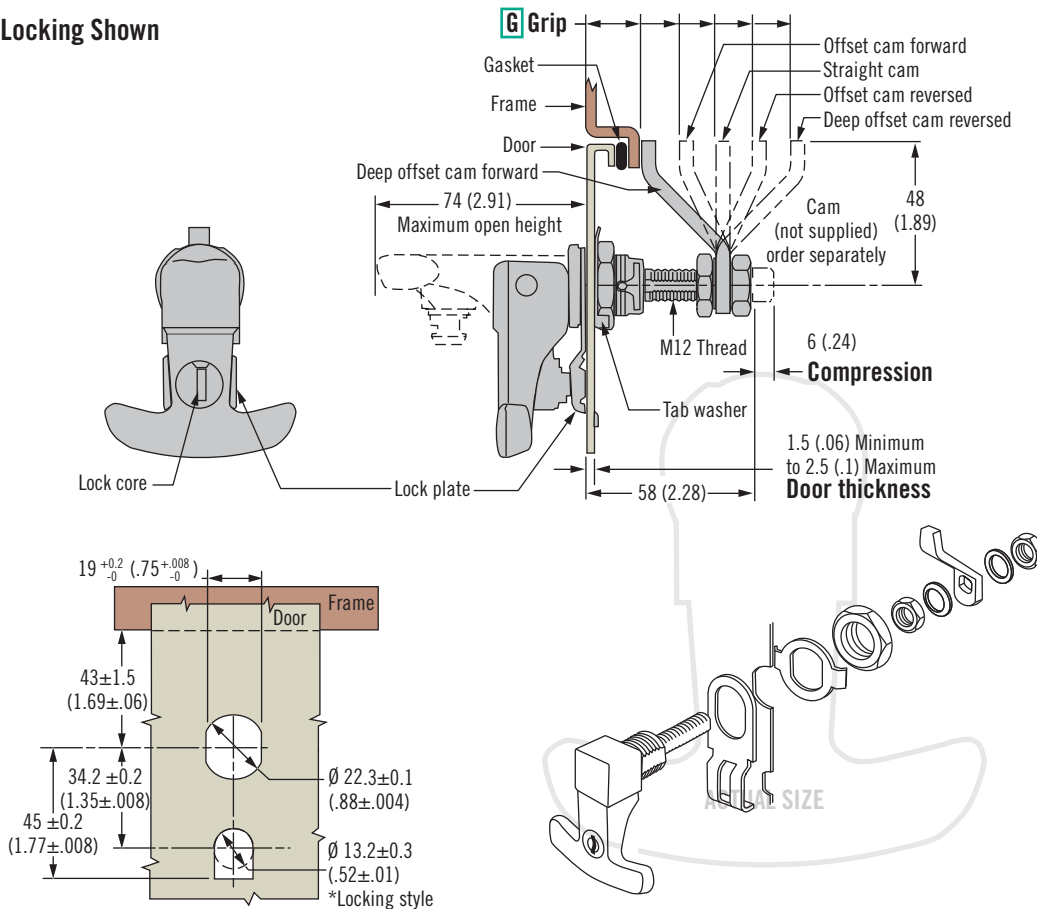
Dimensions in millimeters (inch) unless otherwise stated

N2 Compression Latch

Lift & turn series · Folding T-handle · No cup style · Adjustable grip



Locking Shown



- Heavy-duty performance
- Low profile when latched
- Easy grip adjustment
- Intuitive operation

Material and Finish

Stainless steel, aluminum, black powder coated and plated steel

Performance Details

Maximum static load:
1000 N (225 lbf)

Installation Notes

1. Insert latch and tighten mounting nut.
2. Bend tab washer over mounting nut.
3. With latch in closed position, adjust jam nuts to position cam at correct grip. Maximum tightening torque: 20 N·m (177 in·lbf)

Keys

See page 90

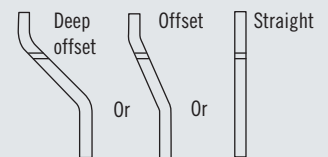
Part Number Selection

See table

Order both parts separately

Choose latch body style

Choose cam (see table)



F Finish
5 Black powder coated
20 Polished stainless

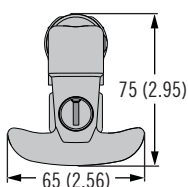
L Locking style
0 Non-locking
1 Key-locking keyed alike
CH751 (2 keys supplied)

Latch part number (no cam)

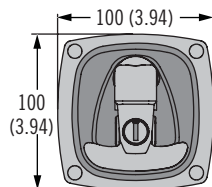
N2 - 2 - 10 L - 01 - F

Cam Part Number Table (order separately)			
Part Number	Grip		Cam Type
	Minimum	Maximum	
N2-21-101-12	2.5 (.10)	15 (.59)	Deep offset cam, forward
	60 (2.36)	75 (2.95)	Deep offset cam, reversed
N2-21-102-12	15 (.59)	30 (1.18)	Offset cam, forward
	45 (1.77)	60 (2.36)	Offset cam, reversed
N2-21-103-12	30 (1.18)	45 (1.77)	Straight

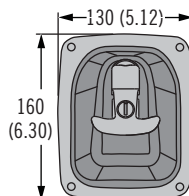
N2 Product Family



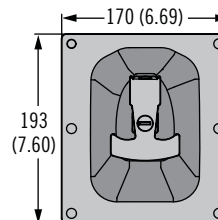
No Cup Style



Standard Cup



Medium Cup



Large Cup



Dimensions in millimeters (inch) unless otherwise stated

Notes

Other styles available
Custom colors and keycodes
Contact Southco for details



62 Compression Latch

Lift & turn series · Flush style · Adjustable grip

- Low profile
- Easy grip adjustment
- Intuitive operation

Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Maximum static load: 220N (50 lbf)

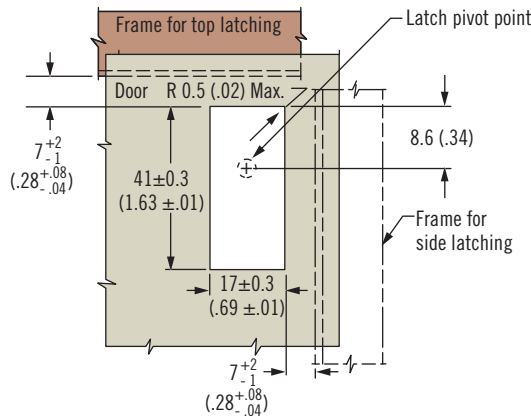
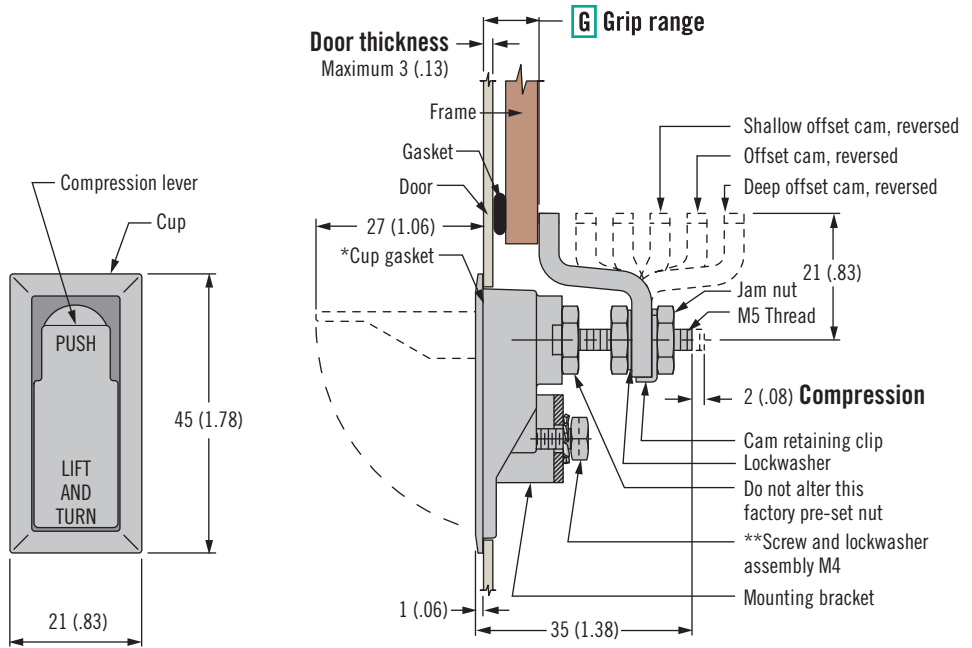
Sealing Notes

* Sealing the mounting screw threads required.

Installation Notes

**Screw and lockwasher assembly M4 x 10. For door thickness greater than 3 (.11) calculate screw length using the following formula:
Door thickness + 7 (.28)

***Add 0.4 (.02) to door thickness when using cup gasket



ACTUAL SIZE

Part Number Selection

See table



S Sealing option

- 0 No Gasket
- 4 Gasket Included see *sealing and ***installation notes

F Finish

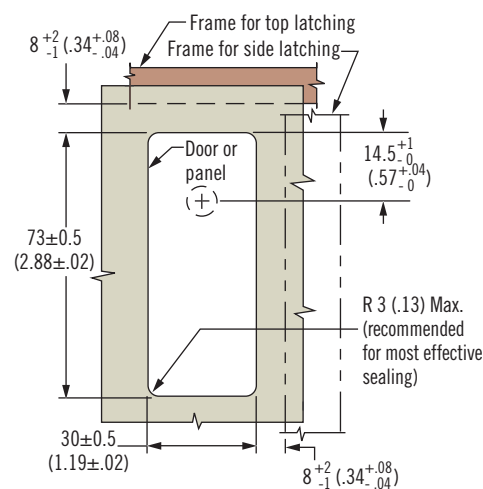
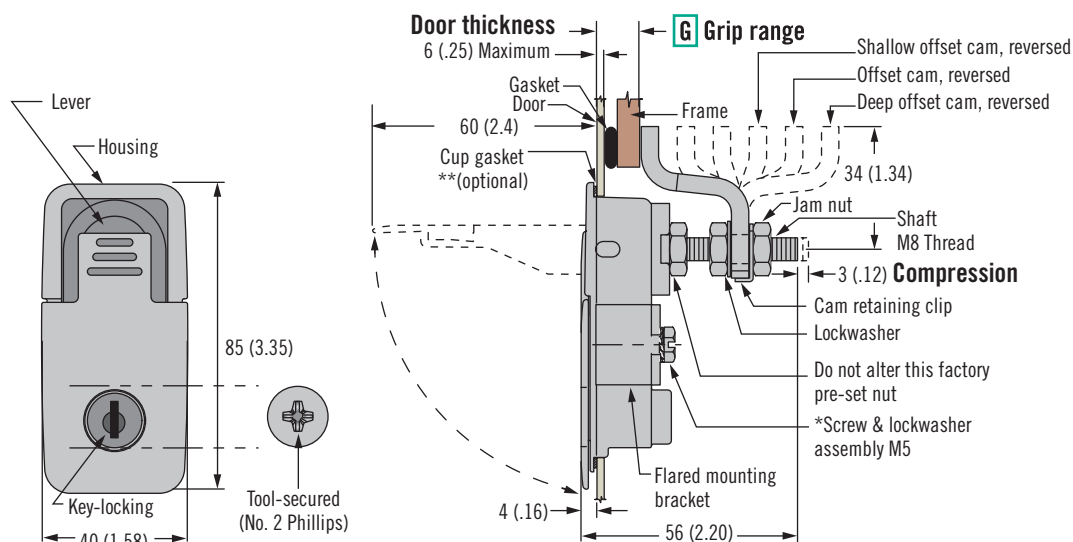
- 1 Polished chrome
- 2 Brushed chrome
- 5 Black powder coated

G Grip	Minimum	Maximum	Cam Type
1	4.5 (.17)	10.5 (.41)	Deep offset cam, forward
	34.5 (1.35)	40.5 (1.59)	Deep offset cam, reversed
2	10.5 (.41)	16.5 (.65)	Offset cam forward
	28.5 (1.12)	34.5 (1.35)	Offset cam reverse
3	16.5 (.65)	22.5 (.88)	Shallow offset cam, forward
	22.5 (.88)	28.5 (1.12)	Shallow offset cam, reversed

Dimensions in millimeters (inch) unless otherwise stated

62 Compression Latch

Lift & turn series · Flush style · Adjustable grip



- Low profile
- Intuitive operation

Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Maximum static load:
440 N (100 lbf)

Sealing Notes

Environmental sealing is achieved by using a cup gasket and sealing the mounting screw threads.

Installation Notes

*Screw and lockwasher assembly M5 x 16. For door thickness greater than 6 (.25) calculate screw length using the following formula:
Door thickness + 10 (.39)

**Add 0.4 (.02) to door thickness when using cup gasket

Accessories

Cup gasket:
Part number: 62-973-431

Keys

PK-10-01
See page 90

Notes

For lock core selection and a complete overview of the SOUTHCO® Key-Choice System see page 158

Part Number Selection

See table

62 - 4 L - G F 1 - P

L Lock style

- 0 Non-locking
- 2 Key-locking without dust shutter keyed alike CH751
- 3 Tool secured No. 2 Phillips
- 21 Locking without lock core (order separately see page 158)

P Packaging option

- 3 Layer packed
- 2 Individually packed

F Finish

- 0 Textured chrome
- 1 Polished chrome
- 5 Black powder coated

G Grip	Minimum	Maximum	Cam Type
1	6 (.23)	16 (.63)	Deep offset cam, forward
	56 (2.20)	66 (2.59)	Deep offset cam, reversed
2	16 (.63)	26 (1.02)	Offset cam forward
	46 (1.81)	56 (2.20)	Offset cam reverse
3	26 (1.02)	36 (1.41)	Shallow offset cam, forward
	36 (1.41)	46 (1.81)	Shallow offset cam, reversed



62 Compression Latch

Lift & turn series · Flush style · Adjustable grip

- Low profile when latched
- Easy grip adjustment
- Intuitive operation

Material and Finish

Zinc alloy, chrome brushed and steel, zinc plated

Performance Details

Maximum static load:
1250 N (280 lbf)

Installation Notes

*Screw and lockwasher assembly 5/16-18UNC x 3/4.
For door thickness greater than 6 (.25) calculate screw length using the following formula:
Door thickness + 7 (.28)

Accessories

Actuator for three point locking assembly (order separately)
Part number: 62-19-501-15

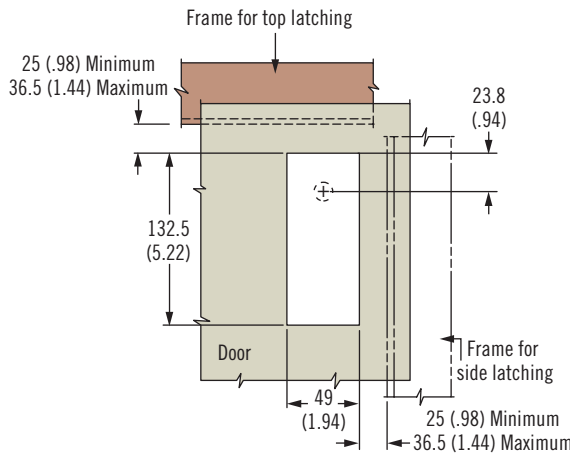
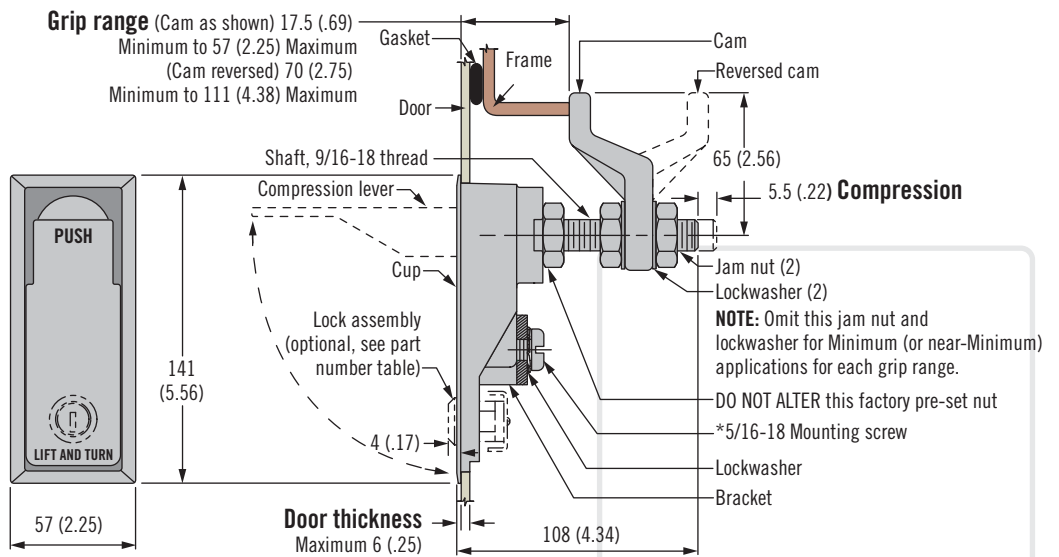


Keys

See page 90

Part Number Selection

See table



ACTUAL SIZE

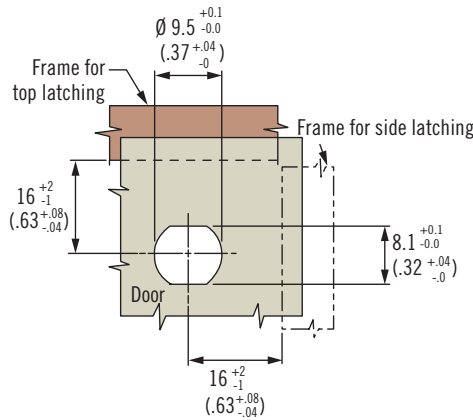
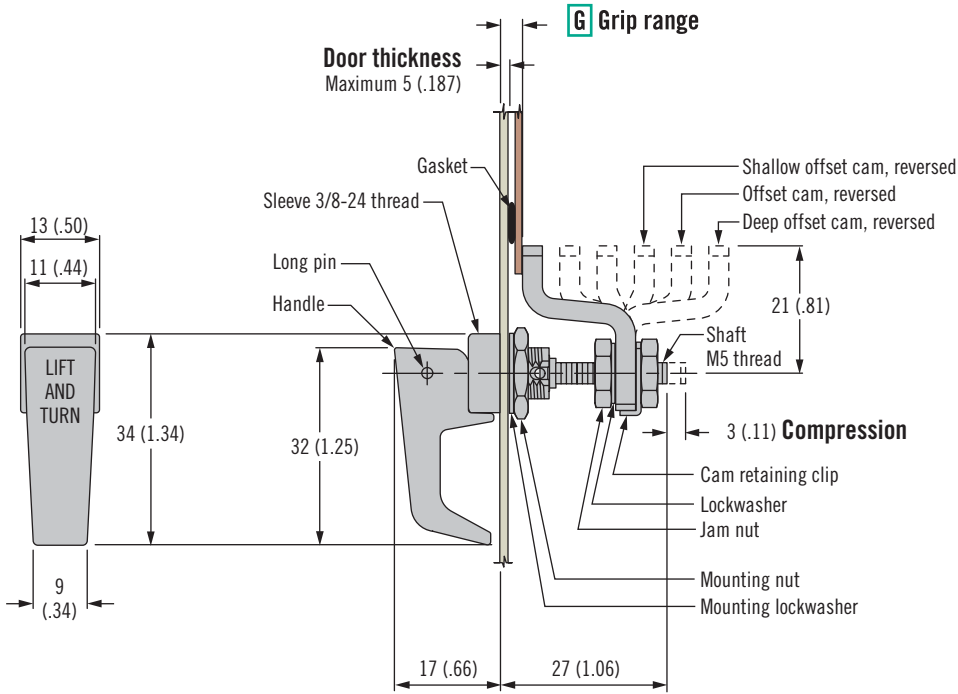
H Head style

- 0 Non-locking
- 1 Key-locking keyed alike CH751 (two flat keys supplied)

62 - 10 - 8 **H** 1 - 20

62 Compression Latch

Lift & turn series · Handle style · Adjustable grip



- Easy grip adjustment
- Intuitive operation

Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Maximum static load: 220 N (50 lbf)



Part Number Selection

See table

62 - 20 - G F

F Finish

1 Polished chrome
5 Black powder coated

G Grip	Minimum	Maximum	Cam Type
1	0 (0)	4 (.16)	Deep offset cam, forward
	28 (1.10)	34 (1.34)	Deep offset cam, reversed
2	4 (.16)	10 (.39)	Offset cam, forward
	22 (.87)	28 (1.10)	Offset cam, reverse
3	10 (.39)	16 (.63)	Shallow offset cam, forward
	16 (.63)	22 (.87)	Shallow offset cam, reversed



62 Compression Latch

Lift & turn series · Handle style · Adjustable grip

- Easy grip adjustment
- Intuitive operation

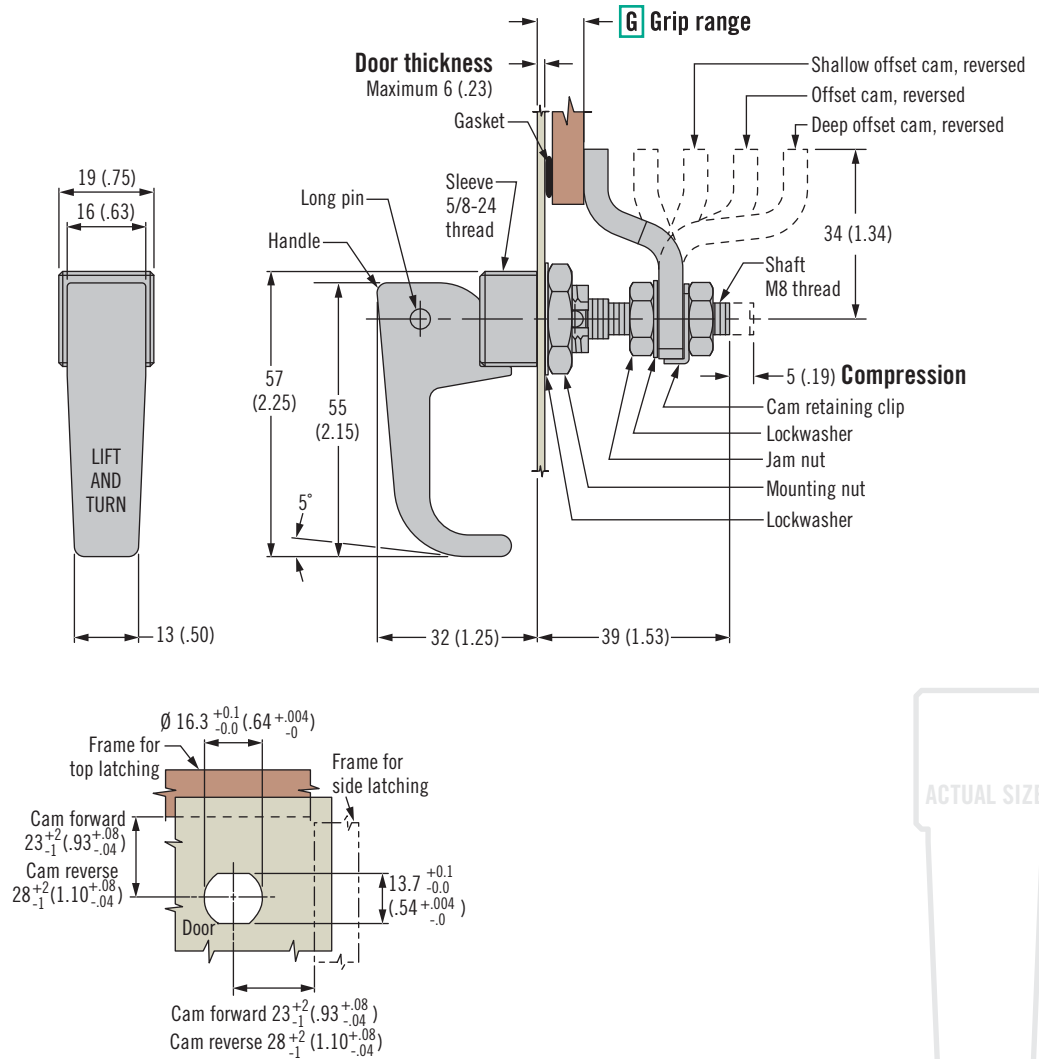
Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Maximum static load:

550 N (125 lbf)



Part Number Selection

See table

62 - 10 - G F

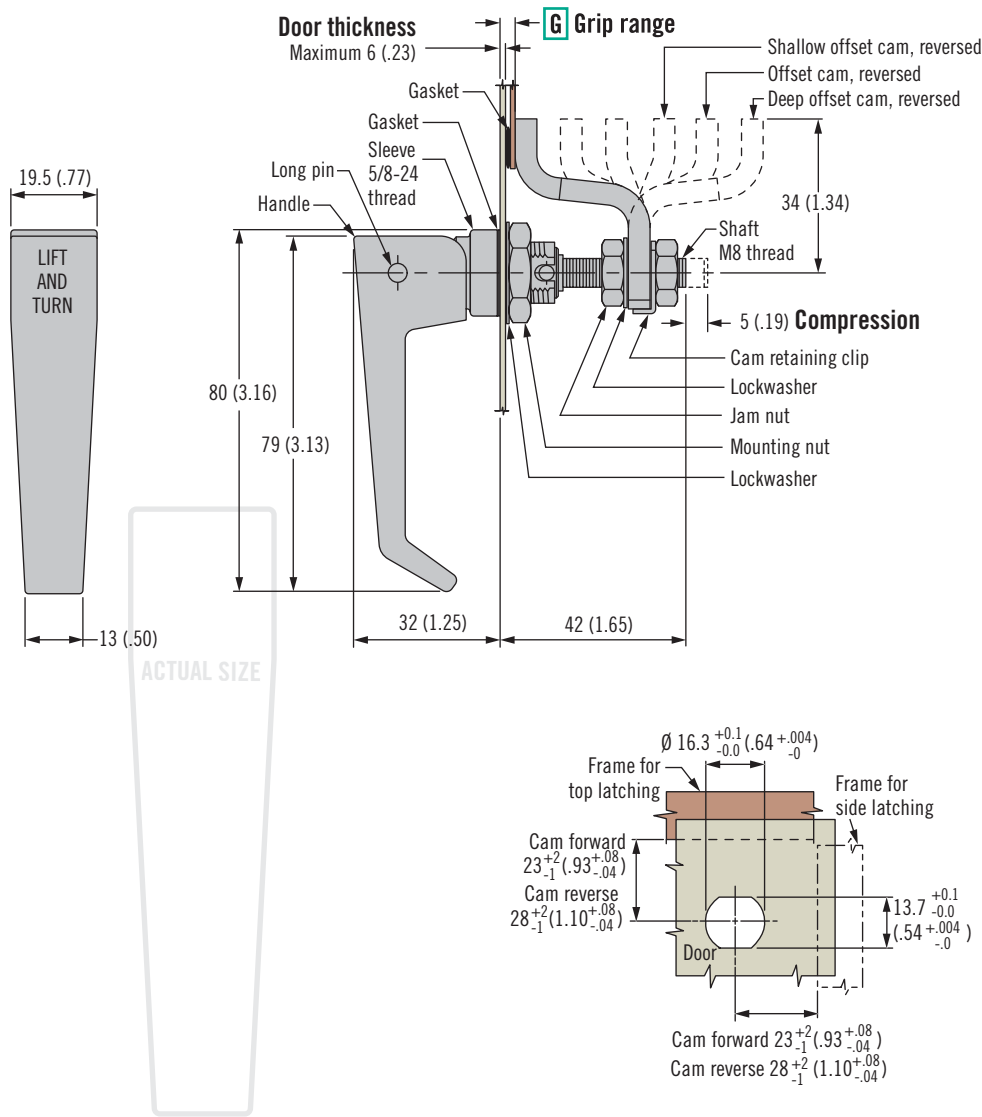
F Finish

- 1 Polished chrome
- 2 Brushed chrome
- 3 Natural with chemical protective film
- 5 Black powder coated

G Grip	Minimum	Maximum	Cam Type
1	42 (1.66)	52 (2.05)	Deep offset cam, forward
	2 (.08)	12 (.47)	Offset cam, forward
2	32 (1.25)	42 (1.66)	Offset cam, reversed
	12 (.47)	22 (.87)	Shallow offset cam, forward
3	22 (.87)	32 (1.25)	Shallow offset cam, reversed

62 Compression Latch

Lift & turn series · Handle style · Adjustable grip



- Easy grip adjustment
- Intuitive operation

Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Maximum static load:
670 N (150 lbf)

Part Number Selection

See table

62 - 30 - G F

F Finish

- 1 Polished chrome
- 2 Brushed chrome
- 5 Black powder coated

G Grip	Minimum	Maximum	Cam Type
1	0 (0)	5 (.20)	Deep offset cam, forward
	45 (1.77)	55 (2.16)	Deep offset cam, reversed
2	5 (.20)	15 (.59)	Offset cam, forward
	35 (1.37)	45 (1.77)	Offset cam, reversed
3	15 (.59)	25 (.98)	Shallow forward
	25 (.98)	35 (1.37)	Shallow reversed



M1 20 Series Compression Latch

Cast 316 stainless steel · Lift & turn · Adjustable grip
50mm (2") size

- Consistent pre-set compression
- Easy grip adjustment
- Flush round hole install

Material and Finish

Cast 316 grade stainless steel

Performance Details

Short cam

Maximum static load:
460 N (103 lbf)

Long cam

Maximum static load: 350 N (78 lbf)

Sealing Notes

NEMA 4 / IP66 sealing is achieved by using supplied flange gasket

Keys

Lock style 8

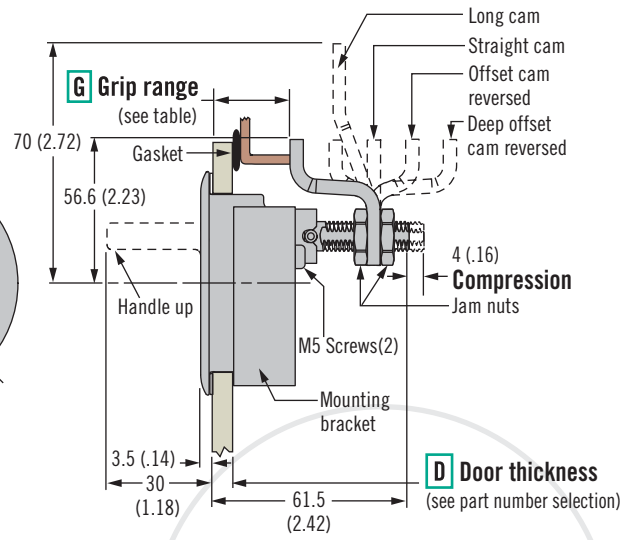
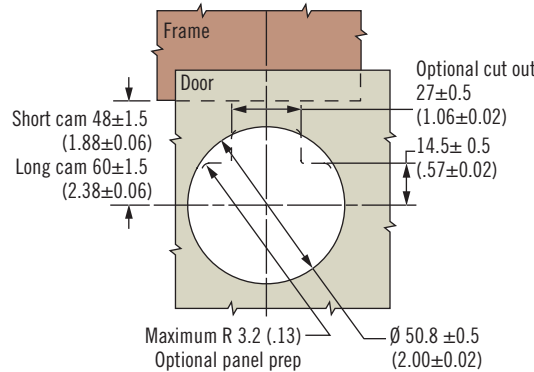
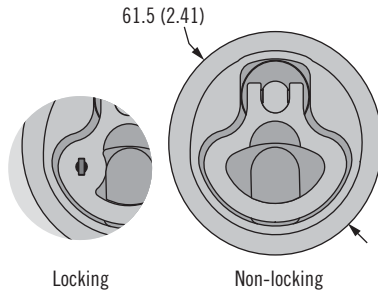
Part number: M1-546



Lock style 9



Part number: M1-525-39-S008



Part Number Selection

See table

See page 223 for complimentary styled push to close version

- L Lock style**
- 3 Non-locking
 - 8 Locking (2 keys supplied)
 - 9 Key-locking keyed alike S008 (2 overmolded keys supplied)

M1 - 20 - L D - G 8

D	Door Thickness	Grip Adjustment Value
1	2 - 12 (.075 - .475)	19 (.75)
2	12 - 22.5 (.475 - .885)	9 (.35)
3	18.5 - 29 (.73 - 1.14)	2.5 (.10)

G Grip Range		
Short cam		
5	21 - 28 (.83 - 1.10)	Deep offset forward
4	27 - 40 (1.06 - 1.57)	Offset forward
3	39 - 52 (2.01 - 2.52)	Straight
4	51 - 64 (2.01 - 2.52)	Offset reversed
5	63 - 76 (2.48 - 3.00)	Deep offset reversed
Long cam		
8	21 - 28 (.83 - 1.10)	Deep offset forward
7	27 - 40 (1.06 - 1.57)	Offset forward
6	39 - 52 (2.01 - 2.52)	Straight
7	51 - 64 (2.01 - 2.52)	Offset reversed
8	63 - 76 (2.48 - 3.00)	Deep offset reversed

Note

All grips of 35 (1.38) or below, highlighted in , in the table above, are potentially a function of door thickness and may not always be achievable, depending on actual door thickness used. In this range of grips, the minimum achievable grip will be limited to actual door thickness + grip adjustment value, or the minimum values shown in the table, whichever is greater.

Examples:

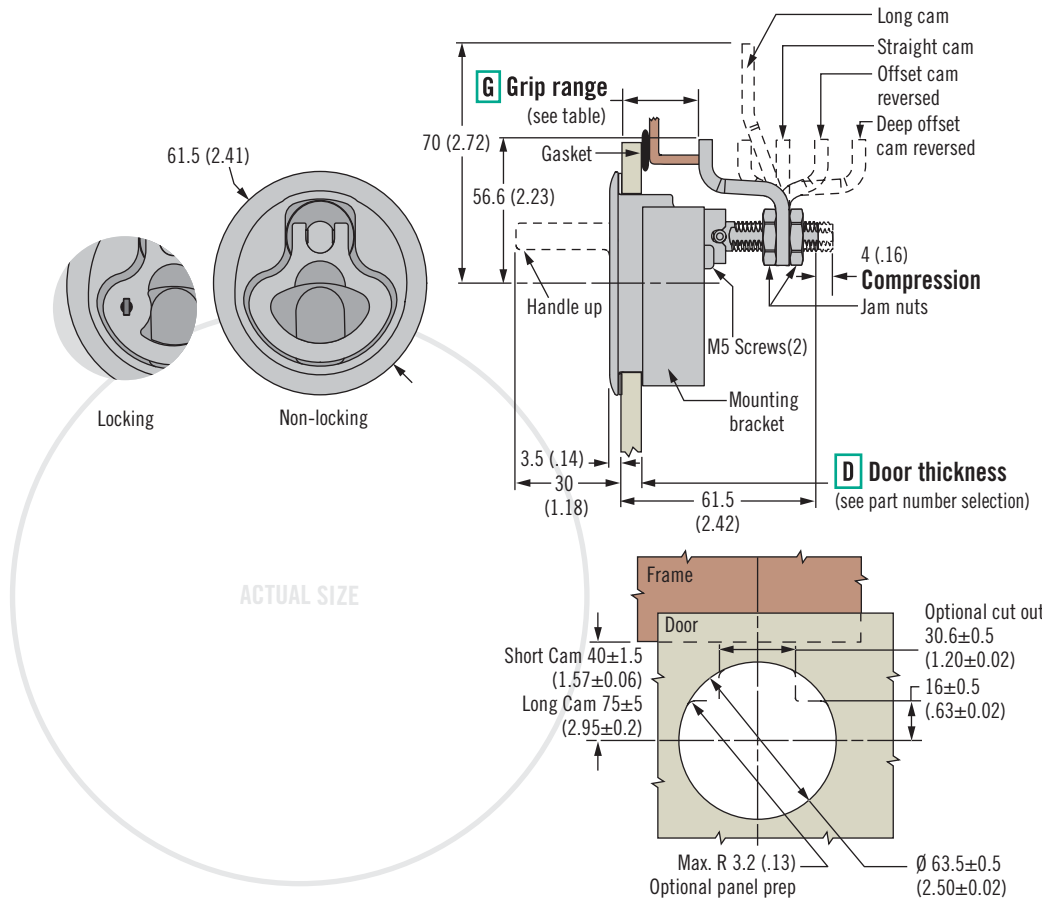
For a door thickness of 4mm, the minimum achievable grip is 23 and is achieved with a deep offset cam in the forward position. (4 + 19 = 23)

For a door thickness of 20mm, the minimum achievable grip is 29 and is achieved with an offset cam in the forward position. (20 + 9 = 29)

Dimensions in millimeters (inch) unless otherwise stated

M1 25 Series Compression Latch

Cast 316 stainless steel · Lift & turn · Adjustable grip
64mm (2.5") size



- Consistent pre-set compression
- Easy grip adjustment

Material and Finish

Stainless steel cast 316 grade

Performance Details

Short cam

Maximum static load:
1010 N (227 lbf)

Long cam

Maximum static load: 350 N (78 lbf)

Sealing Notes

NEMA 4 / IP66 sealing is achieved by using supplied flange gasket

Keys

Lock style 8

Part number: M1-546

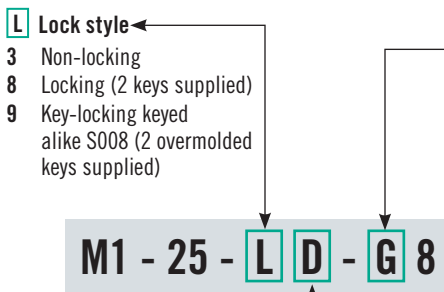
Lock style 9

Part number: M1-525-39-S008

Part Number Selection

See table

See page 224 for complimentary styled push to close version



D	Door Thickness	Grip Adjustment Value
1	2 - 12 (.075 - .475)	21.5 (.85)
2	12 - 22.5 (.475 - .885)	11.5 (.45)
3	18.5 - 29 (.73 - 1.14)	4 (.12)

G Grip Range		
Short cam		
5	23.5 - 35 (.92 - 1.38)	Deep offset forward
4	34 - 48 (1.34 - 1.89)	Offset forward
3	47 - 61 (1.85 - 2.40)	Straight
4	60 - 75 (2.36 - 2.95)	Offset reversed
5	74 - 88 (2.91 - 3.47)	Deep offset reversed
Long cam		
8	23.5 - 35 (.92 - 1.38)	Deep offset forward
7	34 - 48 (1.34 - 1.89)	Offset forward
6	47 - 61 (1.85 - 2.40)	Straight
7	60 - 75 (2.36 - 2.95)	Offset reversed
8	74 - 88 (2.91 - 3.47)	Deep offset reversed

Note

All grips of 33.5 (1.32) or below, highlighted in , in the table above, are potentially a function of door thickness and may not always be achievable, depending on actual door thickness used. In this range of grips, the minimum achievable grip will be limited to actual door thickness + grip adjustment value, or the minimum values shown in the table, whichever is greater.

Examples:

For a door thickness of 4mm, the minimum achievable grip is 25.5 and is achieved with a deep offset cam in the forward position. (4 + 21.5 = 25.5)

For a door thickness of 20mm, the minimum achievable grip is 31.5 and is achieved with a deep offset cam in the forward position. (20 + 11.5 = 31.5)



C5 Compression Latch

Sealed lever latch

90mm size

- Low profile when latched
- Easy grip adjustment
- Push button actuation

Material and Finish

Zinc alloy, black powder coated or chrome plated and steel, zinc plated

Performance Details

Maximum static load:
445 N (100 lbf)

Sealing Notes

NEMA 4 / IP65 sealing is achieved by using optional flange gasket and sealing the mounting screw threads

Accessories

Dust cover:
(add 2.2 (.086) to door thickness)
Part number: C5-0-34682

Flange Gasket:
(add 0.8 (0.03) to door thickness)
Part number: C5-82



Rubber Bumper:
Part Number: C5-25-301-82



Keys

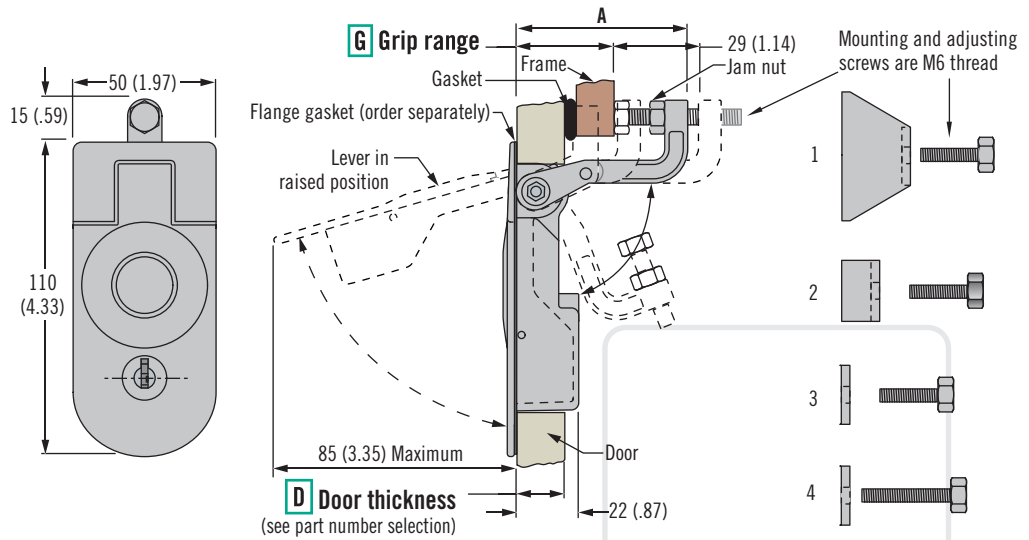
See page 90

Part Number Selection

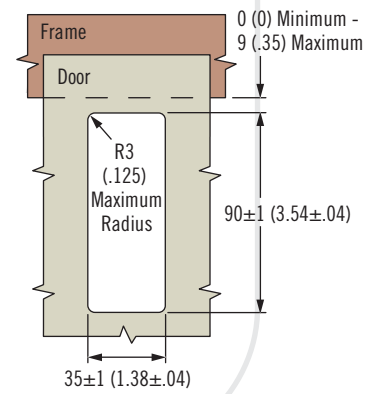
See table

Notes

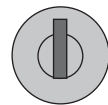
For lock core selection and a complete overview of the *SOUTHCO*® Key-Choice System see page 158



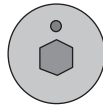
Brackets to Suit Door Thickness



L Lock styles



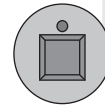
Key-locking
keyed CH751



4 (.16)
Hex recess



No. 2 Phillips
recess



Railway
Standard

L Lock style

- 1 Non-locking
- 2 Locking without dust shutter, keyed alike CH751 (two flat keys supplied)
- 3 Locking with dust shutter, keyed alike CH751 (two flat keys supplied)
- 9 Locking without lock core (order separately see page 158)
- 4 4 (.16) Hex recess
- 5 No. 2 Phillips recess
- 6 Railway standard

D Door thickness

- 1 1 - 11 (.04 - .43)
- 2 11 - 21 (.43 - .83)
- 3 21 - 31 (.83 - 1.22)
- 4 31 - 41 (1.22 - 1.61)

- ### P Packaging option
- 3 Latches are sold layer packed
Omit for individually packaged latches

C5 - L D - G 5 - P

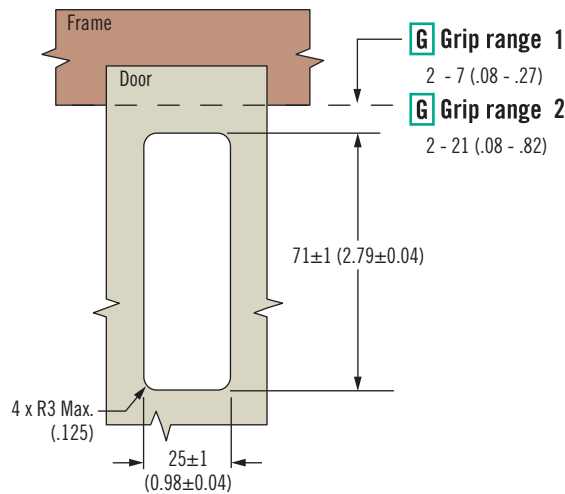
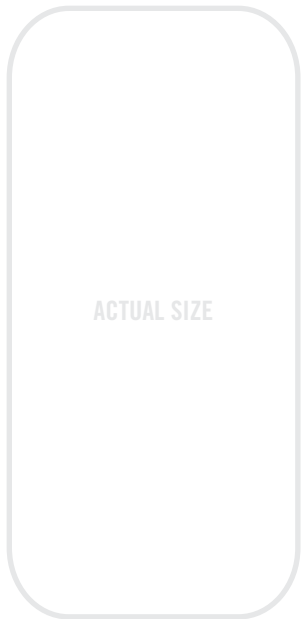
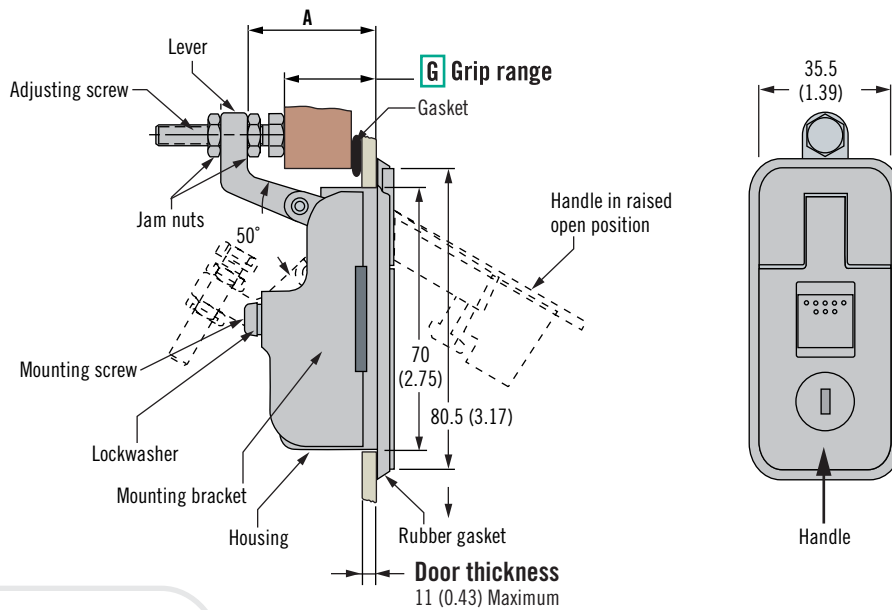
G Grip Range		A
1	1 - 14 (.04 - .55)	Door thickness option 1 and 2 only 29 (1.14)
2	14 - 29 (.55 - 1.14)	Door thickness option 1, 2 and 3 only 44 (1.73)
3	29 - 45 (1.14 - 1.77)	60 (2.36)
4	45 - 57 (1.77 - 2.25)	72 (2.84)

Dimensions in millimeters (inch) unless otherwise stated

C5 Compression Latch

Sealed lever latch

71mm size



- Low profile when latched
- Easy grip adjustment
- Push button actuation

Material and Finish

Zinc alloy, powder coated and steel, zinc plated

Performance Details

Maximum static load:

Grip 1 - 25 (.04 - .98):

290 N (65 lbf)

Grip 15 - 30 (.59 - 1.18):

170 N (40 lbf)

Sealing Notes

Environmental sealing is achieved by sealing the mounting screw threads

Keys

See page 90

Part Number Selection

See table

C5 - M - L 1 - G F

- F** Finish
 5 Black powder coated
 12 Chrome plated

- L** Lock style
 1 Non-locking
 3 Key-locking with dust shutter, keyed alike CH751 (two flat keys supplied)

	G Grip Range	A
1	1 - 25 (.04 - .98)	36.5 (1.44)
2	15 - 30 (.59 - 1.18)	40.0 (1.57)



C2 Compression Latch

Lever latch

- Low profile when latched
- Easy grip adjustment
- Push button actuation
- Optional Sealing

Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Maximum static load: 200 N (45 lbf)

Sealing Notes

For sealed option, NEMA 4 / IP65 sealing is achieved by using the supplied flange gasket.

Installation Notes

* For door thickness greater than 5 (.20) calculate screw length using the following formula:
Door thickness + 12 (.47)

Door thickness + 12 (.47)

Accessories

Rubber Bumper:

Part Number: C2-25-301-82
(reduces min. and max. grip by 2 (0.08))



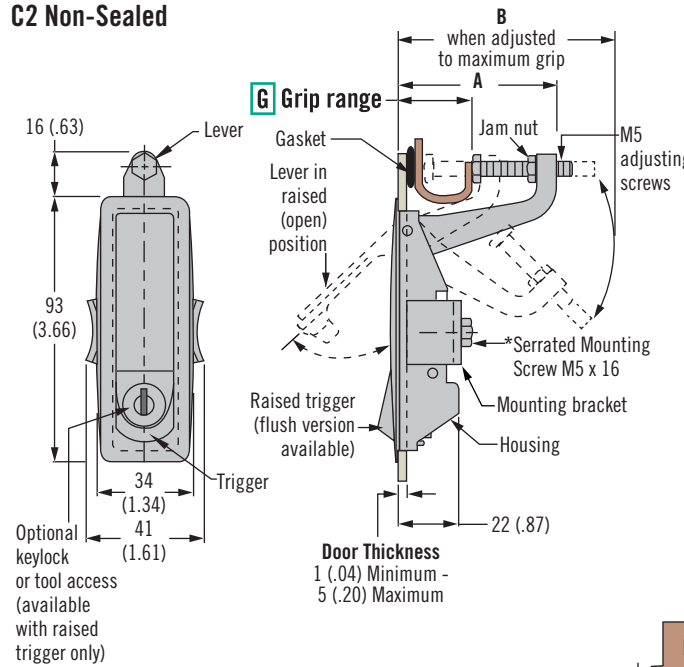
Keys

See page 90

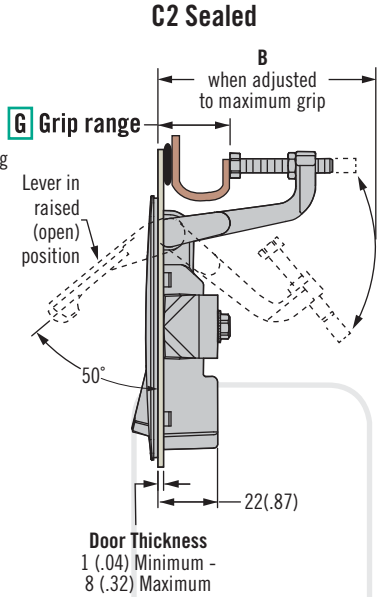
Part Number Selection

See table

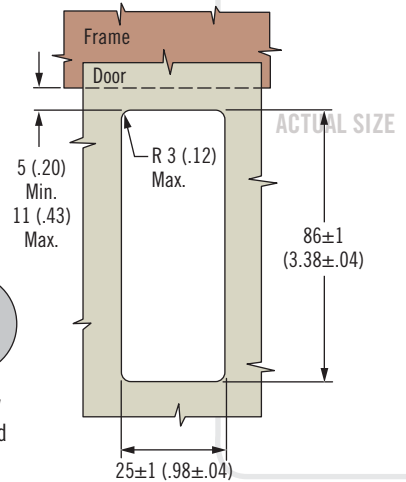
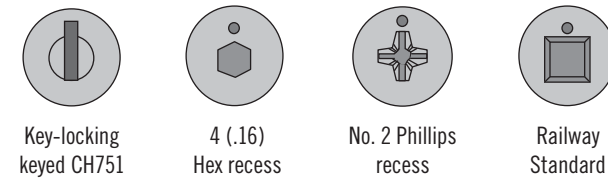
C2 Non-Sealed



C2 Sealed



L Lock Styles



- L Lock style**
- 1 Non-locking raised trigger
 - 2 Key-locking raised trigger keyed CH751 (two flat keys supplied)
 - 3 Flush trigger non-locking
 - 4 4 (.16) Hex recess raised trigger
 - 10 No. 2 Phillips raised trigger
 - 13 Locking without lock core (see page 158 for lock core options)
 - 14 Railway standard

- F Finish**
- 1 Textured chrome
 - 5 Black powder coated

- P Packaging option**
- 3 Latches are sold layer packed. Omit for individually packaged latches.

C2 - S G - L F - P

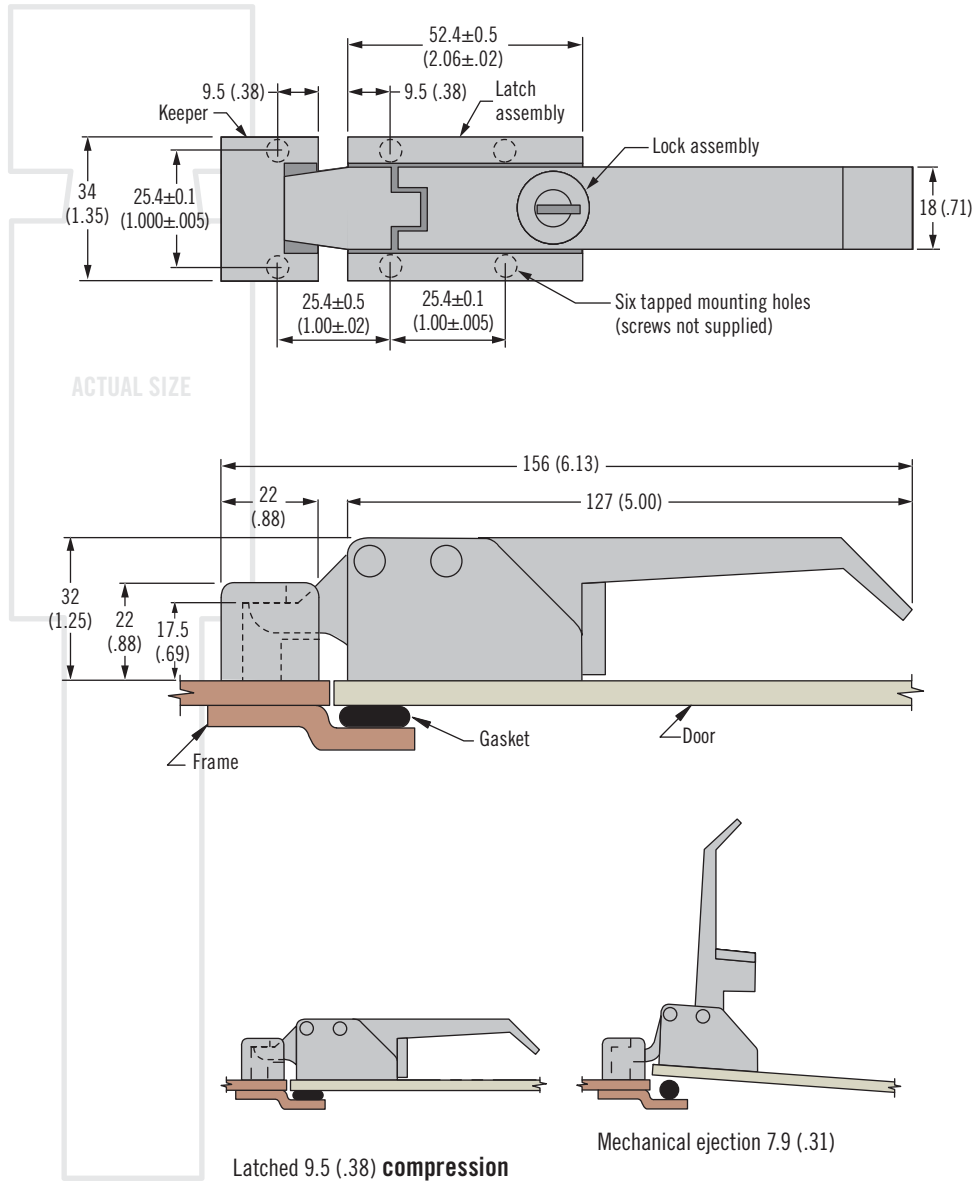
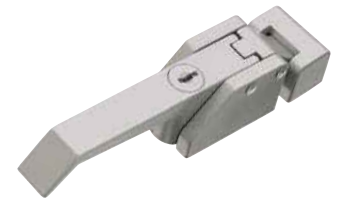
S Sealing Option

- 3 Non-sealed
- 4 Sealed

G Grip Range	A	B
2	1 - 24 (.04 - .95)	35 (1.38) 63 (2.48)
3	23 - 46 (.91 - 1.81)	57 (2.24) 84 (3.31)

A7 Compression Latch

Lever latch · Over-center action



- Intuitive operation
- Built in leverage helps open stuck doors
- Consistent gasket compression



Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Maximum static load:
2200 N (500 lbf)

Keys

PK-10-01
See page 90

Part Number Selection

See table

L Lock Style

- 1 Non-locking
- 2 Key-locking keyed alike CH751 (two flat keys supplied)

F Finish

- 20 Black powder coated
- 30 Chrome plated
- 75 Satin silver coated

A7 - 10 - 3 **T** **L** - **F**

T Tapped mounting

- 0 Tapped mounting hole 10-32UNC x .38" deep
- 5 Tapped mounting hole M5 x 0.8 x 9.5mm deep



27 · 48 Compression Latches

Self-adjusting · Single hole mount

- Two sizes available
- Easy grip adjustment
- Multiple head styles

Material and Finish

Steel, zinc plated or stainless steel

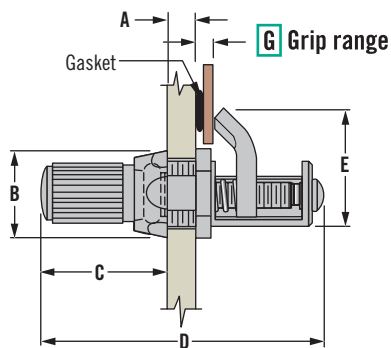
Performance Details

27: Maximum static load:

155 N (35 lbf)

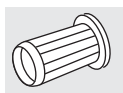
48: Maximum static load:

220 N (50 lbf)

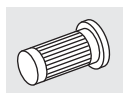


Size	A	B	C	D	E
27 Series Miniature	4.8 (.19) Maximum	10.3 (.41) Maximum	17.5 (.69) Maximum	31.8 (1.25)	13.9 (.55)
48 Series Small	4.8 (.19) Maximum	21 (.81) Maximum	19 (.75) Maximum	44 (1.73)	25.3 (.99)

Nylon knob



Knurled



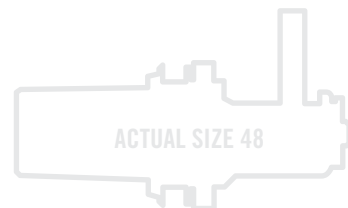
Slotted



Hex recess



Phillips recess



27 Series · Miniature

Material	Grip Range		Knurled	Slotted	Hex Recess	Nylon Knob
	Minimum	Maximum				
Steel	0.8 (.03)	7.1 (.28)	27-99-123-10 *	27-10-501-10 *	27-10-701-10 *	27-10-311-10 *
Stainless steel	0.8 (.03)	7.1 (.28)	27-99-123-20 *	27-10-501-20 *	27-10-701-20 *	27-10-311-20 *

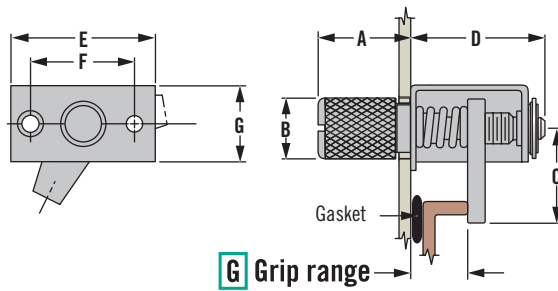
48 Series · Small

Material	Grip Range		Nylon Knob	Slotted	Hex Recess	Phillips Recess
	Minimum	Maximum				
Steel	2.4 (.09)	9.5 (.38)	48-10-401-10	48-11-R	48-81-R	48-91-R
Steel	8.7 (.34)	15.9 (.63)	48-10-402-10	48-12-R	48-82-R	48-92-R
Steel	15.1 (.59)	22.2 (.88)	48-10-403-10	48-13-R	48-83-R	48-93-R

Dimensions in millimeters (inch) unless otherwise stated

43 · 44 · 14 Compression Latches

Self-adjusting · Three hole mount



- Three sizes available
- Three hole installation
- Easy grip adjustment

Material and Finish

Steel, zinc plated or stainless steel

Performance Details

Maximum static load:

43 Small: 330 N (75 lbf)

44 Medium: 490 N (110 lbf)

14 Large: 670 N (150 lbf)

Size	A	B	C	D	E	F	G
43 Small	15.1 (.59)	8.9 (.35)	15.9 (.63)	22.2 (.88)	28.6 (1.13)	20.6 (.81)	13.9 (.55)
44 Medium	23.8 (.94)	14.6 (.57)	25.4 (1.0)	32.1 (1.27)	44.5 (1.75)	31.8 (1.25)	22.2 (.88)
14 Large	28.6 (1.13)	22.7 (.90)	34 (1.34)	44.5 (1.75)	63.5 (2.5)	47.6 (1.87)	33.3 (1.31)

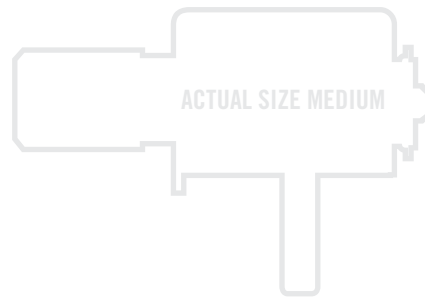
43 · Small size series

Material	G Grip Range		Knurled Head	Slotted Head
	Minimum	Maximum		
Steel	3.2 (.12)	7.1 (.28)	43-1-4-0	43-1-13-0
	6.4 (.25)	13.5 (.53)	43-1-5-0	43-1-14-0
	12.7 (.50)	19.8 (.78)	43-1-6-0	43-1-15-0



44 · Medium size series

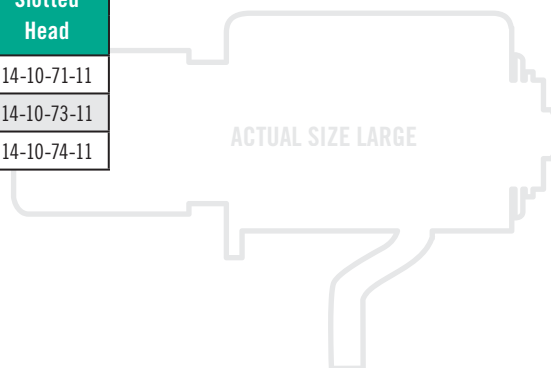
Material	G Grip Range		Knurled Head	Slotted Head
	Minimum	Maximum		
Steel	3.2 (.12)	9.5 (.37)	44-1-1-0	44-1-16-0
	9.5 (.37)	19.1 (.75)	44-1-2-0	44-1-17-0
	19.1 (.75)	28.6 (1.12)	44-1-3-0	44-1-18-0
Stainless steel	3.2 (.12)	9.5 (.37)	44-1-1-24	44-1-16-24
	9.5 (.37)	19.1 (.75)	44-1-2-24	44-1-17-24
	19.1 (.75)	28.6 (1.12)	44-1-3-24	44-1-18-24



Also available: Tool recess, Slotted, Hex recess

14 · Large size series

Material	G Grip Range		Knurled Head	Slotted Head
	Minimum	Maximum		
Steel	3.2 (.13)	19 (.75)	14-10-11-11	14-10-71-11
	9.5 (.38)	31.8 (1.25)	14-10-13-11	14-10-73-11
	22.2 (.88)	42.9 (1.69)	14-10-14-11	14-10-74-11





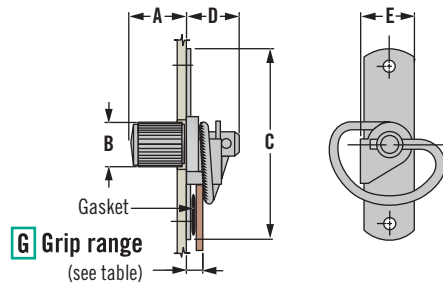
57 Compression Latch

Self-adjusting · Spring latch series

- Four sizes available
- Three hole installation
- Accommodates grip variances

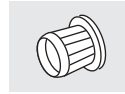
Material and Finish

Steel, zinc plated or stainless steel

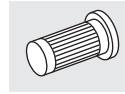


Size	A	B	C	D	E
Miniature	11.9 (.47)	13.5 (.53)	27 (1.06)	7.5 (.30)	8.5 (.33)
Small	15.1 (.59)	14.7 (.58)	39.7 (1.56)	11.1 (.44)	11.6 (.46)
Medium	19.1 (.75)	24.1 (.95)	58.7 (2.31)	17.5 (.69)	17.5 (.69)
Large	26.2 (1.03)	28.2 (1.11)	88.9 (3.5)	25 (.98)	26.2 (1.03)

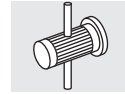
Nylon knob



Knurled



T-bar



Slot



Hex recess



Tool recess



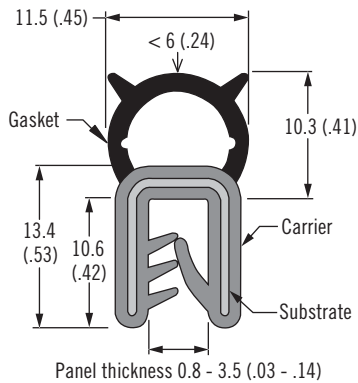
57 Series

Size	Grip Range		Knurled	Slotted	Nylon Knob
	Minimum	Maximum			
Mini	1.2 (.05)	4.3 (.17)	57-20-201-10	57-20-101-10	57-20-401-10
Small	1.2 (.05)	6.4 (.25)	57-30-201-10	57-30-101-10	57-30-401-10
Medium	1.6 (.06)	9.5 (.38)	57-10-201-10	57-10-101-10	57-10-401-10
Medium (stainless)	1.6 (.06)	9.5 (.38)	57-10-201-40	57-10-101-40	~
Large	2.4 (.09)	14.3 (.56)	~	57-40-101-10	57-40-401-10

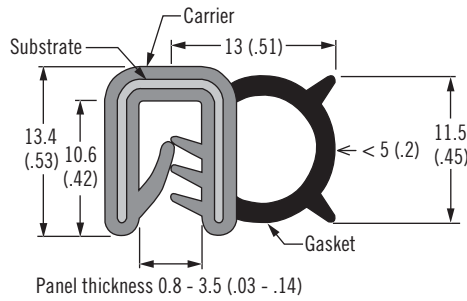
Dimensions in millimeters (inch) unless otherwise stated

GA Gaskets

Self-gripping



Part Number	Coil Length Meters (Feet)
GA-007-82-M500	50 (164)



Part Number	Coil Length Meters (Feet)
GA-202-82-M500	50 (164)

- Broad application range
- Multiple industry standard profiles
- Clip-on or groove mount

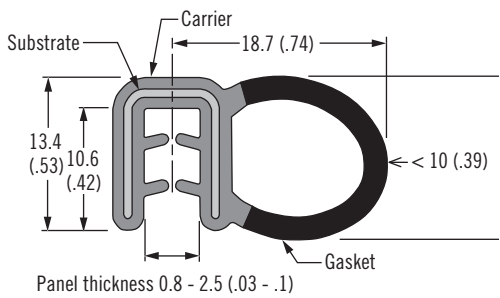
Material and Finish

Gasket: EPDM Sponge, black
 Carrier: 70 Durometer EPDM, black
 Substrate: Steel wire

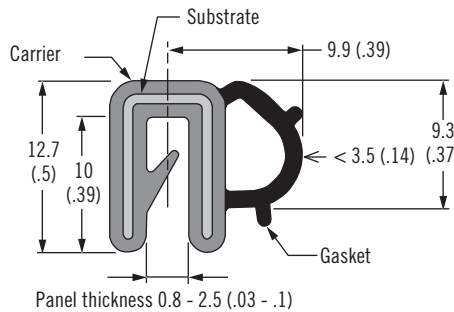
Notes

Maximum recommended compression: see "<" symbol in drawings

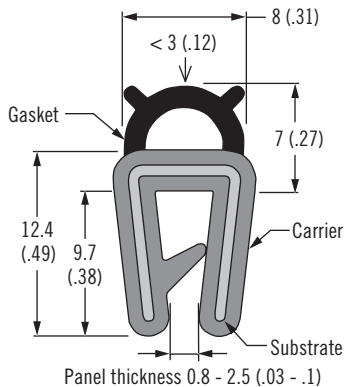
Other profiles available



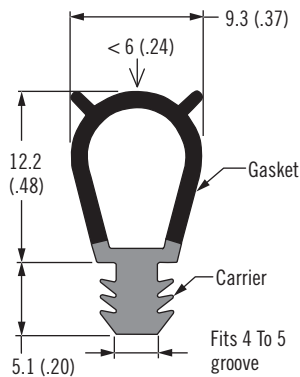
Part Number	Coil Length Meters (Feet)
GA-204-82-M500	50 (164)



Part Number	Coil Length Meters (Feet)
GA-206-82-M500	50 (164)



Part Number	Coil Length Meters (Feet)
GA-209-82-M500	50 (164)



Part Number	Coil Length Meters (Feet)
GA-704-81-M500	50 (164)

Fixed Grip

Pages 116 - 133



SOUTHCO® fixed grip cam latches offer the most flexible and versatile latch solution thanks to their modular design. Their 90° cam rotation provides quick, easy actuation that is also readily adaptable to multi-point latching. Combining three basic components in material, finish or geometry make them suitable for a wide range of applications.

- Cost effective, easy to configure and install
- Numerous hand, key and tool actuation styles
- Wide material choice
- Provide defined grip
- Sealed versions to meet NEMA / IP standards



Adjustable Grip

Pages 134 - 143



Multiple models of *SOUTHCO*® adjustable grip cam latches use threaded cams, jam nuts, or set screws to provide adjustment over a generous grip range. Their 90° cam rotation provides quick, easy actuation that is also readily adaptable to multi-point latching. This enables end-users to compensate for material or fabrication variances in order to satisfy design specifications. It also provides the opportunity for field adjustment of grip dimensions to compensate for wear or misalignment.

- User controls grip adjustment
- One latch fits many applications, minimizing latch inventory requirements
- Wide range of mounting and actuation styles



Get the convenience of a swinghandle latch combined with exceptional versatility for single or multi-point latching. Many grip and security options are available. Durable latches are suitable for enclosures of all sizes.

Multi-point latching rods are available in rod-roller and standard tapered-end style. DIN lock cores and standard *SOUTHCO*® PK lock cores offer multiple key code options with hundreds of standard key codes and custom key code options.

For Swinghandle assemblies suitable for multi-point latching applications, see pages 192-196.

Swinghandle for Single-Point Latching

Pages 144 - 145



H3

Southco offers several fastener designs to assist in panel fastening and positioning applications

- Plungers provide quick installation and removal of components and can serve as a quick-release retractable hinge for removable doors
- Swell latches allow for quick and easy access, with convenient single-hole mounting, plus latch and handle in one assembly
- TL slide latches resist opening under vibration and shock loads

Panel Fasteners

Pages 146 - 155





Cam Latches and Swinghandles

Selection guide

Use this selection guide to choose the right cam latch for your application



Key-Locking Available



Key-Choice System



NEMA / IP Rated



Multi-Point Latching



Padlockable



Stainless Steel










Vibration Resistant



Fire Resistant

	Product Class	MATERIAL			INSTALLATION			
		Stainless Steel 	Zinc and Steel	Plastic	Round Hole Install	Flush / Low Profile	Maximum Door Thickness	
FIXED GRIP PAGES 116-133	E5	✓	✓	✓		✓	14 (.55)	
	E5		✓		✓	✓	3.2 (.13)	
ADJUSTABLE GRIP PAGES 134-143	92		✓		✓		3 (.12) With screws supplied	
	68		✓		✓		25 (1.00) Medium size	
	01		✓			✓	9.5 (.38)	
	24		✓			✓	7.9 (.31)	
	69			✓			12.7 (.50)	
	61			✓	✓	✓	50 (1.97)	
	SWINGHANDLES PAGES 144-145	H3-50		✓			✓	3.2 (.13)
		H3-60		✓			✓	3.2 (.13)

Dimensions in millimeters (inch) unless otherwise stated

	PERFORMANCE				ACCESS STYLE				
Fire EN 45545 	NEMA / IP Rated 	Vibration Resistant 	Maximum Static Load	Grip Range	Key-Locking 	Tool Operable	Key-Choice System 	Padlockable 	Multi-Point Capable 
✓	✓	✓	300 - 670 N (67 - 150 lbf)	2 - 44 (.08 - 1.73)	✓	✓	✓	✓	✓
			330 N (74 lbf)	22.7 - 36.7 (.89 - 1.44)	✓		✓		✓
			200 - 400 N (45 - 90 lbf)	16 - 44.5 (.63 - 1.75)	✓				✓
			890 - 1300 N (200 - 300 lbf)	0 - 57 (0 - 2.25)					✓
			160 - 220 N (35-50 lbf)	0 - 28.6 (0 - 1.13)	✓				✓
			445 - 2670 N (100 - 600 lbf)	17.5 - 62 (.69 - 2.44)	✓				✓
		✓	44 - 330 N (10 - 75 lbf)	3.2 - 61.9 (.13 - 2.44)					
			110 N (25 lbf)	4 - 70 (.16 - 2.75)		✓			
	✓		250 N (56 lbf)	10.3 - 40.3 (.41 - 1.59)	✓	✓		✓	✓
	✓		250 N (56 lbf)	10.3 - 40.3 (.41 - 1.59)	✓	✓		✓	✓



E5 Cam Latches

Overview

Modularity and simplicity in action

The *SOUTHCO*® E5 cam latch is a highly modular and easy to configure solution, suitable for a wide range of applications. By changing any of the three basic components (access style driver, latch body or cam) in either geometry or material, the E5 can be easily adjusted to suit most applications.

Product features

- Cost effective, easy to design and install
- Multiple material and access options to suit multiple needs
- Suitable to meet NEMA 4 / IP65 sealing standards
- Corrosion-resistant materials available
- Highly modular and configurable

➤ Match material and finish options for style and functionality requirements

A variety of materials and finishes to complement your application.

Die-cast zinc latch bodies standard finishes:



Chrome plated



Black powder coated

Corrosion resistant materials available



316
Stainless steel



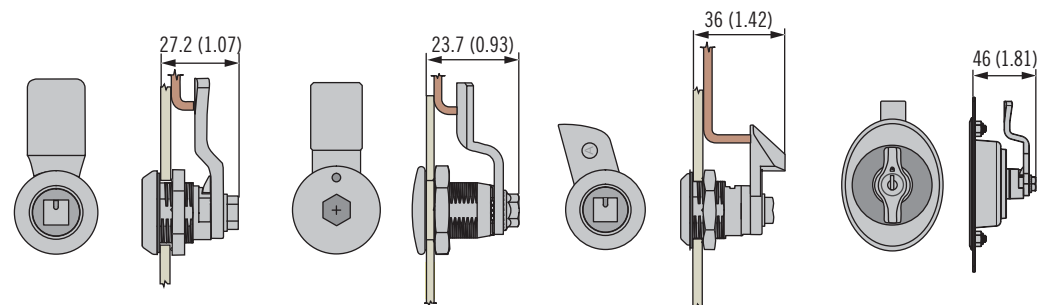
Glass-filled
nylon, black



304
Stainless steel

➤ Select one of these four styles to fit your access requirements

There are four basic E5 styles to meet specific door configuration and mounting requirements in terms of design, depth, surface protrusion and operation style.



E5 Standard

Industry standard, highly modular and configurable options in a wide choice of materials, finishes and access styles. (See page 118)

E5 Low Profile

Stylish, low profile design. Tool and hand operated access styles in zinc alloy chrome plated or black powder coated. (See page 120)

E5 Push-to-Close

Standard E5 with the added functionality of a spring-loaded cam or actuator for single or multi-point operation. Provides quicker turn-to-open, push-to-close action. (See page 128)

E5 Flush Cup Wing Knob

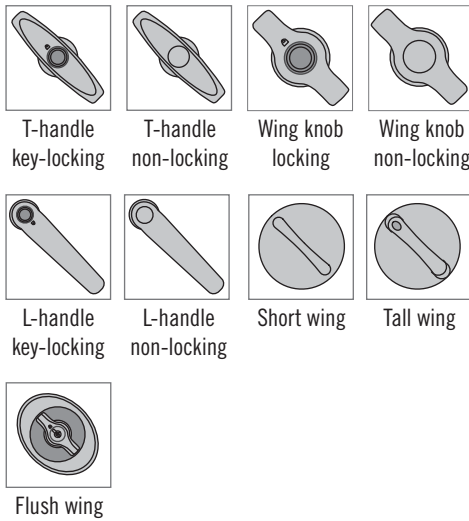
Stylish oval cup design. Provides a clean, flush outer surface. Ideal for multi-point actuation of large doors in aesthetically pleasing applications. (See page 122)

Dimensions in millimeters (inch) unless otherwise stated

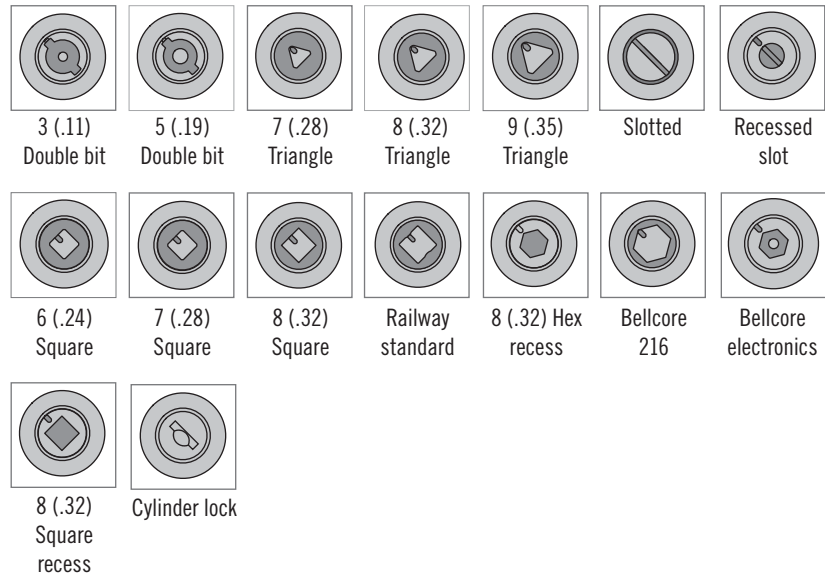
➤ Choose from a wide range of operating styles to fit application and industry requirements.

- Convenient hand-operated wing knob, T and L-handle styles for easy hand access
- Tool operated for restricted access, flush-mount or low-profile clearances, and industry-specific standards
- Key operated for added security

Hand operable

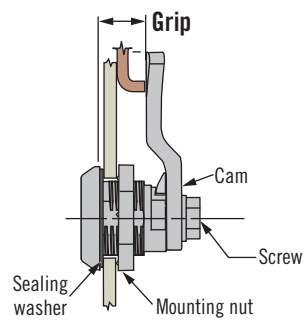


Tool / key operable



➤ Determine your grip options for a perfect fit

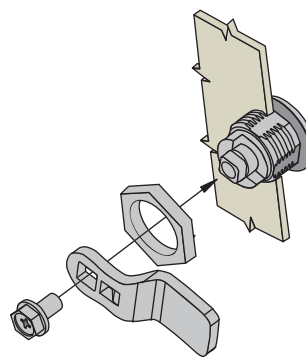
Total grip includes the dimensions of all elements in-between the mounting surface of the latch and the latch's contact surface on the frame - including door thickness, compressed seals and gaskets, accessories, frame offset, etc.



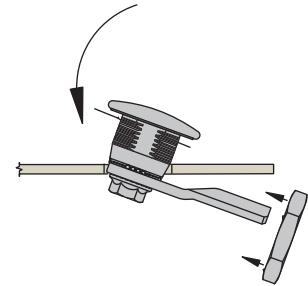
Selecting the right cam for the E5 is easy once the total grip is known. Southco provides a wide selection of standard cams in many grip increments, and special ones like hook and push-to-close cams. Standard cams provide vibration resistance and grip variation tolerance.

Installation

Some *SOUTHCO*® E5 latches are shipped latch and cam separately and some completely pre-assembled. See product pages for details.



E5 Standard
Latch and cam shipped separately.



E5 Low Profile
Latch and cam shipped pre-assembled.



E5 Cam Latch

Stainless steel · Tool operated · Fixed grip

- Single hole install
- Latched / unlatched indicator
- EN 45545-3 E60 Compliant

Material and Finish

Stainless steel, 304 or 316 grade

Performance Details

Maximum static load:

304 Stainless steel 550 N (124 lbf)

316 Stainless steel 670 N (150 lbf)

Sealing Notes

NEMA 4 / IP65 achieved using gasket supplied

Installation Notes

Mounting nut:

Maximum tightening torque:

20 N·m (177 in·lbf)

Screw Maximum tightening torque

10 N·m (90 in·lbf)

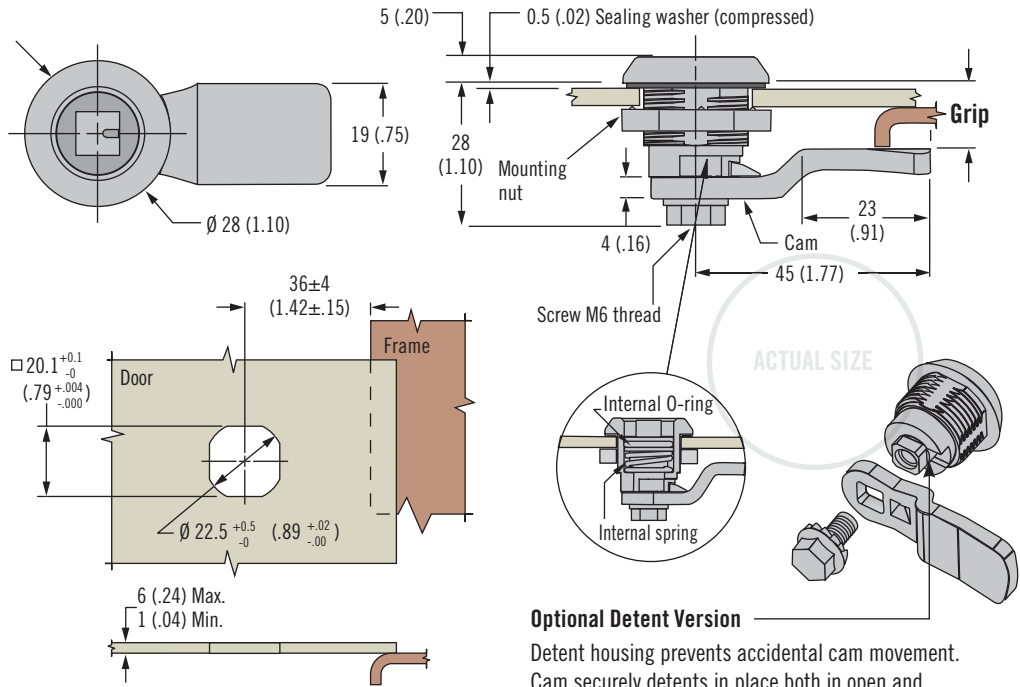
Keys and Accessories

See page 130

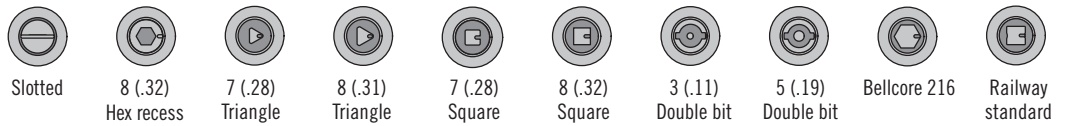
Part Number Selection

See table

Order latch and cam separately



H Head Styles



Latch Part Number (no cam)

E5 - B - H M - UU1

B Body

- 6 Normal housing
- 32 Detented housing

H Head style

- 00 Slotted
- 01 8 (.32) Hex recess
- 02 7 (.28) Triangle
- 03 8 (.32) Triangle
- 04 7 (.28) Square

M Material

- 24 304 Stainless steel
- 27 316 Stainless steel

- 05 8 (.32) Square
- 06 3 (.11) Double bit
- 07 5 (.19) Double bit
- 13 Bellcore 216
- 22 Railway standard

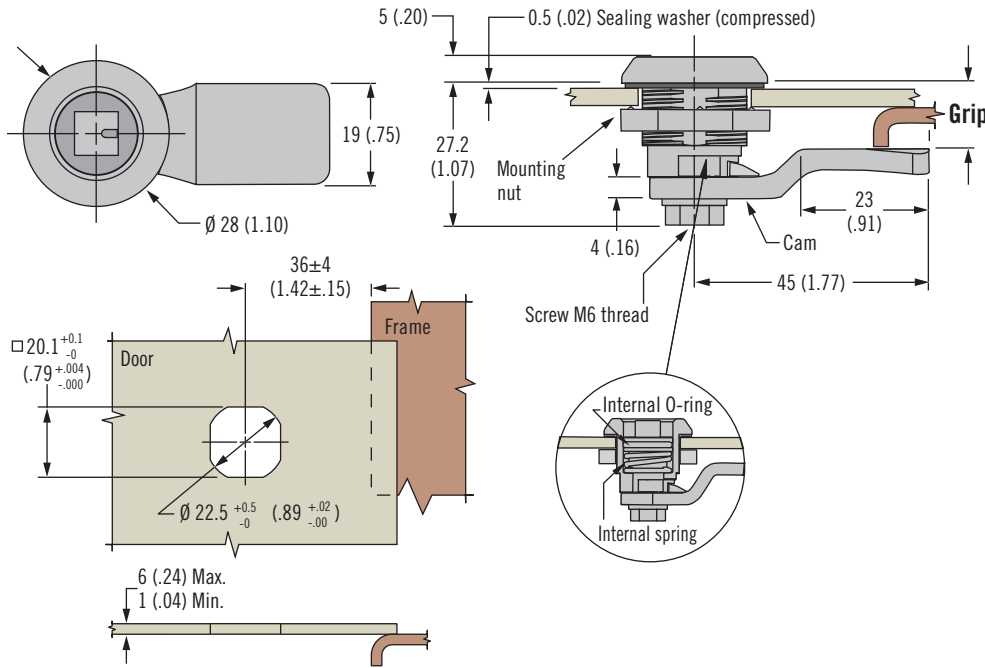
Cam Part Number Table (order separately from latch)

Grip +2(.08) - 0 (.00)	Part Number		Grip +2(.08) - 0 (.00)	Part Number		Grip +2(.08) - 0 (.00)	Part Number		Grip +2(.08) - 0 (.00)	Part Number	
	304 Stainless steel	316 Stainless steel		304 Stainless steel	316 Stainless steel		304 Stainless steel	316 Stainless steel		304 Stainless steel	316 Stainless steel
4 (.16)	E5-8003	E5-9003	14 (.55)	E5-8008	E5-9008	24 (.94)	E5-8013	E5-9013	34 (1.34)	E5-8018	E5-9018
6 (.24)	E5-8004	E5-9004	16 (.63)	E5-8009	E5-9009	26 (1.02)	E5-8014	E5-9014	36 (1.42)	E5-8019	E5-9019
8 (.31)	E5-8005	E5-9005	18 (.71)	E5-8010	E5-9010	28 (1.10)	E5-8015	E5-9015	38 (1.50)	E5-8020	E5-9020
10 (.39)	E5-8006	E5-9006	20 (.79)	E5-8011	E5-9011	30 (1.18)	E5-8016	E5-9016	40 (1.57)	E5-8021	E5-9021
12 (.47)	E5-8007	E5-9007	22 (.87)	E5-8012	E5-9012	32 (1.25)	E5-8017	E5-9017	42 (1.65)	E5-8022	E5-9022

Dimensions in millimeters (inch) unless otherwise stated

E5 Cam Latch

Zinc · Tool operated · Fixed grip



- Single hole install
- Latched / unlatched indicator

Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Maximum static load: 330 N (74 lbf)

Installation Notes

Mounting nut:
Maximum tightening torque:
10 N·m (88 in·lbf)

Screw Maximum tightening torque:
5 N·m (45 in·lbf)

Sealing Notes

NEMA 4 / IP65 achieved using gasket supplied

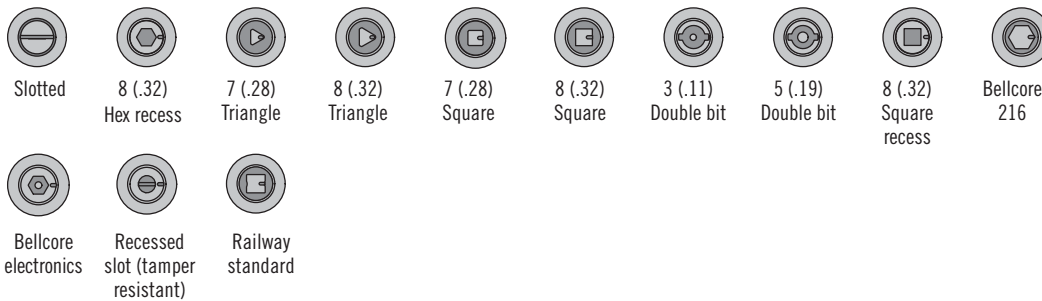
Keys and Accessories

See page 130

Notes

Suitable for push-to-close action
see page 128

H Head Styles



Latch Part Number (no cam)

E5 - 6 - H F - UU1

H Head style

- | | |
|-----------------------|-------------------------------------|
| 00 Slotted | 07 5 (.19) Double bit |
| 01 8 (.32) Hex recess | 08 8 (.32) Square recess |
| 02 7 (.28) Triangle | 13 Bellcore 216 |
| 03 8 (.32) Triangle | 19 Bellcore electronics |
| 04 7 (.28) Square | 21 Recessed slot (tamper resistant) |
| 05 8 (.32) Square | 22 Railway standard |
| 06 3 (.11) Double bit | |

F Finish

- 2 Bright chrome
- 5 Black powder coated

Part Number Selection

See table

Order latch and cam separately

Cam Part Number Table (order separately from latch)

Grip +2(.08) -0(.00)	Part Number	Grip +2(.08) -0(.00)	Part Number	Grip +2(.08) -0(.00)	Part Number	Grip +2(.08) -0(.00)	Part Number
4 (.16)	E5-6003	14 (.55)	E5-6008	24 (.94)	E5-6013	34 (1.34)	E5-6018
6 (.24)	E5-6004	16 (.63)	E5-6009	26 (1.02)	E5-6014	36 (1.42)	E5-6019
8 (.31)	E5-6005	18 (.71)	E5-6010	28 (1.10)	E5-6015	38 (1.50)	E5-6020
10 (.39)	E5-6006	20 (.79)	E5-6011	30 (1.18)	E5-6016	40 (1.57)	E5-6021
12 (.47)	E5-6007	22 (.87)	E5-6012	32 (1.25)	E5-6017	42 (1.65)	E5-6022



E5 Cam Latch Low Profile

Zinc · Tool or hand operated · Fixed grip

- Single hole install
- Latched / unlatched indicator
- Shipped fully assembled
- EN 45545-3 E60 Compliant

Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Maximum static load: 330 N (74 lbf)

Installation Notes

Mounting nut
Maximum tightening torque:
10 N·m (88 in·lbf)

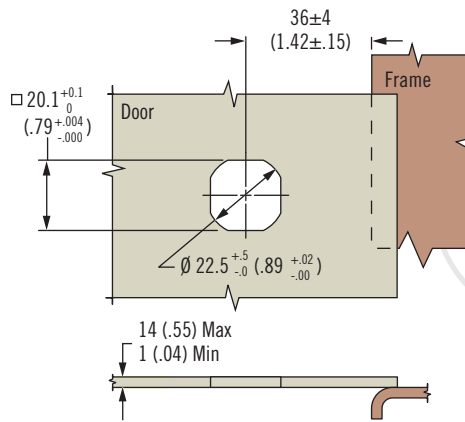
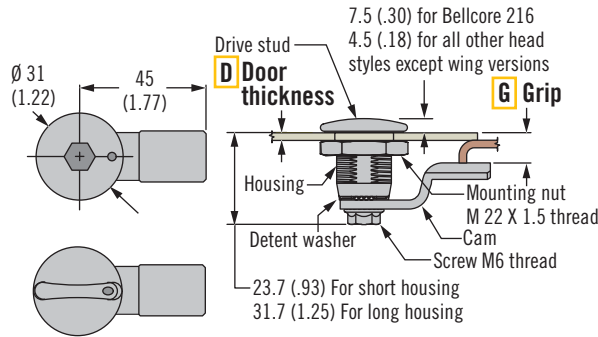
Keys and Accessories

See page 130

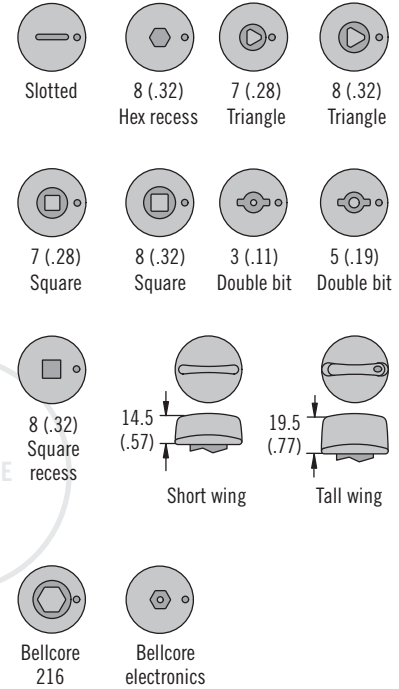
Part Number Selection

See table

Latch is shipped fully assembled
For door thicknesses
1 - 6 (.039 - .236) grip must
exceed door thickness by 4 (.157)
for assembled installation
When sealing option is selected,
add 0.4 (.02) to grip calculation
to accommodate sealing washer



H Head Styles



H Head style

- 00 Slotted
- 01 8 (.32) Hex recess
- 02 7 (.28) Triangle
- 03 8 (.32) Triangle
- 04 7 (.28) Square
- 05 8 (.32) Square
- 06 3 (.11) Double bit
- 07 5 (.19) Double bit
- 08 8 (.32) Square recess
- 11 Short wing
- 12 Tall wing
- 13 Bellcore 216
- 19 Bellcore Electronics

F Finish

- 1 Textured chrome
- 5 Black powder coated

S Sealing option

- 0 No o-ring or external seal
- 1 O-ring and external seal to meet NEMA 4/IP65 standards

E5 - D - H F - G S

- D Door thickness range**
- 1 1 - 6 (.039 - .236) (short housing supplied)
 - 2 1 - 14 (.039 - (.551) (long housing supplied)

G Grip table											
G	Grip		G	Grip		G	Grip		G	Grip	
	Short housing	Long housing		Short housing	Long housing		Short housing	Long housing		Short housing	Long housing
00	Do not use	6 (.24)	05	8 (.31)	16 (.63)	10	18 (.71)	26 (1.02)	15	28 (1.10)	36 (1.42)
01	Do not use	8 (.31)	06	10 (.39)	18 (.71)	11	20 (.79)	28 (1.10)	16	30 (1.18)	38 (1.50)
02	2 (.08)	10 (.39)	07	12 (.47)	20 (.79)	12	22 (.87)	30 (1.18)	17	32 (1.25)	40 (1.57)
03	4 (.16)	12 (.47)	08	14 (.55)	22 (.87)	13	24 (.94)	32 (1.25)	18	34 (1.34)	42 (1.65)
04	6 (.24)	14 (.55)	09	16 (.63)	24 (.94)	14	26 (1.02)	34 (1.34)	19	36 (1.42)	44 (1.73)

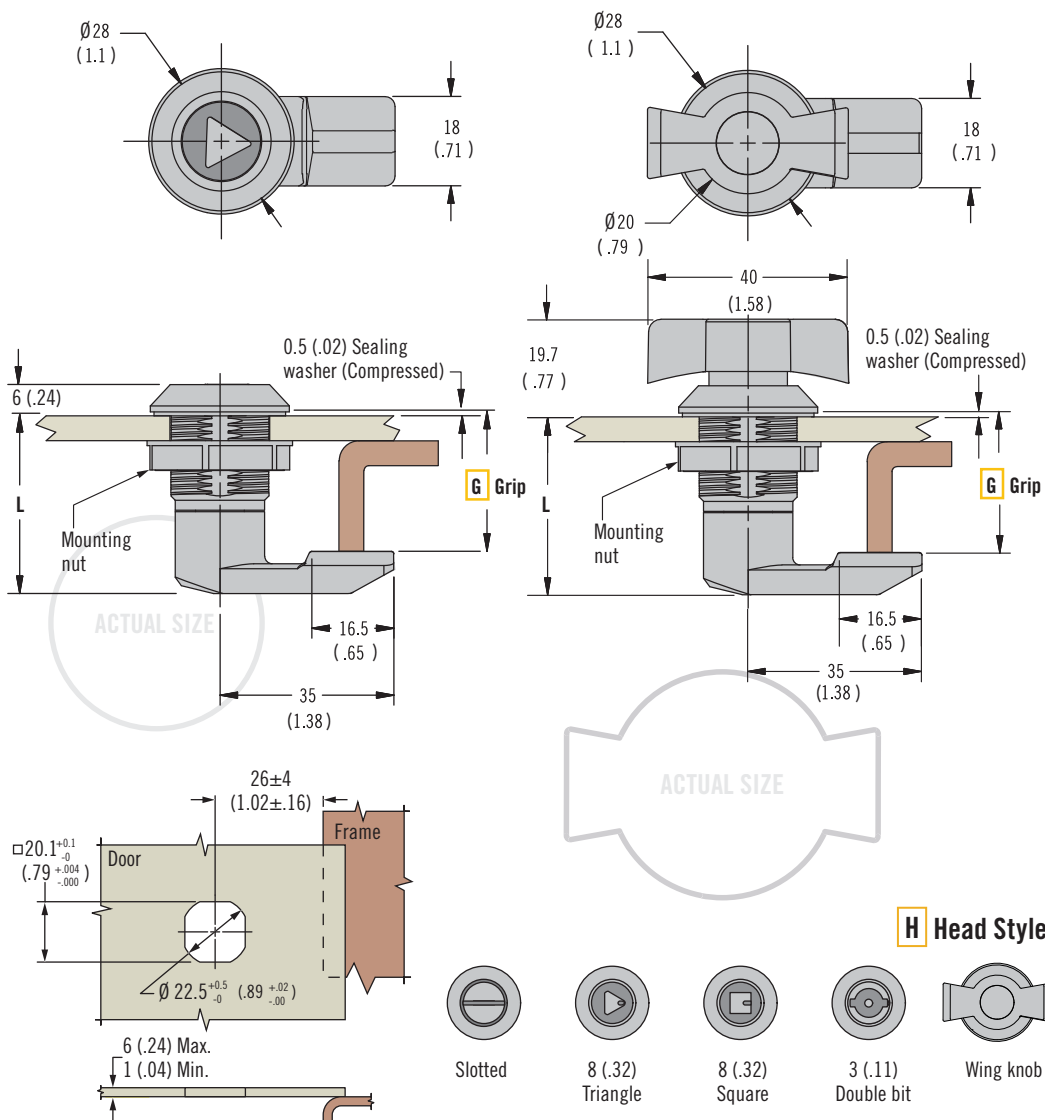
If grip falls between two choices, use the smaller option

Dimensions in millimeters (inch) unless otherwise stated



E5 Cam Latch

Glass-filled nylon · Tool or hand operated · Fixed grip



- Single hole install
- Corrosion-resistant materials

Material and Finish

Glass-filled nylon and Stainless steel

Performance Details

Average ultimate load:
300 N (68 lbf)

Installation Notes

Mounting nut
Maximum tightening torque:
4.25 N·m (38 in·lbf)

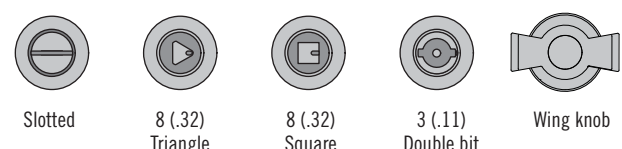
Sealing Notes

NEMA 4 / IP65 achieved using gasket supplied

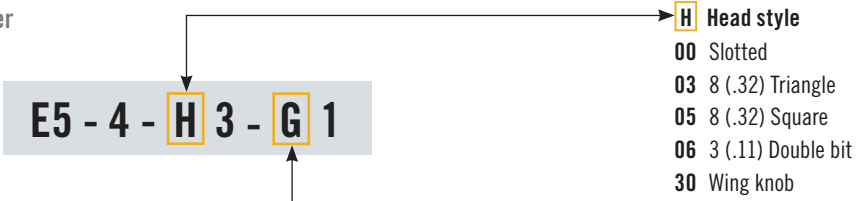
Keys and Accessories

See page 130

H Head Styles



Latch Part Number



Part Number Selection

See table

Total Grip	G	L	Max. Door Thickness for Assembled Latch	Total Grip	G	L	Max. Door Thickness for Assembled Latch	Total Grip	G	L	Max. Door Thickness for Assembled Latch
16 (.63)	16	30 (1.18)	5 (.20)	24 (.94)	24	38 (1.50)	6 (.24)	30 (1.18)	30	44 (1.73)	6 (.24)
18 (.71)	18	32 (1.26)	5 (.20)	25 (.98)	25	39 (1.54)	6 (.24)	32 (1.26)	32	46 (1.81)	6 (.24)
20 (.79)	20	34 (1.34)	6 (.24)	26 (1.02)	26	40 (1.57)	6 (.24)	34 (1.34)	34	48 (1.89)	6 (.24)
22 (.87)	22	36 (1.42)	6 (.24)	28 (1.10)	28	42 (1.65)	6 (.24)	36 (1.42)	36	50 (1.97)	6 (.24)



E5 Cam Latch

Zinc · Flush cup wing style · Hand operated · Fixed grip

- Low profile
- Multiple key code options

Material and Finish

Zinc alloy, powder coated and steel, zinc plated

Performance Details

Maximum static load: 330 N (74 lbf)

Installation Notes

Mounting nuts 10-24 UNC (supplied) maximum tightening torque: 3 N·m (25 in·lbf)

Screw maximum tightening torque: 10 N·m (90 in·lbf)

Keys

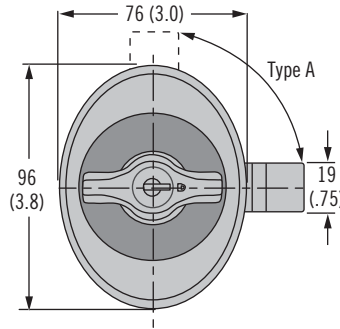
See page 130

Notes

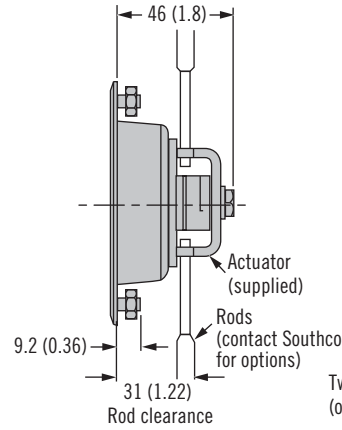
Two point push-to-close action: Internal spring causes return of wing knob and actuator to original latched position when wing knob is released after opening. Ideal for use with cables and rotary latches.

For lock core selection and a complete overview of the *SOUTHCO*® Key-Choice System see page 158

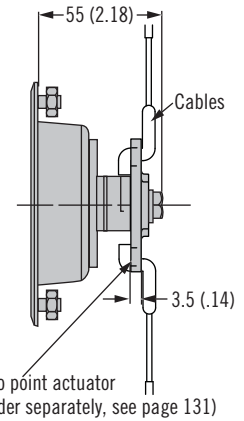
Single Point



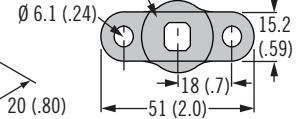
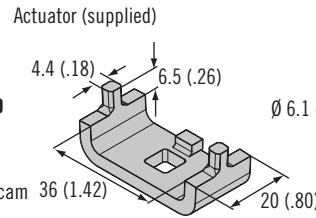
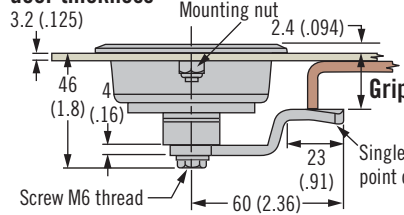
Two Point (for use with rods)



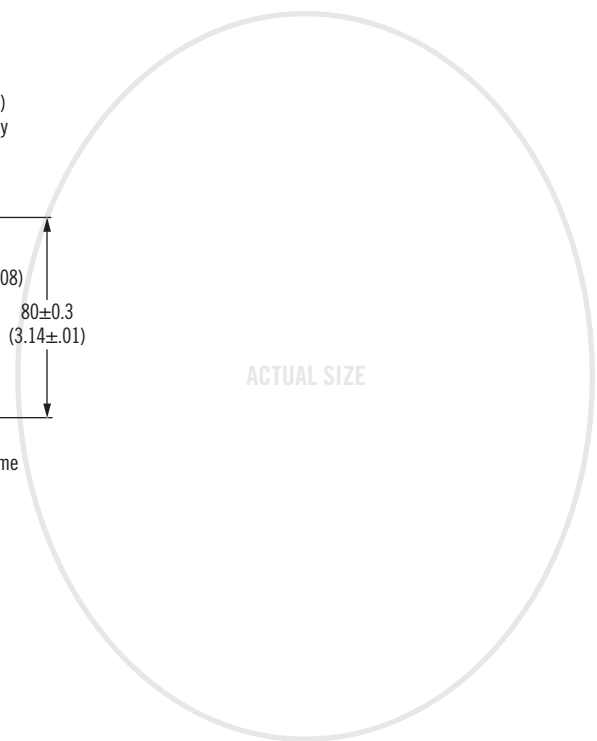
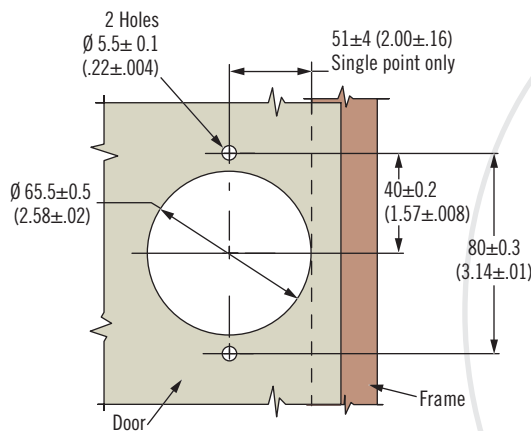
Two Point Push-to-Close Action (spring-loaded)



Maximum door thickness

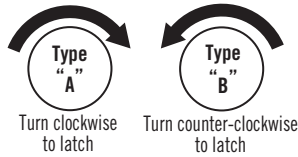


Type A (reverse frame for type B)

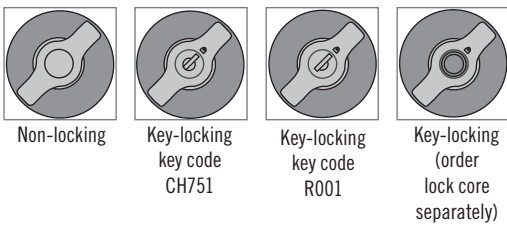




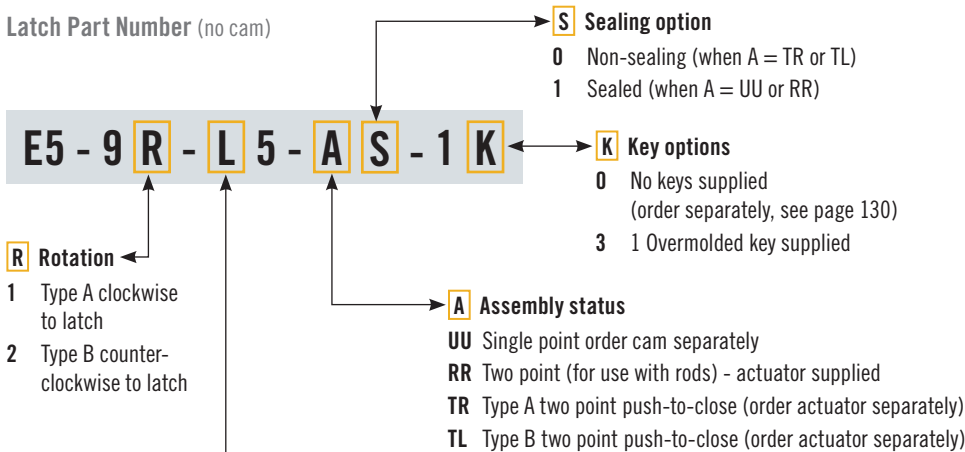
R Rotation



L Lock Styles



Latch Part Number (no cam)



Part Number Selection

See table

Single point

Order latch and cam separately

Two point (for use with rods)

Order latch only (two point actuator supplied)

Two point push-to-close action (spring loaded)

Order latch and actuator separately. Actuator part number A5-91-201-11, see page 131 for details.

To be used with *SOUTHCO*® R4 rotary series latches and cables see page 272.

Cam Part Number Table (order separately from latch)

Grip	Part Number	Grip	Part Number
22.7 (.89)	E5-6603	30.7 (1.21)	E5-6607
24.7 (.97)	E5-6604	32.7 (1.29)	E5-6608
26.7 (1.05)	E5-6605	34.7 (1.37)	E5-6609
28.7 (1.13)	E5-6606	36.7 (1.44)	E5-6610

If grip falls between two choices, use the smaller option

Dimensions in millimeters (inch) unless otherwise stated



E5 Cam Latch

Zinc · L-handle · Hand operated · Fixed grip

- Single hole install
- Multiple key codes

Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Maximum static load: 330 N (74 lbf)

Sealing Notes

NEMA 4 / IP65 achieved using gasket supplied

Installation Notes

Mounting nut: Maximum tightening torque:
10 N·m (88 in·lbf)
Screw maximum tightening torque:
10 N·m (90 in·lbf)

Keys

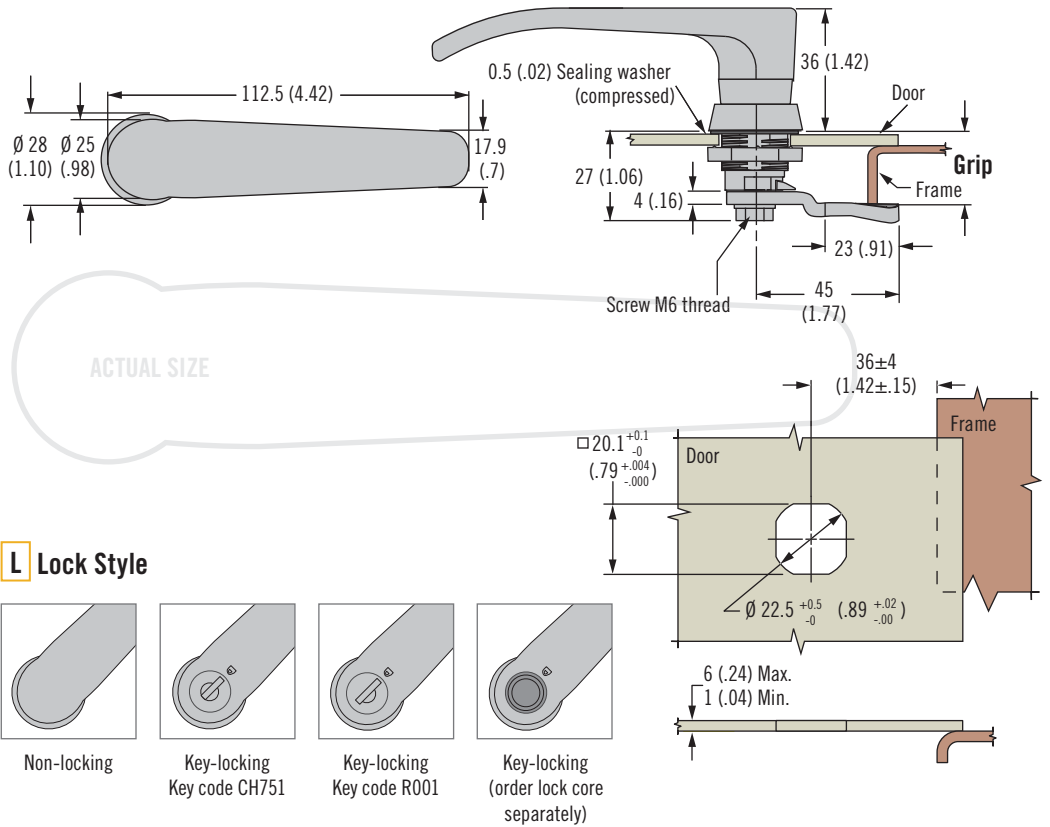
See page 130

Notes

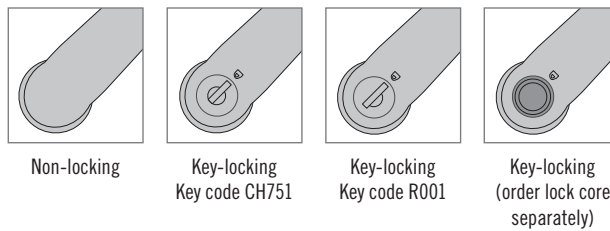
Suitable for push-to-close action see page 128
For lock core selection and a complete overview of the *SOUTHCO*® Key-Choice System see page 158
For adjustable grip versions see page 134

Part Number Selection

Order latch and cam separately



L Lock Style



Latch Part Number (no cam)

E5 - 9 - L F - UU1 - 1 K

L Lock style

- 70 Non-locking (omit last two digits of part number)
 - 71 Keyed CH751 (lock core finish matches handle finish)
 - 72 Keyed R001 (stainless steel scalp shuttered)
 - 73 Without lock core (omit last two digits of part number)
- Order lock core separately, see page 158

F Finish

- 2 Bright chrome
- 5 Black powder coated

K Key options

- 0 No keys supplied (order separately, see page 130)
- 3 1 Overmolded key supplied

Cam Part Number Table (order separately from latch)							
Grip	Part Number	Grip	Part Number	Grip	Part Number	Grip	Part Number
4 (.16)	E5-6003	14 (.55)	E5-6008	24 (.94)	E5-6013	34 (1.34)	E5-6018
6 (.24)	E5-6004	16 (.63)	E5-6009	26 (1.02)	E5-6014	36 (1.42)	E5-6019
8 (.31)	E5-6005	18 (.71)	E5-6010	28 (1.10)	E5-6015	38 (1.50)	E5-6020
10 (.39)	E5-6006	20 (.79)	E5-6011	30 (1.18)	E5-6016	40 (1.57)	E5-6021
12 (.47)	E5-6007	22 (.87)	E5-6012	32 (1.25)	E5-6017	42 (1.65)	E5-6022

If grip falls between two choices, use the smaller option

Dimensions in millimeters (inch) unless otherwise stated



E5 Cam Latch

Zinc · T-handle · Hand operated · Fixed grip

- Single hole install
- Multiple key codes

Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Maximum static load: 330 N (74 lbf)

Sealing Notes

NEMA 4 / IP65 achieved using gasket supplied

Installation Notes

Mounting nut:
Maximum tightening torque:
10 N·m (88 in·lbf)

Screw:
Maximum tightening torque:
10 N·m (90 in·lbf)

Keys

See page 130

Notes

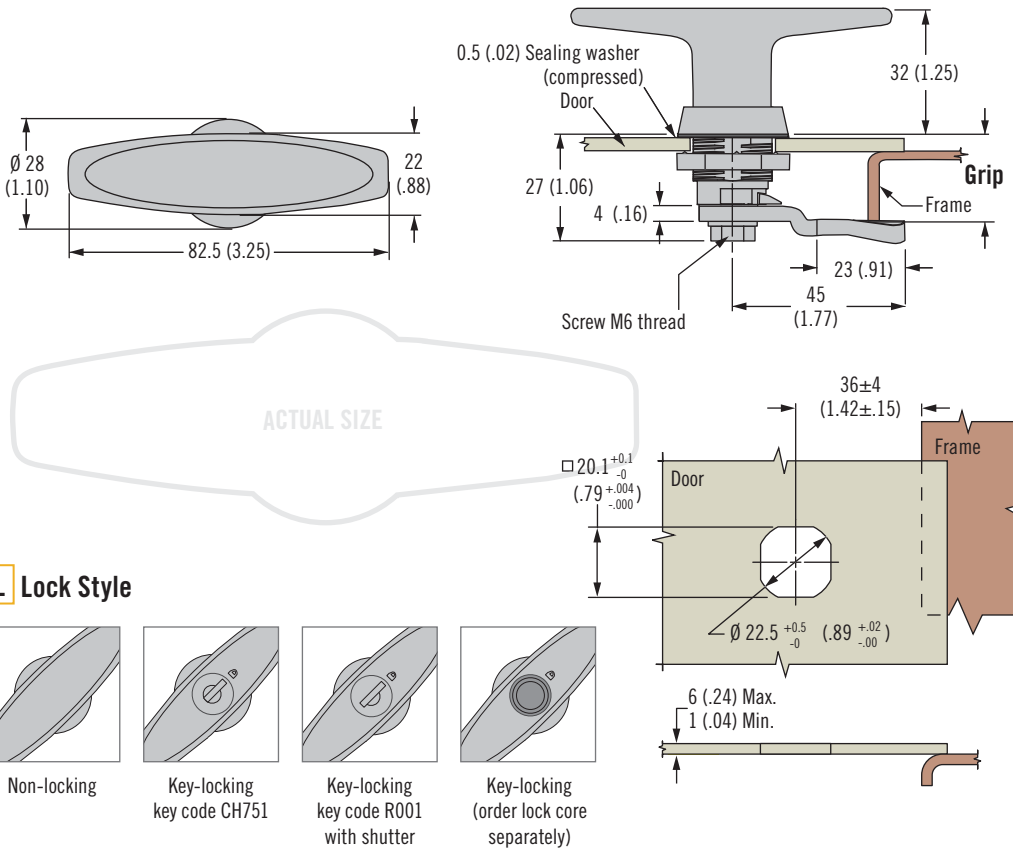
Suitable for push-to-close action see page 128

For adjustable grip versions see page 134

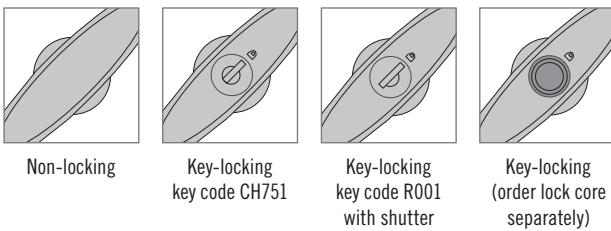
For lock core selection and a complete overview of the *SOUTHCO*® Key-Choice System see page 158

Part Number Selection

Order latch and cam separately



L Lock Style



Latch Part Number (no cam)

E5 - 9 - L F - UU1 - 1 K

- F Finish**
- 2 Bright chrome
 - 5 Black powder coated

- L Lock style**
- 60 Non-locking (omit last two digits of part number)
 - 61 Keyed CH751 (lock core finish matches handle finish)
 - 62 Keyed R001 (stainless steel scalp shuttered)
 - 63 Without lock core (omit last two digits of part number)
Order lock core separately, see page 158

- K Key options**
- 0 No keys supplied (order separately, see page 130)
 - 3 1 Overmolded key supplied

Cam Part Number Table (order separately from latch)

Grip	Part Number	Grip	Part Number	Grip	Part Number	Grip	Part Number
4 (.16)	E5-6003	14 (.55)	E5-6008	24 (.94)	E5-6013	34 (1.34)	E5-6018
6 (.24)	E5-6004	16 (.63)	E5-6009	26 (1.02)	E5-6014	36 (1.42)	E5-6019
8 (.31)	E5-6005	18 (.71)	E5-6010	28 (1.10)	E5-6015	38 (1.50)	E5-6020
10 (.39)	E5-6006	20 (.79)	E5-6011	30 (1.18)	E5-6016	40 (1.57)	E5-6021
12 (.47)	E5-6007	22 (.87)	E5-6012	32 (1.25)	E5-6017	42 (1.65)	E5-6022



E5 Cam Latch

Zinc · Wing style · Padlockable wing style · Fixed grip

- Single hole install
- Multiple key codes

Material and Finish

Wing: Zinc alloy, black powder coated and steel, zinc plated

Padlockable wing: Zinc alloy, chrome plated and steel, zinc plated

Performance Details

Maximum static load: 330 N (74 lbf)

Sealing Notes

Wing style sealed to meet NEMA 4 / IP65 standards

Installation Notes

Mounting nut maximum tightening torque: 10 N·m (88 in·lbf)

Screw Maximum tightening torque: 5 N·m (45 in·lbf)

Keys

See page 130

Notes

Wing style suitable for push-to-close action see page 128

For lock core selection and a complete overview of the *SOUTHCO*® Key-Choice System see page 158

Part Number Selection

Order latch and cam separately

Cam part number see table page 127

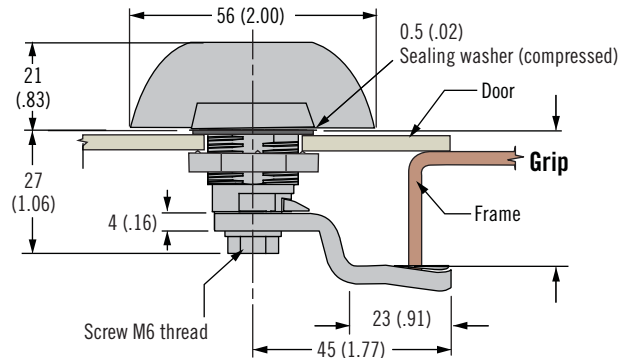
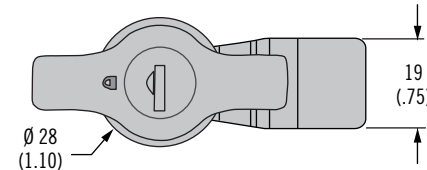
Part Number Selection

See table

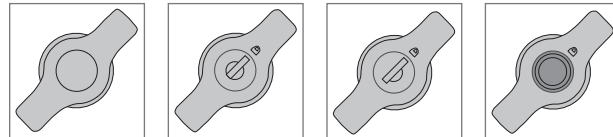
Order latch and cam separately

Cam part number see table page 127

Wing



L Lock Styles

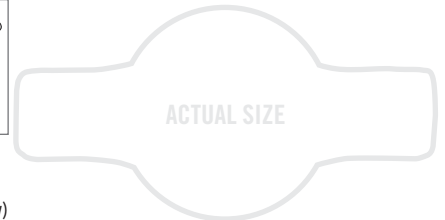


Non-locking

Key-locking key code CH751

Key-locking key code R001 with shutter

Key-locking lock core (order separately)



Latch Part Number (no cam)

E5 - 9 - L 5 - UU1 - 1 K

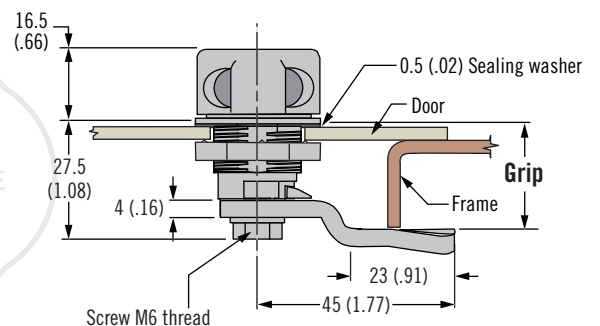
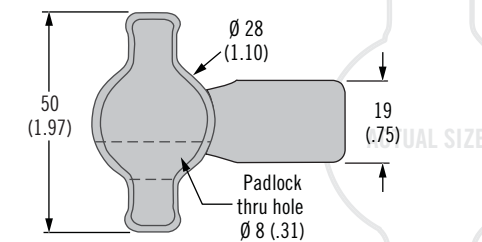
K Key options

- 0 No keys supplied (order separately, see page 130)
- 3 1 Overmolded key supplied

L Lock style

- 30 Non-locking (omit last two digits of part number)
- 31 Key-locking black lock core keyed alike CH751
- 32 Key-locking stainless steel scalp and shuttered lock core keyed alike R001
- 33 Without lock core (omit last two digits of part number)
Order lock core separately, see page 158

Padlockable Wing



R Rotation

- 1 Type B counter-clockwise to latch
- 2 Type A clockwise to latch

Latch Part Number (no cam)

E5 - 31 - 5 R 2 - UU0

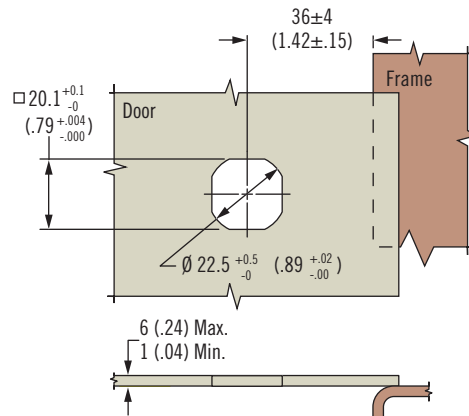
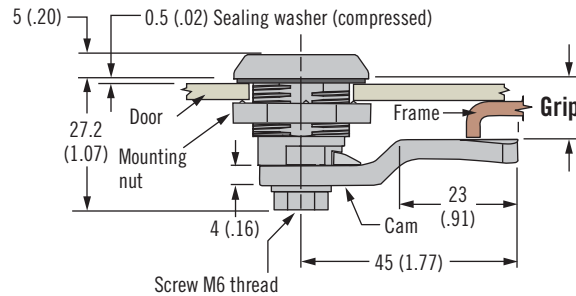
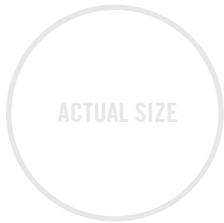
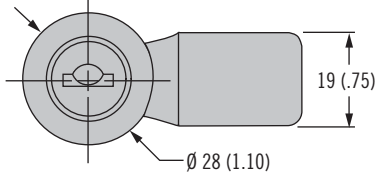
Dimensions in millimeters (inch) unless otherwise stated

E5 Cam Latch

Zinc · Cylinder lock · Fixed grip



Cylinder Lock



- F** Finish
- 2 Bright chrome
 - 5 Black powder coated

- K** Key options CH751
- 0 No keys supplied (order separately, see page 130)
 - 2 2 Flat keys supplied

Latch Part Number
(no cam)

E5 - 5 - 40 F - UU1 - 1 K

- Single hole install
- Latched / unlatched indicator

Material and Finish

Zinc alloy, powder coated and steel, zinc plated
Scalp stainless steel

Performance Details

Maximum static load: 330 N (74 lbf)

Installation Notes

Mounting nut maximum tightening torque: 10 N·m (88 in·lbf)
Screw Maximum tightening torque: 5 N·m (45 in·lbf)

Sealing Notes

NEMA 4 / IP65 achieved using gasket supplied

Keys and Accessories

See page 130

Notes

Suitable for push-to-close action
see page 128

Part Number Selection

See table

Order latch and cam separately

Cam Part Number Table (order separately from latch)

Grip	Part Number	Grip	Part Number	Grip	Part Number	Grip	Part Number
4 (.16)	E5-6003	14 (.55)	E5-6008	24 (.94)	E5-6013	34 (1.34)	E5-6018
6 (.24)	E5-6004	16 (.63)	E5-6009	26 (1.02)	E5-6014	36 (1.42)	E5-6019
8 (.31)	E5-6005	18 (.71)	E5-6010	28 (1.10)	E5-6015	38 (1.50)	E5-6020
10 (.39)	E5-6006	20 (.79)	E5-6011	30 (1.18)	E5-6016	40 (1.57)	E5-6021
12 (.47)	E5-6007	22 (.87)	E5-6012	32 (1.25)	E5-6017	42 (1.65)	E5-6022



E5 Cam Latch

Zinc · Push-to-close · Hand, key or tool operated · Single and two point

- Single hole installation
- Latched / unlatched indicator
- Push-to-close action

Material and Finish

Zinc alloy, powder coated and steel, zinc plated

Performance Details

Maximum static load: 330 N (74 lbf)

Installation Notes

Mounting nut maximum tightening torque: 10 N·m (88 in·lbf)

Screw Maximum tightening torque: 5 N·m (45 in·lbf) for two point actuator only

Keys and Accessories

See page 130

Notes

Single Point: Push-to-close action in unlocked position only and key inserted (cylinder lock)

Two Point: Order actuator separately (see page 131)

For lock core selection and a complete overview of the *SOUTHCO*® Key-Choice System see page 158

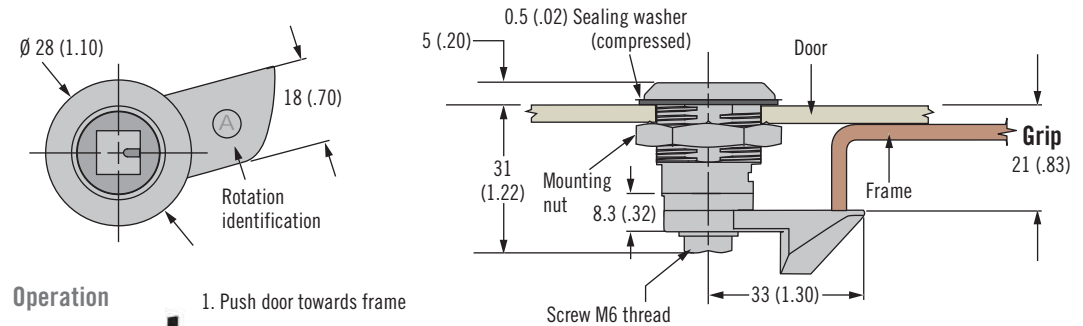
Actuator Part Number

See page 131 for details

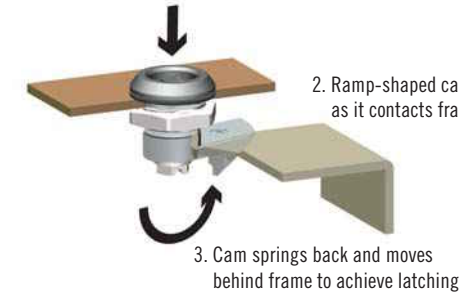
Two point to be used with *SOUTHCO*® R4 rotary series latches and cables see page 272

Two point push to close action: Internal spring causes return of driver and actuator to original latched position when driver is released after opening. Ideal for use with cables and rotary latches.

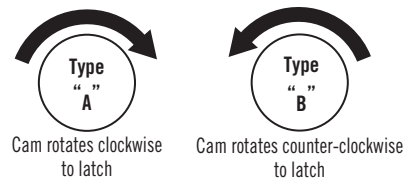
Single Point Spring-Loaded (Type A tool operated shown)



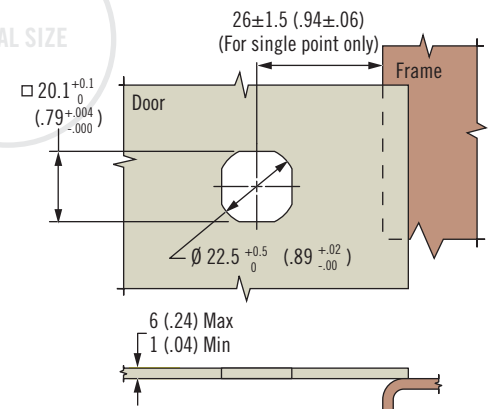
Operation



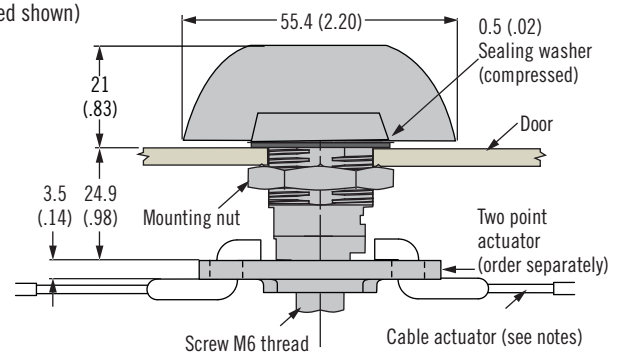
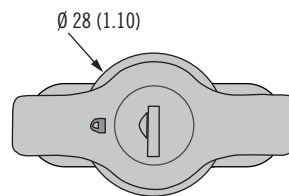
R Rotation



ACTUAL SIZE

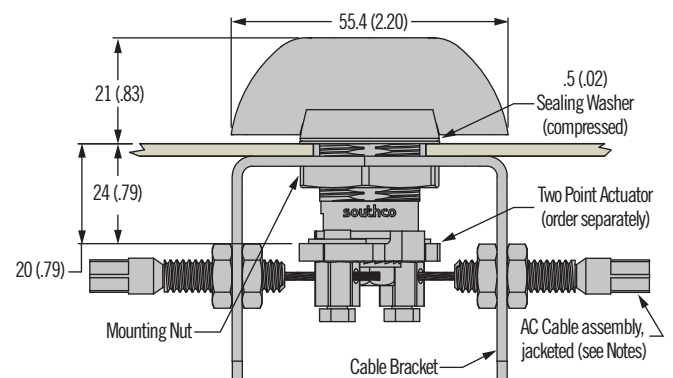


Two Point Spring-Loaded (Type A hand operated shown)



Two Point Actuator for bare cable

(order separately, see page 132)



Dimensions in millimeters (inch) unless otherwise stated

Hand / Key Operated

- F Finish**
- 2 Bright chrome (not available for wing type)
 - 5 Black powder coated

- T Type**
- 5 Cylinder lock keyed alike CH751
 - 9 Wing / T-handle / L-handle





- R Rotation**
- 51 Type A single point (for visual identification cam stamped A or B)
 - 52 Type B single point (for visual identification cam stamped A or B)
 - TR Type A two point (order actuator separately)
 - TL Type B two point (order actuator separately)

Part Number Selection

Latch supplied fully assembled

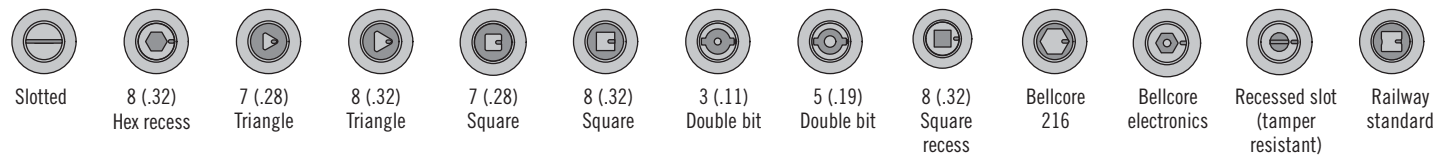
- K Key options**
- 0 No keys supplied (order separately, see page 130)
 - 3 1 Overmolded key supplied

E5 - T - L F - R 0 - 1 K

Lock style	T = 5		T = 9	
				
	Cylinder Lock	Wing	T-handle	L-handle
Non-locking (omit last two digits of part number)	~	30	60	70
Keyed CH751 (lock core finish matches handle finish)	~	31	61	71
Keyed CH751 (stainless steel scalp shuttered)	40	~	~	~
Keyed R001 reversible (stainless steel scalp shuttered)	~	32	62	72
Without lock core (omit last two digits of part number) (to be ordered separately see page 158)	~	33	63	73

Tool Operated

H Head Styles



- F Finish**
- 2 Bright chrome
 - 5 Black powder coated

- H Head style**
- 00 Slotted
 - 01 8 (.32) Hex recess
 - 02 7 (.28) Triangle
 - 03 8 (.32) Triangle
 - 04 7 (.28) Square
 - 05 8 (.32) Square
 - 06 3 (.11) Double bit
 - 07 5 (.19) Double bit
 - 08 8 (.32) Square recess
 - 13 Bellcore 216
 - 19 Bellcore electronics
 - 21 Recessed slot (tamper resistant)
 - 22 Railway standard

- R Rotation**
- 51 Type A single point (for visual identification, cam stamped A or B)
 - 52 Type B single point (for visual identification, cam stamped A or B)
 - TR Type A two point (order actuator separately)
 - TL Type B two point (order actuator separately)

Part Number Selection

Latch supplied fully assembled

E5 - 6 - H F - R 0



E5 Cam Latch Accessories

Keys

Material and Finish

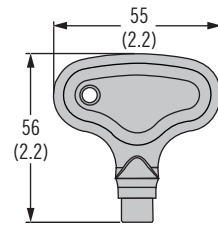
Tool key: Zinc alloy or nylon

Overmolded key: Nickel plated and ABS plastic black

Flat key: Nickel plated

Keys Zinc or Nylon










- H** Head style
- 2 3 (.11) Double bit
 - 3 7 (.28) Triangle
 - 4 7 (.28) Square
 - 7 8 (.32) Triangle
 - 8 8 (.32) Square recess
 - 9 5 (.19) Double bit (nylon only)
 - 10 8 (.32) Square male (zinc only)
 - 11 Bellcore electronics
 - 12 Bellcore 216 (zinc only)



- F** Finish
- 1 Plated zinc
 - 2 Natural zinc
 - 3 Nylon, black

E3 - H - F

Head Styles

-  2 3 (.11) Double bit
-  3 7 (.28) Triangle
-  4 7 (.28) Square
-  7 8 (.32) Triangle
-  8 8 (.32) Square recess
-  9 5 (.19) Double bit
-  10 8 (.32) Square male
-  11 Bellcore electronics
-  12 Bellcore 216

Part Number

Overmolded key CH751:

Single: PK-10-10-05

Pair: PK-10-01-05

Overmolded key R001:

Single: PK-10-10-05-KR001

Pair: PK-10-01-05-KR001

Flat key

Pair: PK-10-01

Overmolded Keys

Key CH751

Key R001



Flat Keys

Key CH751



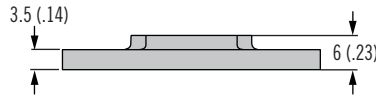
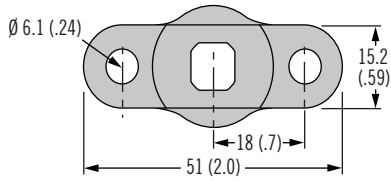
Dimensions in millimeters (inch) unless otherwise stated

E5 Cam Latch Accessories

Multi-point actuators · Dummy cam



Multi-Point Actuator



Part Number

A5-91-201-11

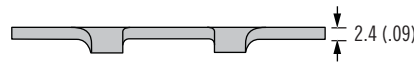
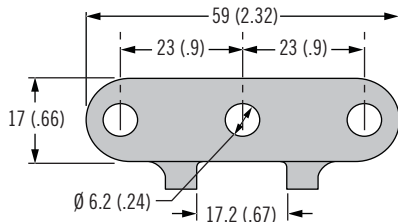
Material and Finish

Zinc alloy

Notes

Actuator plate (for multi-point see page 272 for cable assembly) (not recommended for key-locking)
Not to be used with low profile E5

Multi-Point Actuator - Low Profile



Part Number

A8-4-01-03

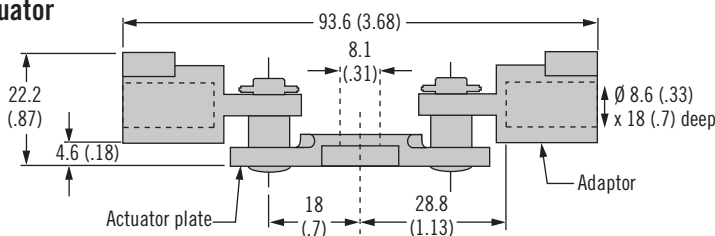
Material and Finish

Steel, plated

Notes

Actuator plate (for multi-point see pages 198-199 for rods)
For use with all E5 latches

Multi-Point Actuator



Part Number

A5-90-101-11

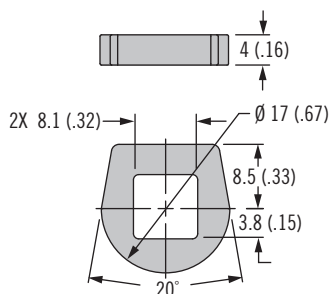
Material and Finish

Zinc alloy and steel, zinc plated

Notes

Actuator plate (for multi-point see page 198 for rods)
Not to be used with low profile E5

Dummy Cam



Part Number

Steel	H3-0-45688
Stainless Steel	H3-0-45688-24

Material and Finish

Steel, stainless steel

Notes

Replaces cam when used with actuator plate A5-90-101-11 in order to create a 2-point latching system



E5 Cam Latch Accessories

Hooked cam · Multi-point actuator · Cable brackets

Material and Finish

Steel plated

Hook cam: Steel, plated

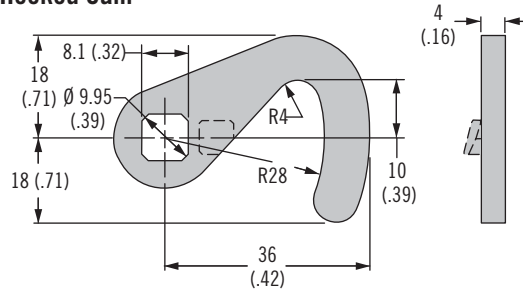
Multi-point actuator: Zinc alloy, plated

Cable bracket: Steel, plated

Notes

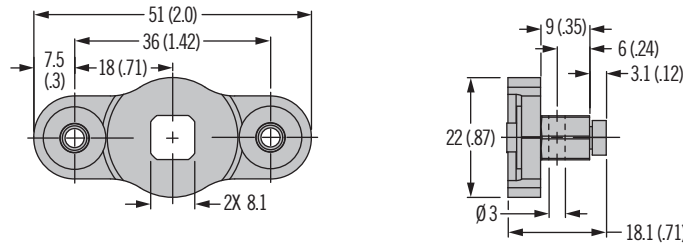
Not to be used with low profile E5

Hooked Cam



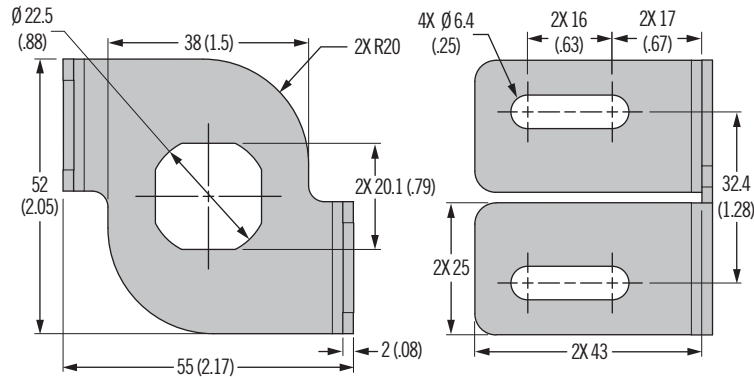
Hooked Cam Part Number	
E5-6200	No stop
E5-6210	Stop for clockwise rotation
E5-6220	Stop for counter-clockwise rotation

Multi-Point Actuator



Part Number
A5-99-136

Cable Bracket – Counter Clockwise Rotation



Part Number
AC-0-49617-11-L

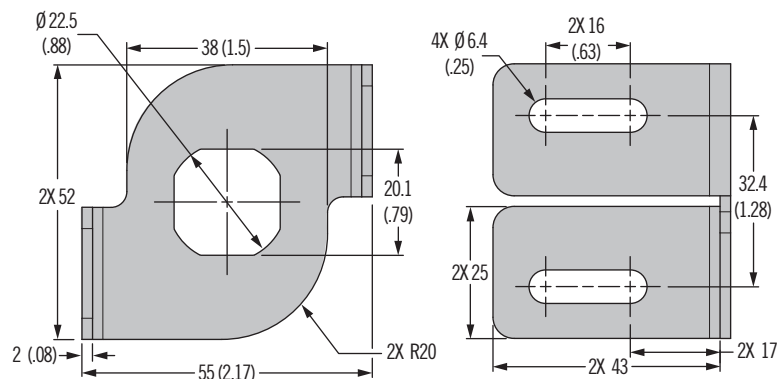
Part Number

See table

Notes

See page 272 for additional cable assembly selections

Cable Bracket – Clockwise Rotation



Part Number
AC-0-49617-11-R

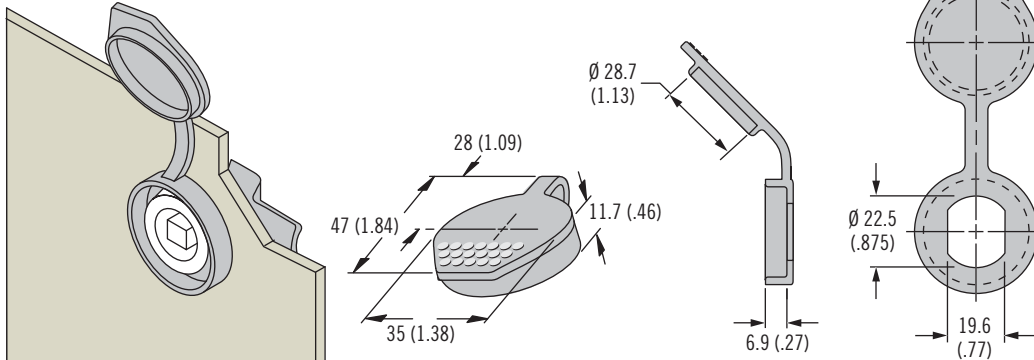
Dimensions in millimeters (inch) unless otherwise stated

E5 Cam Latch Accessories

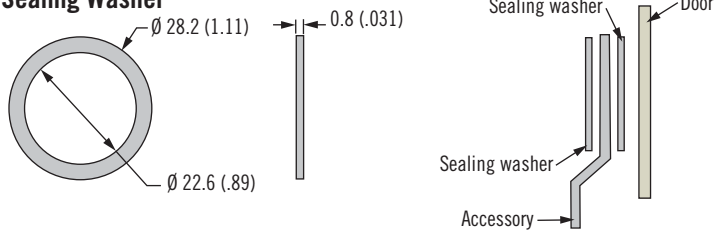
Sealing cover · Sealing washer · Pull tab · Padlock bracket



Sealing Cover

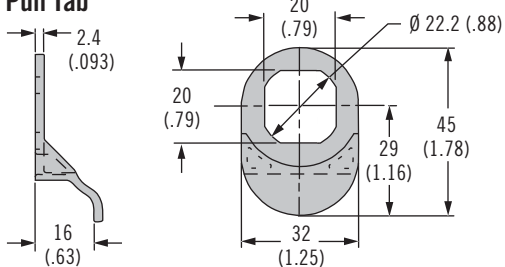


Sealing Washer

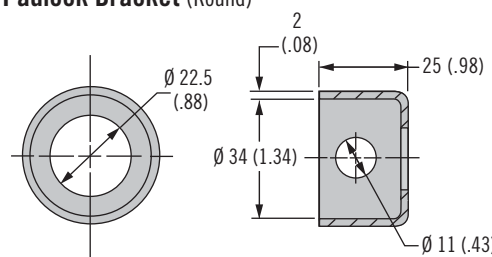


Type	Part Number	Grip Adjustment Formula
Sealing washer	E5-17	Add 0.4 (0.02) compressed height to door thickness
Sealing cover	90-3	Add 2.3 (.090) to door thickness

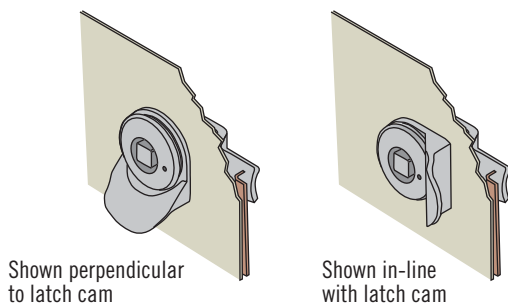
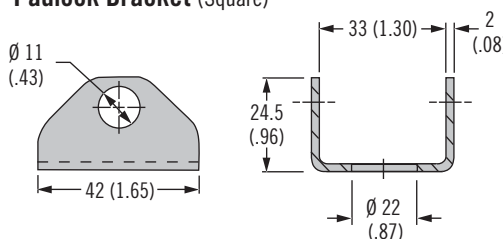
Pull Tab



Padlock Bracket (Round)



Padlock Bracket (Square)



Type	Part Number	Grip Adjustment Formula
Padlock bracket square	E3-77-101-31	Add 2 (.08) to door thickness
Padlock bracket round	E3-77-102-31	Add 2 (.08) to door thickness
Pull tab	E5-18	Add 2.4 (.093) to door thickness

Material and Finish

Sealing washer: Neoprene natural

Sealing cover: Thermoplastic elastomer, black

Installation Notes

To provide sealing: use two sealing washers and add compressed thickness of each washer and accessory thickness to your door thickness range.

Notes

Sealing washer for use with all E5 products

Sealing cover for use with tool operated and cylinder lock E5 only

Part Number

See table

Material and Finish

Padlock bracket: Stainless steel, black powder coated

Pull tab: Nylon, black

Installation Notes

To provide sealing: use two sealing washers and add compressed thickness of each washer and accessory thickness to your door thickness range.

Notes

Padlock brackets and pull tabs for use with tool operated and cylinder lock E5 only

Part Number

See table



92 Cam Latch

T and L-Handle · Adjustable grip

- Round hole install
- Detents in open and closed position

Material and Finish

Zinc alloy and steel, zinc plated

Performance Details

Maximum static load:
 Short cam 400 N (90 lbf)
 Long cam 200 N (45 lbf)

Installation Notes

Screw and lockwasher assembly
 M4 x 10 (supplied).

For door thickness > 3.0 (.12),
 calculate screw length using the
 following formula:

Door thickness + 7.00 (.28)

Keys

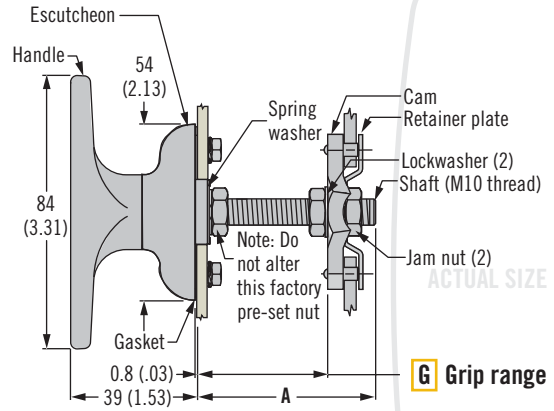
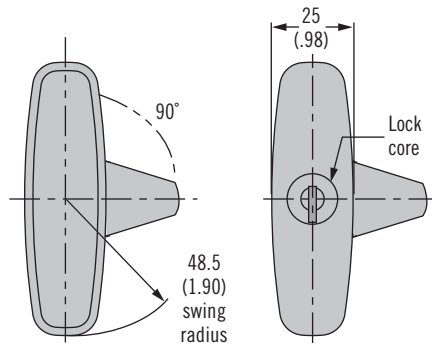
See page 130

Notes

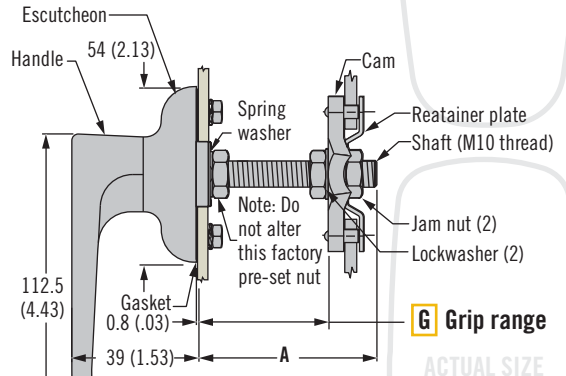
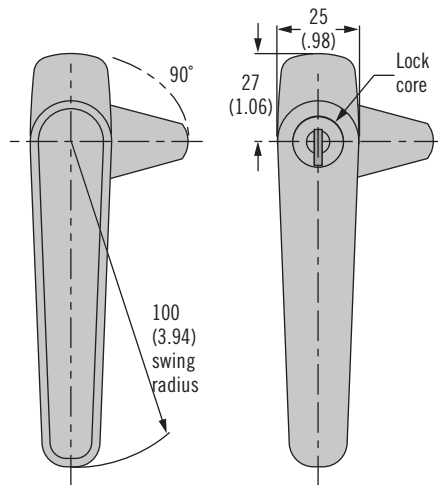
For fixed grip versions see page 124

For version with 8 (.32) square shaft
 see page 143

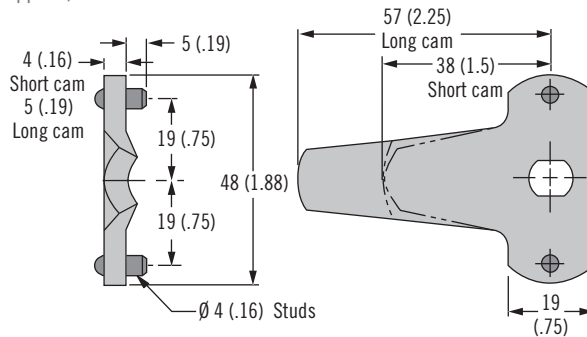
T-Handle



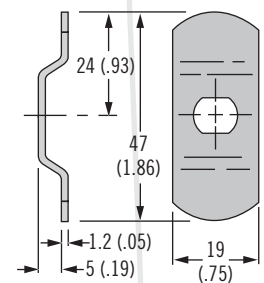
L-Handle



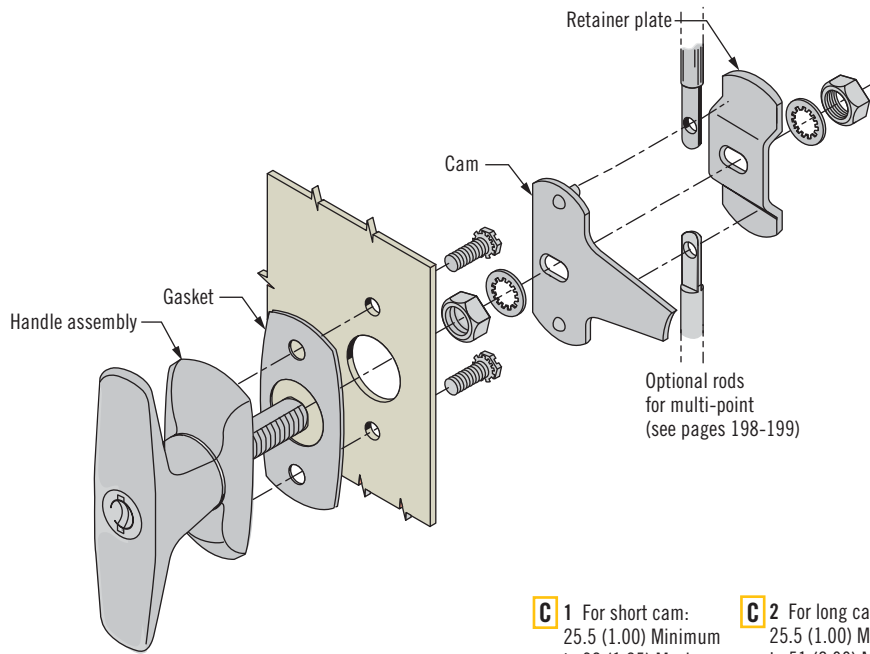
Cam (supplied)



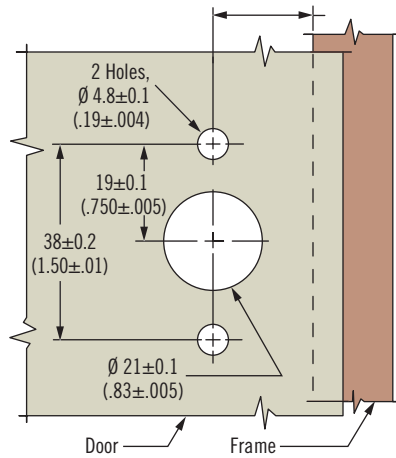
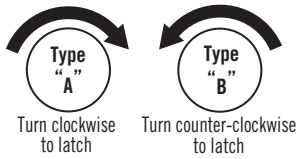
Retainer Plate (supplied)



Dimensions in millimeters (inch) unless otherwise stated

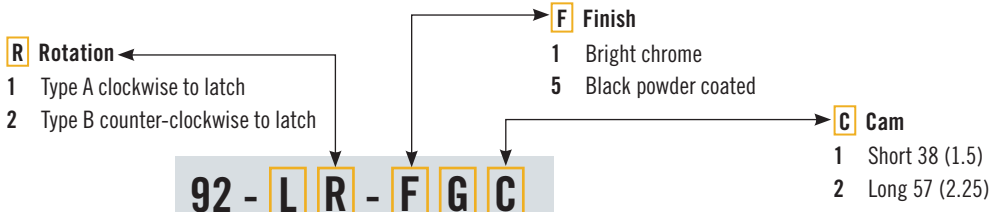


- C 1** For short cam: 25.5 (1.00) Minimum to 32 (1.25) Maximum
- C 2** For long cam: 25.5 (1.00) Minimum to 51 (2.00) Maximum



Part Number Selection

See table



- R** Rotation
 - 1 Type A clockwise to latch
 - 2 Type B counter-clockwise to latch
- L** Lock style
 - 1 T-handle non-locking
 - 2 T-handle key-locking CH751 (two keys supplied)
 - 3 L-handle non-locking
 - 4 L-handle key-locking CH751 (two keys supplied)

G Grip	Minimum	Maximum	A
1		19 (.75)	32 (1.25)
2	16 (.63)	32 (1.25)	44.5 (1.75)
3		44.5 (1.75)	57.5 (2.25)



68 Cam Latch

Small · T-Handle · Adjustable grip

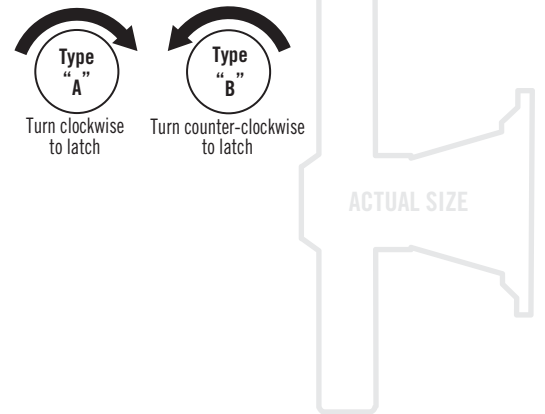
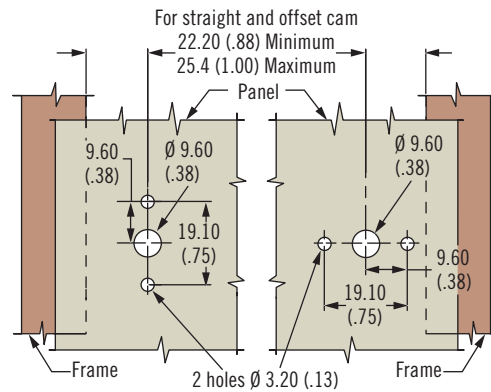
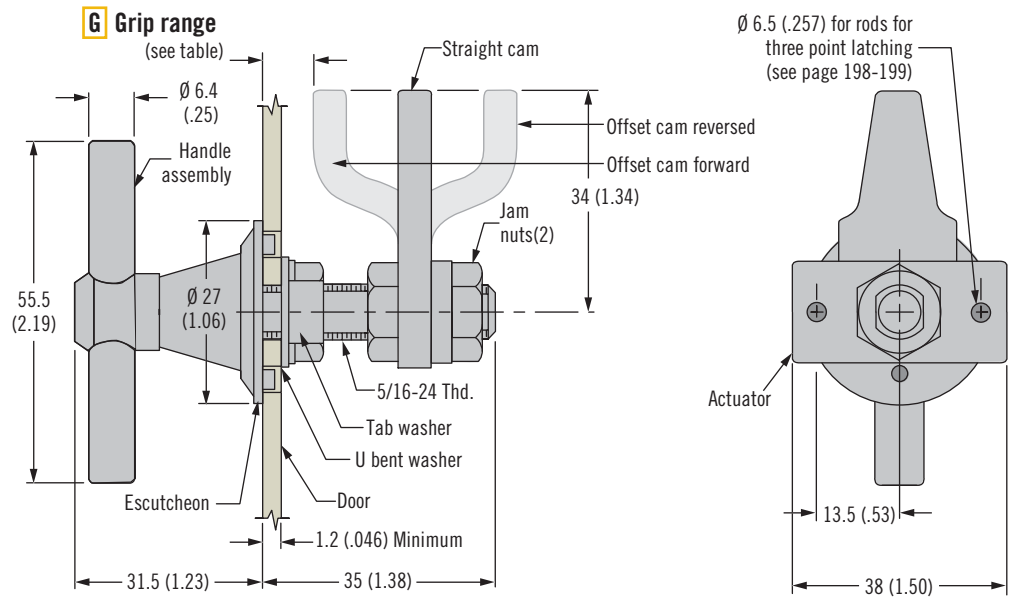
• **Robust design**

Material and Finish

Zinc alloy and steel, zinc plated

Performance Details

Maximum static load:
1100 N (250 lbf)



Part Number Selection

See table

Grip	Minimum	Maximum	Cam Type
1	0 (0)	12.7 (.50)	Offset cam forward position
	25.4 (1.00)	38 (1.50)	Offset cam reversed position
2	12.7 (.50)	25.4 (1.00)	Straight cam

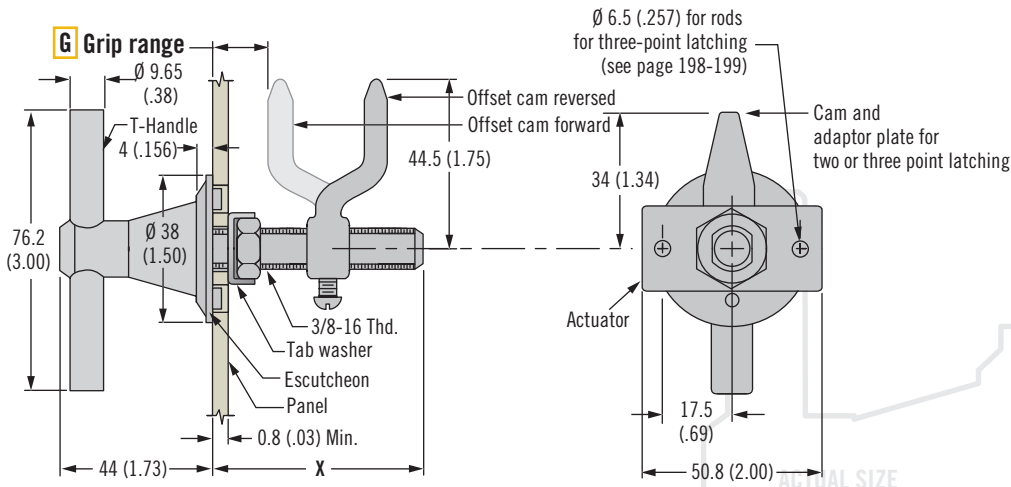
68 - 50 - 30 **G** - **F**

- F** Finish
- 10 Zinc plate bright chromate
 - 20 Chrome plated

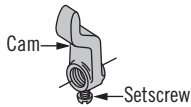
Dimensions in millimeters (inch) unless otherwise stated

68 Cam Latch

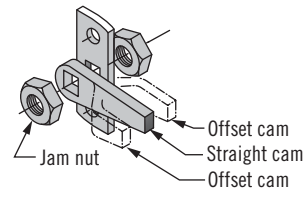
Medium · T-Handle · Adjustable grip



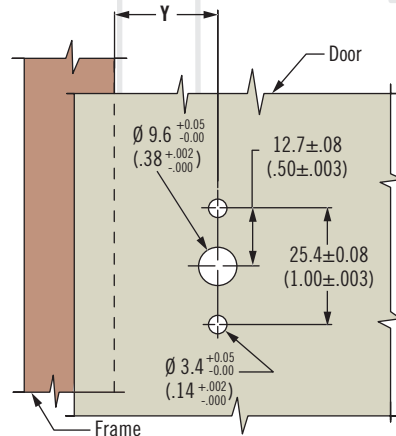
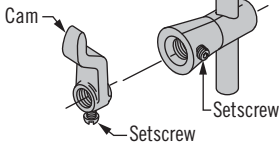
A Single point



A Three point



A Inside release



- Robust design
- Optional internal actuation

Material and Finish

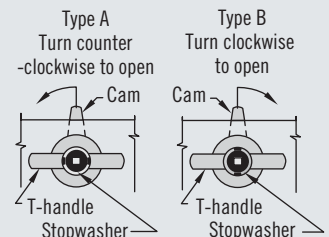
Zinc alloy and steel, zinc plated

Performance Details

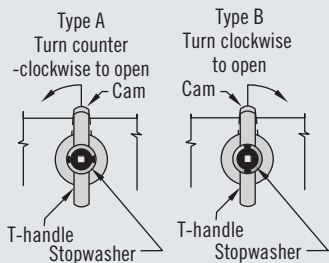
Maximum static load:
1100 N (250 lbf)

Installation Notes

T-handle orientation and operation:
1. Handle parallel to the edge of door when latched.



2. Handle perpendicular to edge of door when latched.



Part Number Selection

See table

A Assembly

- 1 Single point
- 3 Three point
- 4 Inside release

68 - 10 - A 0 G - F

F Finish

- 10 Zinc plate bright chromate
- 20 Chrome plated

Assembly	G Grip	Grip Range		X	Y	Cam Type
		Minimum	Maximum			
Single point	1	3.2 (.13)	25.4 (1.00)	46.4 (1.83)	31.8±3.2 (1.25±.13)	Offset cam forward position
		25.4 (1.00)	50.8 (2.00)			Offset cam reversed position
Three point	1	1.6 (.06)	19.8 (.78)		28.6±1.6 (1.13±.06)	Offset cam forward position
		27 (1.06)	45.2 (1.78)			Offset cam reversed position
	2	14.3 (.56)	32.5 (1.28)			Straight cam
Inside release	1	3.2 (.13)	25.4 (1.00)		65 (2.56)	31.8±3.2 (1.25±.13)
		25.4 (1.00)	50.8 (2.00)	Offset cam reversed position		



68 Cam Latch

Medium · Folding bail handle · Adjustable grip

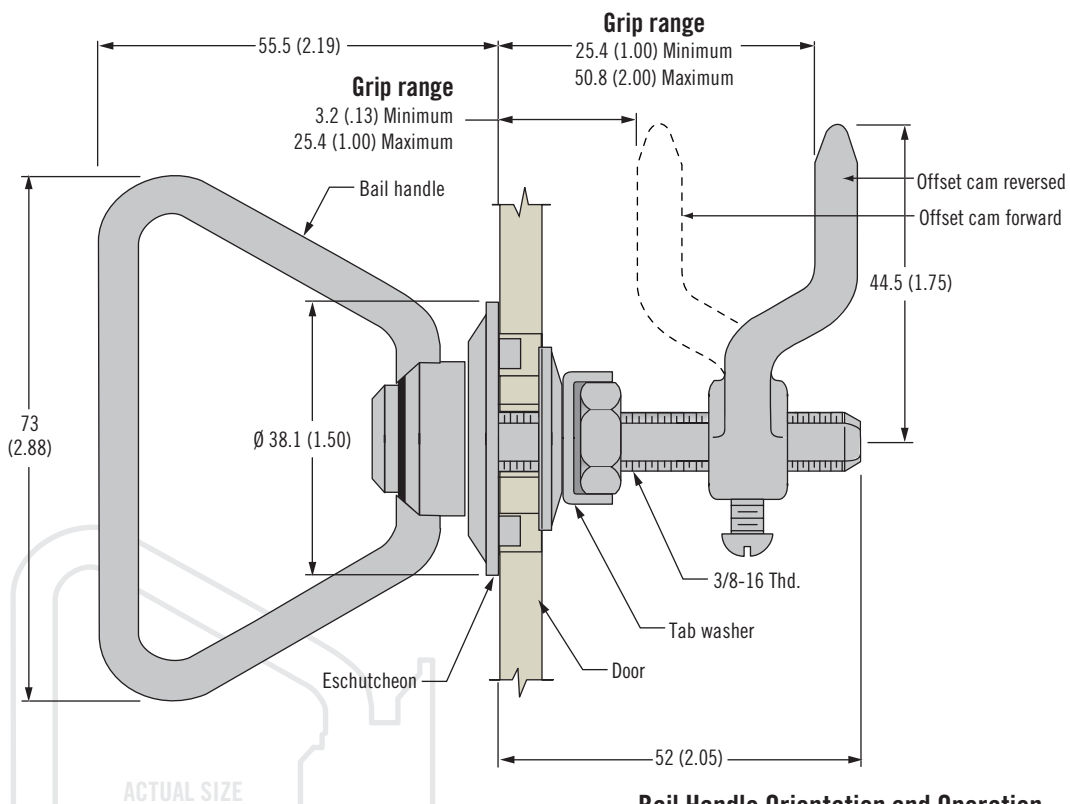
- Robust design
- 90° rotation

Material and Finish

Zinc alloy and steel, zinc plated

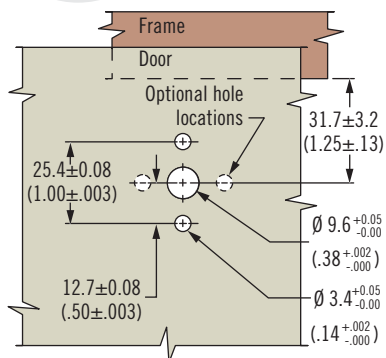
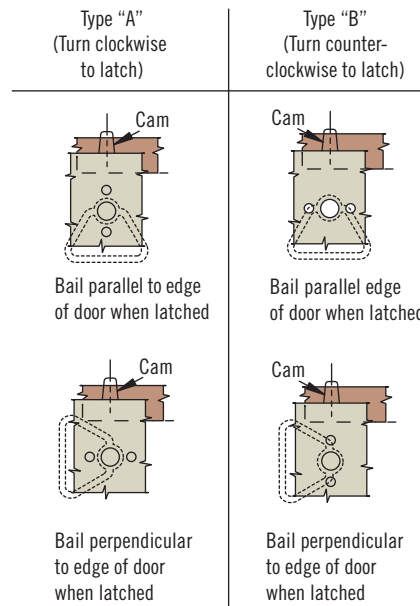
Performance Details

Maximum static load
890 N (200 lbf)



Bail Handle Orientation and Operation

(Shown in latched position)



Part Number Selection

See table

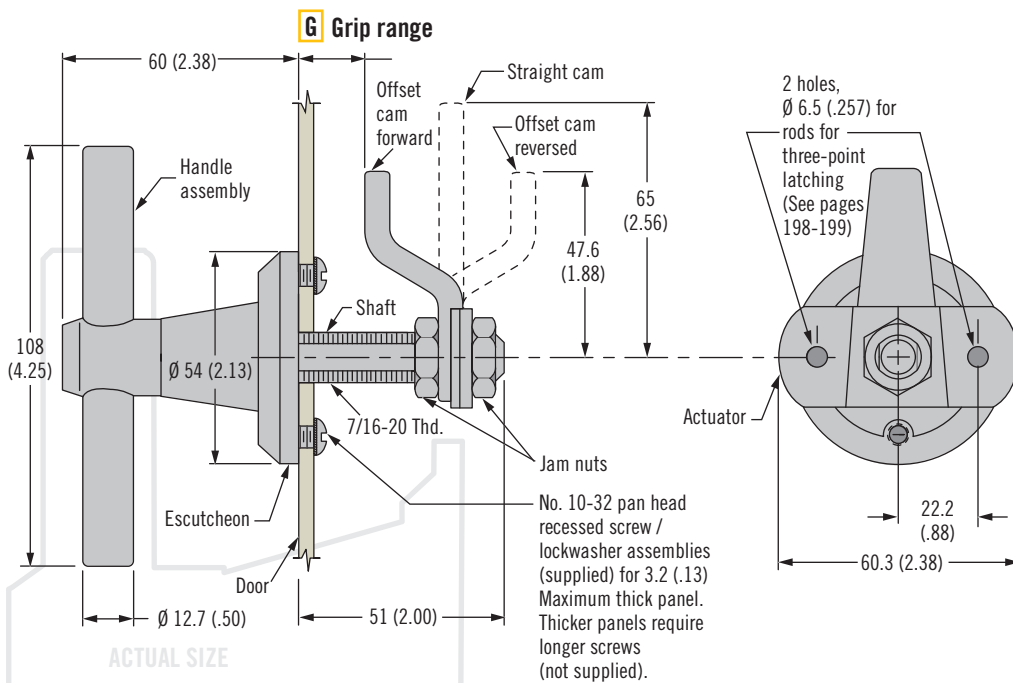
68 - 20 - 101 - F

F Finish
 10 Zinc plate bright chromate
 20 Chrome plated

Dimensions in millimeters (inch) unless otherwise stated

68 Cam Latch

Large · T-Handle · Adjustable grip



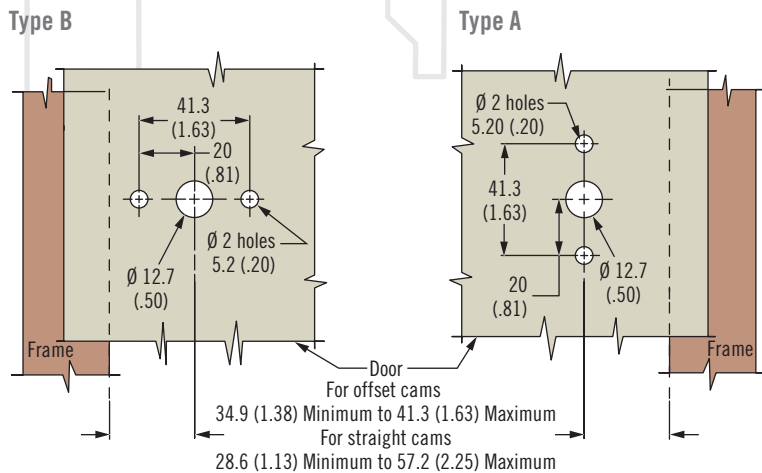
- Robust construction
- 90° movement

Material and Finish

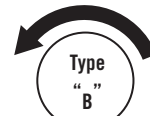
Zinc alloy and steel, zinc plated

Performance Details

Maximum static load:
1300 N (300 lbf)



Turn clockwise to latch



Turn counter-clockwise to latch

Part Number Selection

See table

68 - 70 - 30 G - F

Grip	Minimum	Maximum	Cam Type
1	0 (0)	19 (.75)	Offset cam forward position
	25.4 (1.00)	57 (2.25)	Offset cam reversed position
2	6.4 (.25)	38 (1.50)	Straight cam

- F Finish**
- 10 Zinc plate bright chromate
 - 20 Chrome plated



01 Cam Latch

Small · Flush handle · Cup style · Adjustable grip

- Low profile design

Material and Finish

ABS, zinc and steel, zinc plated

Performance Details

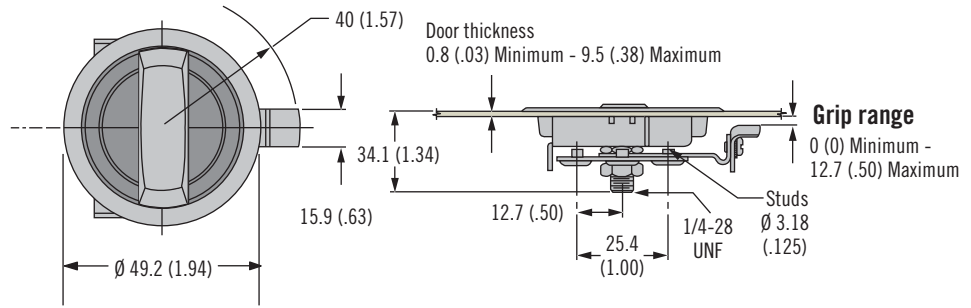
Maximum static load: 160 N (35 lbf)

Flammability rating: UL94-HB

Notes

For multi-point latching options see page 176

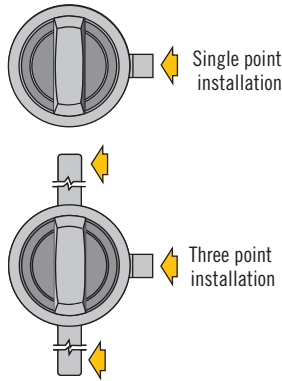
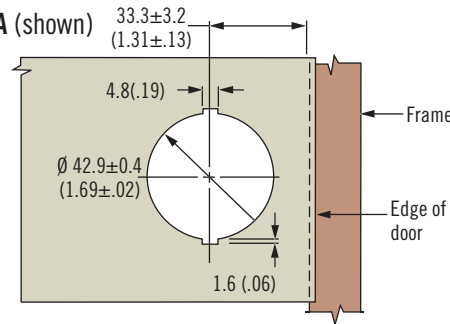
For fixed grip version see page 122



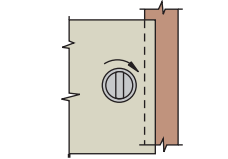
Grip range

0 (0) Minimum - 12.7 (.50) Maximum

Type A (shown)

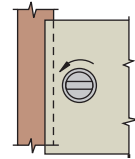


Type A Assemblies (Turn handle clockwise to latch)



Handle shown **parallel** to edge of door when latched

Type B Assemblies (Turn handle counter-clockwise to latch)



Handle shown **perpendicular** to edge of door when latched

- Mounted on either type A or B doors.
- Choose horizontal or vertical closed position of handle

Part Number Selection

See table



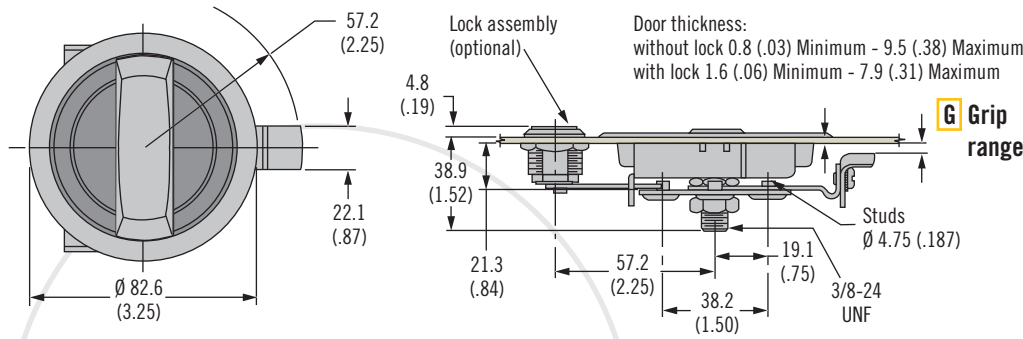
R Rotation

- 1 Type B counter-clockwise to latch for **parallel** installation
- 2 Type B counter-clockwise to latch for **perpendicular** installation
- 1 Type A clockwise to latch for **perpendicular** installation
- 2 Type A clockwise to latch for **parallel** installation

Dimensions in millimeters (inch) unless otherwise stated

01 Cam Latch

Medium · Flush and bail handle · Cup style · Adjustable grip



• **Low profile design**

Material and Finish

ABS, zinc and steel, zinc plated

Performance Details

Maximum static load: 220 N (50 lbf)

Flammability rating UL94-HB

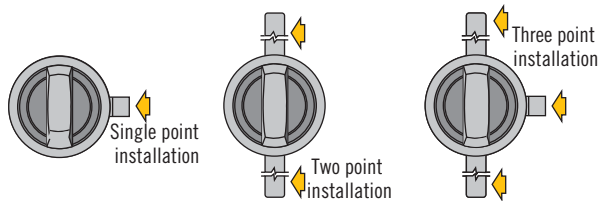
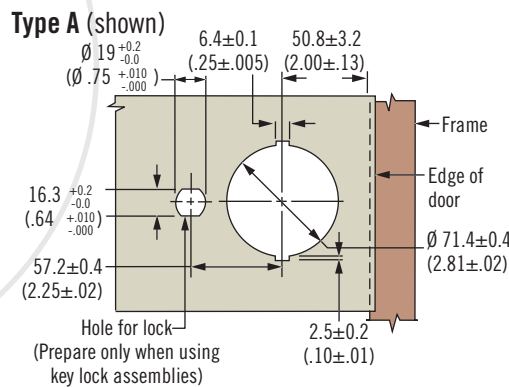
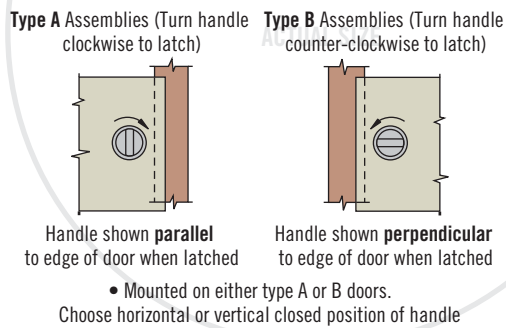
Keys

See page 130

Notes

For multi-point latching options see page 176

For fixed grip version see page 122



Part Number Selection

See table

- L Lock style**
- 1 Non-locking flat handle
 - 2 Non-locking folding bail handle
 - 3 Locking flat handle keyed alike CH751 (two keys supplied)
 - 4 Locking folding bail handle keyed alike CH751 (two keys supplied)

- F Finish**
- 1 Bright chrome
 - 5 Black (flat handle only)

Grip	Grip Range	Type A	Type B	Cam Type
1	0 - 12.7 (0 - .50)	Perpendicular	Parallel	Single or three point latching
2	0 - 12.7 (0 - .50)	Parallel	Perpendicular	Single or three point latching
3	12.7 - 28.6 (.50 - 1.13)	Perpendicular	Parallel	Single or three point latching
4	12.7 - 28.6 (.50 - 1.13)	Parallel	Perpendicular	Single or three point latching
5	Two point only	Perpendicular	Parallel	Two point only
6	Two point only	Parallel	Perpendicular	Two point only

01 - L 3 - G F



24 Cam Latch

Flush T-handle · Adjustable grip

• **Concealed mounting type**

Material and Finish

Zinc alloy and steel, zinc plated or stainless steel

Performance Details

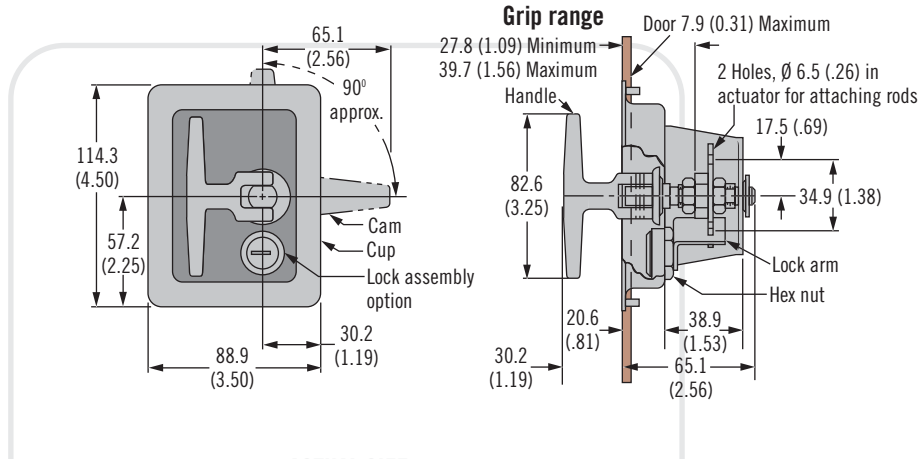
Maximum static load:
445 N (100 lbf)

Installation Notes

Maximum tightening torque of mounting nuts not to exceed 2.8 N·m (25 in·lbf)

Keys

See page 130



Part Number		
Style	With Mounting Studs	
	Cup and bracket polished stainless steel. Handle zinc chrome plated	Cup and bracket steel dacrotized. Handle zinc dacrotized
Locking keyed alike CH751 supplied	24-20-812-35	24-20-812-10
Non-locking	24-20-302-35	24-20-302-10
Non-locking environmentally sealed	24-20-312-35	24-20-312-10



69 Cam Latch

Arrowhead · Detent design · Adjustable grip

- Arrow indicates cam orientation
- Single hole installation
- Detented design
- Adjustable grip

Material and Finish

Nylon and steel, zinc plated

Performance Details

Small size working load:

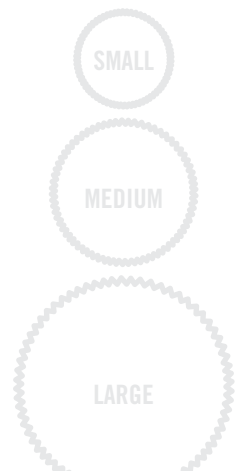
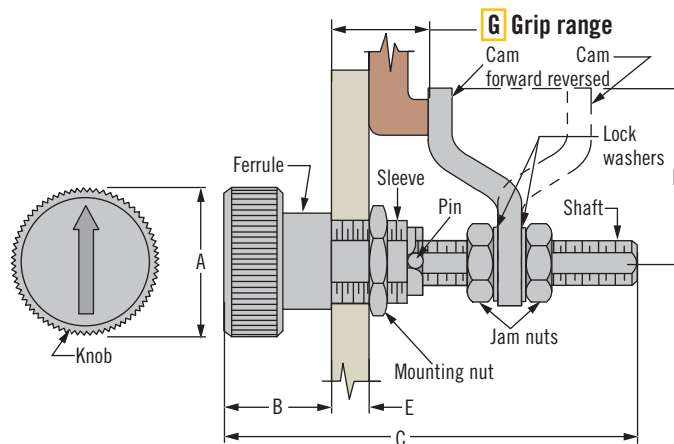
44 N (10 lbf)

Medium size working load:

220 N (50 lbf)

Large size working load:

330 N (75 lbf)



Size	Part Number	Grip Range		A	B	C	D	E
		Minimum	Maximum					
Small	69-10-301-11	4 (.16)	28.2 (1.11)	12.7 (.50)	12.7 (.50) Max.	38.1 (1.50)	13.5 (.53)	4.75 (.188)
Medium	69-10-401-11	3.2 (.13)	33.3 (.13)	19.1 (.75)	17.5 (.69) Max.	47.5 (1.87)	15.9 (.63)	6.35 (.25)
Large	69-10-501-11	4.8 (.19)	61.9 (2.44)	28.6 (1.13)	25.4 (1) Max.	79.2 (3.12)	34.1 (1.34)	12.7 (.50)

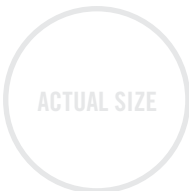
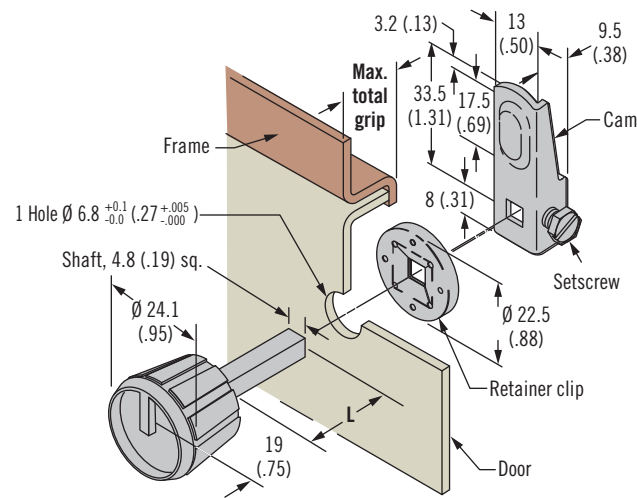
Dimensions in millimeters (inch) unless otherwise stated



61 Cam Latch

Universal cabinet series · Adjustable grip

Knob Style



- Single hole installation
- Accommodates wide grip ranges

Material and Finish

Nylon and steel, zinc plated

Performance Details

Maximum static load: 110 N (25 lbf)

Notes

Knob style shown. Additional L-handle and flush slotted styles available

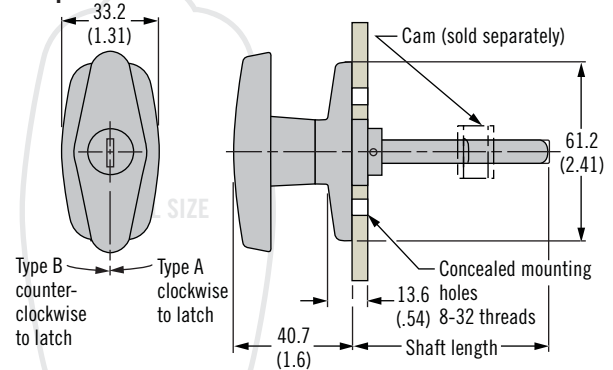
Maximum Total Grip	Shaft Length L	Assembly Part number
12.5 (.50)	25.5 (1.00)	61-10-102-11
25 (1.00)	38 (1.50)	61-10-104-11
44.5 (1.75)	57 (2.25)	61-10-107-11

92 Cam Latch

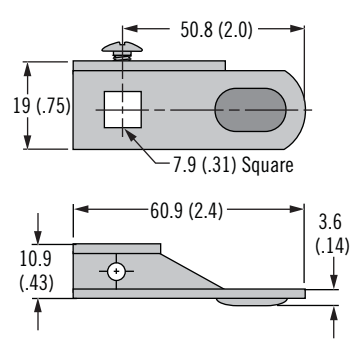
T, Compact-T and L-handle · Adjustable grip



Compact T-handle



Cam



- Easy cam adjustments

Material and Finish

Zinc alloy, powder coated or chrome plated and steel, zinc plated

Performance Details

Maximum static load: 150 N (34 lbf)

Notes

Black and chrome finish available
 For versions with threaded shaft see page 134.
 For fixed grip versions see page 124.
 Gasket Part Number: 92-70-G (sold separately)

Finish	Shaft Length	Locking Compact-T Part Number	
		Type A	Type B
Black	38.1 (1.5)	92-61-113-50	92-61-213-50
	50.8 (2.0)	92-61-114-50	92-61-214-50
	63.5 (2.5)	92-61-115-50	92-61-215-50

Cam Part Number
92-24-203-12

Compact T-handle style shown. T and L-handle style available. Locking and non-locking.



Dimensions in millimeters (inch) unless otherwise stated



H3 Swinghandle

Medium / large · Sealed / non-sealed

- Zinc alloy swinghandle system
- Multiple locking options; including DIN profile
- Indoor/outdoor version
- Available for medium (125mm x 25mm) and large (150mm x 25mm) door cutout

Material and Finish

Handle: Zinc alloy, black powder coated or satin chrome plated
Cam: Steel, zinc plated

Performance Details

Maximum static load: 250 N (56 lbf)

Sealing Notes

Sealed version meets NEMA 4 / IP66 water intrusion standards

Keys

See page 130

Multi-Point Systems

See page 192

Notes

*For dimension details of DIN lock version, please contact Southco

Product available to meet **TELCORDIA®** GR-487; contact Southco for details

Electromechanical swinghandle available see page 38

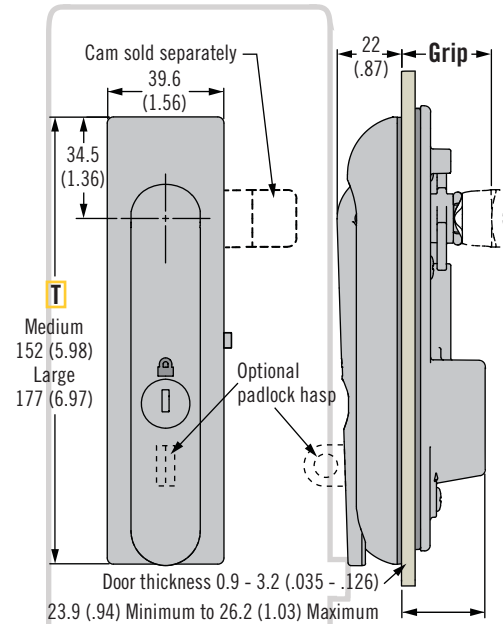
Key removal in lock position only for sealed version

For plastic version see page 196

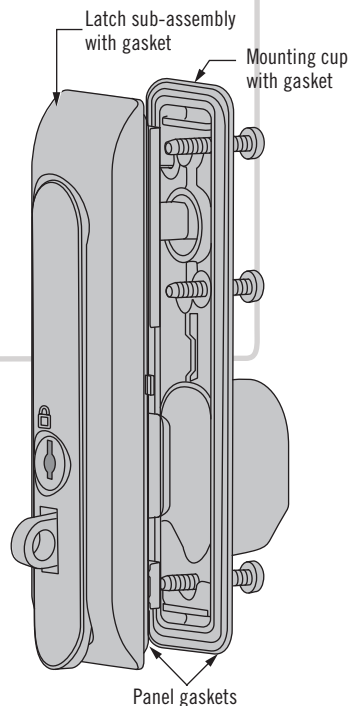
TELCORDIA is a registered trademark of Telcordia Technologies, Inc.

Sealed (H3-50 medium shown)

(H3-60 large available part number selection)

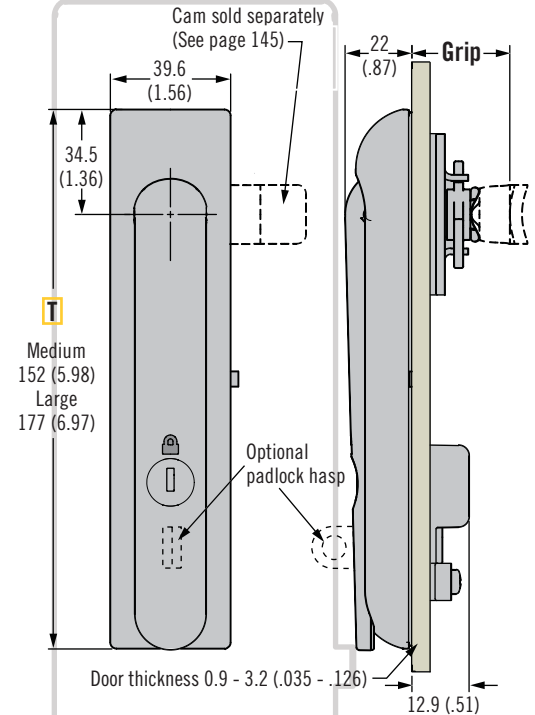


ACTUAL SIZE
H3-50 MEDIUM

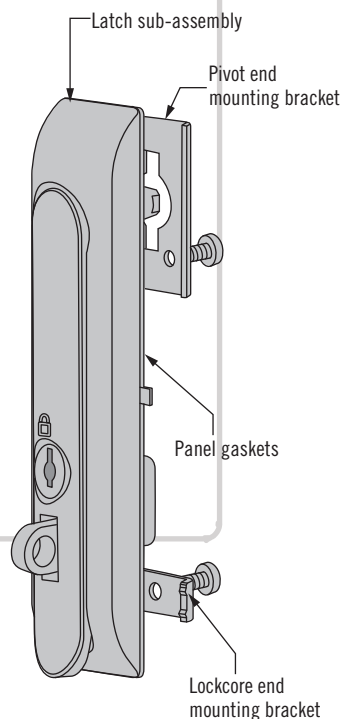


Non-Sealed (H3-60 large shown)

(H3-50 medium available part number selection)

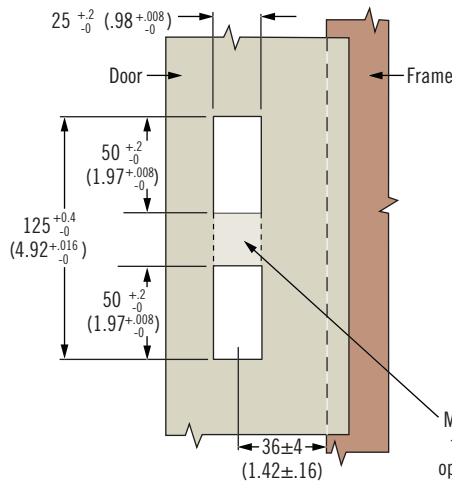


ACTUAL SIZE
H30-60 LARGE

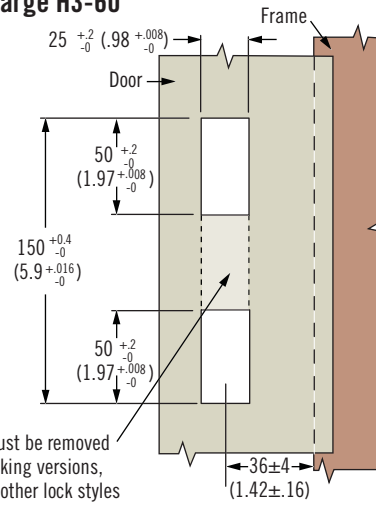


Dimensions in millimeters (inch) unless otherwise stated

Medium H3-50

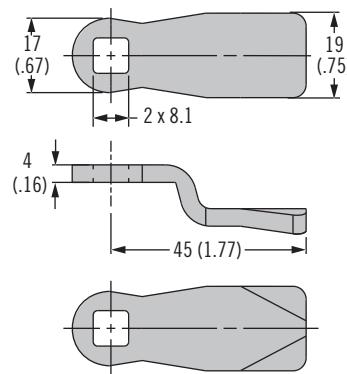


Large H3-60



Material must be removed for DIN locking versions, optional for other lock styles

Cam Part Number Table For Use As Single Point Or With Actuator Plate (order separately from latch)			
Grip	Part Number	Grip	Part Number
10.3 (.41)	E5-6107	26.3 (1.04)	E5-6115
12.3 (.48)	E5-6108	28.3 (1.11)	E5-6116
14.3 (.56)	E5-6109	30.3 (1.19)	E5-6117
16.3 (.64)	E5-6110	32.3 (1.27)	E5-6118
18.3 (.72)	E5-6111	34.3 (1.35)	E5-6119
20.3 (.80)	E5-6112	36.3 (1.43)	E5-6120
22.3 (.88)	E5-6113	38.3 (1.51)	E5-6121
24.3 (.96)	E5-6114	40.3 (1.59)	E5-6122



Part Number Selection

For single point:
Order latch and cam separately

For multi-point:
1. Order latch and cam separately
2. Order multi-point system accessories (linear actuator or actuator plate, rod, rod guide) if 3 point latching required see pages 192-201.

Notes

Actuator style **A** options 1 and 2 see pages 192-193

*2 Overmolded keys supplied

Latch Part Number (no cam)

T Size
50 Medium - 152 (5.98) height
60 Large - 177 (6.97) height

A Actuator style
3 No padlock hasp for use as single point or with actuator plate (see page 195)
4 With padlock hasp for use as single point or with actuator plate (see page 195)

H3 - T - A L - S F

S Sealing option
0 Non-sealed
1 Sealed

F Finish
44 Satin chrome
50 Black powder coated

L Lock style

- 00 Locking DIN profile (no lock supplied)
- 01 Locking keyed alike CH751*
- 02 Locking keyed alike 300*
- 03 Locking keyed alike 333*
- 04 Non-locking
- 05 Locking keyed alike HL450*
- 20 Non-locking with detent
- 21 Locking DIN profile keyed alike CH751*
- 22 Locking DIN profile keyed alike 300*
- 23 Locking DIN profile keyed alike 333*
- 24 DIN without Lock Plug
- 40 3 mm Double-bit
- 41 5 mm Double-bit
- 42 Bellcore 216
- 43 Bellcore Hex-Pin Recess
- 47 8 mm triangle
- 70 DIN profile 3 mm Double-bit
- 71 DIN profile 5 mm Double-bit
- 72 DIN profile Bellcore 216
- 73 DIN Profile Bellcore Hex-Pin Recess
- 77 DIN profile 8 mm triangle

For linear actuator version (see pages 192-193)





56 Spring-Loaded Plunger

Flare-in style – Miniature, Small and Large

- Simplified positioning of sliding components
- Quick-release hinge for removable door
- Fast installation and removal of components
- Designate access with color

Material and Finish

End cap: Steel, zinc plated, chromate, plus sealer
 Ferrule: Aluminum, natural
 Stud: Steel, hardened, zinc plated, chromate, plus sealer
 Knob: (Prism plungers only)
 PC/ABS, UL94-V0 Rated
 Spring: 300 series stainless steel, passivated

Installation Notes

Press with approximately 2,500 N (562 lbf) (Large and Small), 2,000 N (450 lbf) (Mini) until ferrule is flared into the countersink in the panel. A solid back-up tool must be used for proper installation

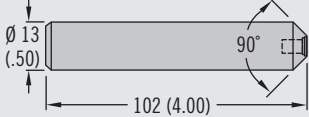
Part Number

See table

Install Tool

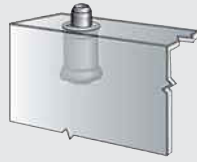
Part number: 47-110 (Miniature)
 56-7-TOOL (Large and Small)

Flaring tool

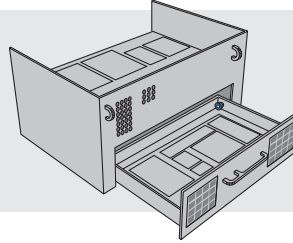


Applications

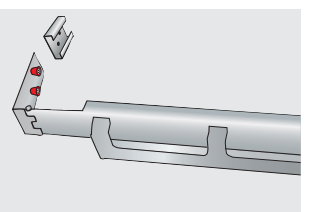
Retractable Hinge



Positioning / Secondary Catch

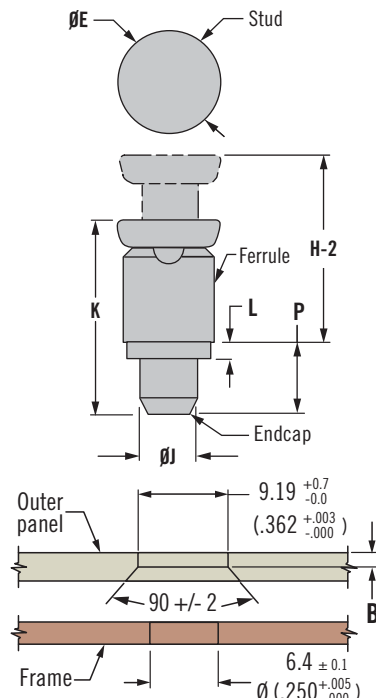


Quick Installation

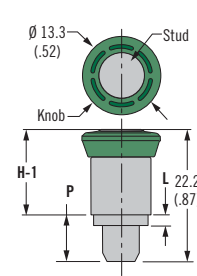


Flare-in style

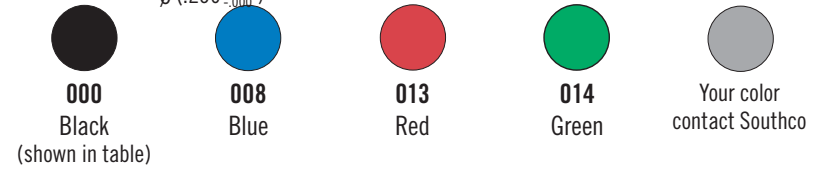
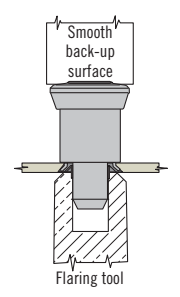
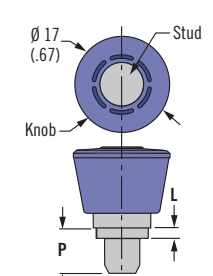
Bright - Miniature and Small



Prism - Miniature and Small



Prism - Large



Specifying Prism Color

To indicate color, change the last three digits of the part number.

Example:

56-161-000, black
 56-161-013, red

Outer Panel Thickness		P	Size	Knob Style	Part Number		H-1	H-2	Ø E	K	L	B	Ø J	Ø D	Ø C
A Min.	A Max.				Hold-Open	Without									
0.8 (.031)	1.5 (.06)	4.4 (.17)	Mini	Bright	56-21-1-15	56-20-1-15	9.9 (.39)	13.6 (.54)	8.5 (.33)	14.3 (.56)	1.0 (.04)	0.41 (.016)	4.29 (.169) MAX	6.76 ^{+0.1} _{-0.0}	4.3 ^{+0.13} _{-0.0}
				Prism	56-121-1-000	56-120-1-000	10.6 (.42)	14.3 (.56)	9 (.35)	15 (.59)					
1.5 (.06)	2.3 (.09)	5.2 (.20)		Bright	56-21-2-15	56-20-2-15	9.1 (.36)	12.8 (.50)	8.5 (.33)	14.3 (.56)	1.78 (.07)	0.41 (.016)	6.33 (.249)	9.19 ^{+0.08} _{-0.0}	6.4 ^{+0.1} _{-0.0}
				Prism	56-121-2-000	56-120-2-000	9.8 (.39)	13.5 (.53)	9 (.35)	15 (.59)					
1.52 (.06)	3.17 (.125)	7.9 (.31)	Small	Bright	56-71-1-15	56-70-1-15	13.7 (.54)	19.8 (.78)	11.5 (.45)	21.5 (.85)	1.78 (.07)	0.41 (.016)	6.33 (.249)	9.19 ^{+0.08} _{-0.0}	6.4 ^{+0.1} _{-0.0}
				Prism	56-171-1-000	56-170-1-000	14.5 (.57)	20.5 (.81)	13.3 (.52)	22.2 (.87)					
3.17 (.125)	4.7 (.185)	9.4 (.37)	Large	Bright	56-271-1-000	56-270-1-000	14.5 (.57)	20.5 (.81)	17 (.67)	22.2 (.87)	3.3 (.13)	1.52 (.06)	6.33 (.249)	9.19 ^{+0.08} _{-0.0}	6.4 ^{+0.1} _{-0.0}
				Prism	56-171-2-000	56-170-2-000	12.2 (.48)	18.2 (.72)	11.5 (.45)	21.5 (.85)					
3.17 (.125)	4.7 (.185)	9.4 (.37)	Small	Bright	56-71-2-15	56-70-2-15	12.2 (.48)	18.2 (.72)	11.5 (.45)	21.5 (.85)	3.3 (.13)	1.52 (.06)	6.33 (.249)	9.19 ^{+0.08} _{-0.0}	6.4 ^{+0.1} _{-0.0}
				Prism	56-171-2-000	56-170-2-000	12.9 (.51)	19 (.75)	13.3 (.52)	22.2 (.87)					
3.17 (.125)	4.7 (.185)	9.4 (.37)	Large	Bright	56-271-2-000	56-270-2-000	12.9 (.51)	19 (.75)	17 (.67)	22.2 (.87)	3.3 (.13)	1.52 (.06)	6.33 (.249)	9.19 ^{+0.08} _{-0.0}	6.4 ^{+0.1} _{-0.0}
				Prism	56-171-2-000	56-170-2-000	12.9 (.51)	19 (.75)	13.3 (.52)	22.2 (.87)					

Dimensions in millimeters (inch) unless otherwise stated

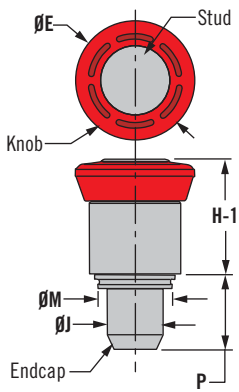
56 Spring-Loaded Plunger

Press-in style – Miniature, Small and Large

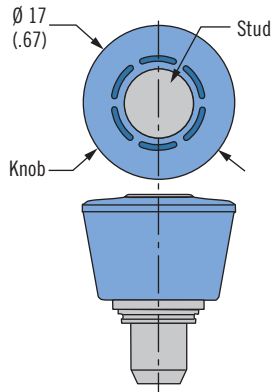


Press-In Style

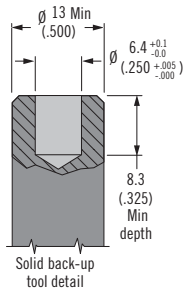
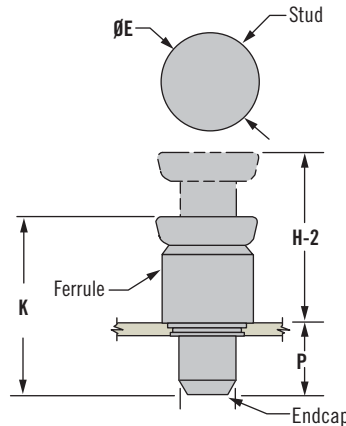
Prism - Miniature and Small



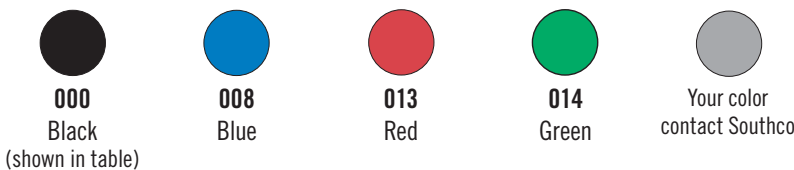
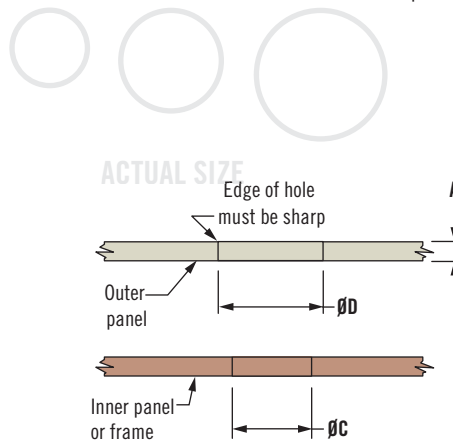
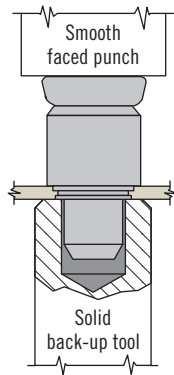
Prism - Large



Bright - Miniature and Small



(Customer Supplied)



- Simplified positioning of sliding components
- Quick-release hinge for removable door
- Fast installation and removal of components
- Designate access with color

Material and Finish

End cap: Steel, zinc plated, chromate, plus sealer

Ferrule and stud: Steel, (Large and Small hardened), zinc plated, chromate plus sealer

Knob: (Prism plungers only) PC/ABS, black, UL94-V0 Rated

Spring: 300 series stainless steel, passivated

Installation Notes

Press knob with approximately 13,400 N (3000 lbf) (Large and Small), 8000 N (1800 lbf) (Mini) for steel, 6700 N (1500 lbf) (Large and Small), 5000 N (1124 lbf) (Mini) for aluminum panels until ferrule sits flush with panel. A solid back-up tool must be used for proper installation.

Part Number

See table

Specifying Prism Color

To indicate color, change the last three digits of the part number. Example: 56-161-000, black; 56-161-013, red

Outer Panel Thickness		P	Size	Knob Style	Part Number		H-1	H-2	E	K	ø J	ø M	ø D	ø C	ø R	S
A Min.	A Max.				Hold-Open	Without										
0.8 (.031)	1.5 (.06)	4.4 (.17)	Mini	Bright	56-11-15	56-10-15	9.2 (.36)	12.9 (.51)	8.5 (.33)	13.6 (.54)	4.29 (.169) MAX	6.6 (.26)	6.7 ^{+0.08} / _{0.0}	4.3 ^{+0.13} / _{0.0}	9 (.35) MIN	4.5 (.18) MIN
				Prism	56-111-000	56-110-000	9.9 (.39)	13.6 (.54)	9 (.354)	14.3 (.56)						
1.52 (.06)	3.81 (.15)	8.2 (.32)	Small	Bright	56-61-15	56-60-15	12.2 (.48)	19.3 (.76)	11.5 (.45)	20.4 (.80)	6.33 (.249)	8.26 (.325)	8.4 ^{+0.0} / _{0.1}	6.4 ^{+0.1} / _{0.0}	13 (.50) MIN	8.26 (.325) MIN
				Prism	56-161-000	56-160-000	13 (.51)	20 (.79)	13.3 (.52)	21.1 (.83)						
			Large	Prism	56-261-000	56-260-000	13 (.51)	20 (.79)	17 (.67)	21.1 (.83)						



56 Spring-Loaded Plunger

Thread-in style · Small and Large

- Simplified positioning of sliding components
- Quick-release hinge for removable door
- Fast installation and removal of components

Material and Finish

Knob: Aluminum

Stud: Low carbon steel, case hardened, zinc plated, chromate plus sealer

Shell and sleeve: Steel, zinc plated, chromate plus sealer

Spring: Stainless steel, passivated

Detent washer: Steel, zinc plated (Hold-open only)

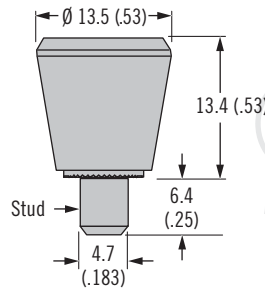
Part Number

See table

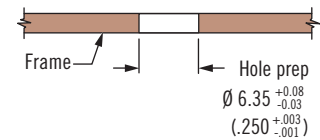
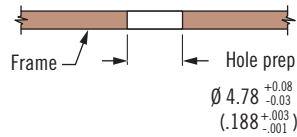
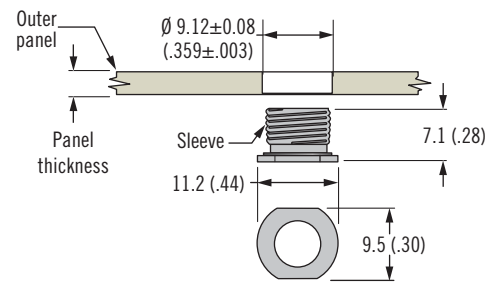
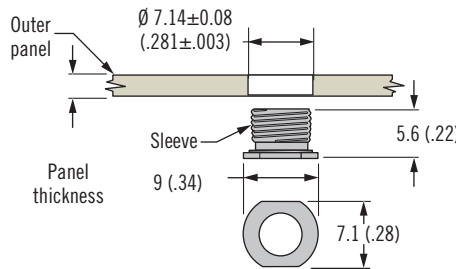
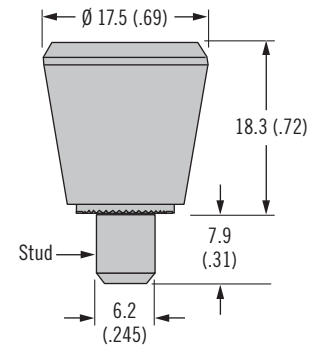
Part Number

See table

300 Series Bright - Small

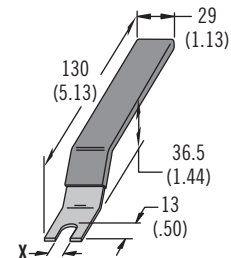
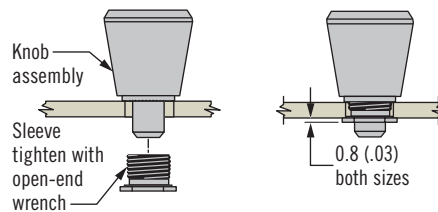


400 Series Bright - Large



Series	Panel Thickness		Part Number	
	Minimum	Maximum	With Hold Open Feature	Without Hold Open Feature
300	0.64 (.025)	1.52 (.060)	56-10-301-20	56-99-196-20
400	0.79 (.031)	3.18 (.125)	56-10-401-20	56-99-197-20

Installation tool

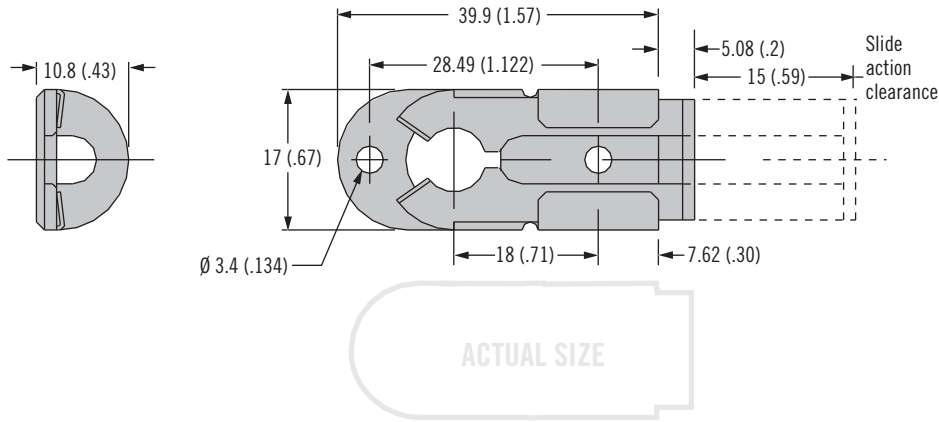


Series	X (Tool)	Tool Part Number
300	7.1 (.28)	56-0-22041-03
400	9.5 (.38)	56-0-22041-04

Dimensions in millimeters (inch) unless otherwise stated

TL Slide Latch

Steel · Slide to close

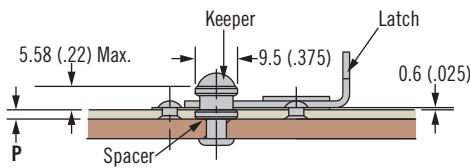


- Slide to secure
- Vibration dampening

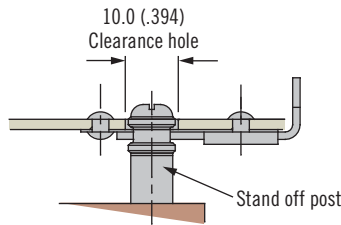
Material and Finish

Steel, zinc plated

Surface Mount



Concealed Mount



Panel Thickness	Required Number of Spacers
1.17 - 2.03 (.046 - .080)	None
2.05 - 3.25 (.081 - .128)	One
3.28 - 4.06 (.129 - .160)	Two

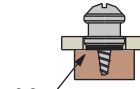
3.96 (.156)



No.8 Screw & nut



No.8 RD. HD. Wood screw



Spacer

2 Spacers

Inside diameter of keeper and spacer: 4.4 (0.17)

Material	Latch		Keeper	Spacer
	Surface Mount	Concealed Mount		
Steel, zinc plated	TL-05-100-07	TL-05-110-07	TL-05-117-07	TL-05-114-07
Stainless Steel	TL-05-100-52	TL-05-110-52	TL-05-117-52	~

Part Number

See table



19 Swell Action Latch

Plastic

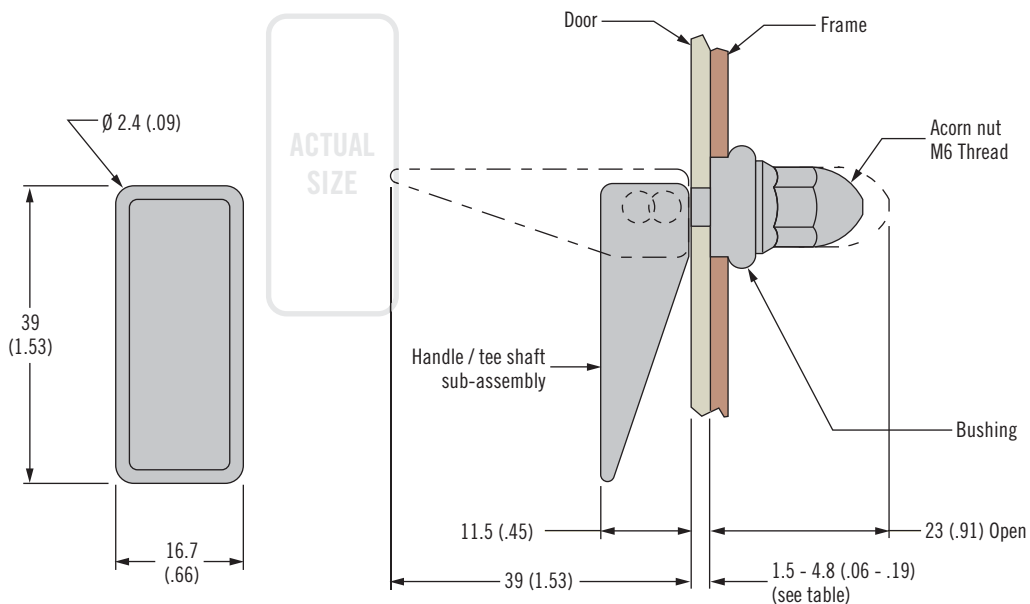
- Accommodates misalignment
- Vibration dampening

Material and Finish

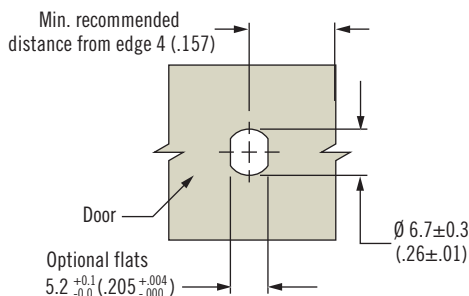
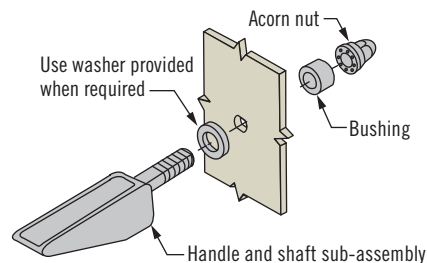
Nylon and glass-filled nylon black with SBR rubber bushing

Performance Details

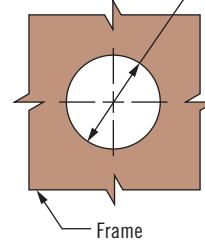
Frame thickness	Rated load (short term)
1.5 (.059)	400 N (90lbf)
2.5 (.098)	690 N (155lbf)
3.2 (.125)	620 N (140lbf)
4.8 (.190)	190 N (43lbf)



Door Thickness	Use Washer?	Adjustment Required
1.7±0.2 (.07±.01)	Yes	No
1.9 - 2.3 (.08 - .09)	Yes	Yes
2.5±0.2 (.10±.01)	No	No
2.7 - 4.8 (.11 - .19)	No	Yes



Ø 13.7±0.3 (.54±.01) for frame thickness up to 3.2 (.13)
 Ø 14.1±0.3 (.56±.01) for frame thickness 3.2 - 4.8 (.13 - .19)



Part Number

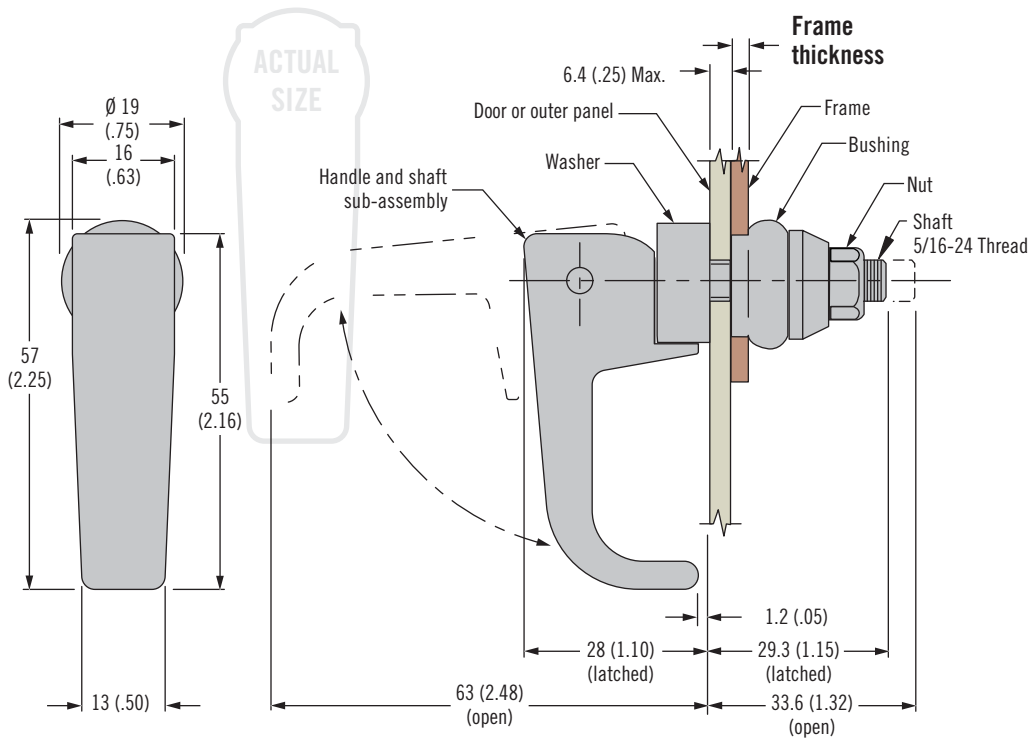
See table

Part Number	Packaging
19-51-01	Components bulk packaged
19-54-01	1 Assembly per bag

Dimensions in millimeters (inch) unless otherwise stated

19 Swell Action Latch

Stainless Steel · Zinc



- Accommodates misalignment
- Vibration dampening

Material and Finish

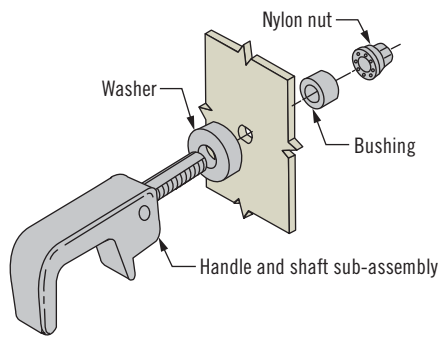
Zinc alloy, black powder coated, acetal and SBR rubber bushing
 Stainless steel, natural or polished, acetal and SBR rubber bushing.

Performance Details

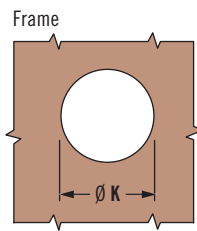
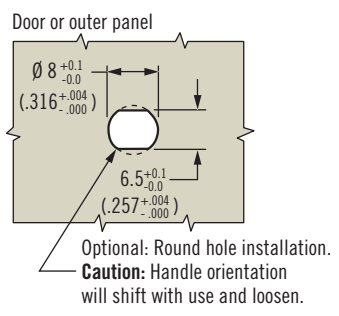
Frame thickness	Rated load (short term)
1.2 (.05) to 3.2 (.13)	330 N (75 lbf)
3.2 (.13) to 4.8 (.19)	660 N (150 lbf)
4.8 (.19) to 6.4 (.25)	550 N (125 lbf)
6.4 (.25) and Up	220 N (50 lbf)

Installation Notes

Maximum tightening torque on mounting nut: 1.0 N·m (9 in·lbf)



Frame Thickness	$\varnothing K$ ^{+0.5 (.031)} _{-0.0 (.000)}
1.2 - 3.2 (.05 - .13)	19 (.750)
3.2 - 4.8 (.13 - .19)	19.5 (.766)
4.8 - 6.4 (.19 - .25)	20 (.781)
6.4 (.25) and up	20.5 (.797)



Part Number

See table

Material	Part Number	Finish
Zinc alloy	19-14-10	Black powder coated
Stainless Steel	19-14-23	Natural
Stainless Steel	19-14-24	Polished



19 Swell Action Latch

Plastic · Flush

- Flush low profile design
- Accommodates misalignment
- Vibration resistant

Material and Finish

Nylon black with stainless steel mounting bracket and SBR rubber bushing

Set tool: 1095 Steel, zinc plated

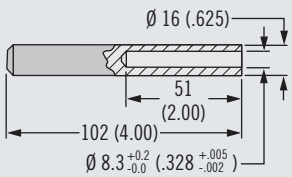
Performance Details

Series	Frame thickness	Rated load (short term)
19-83-10	0.5 - 3.2 (.016 - .13)	180 N (40lbf)
19-93-10	0.5 - 3.2 (.016 - .13)	440 N (100lbf)
	3.2 - 4.8 (.125 - .19)	330 N (75lbf)

Installation notes

Position bracket and retainer over stud and strike set tool. Adjust mounting nut to set latching tension.

Set tool

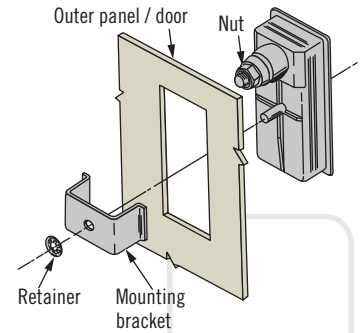
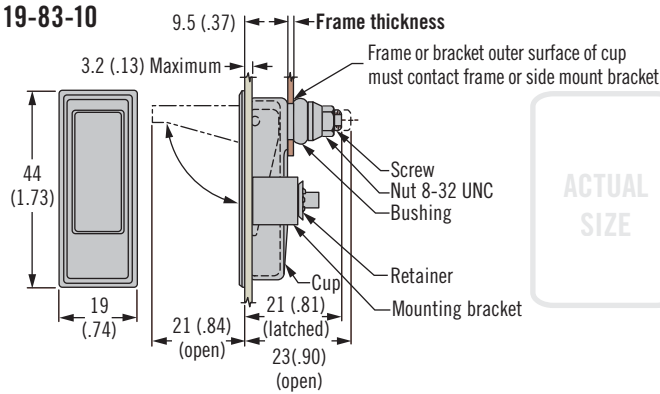


Tool part number: 17-10019-11

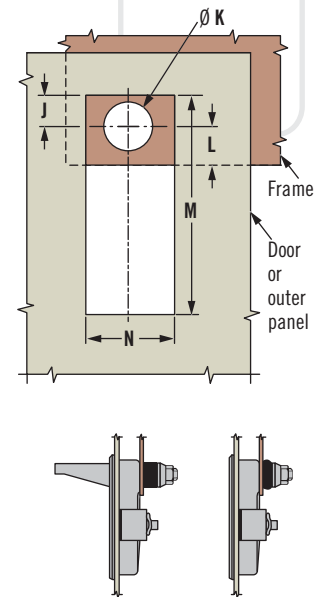
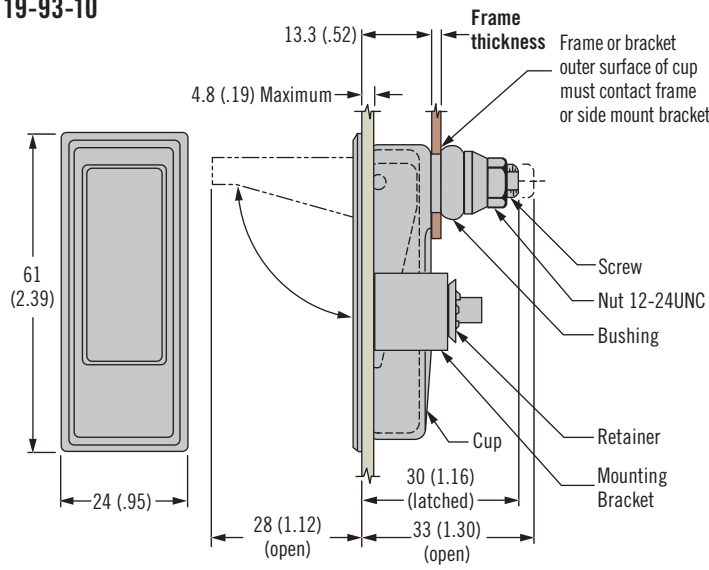
Part Number

See table

19-83-10



19-93-10

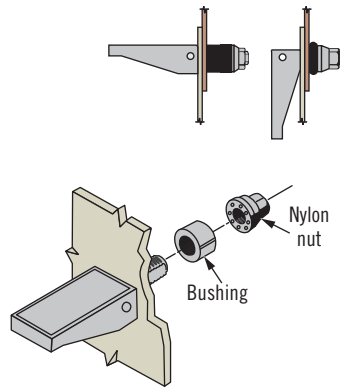
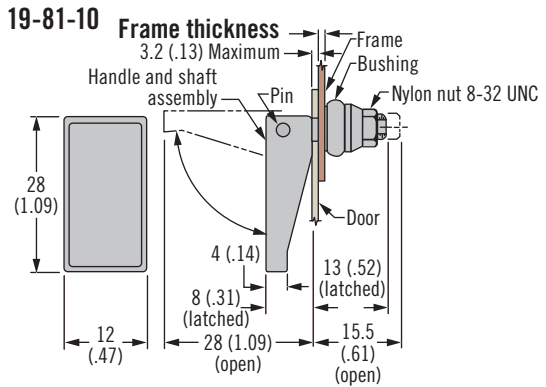


Part Number	Max. Misalignment Between Centerlines of Panel Hole and Frame Hole	Frame or Bracket					Outer Panel / Door	
		Rated Load (Short Term)	Frame Thickness	J ± 0.3 (.010)	Ø K +0.5 (.020) -0.0 (.000)	L Max.	M	N
19-83-10	0.4 (.015)	180 N (40lbf)	3.2 (.13) Max.	6 (.234)	9.5 (.375)	11 (.45)	41.5 ^{+0.4} _{-0.0} (1.64 ^{+0.005} _{-0.0})	16.5 ⁺⁰ _{-0.4} (.640 ⁺⁰ _{-.005})
19-93-10	0.6 (.025)	440 N (100lbf)	Up to 3.2 (.13)	8 (.312)	13.5 (.531)	15 (.56)	57.5 ± .02 (2.265 ± .005)	20.5 ^{+0.4} _{-0.0} (.812 ⁺⁰ _{-.005})
	0.8 (.030)	330 N (75lbf)	3.2 - 4.8 (.13 - .19)		14 (.56)			

Dimensions in millimeters (inch) unless otherwise stated

19 Swell Action Latch

Plastic



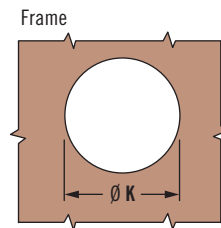
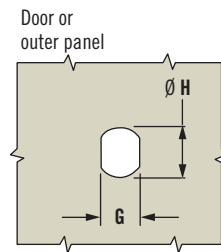
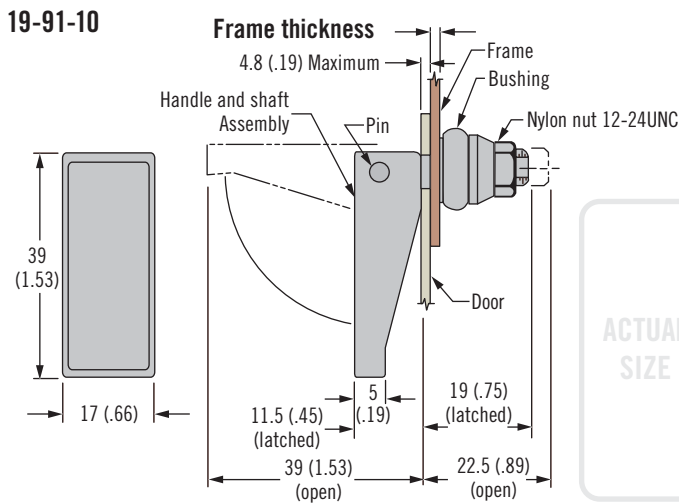
- Accommodates misalignment
- Vibration dampening

Material and Finish

Nylon and glass-filled nylon black with SBR rubber bushing

Performance Details

Series	Frame thickness	Rated load (short term)
19-81-10	0.5 - 3.2 (.016 - .13)	180 N (40lbf)
19-91-10	0.5 - 3.2 (.016 - .13)	440 N (100lbf)
	3.2 - 4.8 (.125 - .19)	330 N (75lbf)

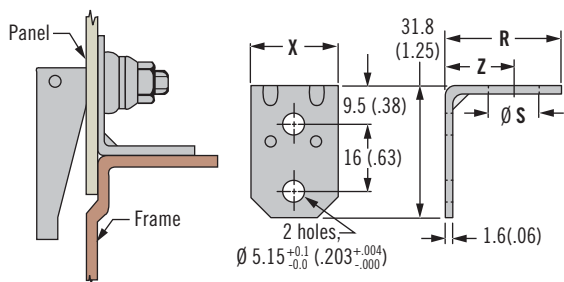


Installation notes

Maximum tightening torque on mounting nut: 1 N•m (9 in•lbf)

Part Number	G +0.1 (+.004) -0.0 (-.000)	H +0.1 (+.004) -0.0 (-.000)	Frame Thickness	K +0.5 (+.030) -0.0 (-.000)
19-81-10	3.3 (.130)	4.1 (.161)	3.2 (.13) Maximum	9.5 (.375)
19-91-10	4.5 (.177)	5.8 (.228)	Up to 3.2 (.13)	13.5 (.531)
			3.2 - 4.8 (.13 - .19)	14 (.547)

Accessories - Side mount bracket



Latch Part Number	ϕS	R	X	Z	Bracket Part Number
19-81-10 and 19-83-10	9.5 (.38)	27 (1.06)	20.5 (.81)	16.7 (.66)	19-0-15666-11
19-91-10 and 19-93-10	13.5 (.53)				19-0-15665-11

Part Number

See table



NY NYLATCH Panel Fastener

Push / pull style

- Simple reusable panel fastener
- Multiple styles and sizes
- Non-conductive and non-corrosive materials

Material and Finish

Grommet: Polycarbonate, black or white, or polysulfone, black

Plunger: Nylon, black or white, or polyester, black

Performance Details

Ultimate shear load:

4.8 (3/16): 200 N (45 lbf)

6.4 (1/4): 330 N (75 lbf)

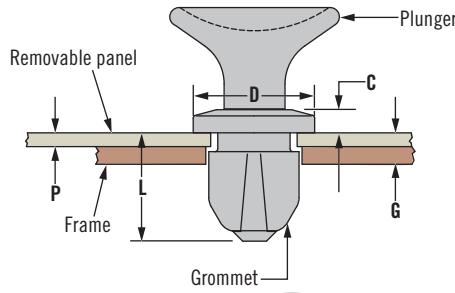
7.9 (5/16): 667 N (150 lbf)

Max. operating temperature:

85°C (185°F)

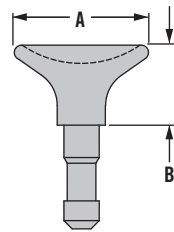
Flammability rating:

See part number selection

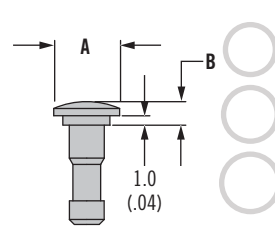


Head Style Code	Plunger Size					
	4.8 (3/16)		6.4 (1/4)		7.9 (5/16)	
	A	B	A	B	A	B
Easy Grip	12.7 (.50)	8.1 (.32)	14.4 (.57)	8.6 (.34)	16.0 (.63)	9.6 (.38)
Low Profile	6.6 (.26)	2.5 (.10)	7.1 (.28)	2.5 (.10)	7.6 (.30)	2.8 (.11)
Mini Grip	6.3 (.25)	6.6 (.26)	8.1 (.32)	7.1 (.28)	9.6 (.38)	7.6 (.30)

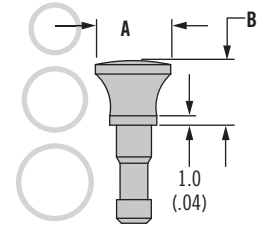
[H] Easy Grip



[H] Low Profile



[H] Mini Grip



3/16" Sizes \varnothing 4.8 (.188) ACTUAL SIZE

Sheet Capacity		Dimensions			Length Number	
G Range	P Max.	C Max.	L Max.	\varnothing D	[G] Grommet	[L] Plunger
1.4 - 3.9 (.056 - .153)	1.0 (.042)	1.6 (.065)	8.4 (.330)	6.5 (.255)	-31	-32
2.0 - 4.5 (.079 - .176)	1.6 (.065)	1.3 (.050)	8.8 (.346)		-32	-32
2.8 - 5.3 (.112 - .209)	2.5 (.098)		9.9 (.390)		-33	-33
3.9 - 6.3 (.152 - .249)	3.5 (.138)		10.9 (.430)		-34	-34

1/4" Sizes \varnothing 6.4 (.250)

Sheet Capacity		Dimensions			Length Number	
G Range	P Max.	C Max.	L Max.	\varnothing D	[G] Grommet	[L] Plunger
1.5 - 3.8 (.059 - .148)	1.0 (.042)	2.0 (.079)	9.4 (.371)	8.5 (.336)	-41	-42
2.1 - 4.4 (.084 - .173)	1.6 (.065)	1.6 (.064)	9.8 (.386)		-42	-42
3.0 - 5.3 (.118 - .207)	2.5 (.098)		10.9 (.430)		-43	-43
4.6 - 6.9 (.182 - .271)	4.1 (.162)		12.5 (.494)		-44	-44

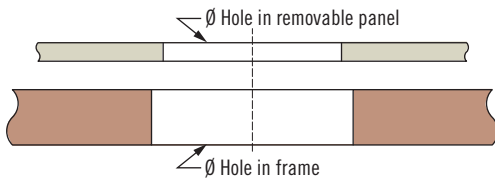
5/16" Sizes \varnothing 7.9 (.313)

Sheet Capacity		Dimensions			Length Number	
G Range	P Max.	C Max.	L Max.	\varnothing D	[G] Grommet	[L] Plunger
1.5 - 3.8 (.059 - .148)	1.0 (.042)	2.4 (.095)	9.4 (.371)	10.7 (.420)	-51	-52
2.1 - 4.4 (.084 - .173)	1.6 (.065)	2.0 (.080)	9.8 (.386)		-52	-52
3.0 - 5.3 (.118 - .207)	2.5 (.098)		10.9 (.430)		-53	-53
4.6 - 6.9 (.182 - .271)	4.1 (.162)		12.5 (.494)		-54	-54
5.8 - 8.1 (.230 - .319)	5.3 (.210)		13.8 (.542)		-55	-55

Dimensions in millimeters (inch) unless otherwise stated

NY NYLATCH Panel Fastener

Push / pull style



Size	Ø Removable Panel Hole	Ø Frame Hole
4.8 (3/16)	4.57 - 4.65 (.180 - .183)	4.8 - 4.88 (.189 - .192)
6.4 (1/4)	6.04 - 6.15 (.238 - .242)	6.35 - 6.45 (.250 - .254)
7.9 (5/16)	7.47 - 7.59 (.294 - .299)	8.03 - 8.2 (.316 - .323)

Part Number Selection

Order grommet and plunger separately

Plunger and grommet size code must match

Grommet Part Number

S Size code

- 3 Ø 4.8 (.188)
- 4 Ø 6.4 (.250)
- 5 Ø 7.9 (.313)

M Material and finish

- 20 Polycarbonate (UL 94 V-2) black
- 10 Polycarbonate (UL 94 V-2) white
- 30 Polysulfone (UL 94 V-0) black



G Grommet length

Grommet length number
(See grommet and plunger tables on page 154)

Plunger Part Number

S Size code

- 3 Ø 4.8 (.188)
- 4 Ø 6.4 (.250)
- 5 Ø 7.9 (.313)

M Material and finish

- 50 Nylon (UL 94 V-2) black
- 51 Nylon (UL 94 V-2) white
- 60 Polyester (UL 94 V-0) black



L Plunger length

Plunger length number
(See grommet and plunger tables on page 154)

H Head style

- 1 Easy grip
 - 3 Low profile
 - 4 Mini grip
- (Refer to the plunger length table for the head style availability)

CAM LOCKS & LOCK CORES

PK Lock Cores

Pages 158 - 159



Different latch and lock core styles offer a variety of key code choices and implementation options for optimum security and flexibility.

Lock core options include:

- Keyed alike
- Keyed differently
- Master keyed, keyed differently
- Shuttered and non-shuttered
- Tool access
- Multiple finishes



PK



PK



PK



PK



PK

SOUTHCO® CM Cam Locks provide a basic key-locking or manual solution for a wide range of applications.

SOUTHCO® CM Cam Lock options include:

- Broad range of sizes fits a variety of enclosure applications
- Multiple access control styles: Key, tool or hand actuation
- Flexible key code options
- Modular design reduces inventory investment
- Options to meet environmental sealing requirements
- Attractive aesthetic finishes

CM Cam Locks

Pages 162 - 169



SOUTHCO® PT Tubular Key cam locks offer a higher security solution with multiple options.

SOUTHCO® PT Tubular Key cam lock options include:

- 7-Pin tumbler design enhances key-locking security
- Broad range of sizes fits a variety of enclosure applications
- Flexible key code options
- Attractive chrome finish

PT Tubular Key Cam Locks

Pages 170 - 171



PT-1



PK Lock Cores

SOUTHCO® Key-Choice System

- Lock cores ordered separately
- Greater flexibility in locking requirements

Material and Finish

Zinc alloy, chrome plated, black powder coated or with a stainless steel scalp



Key-Choice System

This icon indicates that a product is compatible with the SOUTHCO® Key-Choice System



















The SOUTHCO® Key-Choice System features a common lock core that fits a wide range of SOUTHCO® latches.

This system allows for the independent selection of the correct latch for your application and the lock core required to manage the security of the end product. The guide below shows each of the latches in the SOUTHCO® Key-Choice System that can be purchased without the lock core installed.

Lock cores are sold separately which provides:

- The option to configure multiple latch styles with the same keying option
- The ability to configure the same latch style with multiple keying options
- Inventory reduction by managing multiple keying options with the lock core, while latches remain without the core installed until keying assignment is desired

Latches in the SOUTHCO® Key-Choice System

				
	Compression	Cam	Push-to-close	Locks
	62 Lift and Turn Latch page 97			
		E5 Wing Style Latch page 126	R3-20 Baggage Door Latch page 238	CM-3 Sealed page 164
	C2 Lever Latch page 106			
		E5 T-Handle Latch page 125	AC-10 Actuator page 264	CM-6 Non-sealed page 164
	C5 Sealed Lever Latch page 104			
		E5 L-Handle Latch page 124	AC-15 Actuator page 265	
				
		E5 Flush Cup Wing Style page 122		

PK Lock Cores

SOUTHCO® Key-Choice System



Lock Cores - Disc Tumbler

Lock Core Part Number						
Keying	Key code	Bag qty	Shuttered stainless steel scalp	Non shuttered stainless steel scalp	Non shuttered black powder coated	Non shuttered chrome plated
KA	CH751	1	PK-39-72-13-KCH751	PK-132-13	PK-115-13	PK-116-13
KA	RS001	1	PK-39-72-13-RS001	PK-132-13-RS001	PK-29-15-13-RS001	PK-29-16-13-RS001
KD	10 CODES	10	PK-39-72-13-KD1010	PK-132-13-KD1010	PK-29-15-13-KD1010	PK-29-16-13-KD1010
KD	50 CODES	50	PK-39-72-13-KD1050	PK-132-13-KD1050	PK-29-15-13-KD1050	PK-29-16-13-KD1050
KD	125 CODES	125	PK-39-72-13-KD1125	PK-132-13-KD1125	PK-29-15-13-KD1125	PK-29-16-13-KD1125
MKKD	10 CODES	10	PK-39-72-13-MK1010	PK-132-13-MK1010	PK-29-15-13-MK1010	PK-29-16-13-MK1010
MKKD	50 CODES	50	PK-39-72-13-MK1050	PK-132-13-MK1050	PK-29-15-13-MK1050	PK-29-16-13-MK1050
MKKD	125 CODES	125	PK-39-72-13-MK1125	PK-132-13-MK1125	PK-29-15-13-MK1125	PK-29-16-13-MK1125

Keys	Part Number
Master Key (1)	PK-24-01
Control (Removal) Key (1)	PK-11-03

Keys	Part Number
CH751	PK-10-01
RS001	PK-10-01-RS001

Key code selection

KA - Keyed Alike:

All lock cores are the same key code

KD - Keyed Differently:

Multiple key codes provided in a non-master key system

MKKD - Master Keyed, Keyed Differently:

Multiple key codes provided in a master key system

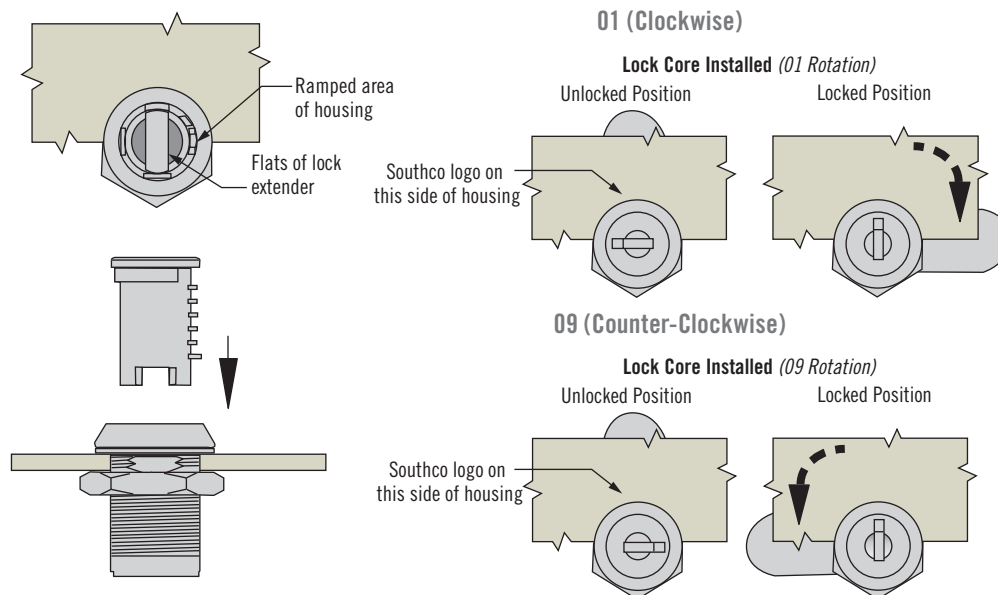
Notes

Part Number includes 1 lock core and 2 keys

Lock Cores - Tool Operable

Head Style	Lock Core Part Number			
	Phillips recess	Slotted	4 mm Hex recess	8 mm Hex recess
Chrome plated	PK-0-34027-01	PK-0-43489-01	PK-0-34323-01	PK-0-40374-01
Black powder coated	PK-0-34027-50	PK-0-43489-50	PK-0-34323-50	PK-0-40374-50

Lock Core Installation for CM-3 and CM-6 only (see page 164)



Installation Notes

1. Prepare panel and install latches shown on page 164.
2. Latch should be in unlatched position. The flats of the lock extender should be aligned with the flats on the housing.
3. Take a lock core and orient the brass wafers to the internal ramped area of the housing. Push lock core into housing until it stops.
4. Insert key into lock core and turn to verify lock core is fully seated and operating properly.
5. Install cam.



Cam Locks

Selection guide

Use this selection guide to choose the right cam lock for your application



Key-Locking Available



Key-Choice System





NEMA / IP Rated



Stainless Steel

		Latching Series	MATERIAL		INSTALLATION	
			Stainless Steel Scalp 	Zinc and Steel	Key-Choice System 	Maximum Door Thickness
CM REMOVABLE CORE PAGE 164		CM-6	✓	✓	✓	38.9 (1.53)
		CM-3		✓	✓	38.9 (1.53)
CM FIXED CORE PAGES 165-166		CM-5	✓	✓		38.9 (1.53)
		CM-2		✓		38.9 (1.53)
		CM-1		✓		26.2 (1.03)
CM MINI CAM PAGE 168		CM-9		✓		7.5 (.3)
		CM-9		✓		7.5 (.3)
PT TUBULAR PAGE 170		PT-1		✓		28.9 (1.14)

Dimensions in millimeters (inch) unless otherwise stated

PERFORMANCE			ACCESS STYLE				
NEMA / IP Rated 	Average Ultimate Load on Cam	Grip Range	Key-Locking 	Keyed Alike	Keyed Differently	Master Keyed, Keyed Differently	Tool Access
	180N (40 lbf)	6.4 - 57.2 (.25 - 2.25)	✓	✓	✓	✓	✓
✓	180N (40 lbf)	6.4 - 57.2 (.25 - 2.25)	✓	✓	✓	✓	✓
	180N (40 lbf)	1.6 - 57.2 (.063 - 2.25)	✓	✓			
✓	180N (40 lbf)	6.4 - 57.2 (.25 - 2.25)	✓	✓			
✓	180N (40 lbf)	6.4 - 44.5 (.25 - 1.75)					
	160N (35 lbf)	9.7 - 21.3 (.38 - .84)	✓	✓	✓		
	160N (35 lbf)	9.7 - 21.3 (.38 - .84)					
	645N (145 lbf)	6.4 - 42.8 (.25 - 1.69)	✓	✓	✓		



CM Cam Locks

Selection

- Removable core options provide maximum flexibility
- Fixed core options provide simple, economic solutions
- Sealed housings are available
- Multiple finishes
- A broad selection of lock housing and cam sizes available

Notes

All CM Cam Lock housings, cams, and lock core components can be ordered separately for maximum configuration flexibility with minimal inventory investment.

To determine the perfect CM Cam Lock components for your needs, simply follow the **Selection Guide** on the next page.

Cam Lock Options

Removable Core

- ⇒ Multiple key codes
- ⇒ Tool actuation
- ⇒ Change key codes in future
- ⇒ Configure to order

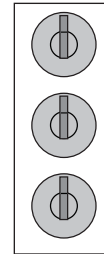


Non Sealed CM-6
Page 164



Sealed CM-3
Page 164

Key Options

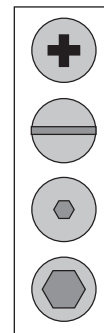


Keyed alike

Keyed differently

Master keyed, keyed differently

Tool Options



Phillips recess

Slotted

4mm Hex recess

8mm Hex recess

Fixed Core

- ⇒ Single key code
- ⇒ Key-locking
- ⇒ Wing driver
- ⇒ Integrated housing and lock core



Non Sealed CM-5
Page 165



Sealed CM-2
Page 165

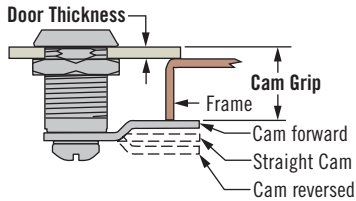


Wing Driver CM-1
Page 166



Cam Lock Selection Guide

1. Once you have determined the **CM Cam Lock** version that best meets your needs, calculate the **Cam Grip** for your application using the illustration below.



Notes: add 0.5 (.02) to your grip when using a sealed product.

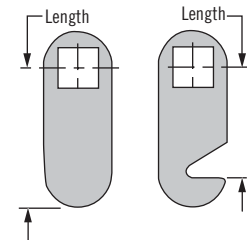
2. In the **TAN** section below, locate the **Cam Grip** calculated for your application. If your grip falls between two values, use the higher value.

Notes: Certain grip values repeat in the table below. Use the value that results in the shortest housing possible based on the **Max. Door Thickness** allowed.

3. From this value, move right horizontally into the **GRAY** section and verify your door thickness falls within the **Max. Door Thickness** listed. Once this is verified, the housing length is selected and is illustrated by the **Housing Length Number**.

4. Returning to your original grip value in the **TAN** section, move down vertically into the **GREEN** section. The **GREEN** section illustrates the cams that are appropriate for your grip.

5. By determining the required cam orientation and length in the **BLUE** section, the appropriate **Cam Part Number** for your application is selected.



6. Proceed to the Cam Lock sections (CM-6, CM-3, CM-2, CM-5, and CM-1) to complete your **Part Number** selection.

Selection Guide

Cam Grips							Max. Door Thickness	Housing Length Number
20.7 (.81)	17.5 (.69)	14.3 (.56)	11.1 (.44)	8 (.31)	4.8 (.19)	1.6 (.06)	2.4 (.09)	7
25.4 (1.00)	22.2 (.88)	19.1 (.75)	15.9 (.63)	12.7 (.50)	9.5 (.38)	6.4 (.25)	7.1 (.28)	1
31.8 (1.25)	28.6 (1.13)	25.4 (1.00)	22.2 (.88)	19.1 (.75)	15.9 (.63)	12.7 (.50)	13.5 (.53)	2
38.1 (1.50)	34.9 (1.38)	31.8 (1.25)	28.6 (1.13)	25.4 (1.00)	22.2 (.88)	19.1 (.75)	19.8 (.78)	6
44.5 (1.75)	41.3 (1.63)	38.1 (1.50)	34.9 (1.38)	31.8 (1.25)	28.6 (1.13)	25.4 (1.00)	26.2 (1.03)	3
50.8 (2.00)	47.6 (1.88)	44.5 (1.75)	41.3 (1.63)	38.1 (1.50)	34.9 (1.38)	31.8 (1.25)	32.5 (1.28)	4
57.2 (2.25)	54 (2.13)	50.8 (2.00)	47.6 (1.88)	44.5 (1.75)	41.3 (1.63)	38.1 (1.50)	38.9 (1.53)	5
Cam Part Number							Cam Length	Cam Orientation
Cam Reversed		Straight	Cam Forward					
CM-C606	CM-C406	CM-C206	CM-C006	CM-C206	CM-C406	CM-C606	19.1 (.75)	No Hook
CM-C610	CM-C410	CM-C210	CM-C010	CM-C210	CM-C410	CM-C610	31.8 (1.25)	
CM-C614	CM-C414	CM-C214	CM-C014	CM-C214	CM-C414	CM-C614	44.5 (1.75)	
CM-L606	CM-L406	CM-L206	CM-H006	CM-H206	CM-H406	CM-H606	19.1 (.75)	Left
CM-L610	CM-L410	CM-L210	CM-H010	CM-H210	CM-H410	CM-H610	31.8 (1.25)	
CM-L614	CM-L414	CM-L214	CM-H014	CM-H214	CM-H414	CM-H614	44.5 (1.75)	
CM-H606	CM-H406	CM-H206	CM-H006	CM-L206	CM-L406	CM-L606	19.1 (.75)	Right
CM-H610	CM-H410	CM-H210	CM-H010	CM-L210	CM-L410	CM-L610	31.8 (1.25)	
CM-H614	CM-H414	CM-H214	CM-H014	CM-L214	CM-L414	CM-L614	44.5 (1.75)	



CM Cam Locks

Removable core

- Ideal for applications requiring multiple key codes or tool actuated options
- Sealed version meets NEMA 4 and IP65 water intrusion standards
- Lock cores and cams sold separately
- Master and non-master key codes available

Material and Finish

Housing: Zinc alloy, chrome plated or black powder coated
 Scalp: stainless steel

Performance Details

Average ultimate load on cam:
 180 N (40 lbf)

Installation Notes

See page 159

Accessories

See page 169

Part Number Selection

See table

Housing part number
 (no lock core or cam)

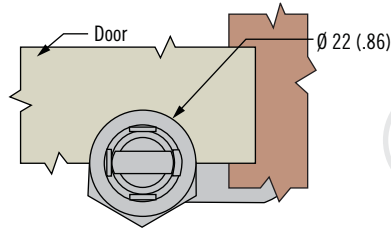
Order housing, lock core and cam separately

Lock core part numbers and installation see page 159

Cam page 167

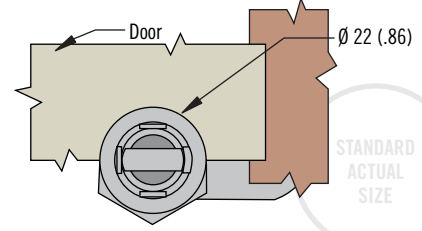
To select cam part number see grip table page 163

Sealed Disc Tumbler

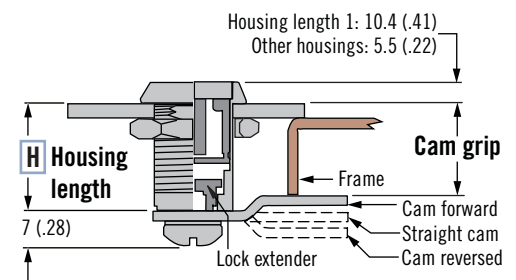
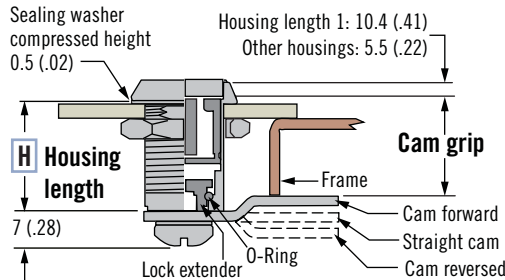


MINATURE
ACTUAL
SIZE

Non-Sealed Disc Tumbler

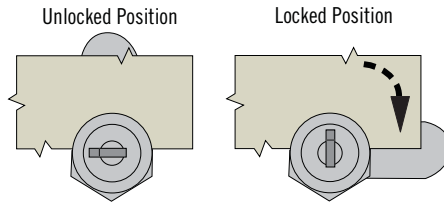


STANDARD
ACTUAL
SIZE

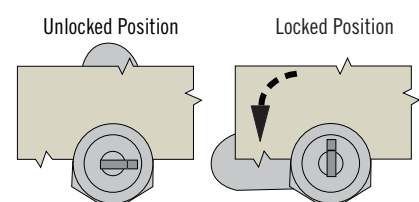


Cam Rotation

R 01 (Clockwise to Lock)

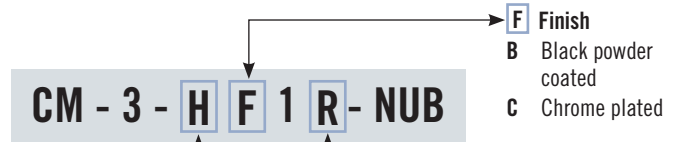


R 09 (Counter-Clockwise to Lock)



Sealed Version

Max. Door Thickness	Housing Length	H Housing Length Number
7.1 (.28)	16 (.625)	1
13.5 (.53)	22 (.875)	2
19.8 (.78)	28.5 (1.125)	6
26.2 (1.03)	35 (1.375)	3
32.5 (1.28)	41 (1.625)	4
38.9 (1.53)	48 (1.875)	5



Non-sealed version



Dimensions in millimeters (inch) unless otherwise stated

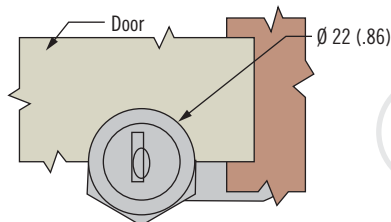
CM Cam Locks

Fixed core



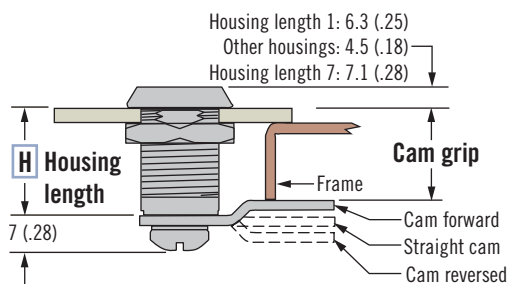
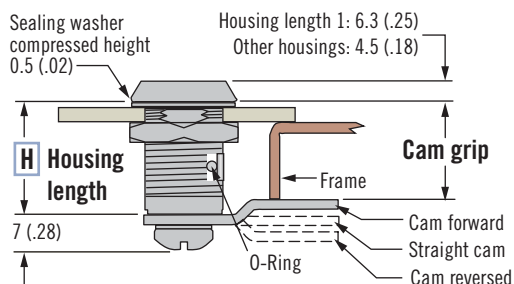
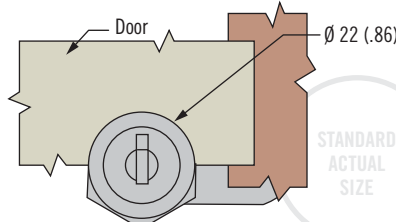
Sealed Disc Tumbler

Pictured with Lockcore Installed



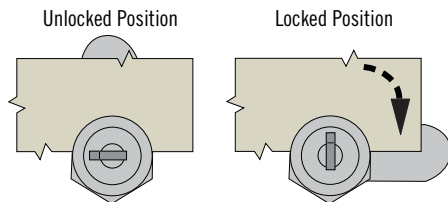
Non-Sealed Disc Tumbler

Pictured with Lockcore Installed

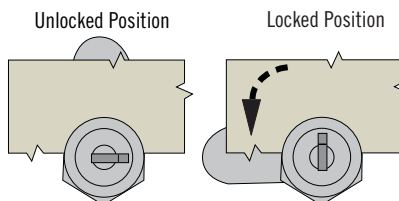


Cam Rotation

R 01 (Clockwise to Lock)



R 09 (Counter-Clockwise to Lock)



Sealed Version

Max. Door Thickness	Housing Length	H Housing Length Number
2.4 (.09)	11 (.438)	7 Non-Sealed Only
7.1 (.28)	16 (.625)	1
13.5 (.53)	22 (.875)	2
19.8 (.78)	28.5 (1.125)	6
26.2 (1.03)	35 (1.375)	3
32.5 (1.28)	41 (1.625)	4
38.9 (1.53)	48 (1.875)	5



F Finish

- B** Black powder coated
- C** Chrome plated

R Rotation

- 01** Clockwise
- 09** Counter-clockwise

Non-sealed version



(Stainless steel scalp)

- Stainless steel scalp on housing and lock core on non-shuttered style
- Sealed version meets NEMA 4 and IP65 water intrusion standards
- Cams sold separately

Material and Finish

Housing: Zinc alloy, chrome plated or black powder coated
Scalp: stainless steel

Performance Details

Average ultimate load on cam:
180 N (40 lbf)

Installation Notes

See page 167

Accessories

See pages 169

Notes

Lock: Key code CH751, keyed alike, key removal in locked and unlocked positions (two keys supplied)

Part Number Selection

See table

Lock part number (no cam)

Order lock and cam separately

Cam page 167

To select cam part number see grip table page 163

Notes

CM-2-1 version is sealed but does not meet the NEMA 4 / IP65 standards



CM Cam Locks

Fixed core wing driver

- Sealed to meet NEMA 4 and IP65 water intrusion standards
- Smooth, consistent operation
- Cams sold separately

Material and Finish

Housing: Zinc alloy, chrome plated or black powder coated

Performance Details

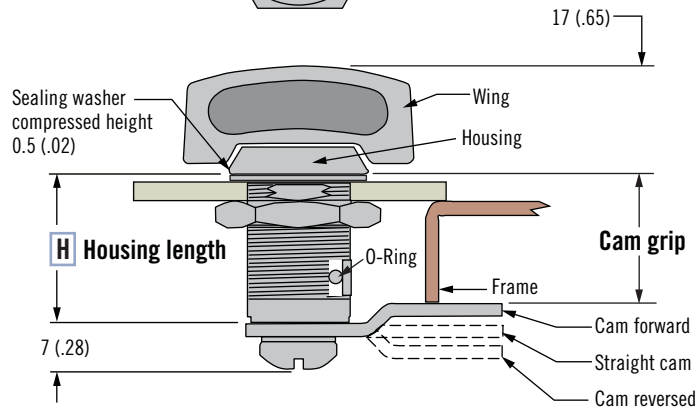
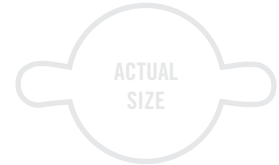
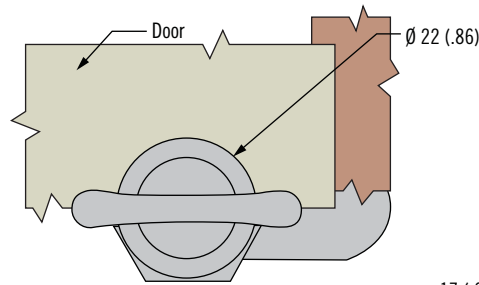
Average ultimate load on cam: 180 N (40 lbf)

Installation Notes

See page 167

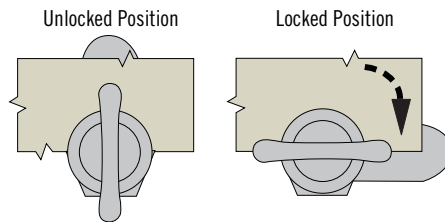
Accessories

See page 169

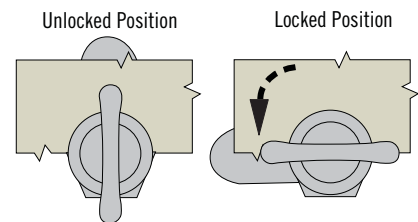


Cam Rotation

R 01 (Clockwise to Lock)



R 09 (Counter-Clockwise to Lock)



Part Number Selection

See table

Lock part number (no cam)

Order lock and cam separately

Cam page 167

To select cam part number see grip table page 163

F Housing Finish
B Black powder coated
C Chrome plated

R Rotation
01 Clockwise
09 Counter-clockwise

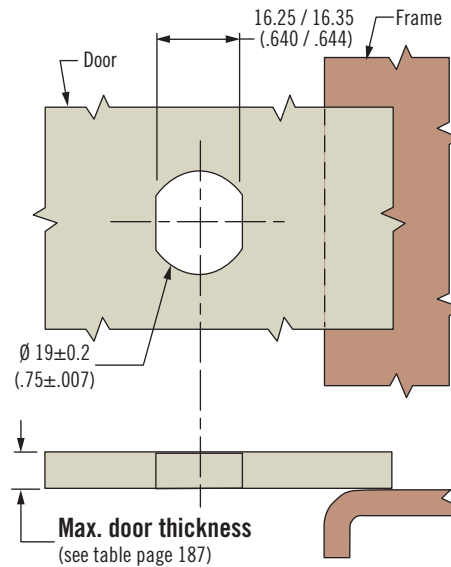
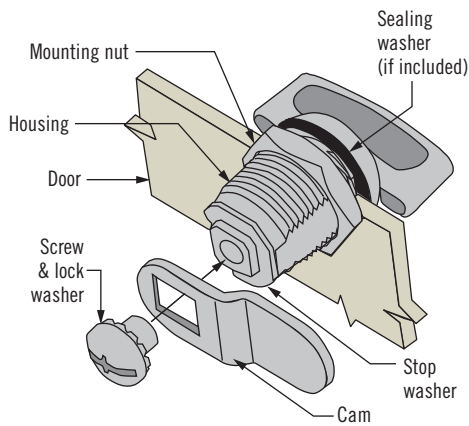
W Wing Finish
B Black powder coated
C Chrome plated

CM - 1 - H F 1 R - 1 W

H Housing Length Number	Housing Length	Max. Door Thickness
1	16 (.625)	7.1 (.28)
2	22 (.875)	13.5 (.53)
3	35 (1.375)	26.2 (1.03)

CM Cam Locks

Cams & installation



Installation Notes

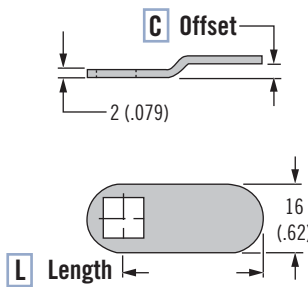
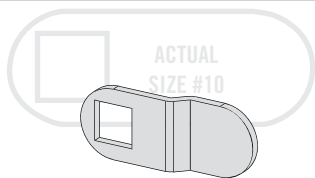
1. Place sealing washer onto housing (if included) and put through the mounting hole (see panel preparation).
2. Install mounting nut and tighten to 5 N•m (44 in•lbf).
3. Install cam to assembly. Properly orientate for rotation and grip.
4. Install screw. Tighten to 4 N•m (35 in•lbf).

Material and Finish

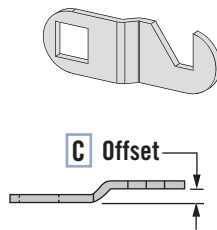
Cam: Steel plated

Part Number Selection

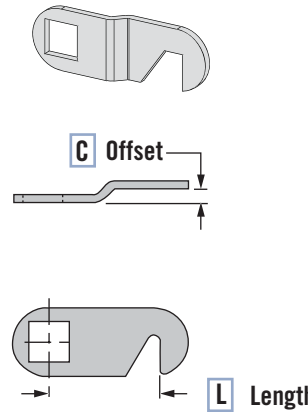
See table
 Order lock and cam separately
 Cam part number (no lock)
 For Lock selection see pages 164-166



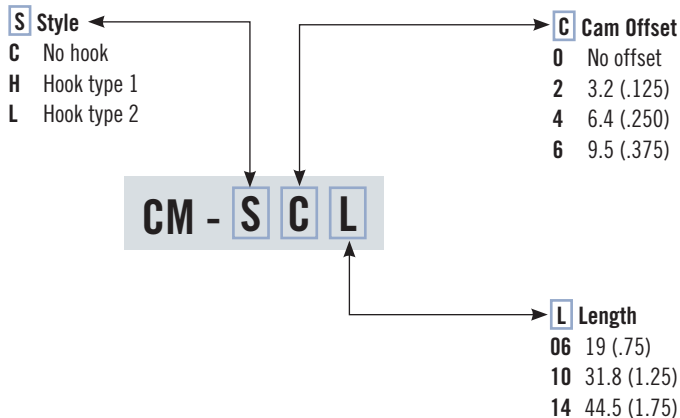
S C - No hook



S H - Hook type 1



S L - Hook type 2





CM Mini Cam Locks

Fixed core

- Compact design
- Non-shuttered lock core
- Cams sold separately

Material and Finish

Lock: Zinc alloy, chrome plated or black powder coated
 Cam: Steel, zinc plated

Performance Details

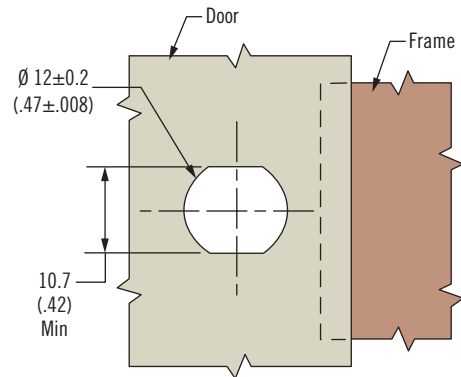
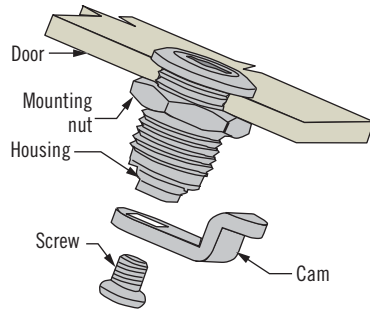
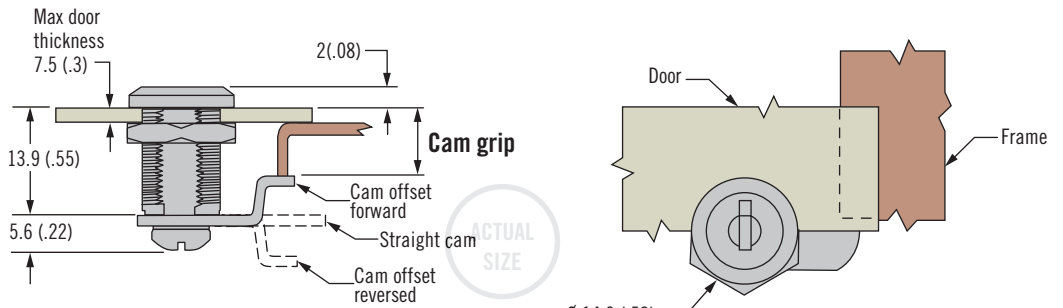
Average ultimate load on cam:
 160 N (35 lbf)

Installation Notes

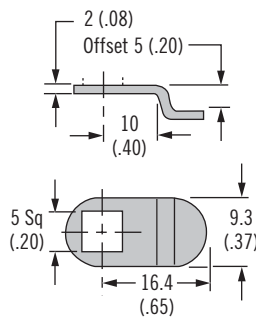
1. Install mounting nut and tighten to 4 N·m (35 in·lbf).
2. Install cam to assembly. Properly orientate for rotation and grip.
3. Install screw. Tighten to 4 N·m (35 in·lbf).

Accessories

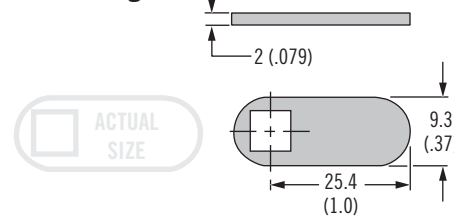
See page 169



Cam - Offset



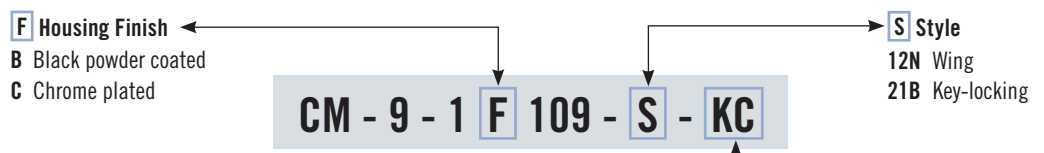
Cam - Straight



Cam Grip		
Cam Grip	Cam Type	Cam Part Number
9.7 (.38)	Offset forward	CM-M101
15.4 (.61)	Straight	CM-M002
21.3 (.84)	Offset reverse	CM-M101

Part Number Selection

Lock part number (no cam)
 Order lock and cam separately
 To select cam part number see grip table above



- KC** Key Code
 Omit for wing style
KA Keyed alike M01 (2 keys supplied)
KD Keyed differently (10 key codes provided in a non-master key system) M01 to M10 (2 keys supplied)

Dimensions in millimeters (inch) unless otherwise stated

CM Cam Locks

Accessories · Keys · Spares



Accessories (Add adjustment value to door thickness when accessory is used)

Metal Dust Cover



Metal Pull Tab



Plastic Dust Cover



Trim Washer



Pull Tab - In-Line



Prong Washer



Pull Tab - Perpendicular



Sealing Washer



Overmolded Key



Plain Key



Item	Part Number	Material	Adjustment Value	Suitable for		
				CM	Mini CM	PT
Metal dust cover	CM-A-10-01	Zinc alloy, chrome plated and stainless steel	0.7 (.027)	✓		✓
Plastic dust cover	90-2	Santoprene, black	2.1 (.085)	✓		✓
Pull tab - In-line	CM-A-08-01	Nylon, black	2.1 (.085)	✓		✓
Pull tab - Perpendicular	CM-A-08-02	Nylon, black	2.1 (.085)	✓		✓
Metal pull tab	CM-A-09	Stainless steel	1.5 (.059)	✓		✓
Trim washer	CM-A-07-N	Steel, nickel plated	0.8 (.031)	✓		✓
Prong washer	CM-A-04	Steel, plated	0.9 (.035)	✓		✓
Sealing washer	CM-A-03	Rubber, black	1.0 (.039)	✓		✓

Keys (contact Southco for custom overmolded logo options)

Item	Part Number	Suitable for		
		CM	Mini CM	PT
Plain key CH751 pair	PK-10-01	✓		
Overmolded key CH751 pair	PK-10-01-05	✓		
Overmolded key CH751 single	PK-10-10-05	✓		
Control (removal) key single	PK-11-03	✓		
Master key single	PK-24-01	✓		
Plain key M01 pair	PK-10-01-M01		✓	
Tubular key T0001 pair	PK-60-01-T0001			✓

Replacement Parts

Item	Part Number	Material	Suitable for		
			CM	Mini CM	PT
Housing mounting nut	CM-A-01	Zinc alloy	✓		
Housing mounting nut	PT-A-04-01				✓
Housing mounting nut	CM-B-01			✓	
Housing mounting clip	CM-A-05	Spring steel, plated	✓		
Cam mounting screw	CM-A-02	Steel, plated	✓		
Cam mounting screw	CM-B-03			✓	
Tooth washer hex nut	CM-A-12		✓		
Lockwasher	PT-A-09				✓
Cam mounting nut	PT-A-05-01				✓



PT Tubular Key Cam Locks

Fixed core

- 7-pin tumbler lock security
- Keyed alike, keyed differently or custom key code options
- Cams sold separately

Material and Finish

Zinc alloy, chrome plated

Performance Details

Average ultimate load on cam:
645 N (145 lbf)

Accessories

See page 169

Installation Notes

1. Install mounting nut and tighten to 5 N•m (44 in•lbf) Max.
2. Install cam to assembly. Properly orient for rotation and grip.
3. Install lockwasher and cam mounting nut. Tighten to 2 N•m (18 in•lbf).

Part Number Selection

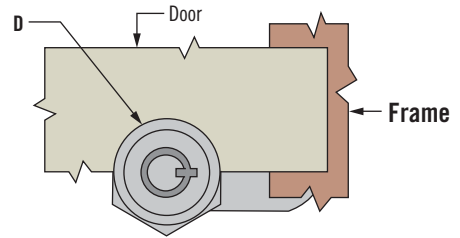
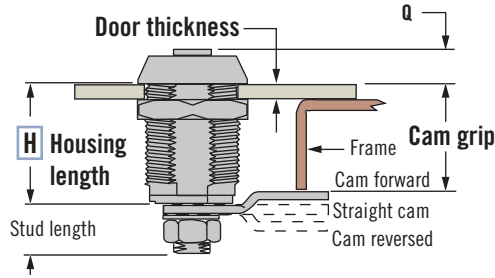
See table

Lock part number (no cam)

Order lock and cam separately

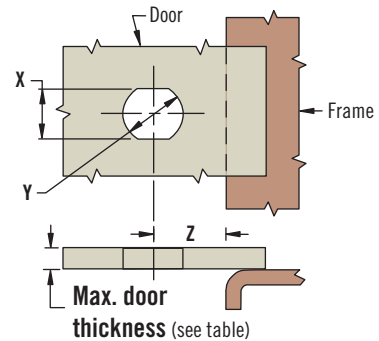
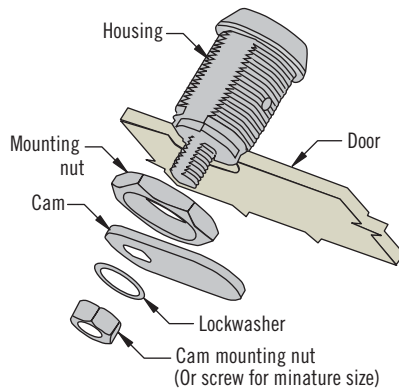
Cam page 171

Non-Sealed Pin Tumbler



Series	Non-Sealed Pin Tumbler	
	Q	D
Standard	6.8 (.27)	Ø 22 (.87)

Series	Installation		
	X	Y	Z
Standard	16.26 - 16.36 (.640 - .644)	Ø 19±0.2 (.75±.007)	19±2 (.75±.08)



R Rotation
01 Clockwise
09 Counter-clockwise

K Key removal
B Locked / unlocked removal
L Locked removal only

S Size
1 Standard

PT - 1 - H C 1 R - 20 K - KC

H Housing Length Number	Housing Length	Stud Length	Max. Door Thickness
1	12.7 (.50)	8.9 (.35)	5.1 (.20)
2	17.5 (.69)	9.5 (.37)	10.9 (.43)
3	23.8 (.94)	9.5 (.37)	15.9 (.63)
4	30.5 (1.20)	9.5 (.37)	22.9 (.90)
5	36.5 (1.44)	9.5 (.37)	28.9 (1.14)

KC Key Code
KA Keyed alike T0001 (2 keys supplied)
KD Keyed differently 50 key codes (T0001 to T0050) provided in a non-master key system (2 keys supplied)

Dimensions in millimeters (inch) unless otherwise stated




PT Tubular Key Cam Locks

Cams & installation

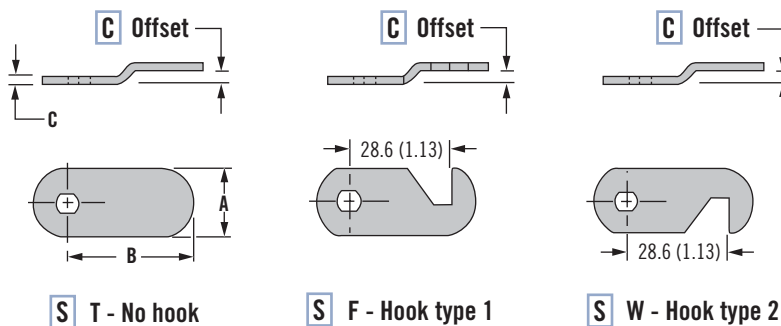


Installation

Standard

Cam Grip					Max. Door Thickness	Housing Length Number
19.0 (.75)	15.9 (.63)	12.7 (.50)	9.5 (.38)	6.4 (.25)	5.1 (.20)	1
23.8 (.94)	20.7 (.81)	17.5 (.69)	14.3 (.56)	11.2 (.44)	10.9 (.43)	2
30.1 (1.19)	27 (1.06)	23.8 (.94)	20.6 (.81)	17.5 (.69)	15.9 (.63)	3
36.8 (1.45)	33.7 (1.33)	30.5 (1.20)	27.3 (1.08)	24.2 (.95)	22.9 (.90)	4
42.8 (1.69)	39.7 (1.56)	36.5 (1.44)	33.3 (1.31)	30.2 (1.19)	28.9 (1.14)	5
Cam Part Number					Cam Type	
Cam Reversed		Straight	Cam Forward		Cam Type	
PT-T409	PT-T209	PT-T009	PT-T209	PT-T409	No Hook 	
PT-W409	PT-W209	PT-F009	PT-F209	PT-F409	Left 	
PT-F409	PT-F209	PT-F009	PT-W209	PT-W409	Right 	

Cam Styles



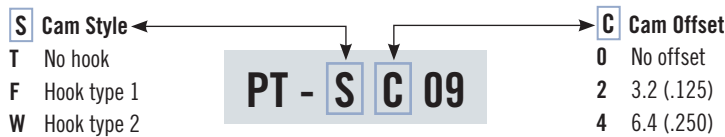
Material

- In the **TAN** section, locate the cam grip calculated for your application. If your grip falls between two values, use the higher value.
Notes: For cam grips that can be achieved with multiple housing lengths, use the value that results in the shortest housing possible based on the Max. door thickness allowed.
- From this value, move right horizontally into the **Gray** section and verify your door thickness falls within the Max. door thickness listed. Once this is verified, the housing length is selected and is illustrated by the housing length number.
- Returning to your original grip value in the **TAN** section, move down vertically into the **GREEN** section. The **GREEN** section illustrates the cams that are appropriate for your grip.
- By determining the required cam orientation and style in the **BLUE** section, the appropriate cam for your application is selected.

Part Number Selection

See table

- Order lock and cam separately
- Cam part number (no lock)
- For Lock selection see page 170



Series	Cam Style T No hook		
	A	B	C
Standard	19 (.75)	28.6 (1.13)	3 (.12)



MULTI-POINT LATCHING SYSTEMS

Multi-Point Systems

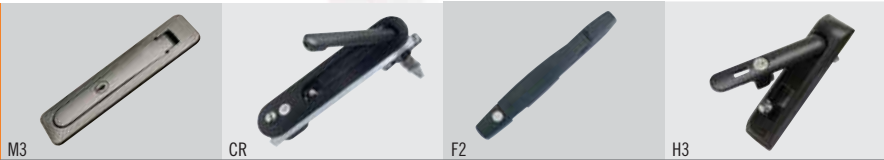
Pages 174-197



Multi-point latching systems provide a convenient solution for large door spans with a single user touch point operating multiple latch points.

Multiple points of engagement provide extra security and strength by eliminating pry points, door flexing and rattle.

Available in multiple styles for gasket sealed applications.



Rod Systems

Pages 198-201



Multi-point rod systems provide a simple, economical add-on for many *SOUTHCO*® single point latches.

Rod systems can be included in your original cabinet design or retrofit as needed. Additional latching points provide extra security and strength by eliminating pry points, flexing and rattle.

Available in multiple styles for gasket sealed applications.



H3 Electronic Swinghandle System

Pages 38-39

The H3 electronic locking swinghandle provides the functionality of a manual latching system with the added benefit of electronic locking for access control. For more information see pages 38-39 in the Electronic Access section.

- Remote lock and unlock
- Single or multi-point
- Low power, gear motor driven mechanism
- Momentary or continuous lock actuation
- High security DIN lock manual override
- Directly integrates with industry standard rack monitoring and access control systems
- Fits industry standard panel preparations
- Integrated sensors detect lock and latch status for network control, monitoring and alarm functions
- Accommodates both left and right doors



Multi-Point Systems

Multi-point latching systems provide a convenient solution for large door spans, with a single user touch point operating multiple latching points. Providing multiple points of engagement alleviates door flexing and rattling, and eliminates pry points on doors with longer spans. Over-center mechanisms

provide the ultimate in consistent compression along the entire edge of the enclosure door. Available with a choice of stylish actuators and security options to suit all your application requirements.

M3 Adjustable Compression

Designed for NEMA/IP rated enclosures
Multiple security options
Each latch fully adjustable for perfect door trim

CR Compression Swinghandle

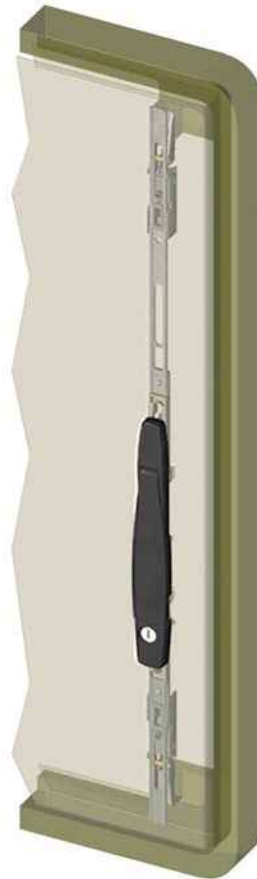
Designed for NEMA/IP rated enclosures
Multiple security options
Designed with center point compression and heavy-duty adjustable rod roller system

F2 Lift Handle

Designed for indoor enclosures and installed outside the sealed area

H3 Swinghandle

Designed for NEMA/IP rated enclosures
Multiple actuator styles
Suitable for A5 modular rod system
Linear actuator assembly for limited space application



SOUTHCO® rod systems are a simple add-on option for many single-point latches to provide multi-point latching for added strength and security, eliminating pry points, flexing and rattle. Available with a variety of stylish actuators and security options to suit all your enclosure requirements.



In this handbook, where a latch product page displays the multi-point icon, it indicates that you can add a rod system of your choice.

A rod system will require the center latching device to be ordered separately and the rod system components to be ordered from the same family.

COMPATIBLE PRODUCT CLASS FAMILIES									
EAS	COMPRESSION				CAM				
									
H3 - EM	E3 Large	62	M1	E5	H3	92	68	01	24

A5 Modular Rod System

Adjustable rod system
(shown with H3 swing handle latch)





Multi-Point Latching Systems

Selection guide

Use this selection guide to help make the right choice of multi-point system for your application



Key-Locking Available



NEMA / IP Rated



Multi-Point Latching



Padlockable



Stainless Steel














Vibration Resistant

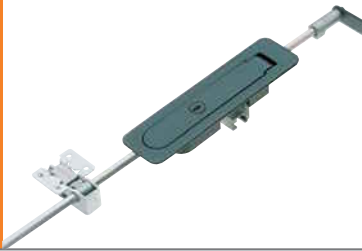
COMPLETE SYSTEMS			MATERIAL			
			Product Class	Zinc and Steel, Zinc Plated	Zinc and Stainless Steel	Plastic and Steel, Zinc Plated
MULTI-POINT LATCHING SYSTEMS PAGES 174-197	Actuator	Latch	M3	✓		
					✓	
			F2			✓
			H3	✓		

ROD SYSTEMS		MATERIAL			PERFORMANCE	
		Product Class	Zinc Actuator with Plated Steel Rod	Zinc Plated Steel actuator with Aluminium Rod	Zinc Actuator with Aluminum Rod	Rod Roller Assembly Pull-Up
ROD SYSTEMS PAGES 198-201		A5	✓		✓	4.5 (.18)
		A5 - A8 Contact Southco		✓		3 (.12)
		H3 Linear Actuator	✓			4.5 (.18)

Dimensions in millimeters (inch) unless otherwise stated

PERFORMANCE				ACCESS STYLE				INSTALLATION	
Maximum Static Load	NEMA / IP Rated 	Compression	Grip Range	Key-Locking 	Tool Secured	Padlockable 	Electronic Access	Concealed	Flush/ Low Profile
890 N (200 lbf)	✓	5 (.197)	3.5 - 20 (.14 - .79)	✓	✓	✓		✓	✓
500 N (112 lbf)	✓	5 (.197)	5 - 124 (.197 - 4.88)	✓	✓	✓			✓
100 N (22 lbf)		12 (.47)	15 - 25 (.59 - .98)	✓					✓
250 N (56 lbf)	✓		10.3 - 50.9 (.41 - 2)	✓	✓	✓	✓		✓

COMPATIBLE PRODUCT CLASS FAMILIES									
EAS PAGES 38-39	COMPRESSION PAGES 72-111			CAM PAGES 112-155					
 H3 - EM	 E3 Large	 62	 M1	 E5	 H3	 92	 68	 01	 24
		✓		✓	✓	✓			
	✓	✓	✓	✓		✓	✓	✓	✓
✓					✓				



M3 Compression System

Remote compression latch

- Consistent compression driven by rotational rod
- Adjustable grip
- Meets NEMA 4 / IP66 and EMI standards
- Can be driven by hand, tool or key-locking actuators

Material and Finish

Zinc alloy and steel, zinc plated

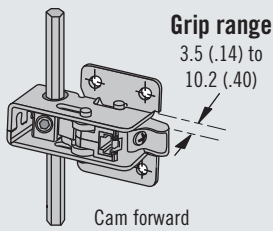
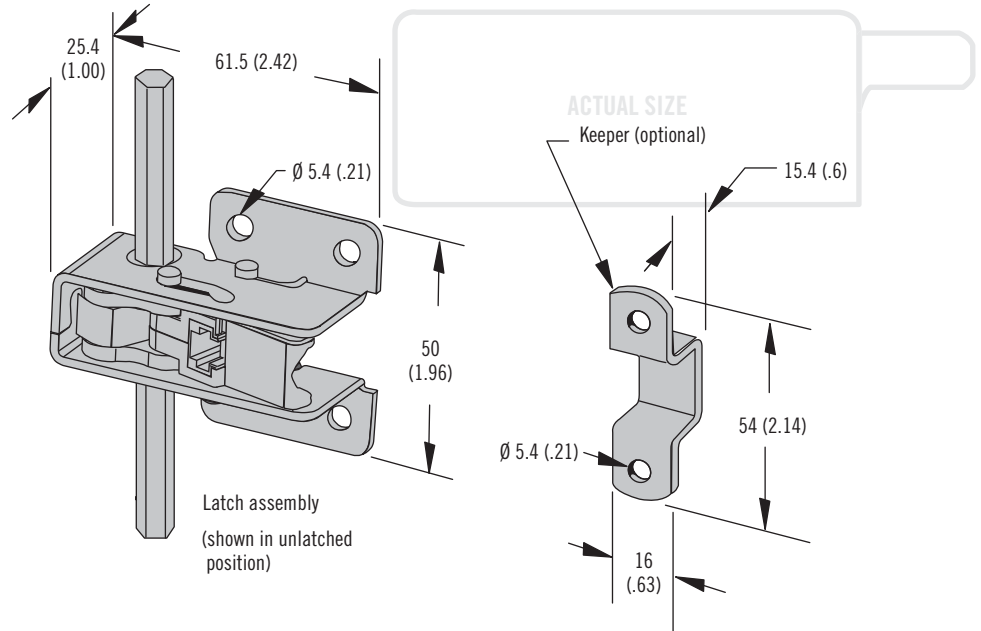
Performance Details

Max. static load:

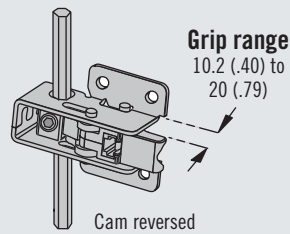
890 N (200 lbf) per latch

Average ultimate load:

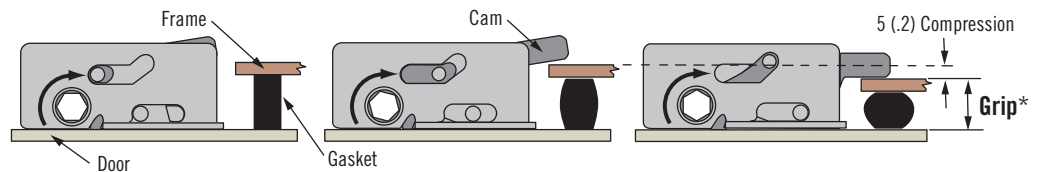
1335 N (300 lbf)



Cam forward

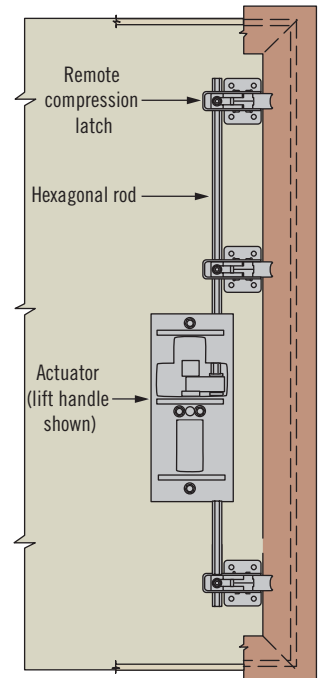
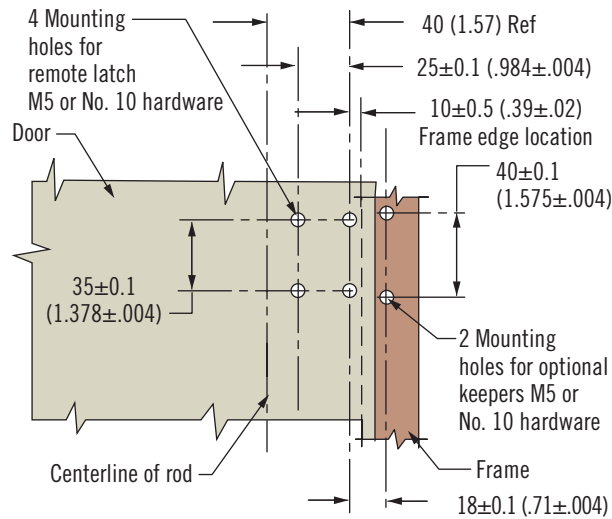


Cam reversed



* Measure your **Grip** from the latch mounting surface to the inside frame surface, with gasket compressed

Inside view



Notes

Do not exceed 20 (.79) grip range with cam reversed

Part Number

The complete system consists of:
 Remote compression latch and/or optional keeper (see page 178)
 Actuator (see pages 179-182)
 Rods (see page 183)

Order each component separately

Part Number	
Remote compression latch	M3-50
Keeper (optional) use for grip ranges 15 - 30 (.59 - 1.18)	M3-51

Dimensions in millimeters (inch) unless otherwise stated

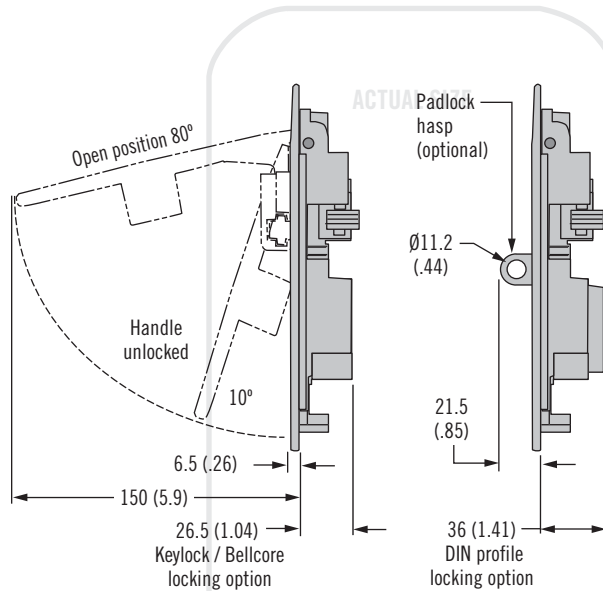
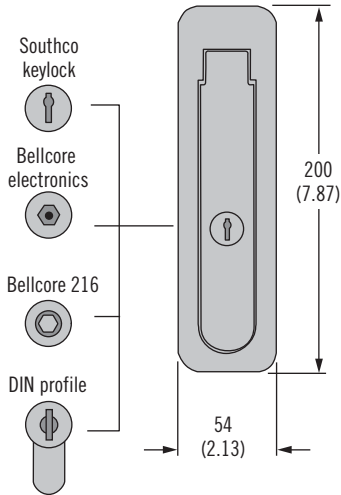
M3 Compression System

Actuators · Lift handle



Lift Handle

Locking options



- Suitable for left and right side latching
- Meets NEMA 4/ IP66 and EMI standards
- Ejecting handle

Material and Finish

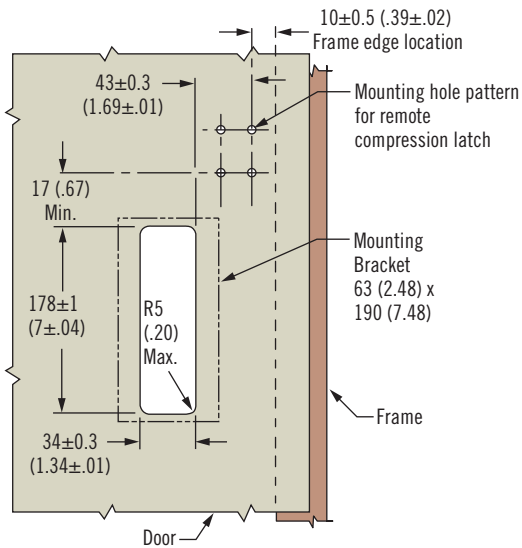
Zinc alloy black powder coated and steel, zinc plated

Sealing Notes

NEMA 4 / IP66 achieved using gasket supplied

DIN Profile Key Part

M3-0-36406



Part Number Selection

- P** Padlock option
0 Non padlock
1 Padlockable
- D** Door thickness range
10 1.5 - 3 (.06 - .12)
11 3 - 4.5 (.12 - .18)
25 24 - 25.5 (.94 - 1.0)

M3 - 40 - L P - D

- L** Lock style
10 Key-locking keyed alike CH751 (two keys supplied)
11 DIN profile supplied keyed alike 347876 (three keys supplied)
12 DIN lock CH751
13 Push button
16 Bellcore 216
17 Bellcore electronics

Actuator only

The complete system consists of:
 Remote compression latch and/or optional keeper (see page 178)
 Actuator (see page 179-182)
 Rods (see page 183)

Order each component separately



M3 Compression System

Actuators · Push-button handle

- Suitable for left and right side latching

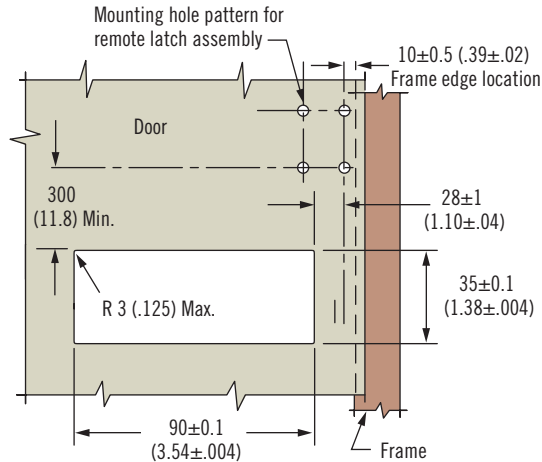
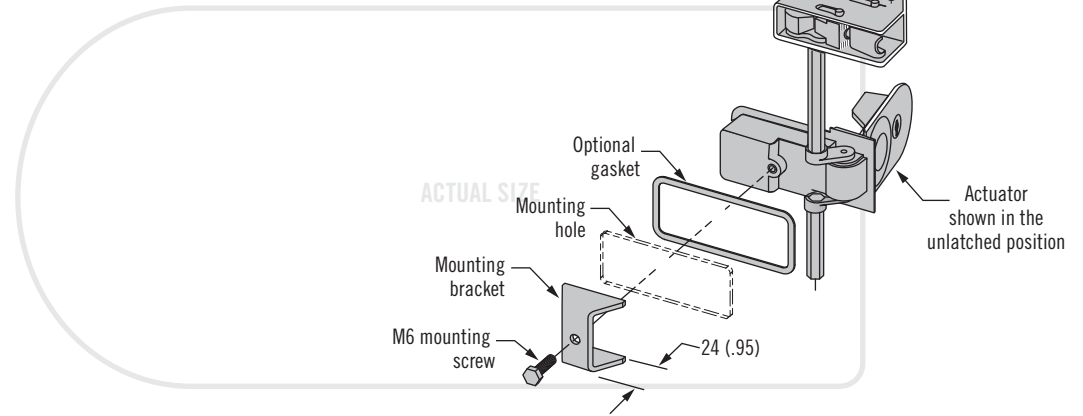
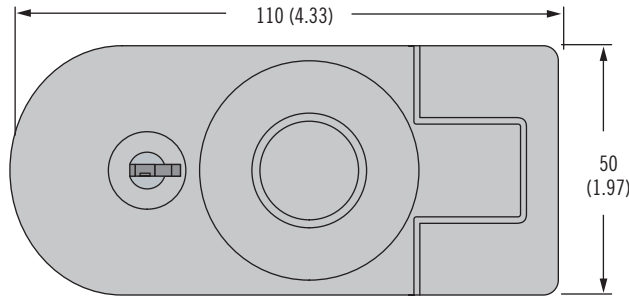
Material and Finish

Zinc alloy, black powder coated and steel, zinc plated

Sealing Notes

NEMA 4 / IP66 achieved using optional gaskets (ordered separately)

Push-Button Handle



Part Number

Actuator and sealing gasket only see table

The complete system consists of: Remote compression latch and/or optional keeper (see page 178) Actuator (see pages 179-182) Rods (see page 183)

Order each component separately

Actuator	Door Thickness Range	Part Number
Push-button handle	0 - 5 (0 - .20)	M3-90
	5 - 10 (.20 - .39)	M3-92
Push-button handle with key-lock	0 - 5 (0 - .20)	M3-91
	5 - 10 (.20 - .39)	M3-93

Sealing Gasket Part Number
C5-82

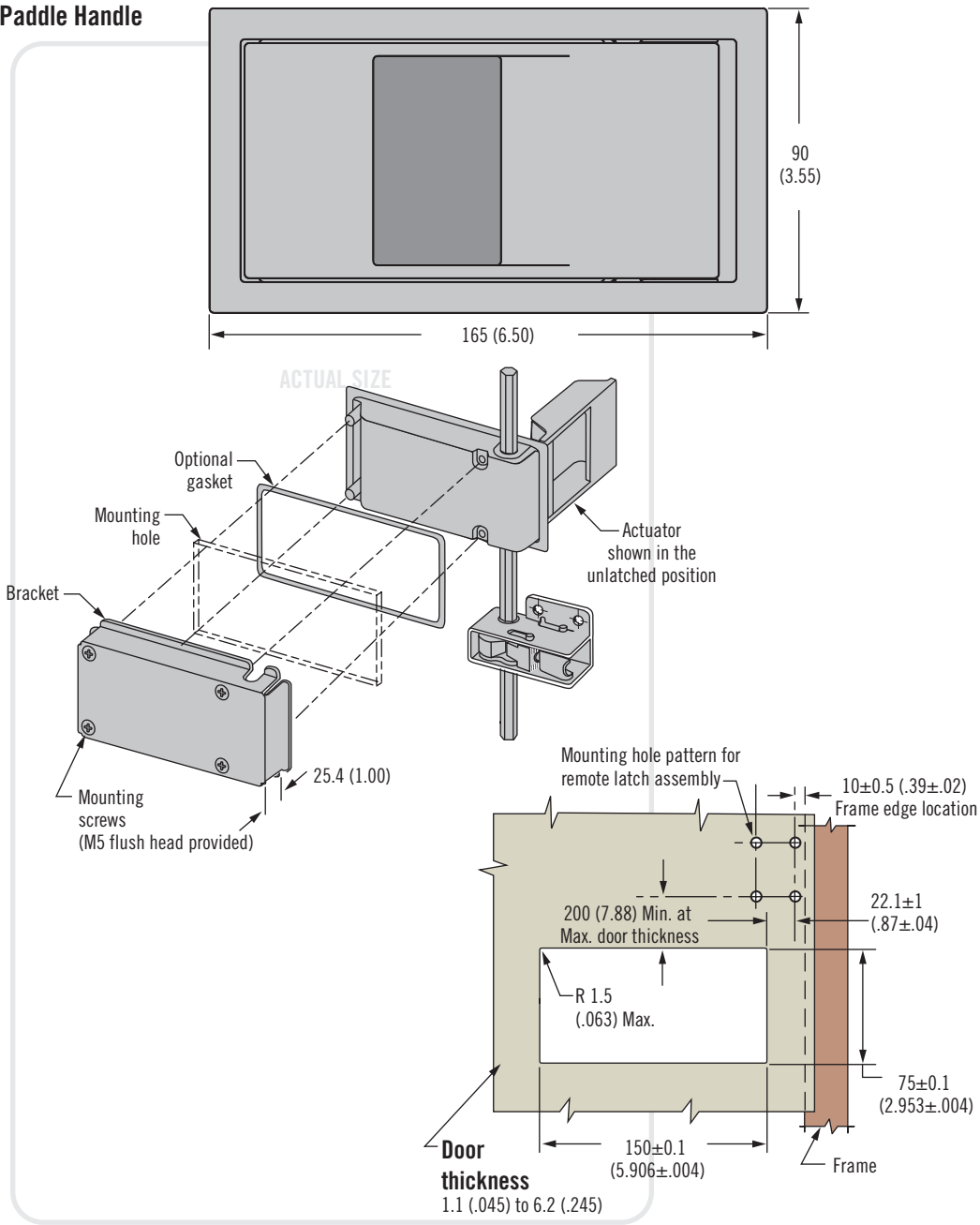
Dimensions in millimeters (inch) unless otherwise stated

M3 Compression System

Actuators · Paddle handle



Paddle Handle



- Suitable for left and right side latching

Material and Finish

Zinc alloy, black powder coated and steel, zinc plated

Sealing Notes

NEMA 4 / IP66 achieved using gasket supplied



Part Number

Actuator and gaskets only see table
 The complete system consists of:
 Remote compression latch and/or optional keeper (see page 178)
 Actuator (see pages 179-182)
 Rods (see page 183)
 Order each component separately

Actuator	Part Number
Paddle (includes bracket and screws)	M3-10
Paddle with key-lock (includes bracket and screws)	M3-17

Gasket Type	Part Number
Environmental	M3-12
EMC	M3-13



M3 Compression System

Actuators · Door edge lever · Concealed

- Simple actuator for top or bottom of door

Material and Finish

Door edge lever: Zinc alloy, black powder coated and steel, zinc plated

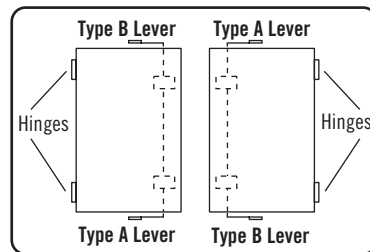
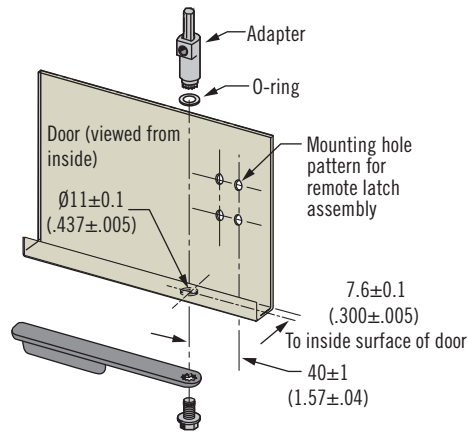
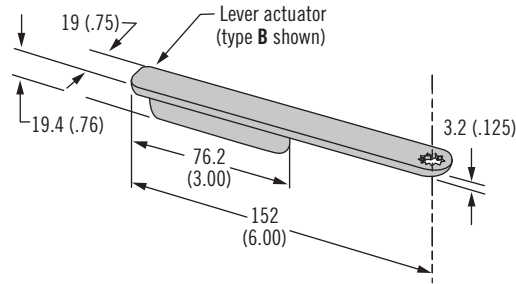
Adaptor: Zinc alloy, chemical protective film

Concealed: Zinc alloy, chemical protective film

Notes

Concealed: Operated by 8mm hex wrench (not supplied)

Door Edge Lever



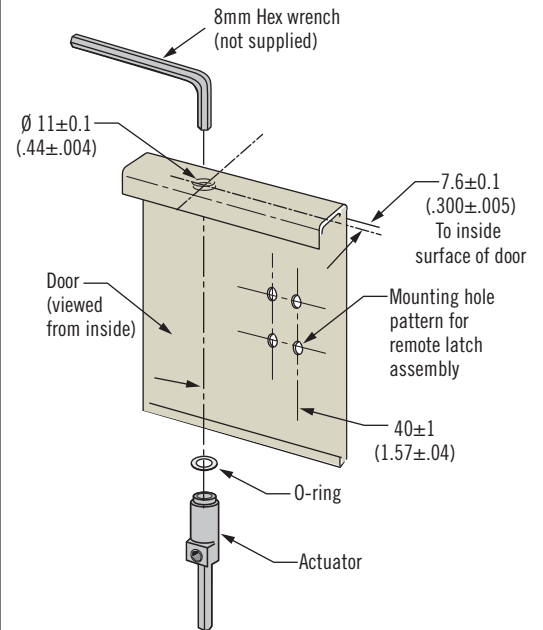
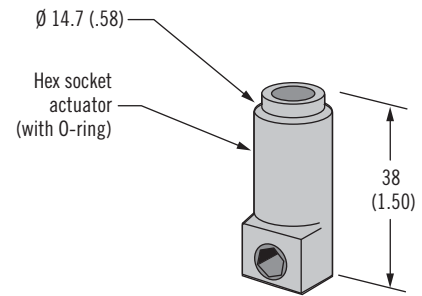
Viewed from outside

Part Number

Actuator only see table
 The complete system consists of:
 Remote compression latch
 Remote compression latch and/or optional keeper (see page 178)
 Actuator (see pages 179-182)
 Rods (see page 183)
 Order each component separately

Actuator	Type	Part Number
Lever (includes adapter and O-ring)	A	M3-31
	B	M3-32

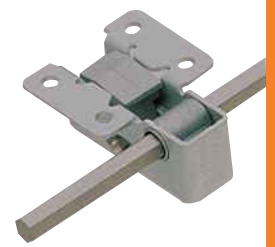
Concealed



Actuator	Part Number
Hex socket with O-ring seal	M3-30

M3 Compression System

Rods and Calculator



Material and Finish

Stainless steel, natural

Notes

If you choose to use your own rods, they should have no more than 1 degree of twist in any meter length

Part Number

Rod only see table

The complete system consists of:
Remote compression latch and/or optional keeper (see page 178)
Actuator (see pages 179-182)
Rods (see page 183)

Order each component separately

Calculation Notes

Once you have completed the calculation please order the following parts:

- 1 x Actuator
- 1 or 2 rods to correct length
- Number of compression latches determined from calculation

Hexagonal Rod

Hex Rod Length	Part Number	
Hex rods (length measured in centimeters)	125 cm	M3-125
	155 cm	M3-155
	185 cm	M3-185

Calculator

To determine the minimum number of remote compression latches you require along the door edge:

$$N = \frac{L \times R}{470}$$

N = Number of compression latches along door edge (rounded to the nearest whole number)
L = Total length of gasketing material in millimeters
R = Gasket compression rate in N / mm

Example: $\frac{5200 \text{ mm} \times 0.3 \text{ N / mm}}{470} = 3.28 = 3 \text{ latches}$

Remote compression latches should be evenly spaced along edge of door



CR Compression System

Swinghandle actuator

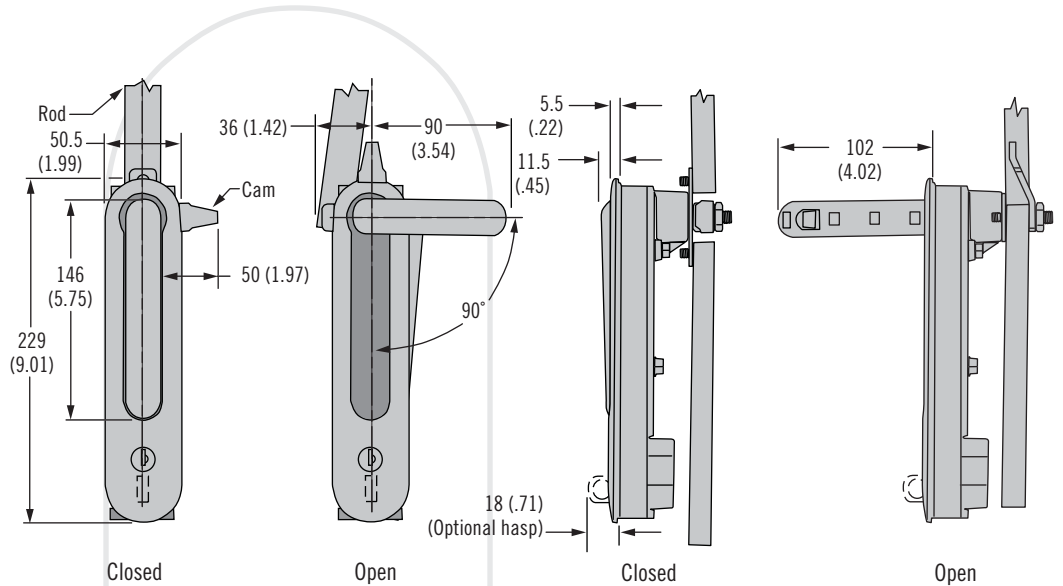
- Consistent compression
- Adjustable grip
- Meets NEMA 4 / IP66 and EMI standards

Material and Finish

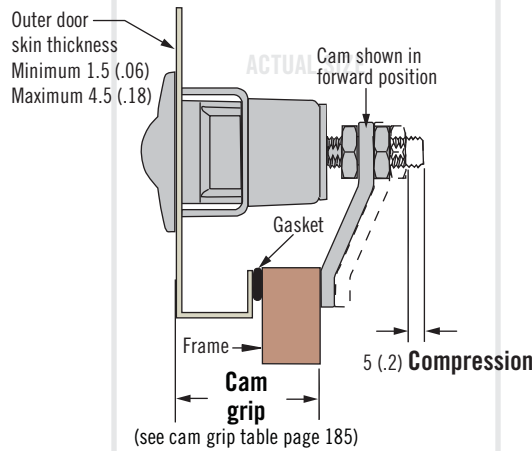
Handle actuator:
Zinc alloy black powder coated
Mounting hardware:
Acetal black, stainless steel and brass

Performance Details

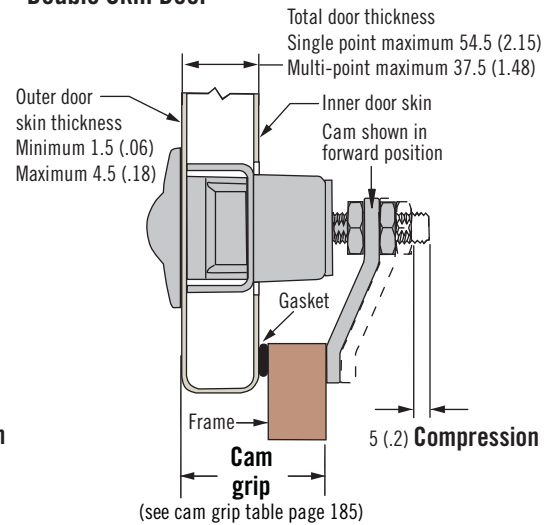
Maximum static load:
500 N (110 lbf) per latch point
Average ultimate load:
1400 N (315 lbf)



Single Skin Door



Double Skin Door



Part Number Selection

See table

Actuator only

The complete system consists of:
Actuator (see part number selector)
Cam (see page 185)
Rod end (see page 186)
Rods (see page 186)
Rod guide (see page 186)
Order each component separately

CR - 19 - L - R 5

L Lock style

- 11 Key-locking keyed alike CH751 (2 keys supplied)
- 21 Keylocking keyed alike CH751 (2 keys supplied) and padlock hasp
- 32 DIN 18354 profile keyed alike 347876 (3 keys supplied)
- 44 Bellcore electronics
- 45 Bellcore 216
- 54 Bellcore electronics and padlock hasp
- 55 Bellcore 216 and padlock hasp

R Rotation

- 1 Universal 180°
- 2 Counter-clockwise 90°
- 3 Clockwise 90°

Dimensions in millimeters (inch) unless otherwise stated

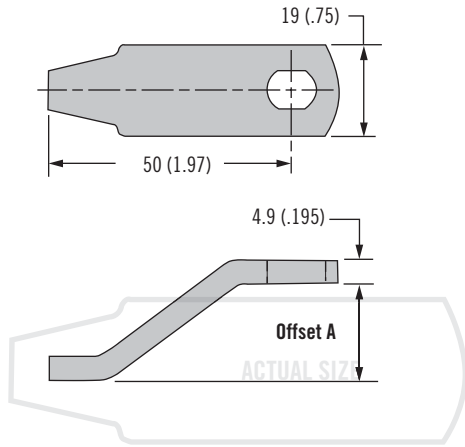
CR Compression System

Cam



Cam

See page 184 for definition of cam grip



Cam Part Number	Offset A	Cam Grip Range	
		Cam Forward	Cam Reversed
CR-846-1000-24	0 (0.0)	56.5 - 62 (2.23 - 2.44)	
CR-846-1005-24	5 (.20)	51.5 - 57 (2.03 - 2.25)	61.5 - 67 (2.42 - 2.64)
CR-846-1010-24	10 (.39)	46.5 - 52 (1.83 - 2.05)	66.5 - 72 (2.62 - 2.84)
CR-846-1015-24	15 (.59)	41.5 - 47 (1.64 - 1.85)	71.5 - 77 (2.82 - 3.03)
CR-846-1020-24	20 (.79)	36.5 - 42 (1.44 - 1.66)	76.5 - 82 (3.01 - 3.23)
CR-846-1025-24	25 (.98)	31.5 - 37 (1.24 - 1.46)	81.5 - 87 (3.21 - 3.43)
CR-846-1030-24	30 (1.18)	26.5 - 32 (1.05 - 1.26)	86.5 - 92 (3.41 - 3.62)
CR-846-1035-24	35 (1.38)	21.5 - 27 (.85 - 1.07)	91.5 - 97 (3.60 - 3.82)
CR-846-1040-24	40 (1.58)	16.5 - 22 (.65 - .87)	96.5 - 102 (3.80 - 4.02)
CR-846-1045-24	45 (1.77)	11.5 - 17 (.46 - .67)	101.5 - 107 (3.99 - 4.22)
CR-846-1050-24	50 (1.97)	6.5 - 12 (.26 - .47)	106.5 - 112 (4.19 - 4.41)

Material and Finish

Stainless steel

Part Number

Cam see table

The complete system consists of:

Actuator (see page 184)

Cam (see page 185)

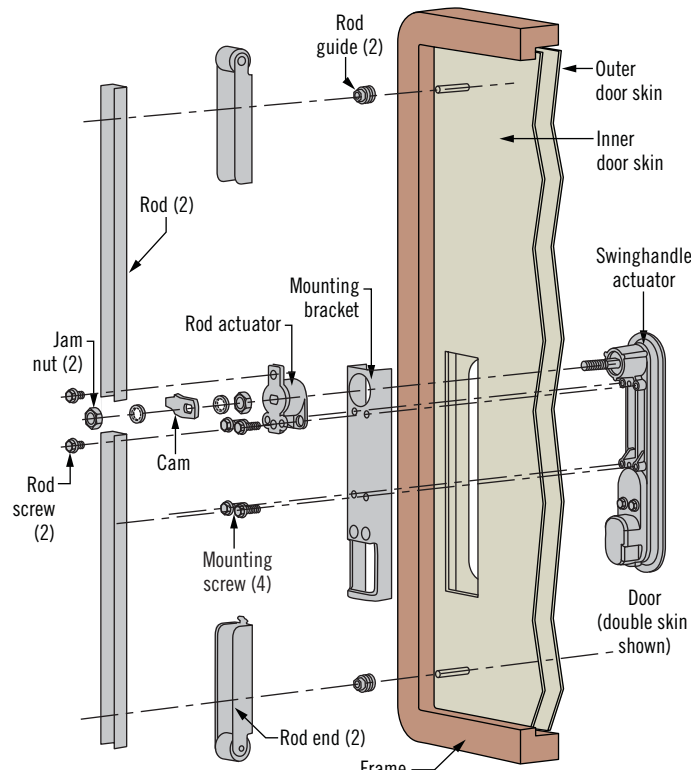
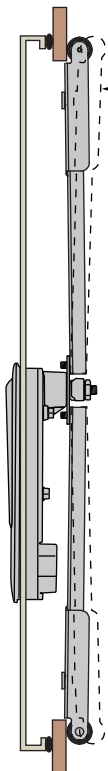
Rod end (see page 186)

Rods (see page 186)

Rod guide (see page 186)

Order each component separately

Assembly





CR Compression System

Rod end · Rod · Rod guide · Installation

Material and Finish

Rod end: Stainless steel and nylon, black
 Rod: Aluminum
 Rod guide: Brass

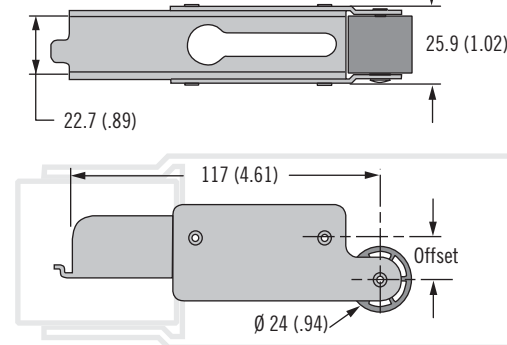
Notes

Rod end: When more than one rod end fits desired rod end grip range select the part number with the lowest offset value
 Rod: Sold separately without mounting hole, in standard length of 1000 (39.37). Rod will need to be cut to desired lengths and mounting holes $\varnothing 8.5 (.33)$ drilled. Minimum 300 (11.81), Maximum 1000 (39.37)
 Rod guide: M6 thread with prevailing torque for vibration resistance

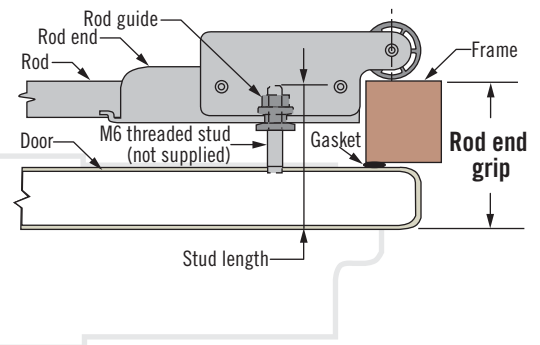
Part Number

Rod end, rod and rod guides see tables
 The complete system consists of:
 Actuator (see page 184)
 Cam (see page 185)
 Rod end (see page 186)
 Rods (see page 186)
 Rod guide (see page 186)
 Order each component separately

Rod End - Negative offset shown



Positive offset shown



Rod End Grip when used with 1000 (39.37) rod	Offset	Formula for Stud Length $\begin{matrix} +2.5 \\ -0 \end{matrix} \begin{matrix} (+1 \\ -0) \end{matrix}$ Distance from front of door to the end of the threaded stud (not supplied)	Rod End Part Number
40 (1.57) Min. to 124 (4.88) Max.	+30 (1.18)	Rod end grip -16.5 (.65)	CR-51-30-24
25 (.98) Min. to 109 (4.29) Max.	+15 (.59)	Rod end grip -1.5 (.06)	CR-51-15-24
10 (.39) Min. to 94 (3.70) Max.	0 (0)	Rod end grip +13.5 (.53)	CR-50-01-24
5 (.20) Min. to 79 (3.11) Max.	-15 (.59)	Rod end grip +28.5 (1.12)	CR-52-15-24
5 (.20) Min. to 64 (2.52) Max.	-30 (1.18)	Rod end grip +43.5 (1.71)	CR-52-30-24

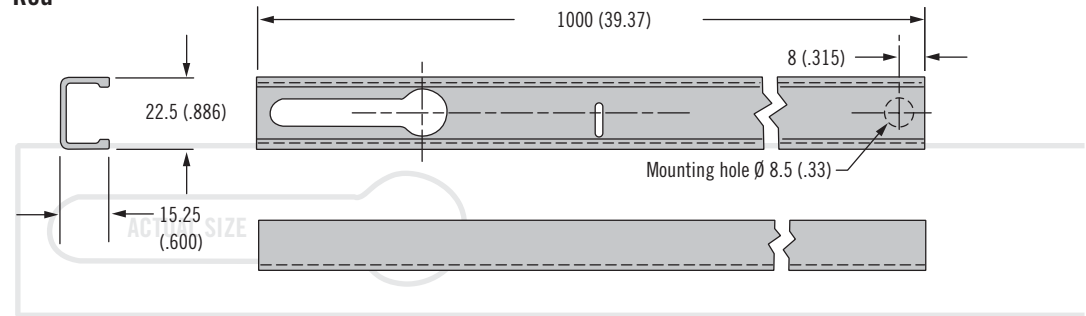
Example:

Rod end grip = 40 (1.57)

Rod end offset = +15 (.59)

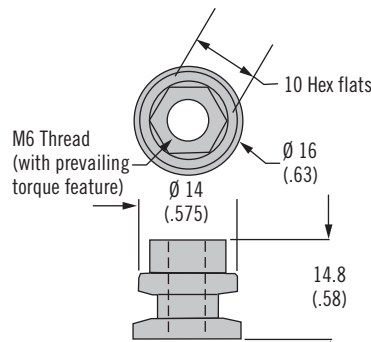
Stud Length = 40 (1.57) - 1.5 (.06) = 38.5 (1.51)

Rod



Rod Part Number
CR-64-1000-50

Rod Guide

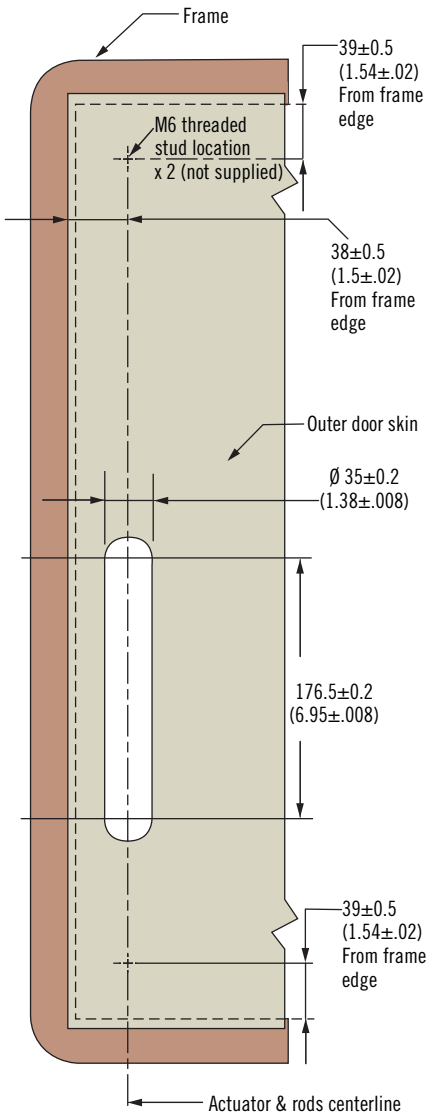


Rod Guide Part Number
CR-843-01-26

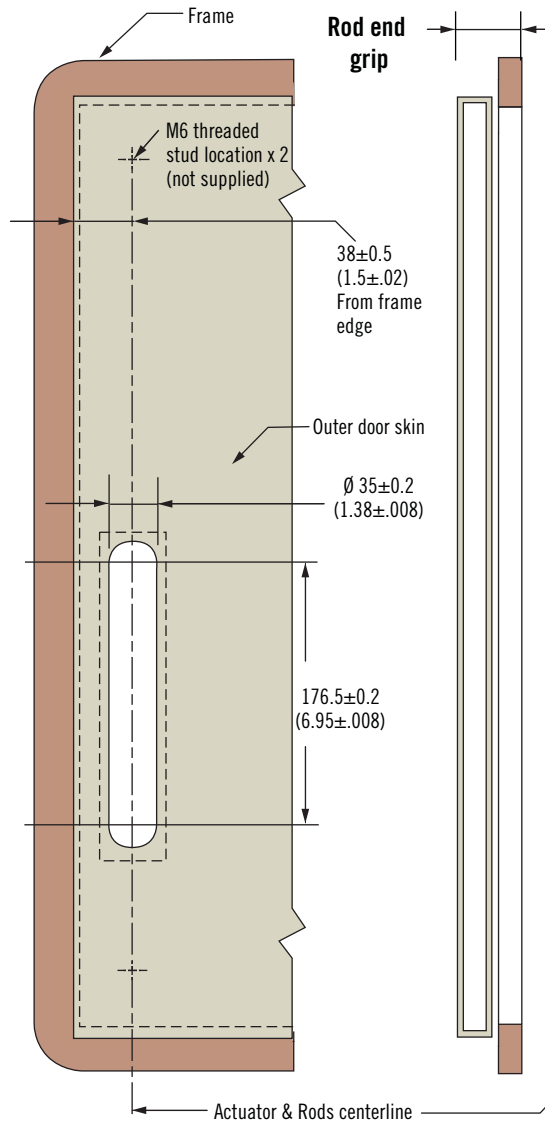
Dimensions in millimeters (inch) unless otherwise stated

Installation

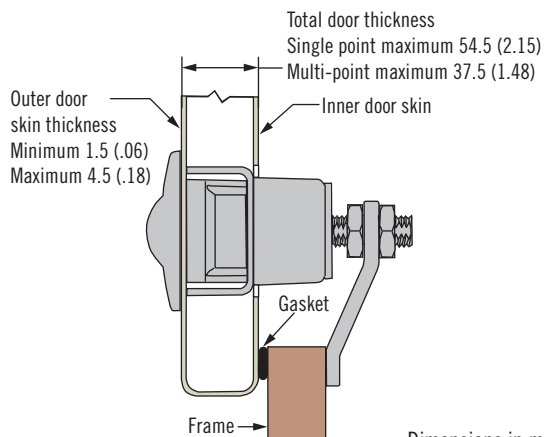
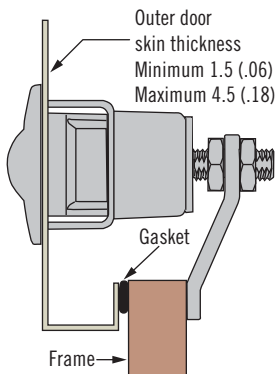
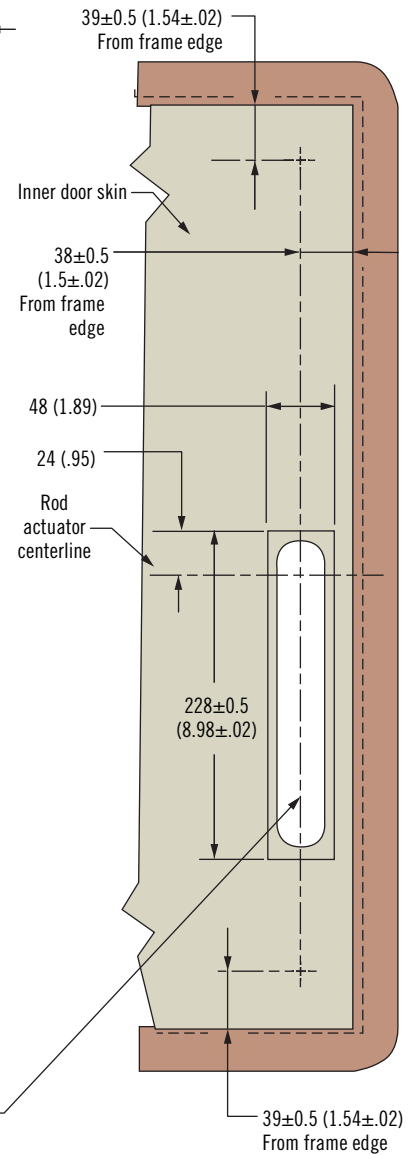
Single Skin Door
View From Front



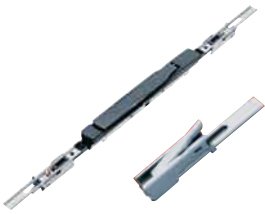
Double Skin Door
View From Front



View From Rear



Dimensions in millimeters (inch) unless otherwise stated



F2 Compression System

System integration

- Designed for indoor enclosures
- Operates outside the enclosure's seal
- Installs close to the door edge
- System engages when door is up to 15 mm (.59 in) away from the closed position

Notes

One complete system consists of:

One actuator assembly

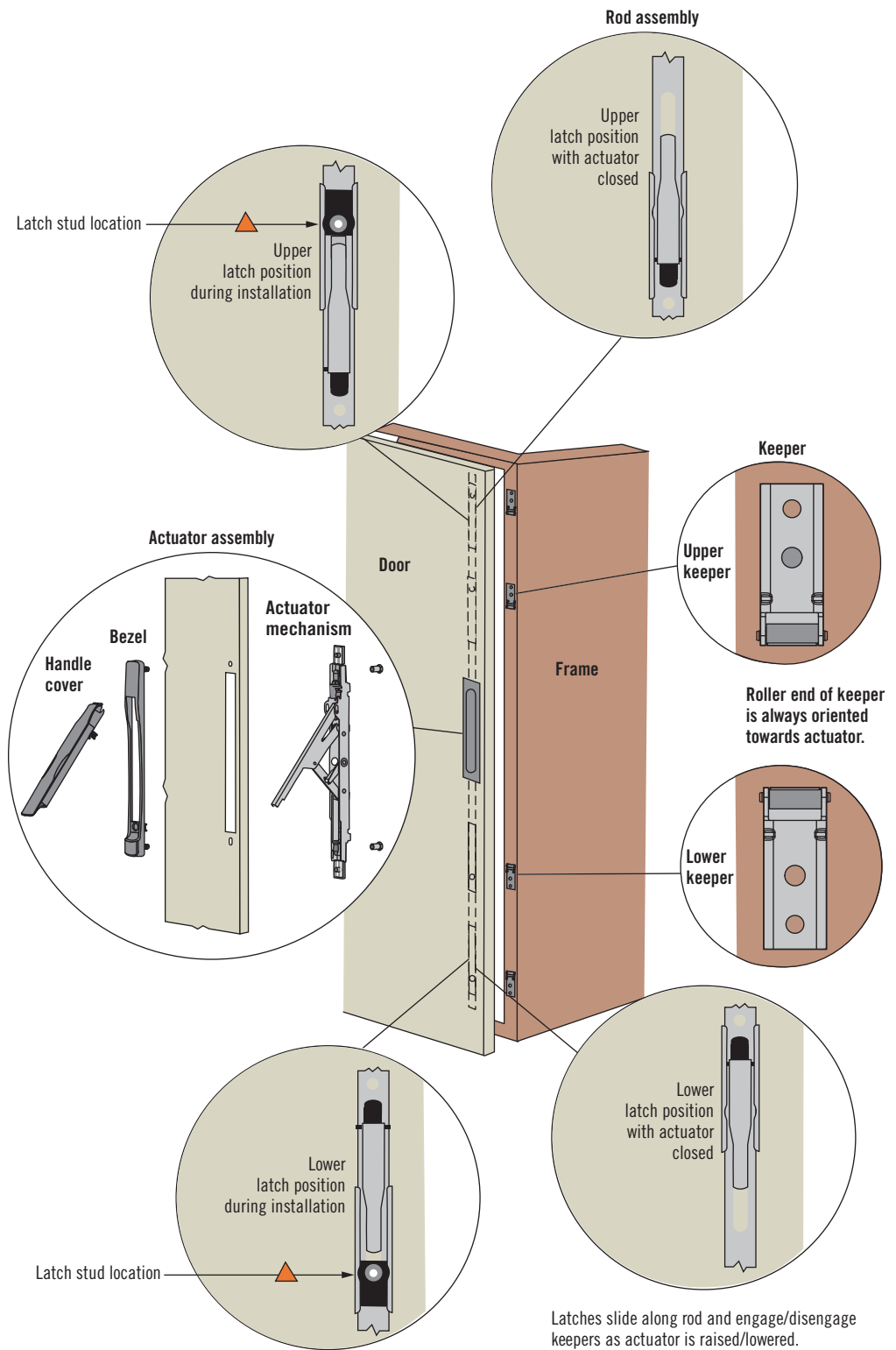
(see page 189)

Two rod assemblies

(see pages 190-191)

Keepers (quantity depends on no. of latches specified; see page 191)

Order each component separately

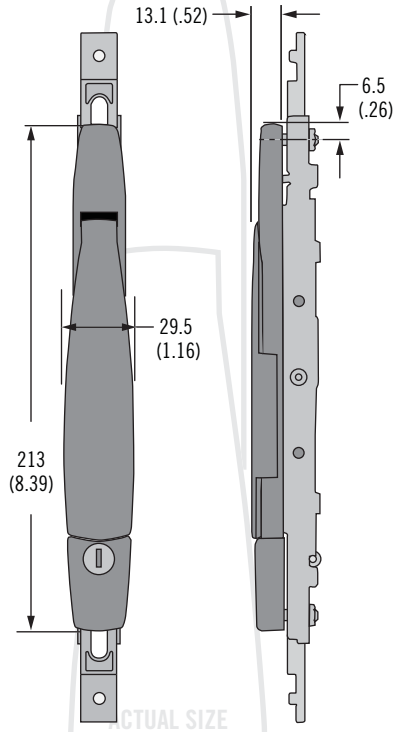


F2 Compression System

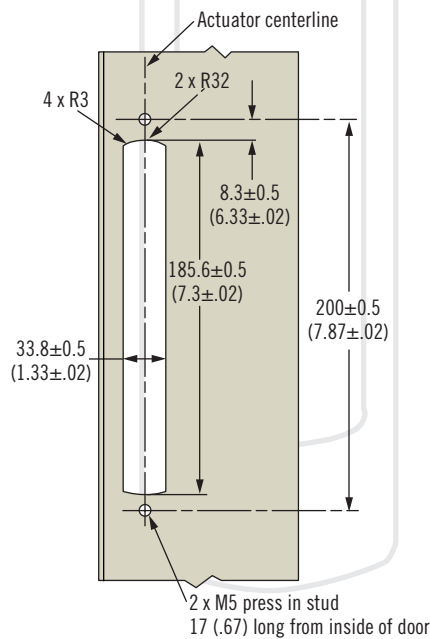
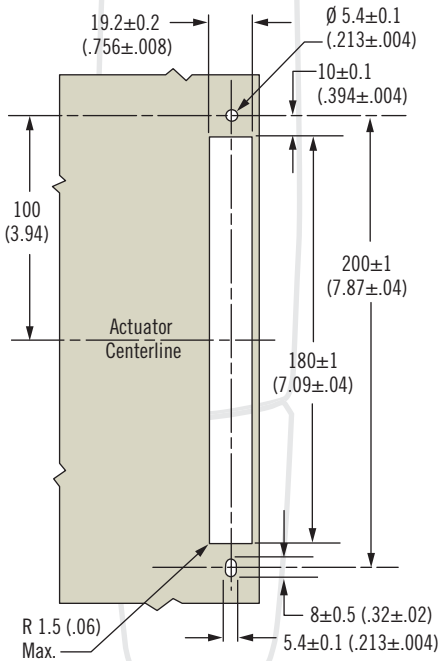
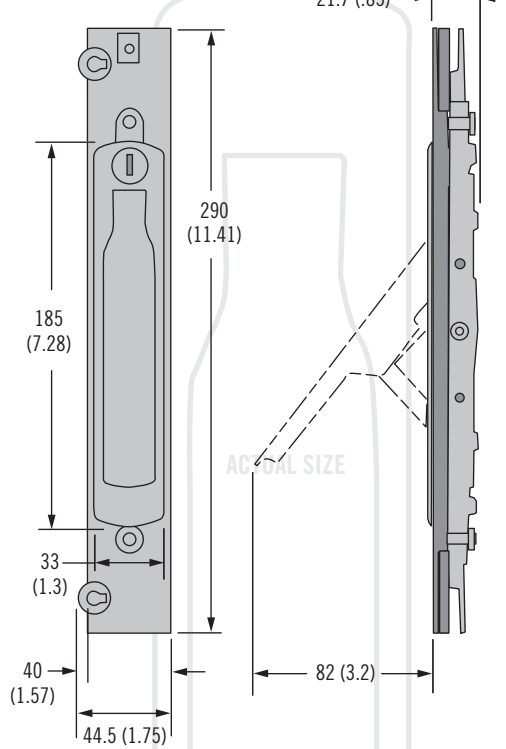
Surface and flush actuators



Surface Actuator



Flush Actuator



- Designed for indoor enclosures
- Operates outside the enclosure's seal
- System engages when door is up to 15 mm (.59 in) away from the closed position

Material and Finish

PC/ABS plastic, black
Zinc alloy and steel, zinc plated

Performance Details

Max. static load:
100 N (22 lbf) per latch point
500 N (112 lbf) for entire system
Flammability rating:
UL94-V0 for all plastic components

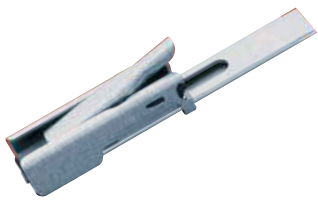
Accessories

Flat key keyed alike CH751
(2 keys per ring)
Part number: PK-10-01
Overmolded key keyed alike CH751
(2 keys per ring)
Part number: PK-10-01-05
Plain key SC001 (2 keys per ring)
Part number: FK-KEY-SC001

Part Number

Actuator only see table
One complete system consists of:
One actuator assembly
(see page 189)
Two rod assemblies
(see pages 190-191)
Keepers (quantity depends on no. of
latches specified; see page 191)
Order each component separately

Lock Style	Surface Actuator Part Number	Flush Actuator Part Number
Non-locking	F2-20-17	F2-20-12
Key-locking keyed alike SC001 (two keys supplied)	F2-20-18	F2-20-13
Key-locking keyed alike CH751 (two keys supplied)	F2-20-19	~



F2 Compression System

Rod assembly · High compression

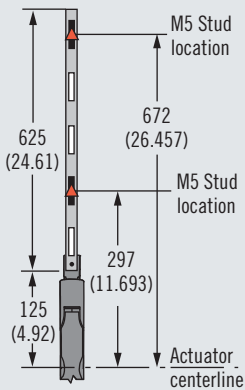
- Multiple lengths and latching point locations
- Latching mechanisms engage keepers when door is up to 15 mm (.59 in) away from the closed position

Material and Finish

PC/ABS plastic black, zinc alloy and steel, zinc plated

Installation Notes

Latch installation stud is not supplied. Use M5 press-in studs or non-flanged weld studs. Length is 6 (.24) to 10 (.39) Maximum, measured from inside surface of the door. Example: F2-10-625-25



Stud must be positioned within 0.2 (.008) of nominal

Part Number

High compression rod assembly only see table

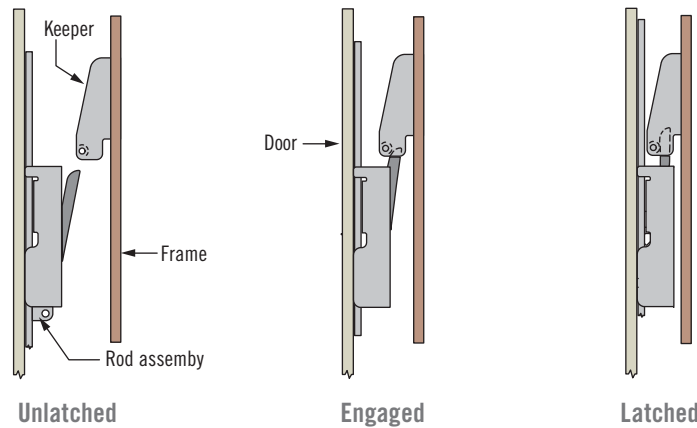
One complete system consists of:

One actuator assembly (see page 189)

Two rod assemblies (see pages 190-191)

Keepers (quantity depends on no. of latches specified; see page 191)

Order each component separately



Rod Length	Latch Installation Stud Locations from Centerline of Actuator	Part Number									
		F2-10-125-1	F2-10-250-2	F2-10-375-3	F2-10-375-13	F2-10-500-14	F2-10-625-25	F2-10-750-26	F2-10-750-36	F2-10-875-37	
125 (4.92)	172 ▲ (6.772)										
250 (9.84)	297 ▲ (11.693)										
375 (14.76)	422 ▲ (16.614)										
500 (19.69)	547 ▲ (21.535)										
625 (24.61)	672 ▲ (26.457)										
750 (29.53)	797 ▲ (31.378)										
875 (34.45)	922 ▲ (36.299)										



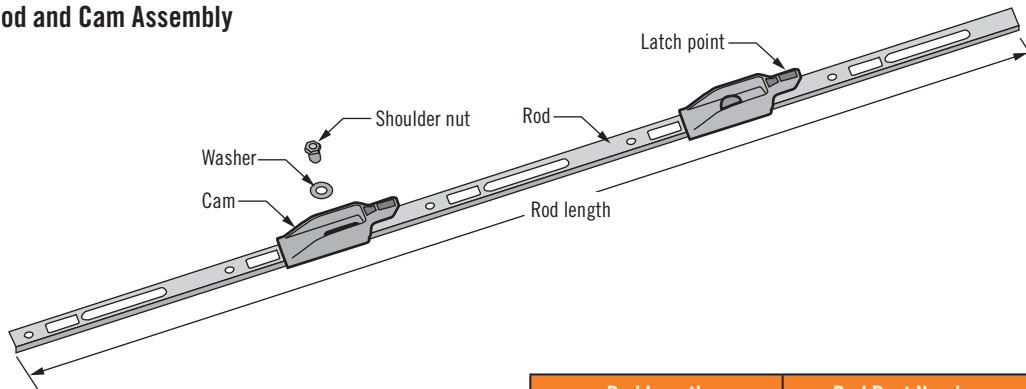
Dimensions in millimeters (inch) unless otherwise stated

F2 Compression System

Rod assembly · Flexible



Rod and Cam Assembly



Rod Length	Rod Part Number
125 (4.92)	F2-11-125-19
250 (9.84)	F2-11-250-19
375 (14.76)	F2-11-375-19
500 (19.69)	F2-11-500-19
625 (24.61)	F2-11-625-19
750 (29.53)	F2-11-750-19
875 (34.45)	F2-11-875-19

Cam Assembly Part Number	
Hardware pack assembly contains 1 x cam, washer and shoulder nut (order 1 hardware pack per latching point)	F2-50-1

- Flexible mounting options

Material and Finish

Glass-filled nylon black, brass and steel, zinc plated

Part Number

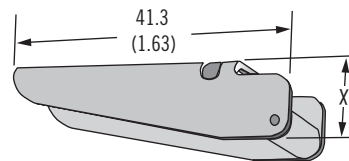
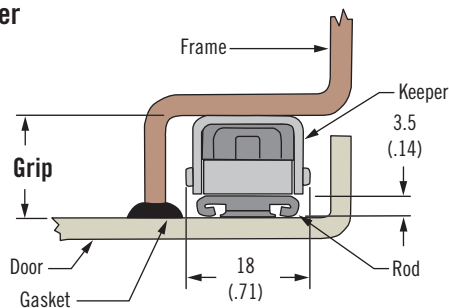
Rod and cam assembly only see table
The complete system consists of:
One actuator assembly (see page 189)
Two rod assemblies
(see pages 190-191)
Keepers (quantity depends on no. of latches specified; see page 191)
Order each component separately

F2 Compression System

Keeper



Keeper



- Keeper roller provides for smooth operation

Notes

Order one keeper per latching point

Part Number

Keeper only see table
One complete system consists of:
One actuator assembly
(see page 189)
Two rod assemblies
(see pages 190-191)
Keepers (quantity depends on no. of latches specified; see page 191)
Order each component separately

Grip	Part Number	X	Rod System Compatibility	
			High Compression	Flexible
15 (.59)	F2-30-15	11.5 (.45)	✓	~
19 (.75)	F2-30-19	15.5 (.61)	✓	✓
20 (.79)	F2-30-20	16.5 (.65)	✓	✓
22 (.87)	F2-30-22	18.5 (.73)	✓	✓
25 (.98)	F2-30-25	21.5 (.85)	✓	✓



H3 Swinghandle System

Medium / large · Sealed / non-sealed

- Zinc alloy swinghandle system
- Multiple locking options; including DIN profile
- Indoor/outdoor version
- Available for medium (125mm x 25mm) and large (150mm x 25mm) door cutout
- Linear and rotational systems available

Material and Finish

Handle: Zinc alloy, black powder coated or satin chrome plated
Cam: Steel, zinc plated

Performance Details

Maximum static load: 250 N (56 lbf)

Sealing Notes

Sealed version meets NEMA 4/IP66 water intrusion standards

Keys

See page 130

Notes

Key removal in unlocked position only available on non-sealed version

Product available to meet **TELCORDIA®** GR-487 contact Southco for details

Electromechanical swinghandle available see pages 38-39

For single point and actuator plate system see pages 144-145

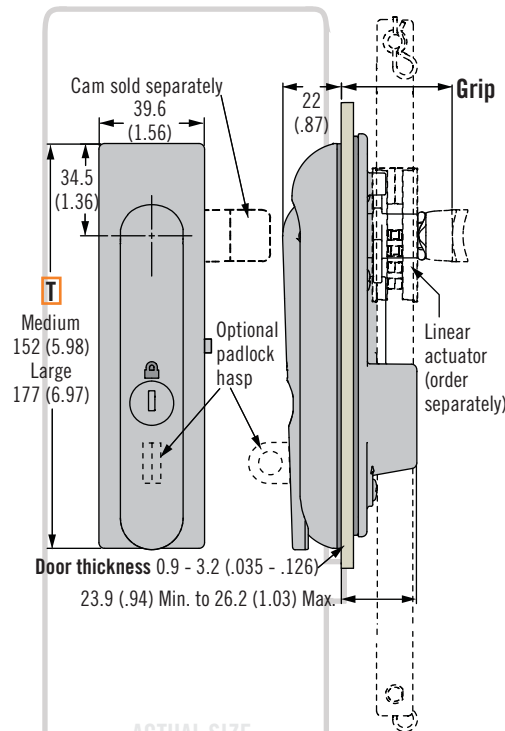
For dimension details of DIN lock version, please contact Southco

For plastic version see page 196.

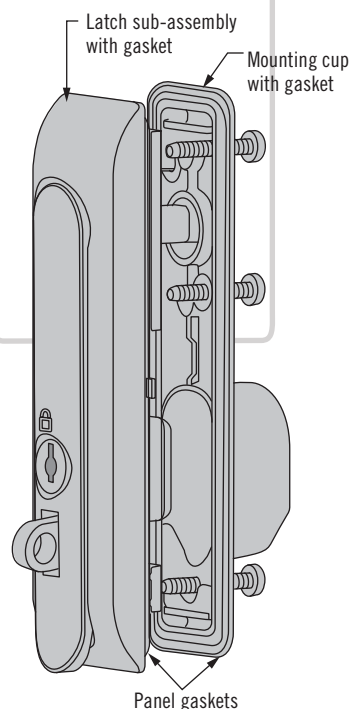
TELCORDIA is a registered trademark of Telcordia Technologies Inc.

Sealed (H3-50 medium shown)

(Also available in large. See part number selection)

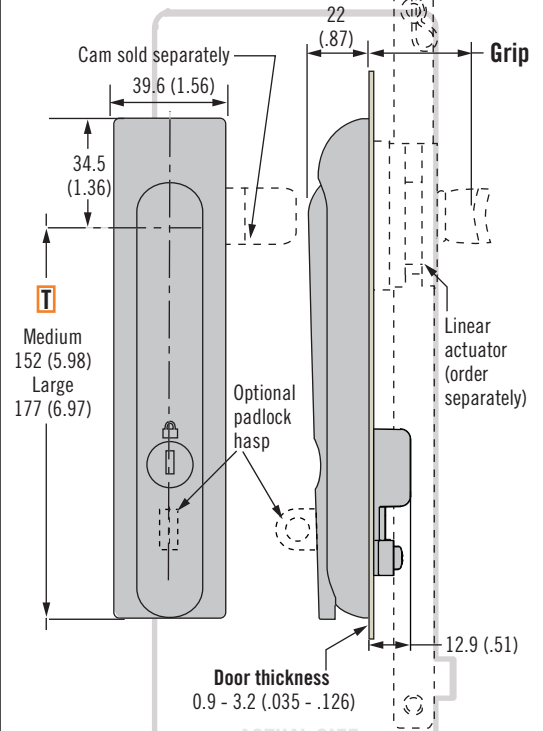


ACTUAL SIZE
H3-50 MEDIUM

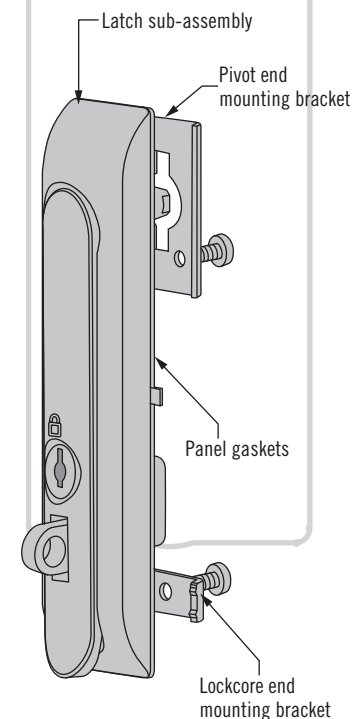


Non-Sealed (H3-60 large shown)

(Also available in medium. See part number selection)



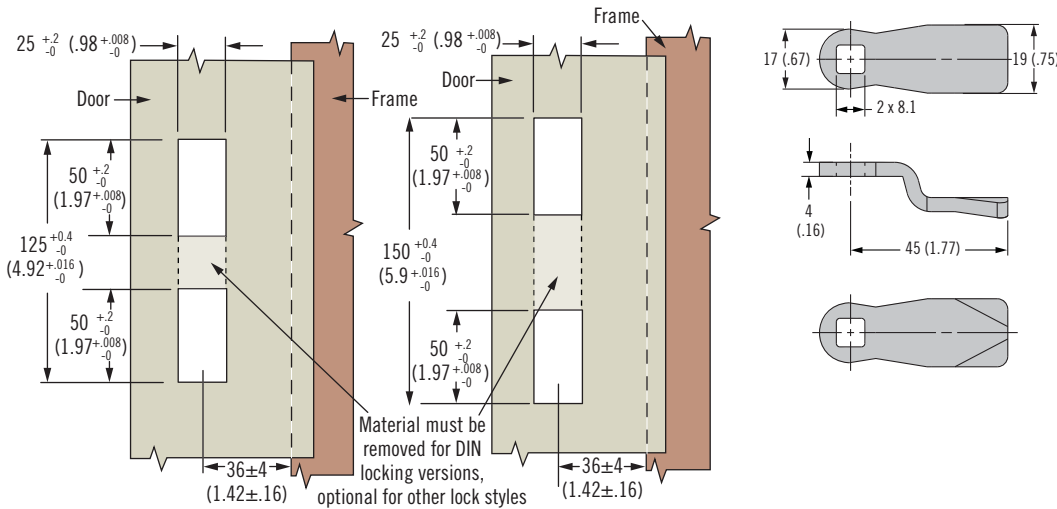
ACTUAL SIZE
H30-60 LARGE



Dimensions in millimeters (inch) unless otherwise stated

Medium H3-50

Large H3-60



Part Number Selection

For single point:
Order latch and cam separately
(see page 144-145)

For multi-point order:
Latch and cam (if 3 point latching
required)

Linear actuator and rod adaptors
(see page 194)

Rods (see pages 198-201)

Rod guides (see pages 198-201)

Note

*2 Overmolded keys supplied

Cam Part Number Table For Use With Linear Actuator Or Actuator Plate					
Grip With Linear Actuator	Grip With Actuator Plate	Part Number	Grip With Linear Actuator	Grip With Actuator Plate	Part Number
~	10.3 (.41)	E5-6107	36.9 (1.45)	26.3 (1.04)	E5-6115
~	12.3 (.48)	E5-6108	38.9 (1.53)	28.3 (1.11)	E5-6116
24.9 (.98)	14.3 (.56)	E5-6109	40.9 (1.61)	30.3 (1.19)	E5-6117
26.9 (1.06)	16.3 (.64)	E5-6110	42.9 (1.69)	32.3 (1.27)	E5-6118
28.9 (1.14)	18.3 (.72)	E5-6111	44.9 (1.76)	34.3 (1.35)	E5-6119
30.9 (1.22)	20.3 (.80)	E5-6112	46.9 (1.85)	36.3 (1.43)	E5-6120
32.9 (1.30)	22.3 (.88)	E5-6113	48.9 (1.93)	38.3 (1.51)	E5-6121
34.9 (1.37)	24.3 (.96)	E5-6114	50.9 (2.00)	40.3 (1.59)	E5-6122

Latch Part Number (no cam)

H3 - T - A L - S F

- T Size**
 - 50 Medium - 152 (5.98) length
 - 60 Large - 177 (6.97) length
- A Actuator style**
 - 1 No padlock hasp for use with linear actuator (see page 194)
 - 2 With padlock hasp for use with linear actuator (see page 194)
 - 3 No padlock hasp for use as single point or with actuator plate (see page 195)
 - 4 With padlock hasp for use as single point or with actuator plate (see page 195)
- L Lock style**
 - 00 Locking DIN profile (no lock supplied)
 - 01 Locking keyed alike CH751*
 - 02 Locking keyed alike 300*
 - 03 Locking keyed alike 333*
 - 04 Non-locking
 - 05 Locking keyed alike HL450
 - 20 Non-locking with detent
 - 21 Locking DIN profile keyed alike CH751*
 - 22 Locking DIN profile keyed alike 300*
 - 23 Locking DIN profile keyed alike 333*
- S Sealing option**
 - 0 Non-sealed
 - 1 Sealed
- F Finish**
 - 44 Satin chrome
 - 50 Black powder coated



H3 Linear Actuator

Linear actuator and rod adaptor

- Linear actuator for H3 swinghandles
- Linear rod travel for limited space
- Suitable for left and right hand applications

Material and Finish

Zinc alloy and steel, zinc plated

To Select Linear actuator and Rod Adaptor:

For use with H3-50 and H3-60 swinghandles (see pages 192-193)
Order linear actuator and rod adaptors separately (1 actuator and 2 adaptors required per latch)

Accessories

Replacement rod adaptor retainer pin part number: H3-0-44778-01

Part Number

Linear actuator and rod adaptors see table

For multi-point order:

Latch (see pages 192-193)

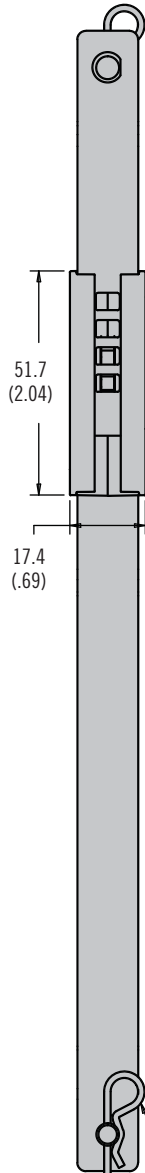
Cam (if 3 point latching required) (see page 193)

Linear actuator and rod adaptor (see table)

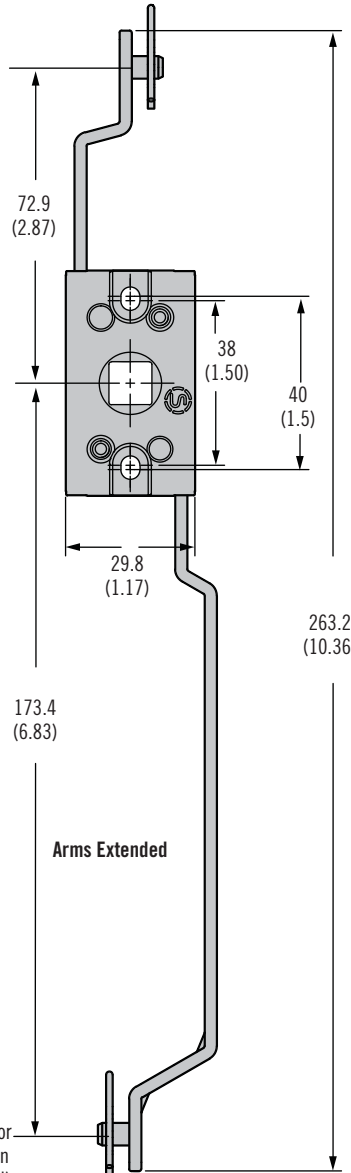
Rods (see pages 198-201)

Rod guides (if required) (see page 198)

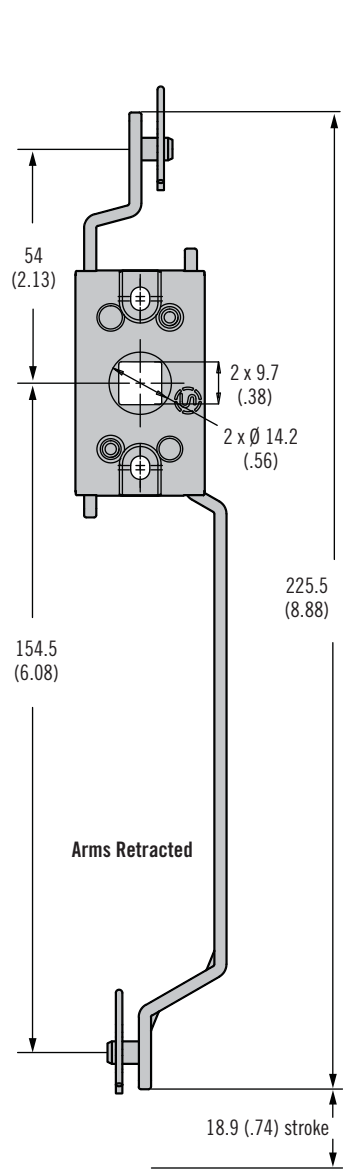
Linear Actuator



Closed Position



Open Position

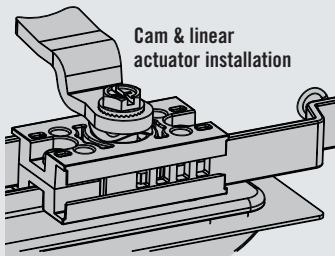
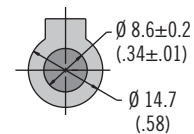
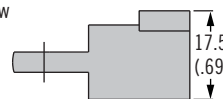
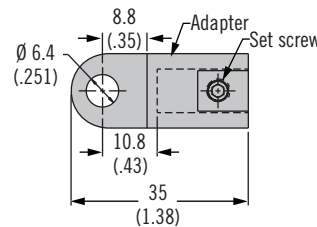


Arms Extended

Arms Retracted

Rod adaptor retainer pin (2 supplied)

Rod Adaptor



Cam & linear actuator installation

Part Number	
Linear actuator	H3-51-40
Rod adaptor	A5-92-201-31

Dimensions in millimeters (inch) unless otherwise stated

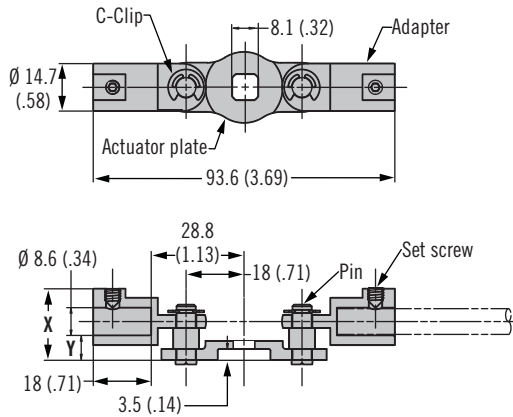
A5 Modular System

Actuator plates

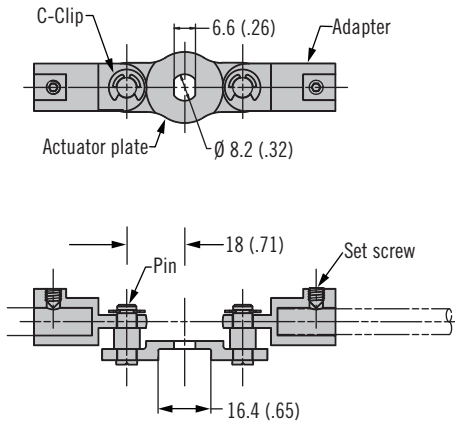


Actuator Plate

A5-90-101-11

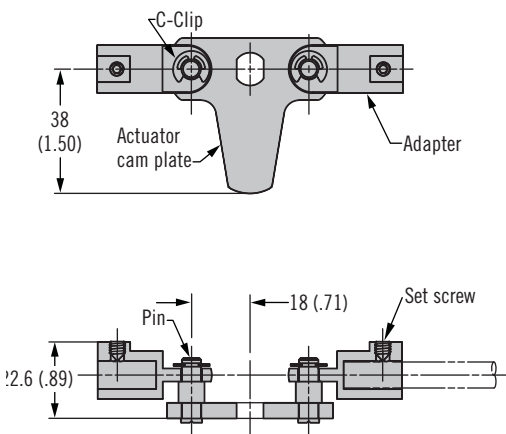


A5-90-301-11

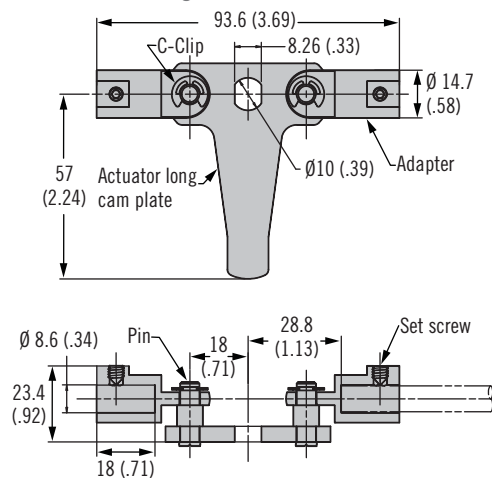


Part Number	X	Y
A5-90-101-11	22.2 (0.87)	4.7 (0.18)
A5-90-104-11	25.2 (0.99)	7.7 (0.30)
A5-90-401-11	22.6 (0.89)	5.1 (0.20)
A5-90-501-11	23.4 (0.92)	5.9 (0.23)

A5-90-401-11 (Short Cam)



A5-90-501-11 (Long Cam)



Actuator Plate Part Number								
Operating Latch Families								
	Page 118-127			Page 192-193		Page 101	Page 134-135	
Actuator Plate Part Number	A5-90-101-11					A5-90-301-11	A5-90-401-11	A5-90-501-11

- Modular actuators to suit multiple latch families using A5 modular rods

Material and Finish

Zinc alloy, steel, zinc plated and stainless steel set screw

To Select Correct Actuator:

1. Choose actuator plate to match latch family (one per latch required)
2. Order rods and rod guides from page 198

Part Number

Actuator plate see table
 Rods (see page 198)
 Rod guides (see page 198)



H3 Swinghandle System

Plastic · Large · Non-sealed

- Lightweight Glass filled nylon swinghandle system UL94-V0 rated
- DIN profile locking options
- Push or turn to close versions available

Material and Finish

Handle: Glass filled nylon
Cam: Steel, zinc plated

Performance Details

Max. static load: 250 N (56 lbf)

Keys

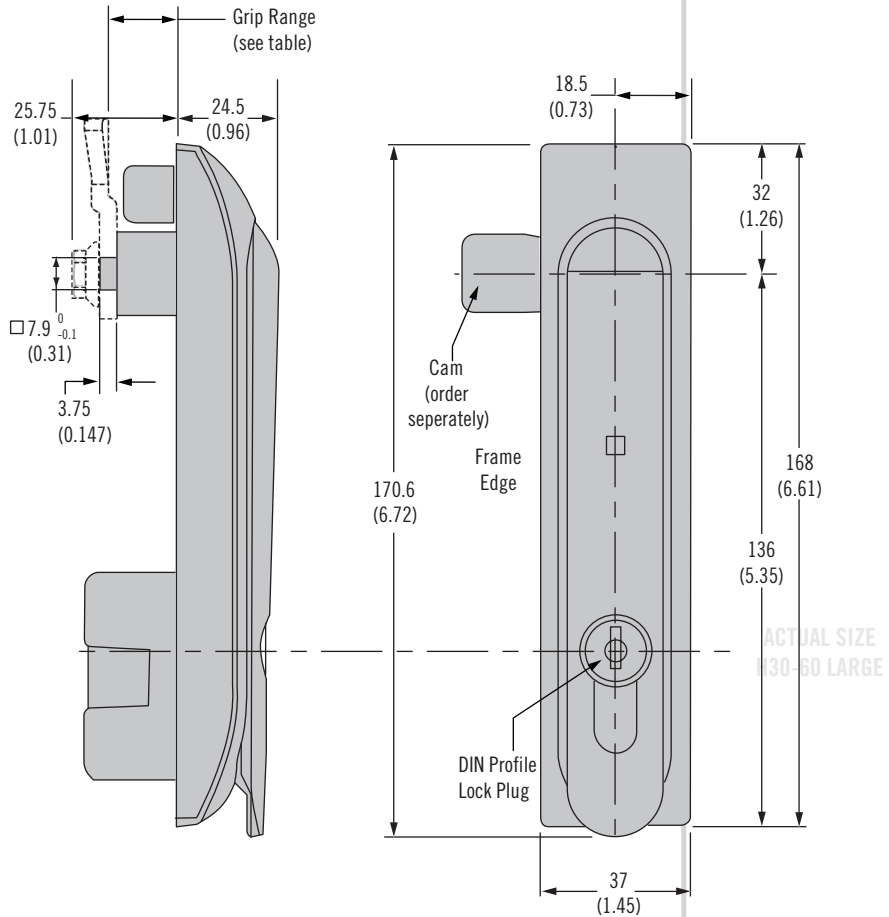
See page 130

Notes

Electromechanical swinghandle available see pages 38-39

For metal version visit pages 144-145 and 192-193

H3 Plastic Swinghandle



Part Number Selection

For single point:
Order latch and cam separately

For multi-point order:
Latch and cam
Linear actuator and rod adaptors
Rods
Rod guides

Note

*2 keys supplied

Latch Part Number (no cam)

T Style

- 65 Push to close handle
- 66 Turn to close handle

L Lock style

- 00 Locking DIN profile (no lock supplied)
- 21 Locking DIN profile keyed alike CH751*
- 22 Locking DIN profile keyed alike 300*
- 23 Locking DIN profile keyed alike 333*
- 70 DIN profile 3 mm Double-bit
- 71 DIN profile 5 mm Double-bit
- 72 DIN profile Bellcore 216
- 73 DIN Profile Bellcore Hex-Pin Recess
- 77 DIN profile 8 mm triangle

H3 - T - 5 L - 071

Cam Part Number Table

Grip	Part Number (length = 38mm)	Part Number (length = 45mm)
15.5 (.61)	E5-6710	E5-6110
17.5 (.69)	E5-6711	E5-6111
19.5 (.77)	E5-6712	E5-6112
21.5 (.85)	E5-6713	E5-6113
23.5 (.93)	E5-6714	E5-6114
OTHER	Please contact Southco	

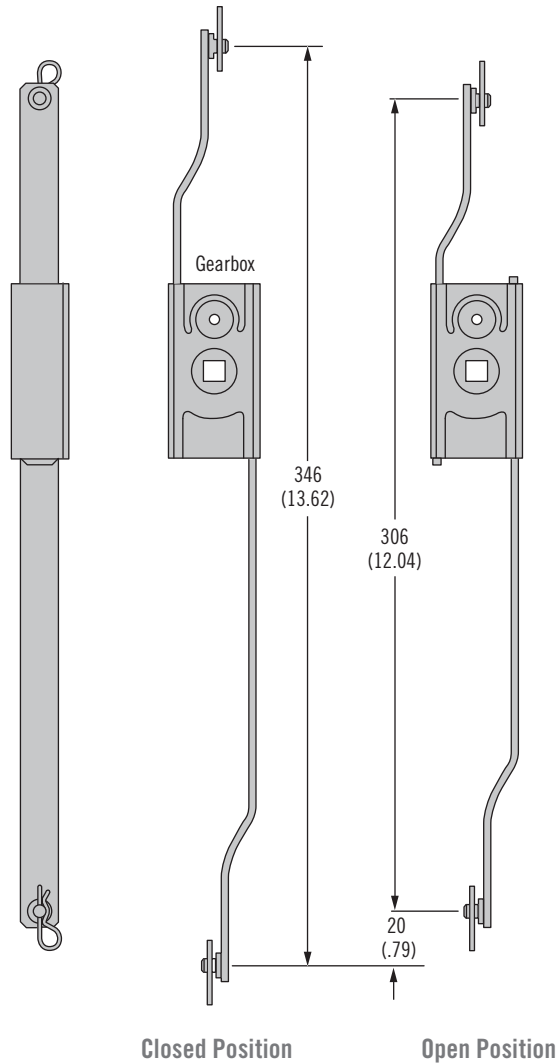
H3 Linear Actuators

Linear actuators and rod adaptor for plastic H3 swinghandle system

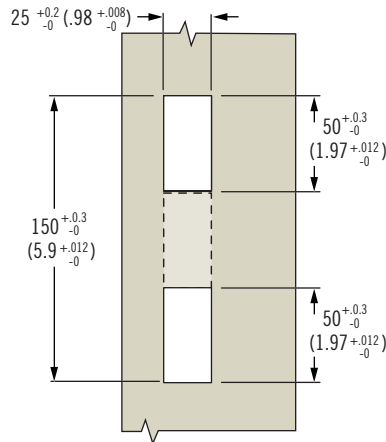


Linear Actuator

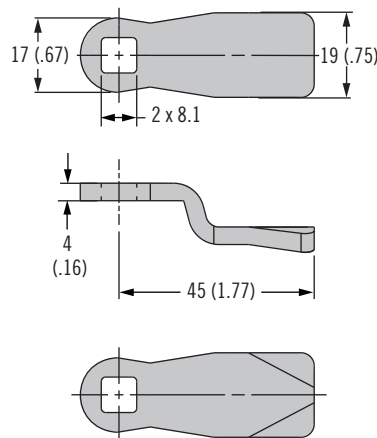
(Right Hand Mounting shown)



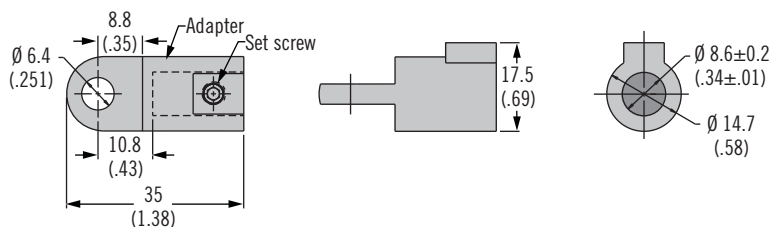
Panel Preparation



Cam



Rod Adaptor



- Linear actuator for Plastic H3 swinghandles
- Linear rod travel for limited space
- Suitable for left and right hand applications
- Left and Right hand Actuators can be disassembled and reassembled in the opposite hand if required

Material and Finish

Zinc alloy and steel, zinc plated

To Select Linear actuator and Rod Adaptor:

For use with H3-65 and H3-66 swinghandles. Order linear actuator and rod adaptors separately (1 actuator and 2 adaptors required per latch)

Accessories

Replacement rod adaptor retainer pin part number: H3-0-44778-01

Part Number

Linear actuator and rod adaptors see table

For multi-point order: Latch Cam (if 3 point latching required) Linear actuator and rod adaptor (see table)

Rods, Rod guides

Part Number	
Linear actuator right hand mounting	H3-61-56-33
Linear actuator left hand mounting	H3-61-55-33
Rod adaptor	A5-92-201-31



A5 Modular System

Rods and rod guides

• Modular rod and rod guides

Material and Finish

Rods: Aluminum or steel, zinc plated
 Rod rollers: Glass-filled nylon, black
 Rod guides: Glass-filled nylon, black with steel, zinc plated hardware

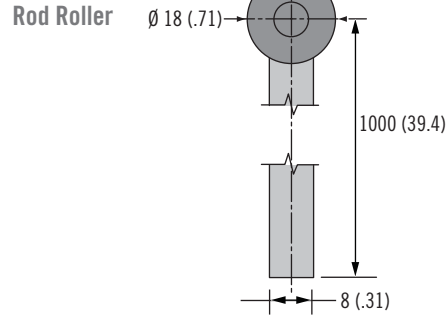
To Select Correct Assembly:

1. Choose actuator plate to match latch family or linear actuator and 2 adaptors. See drawing J-A5-F30 for rod type and latch family compatibility.
2. Order rod guides (2 per assembly). Fixed rod guide recommended for fixed point rod. Adjustable rod guide recommended for rod roller assembly.
3. Order rods (2 per assembly)

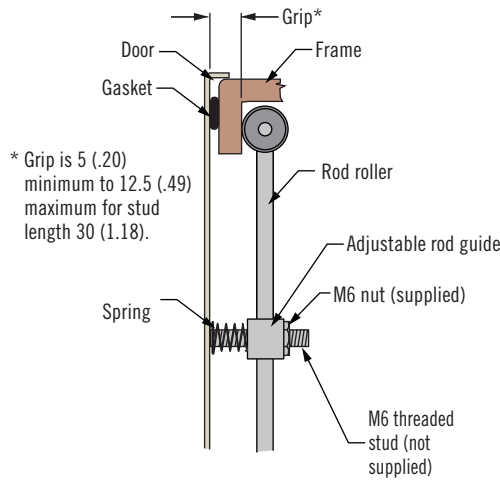
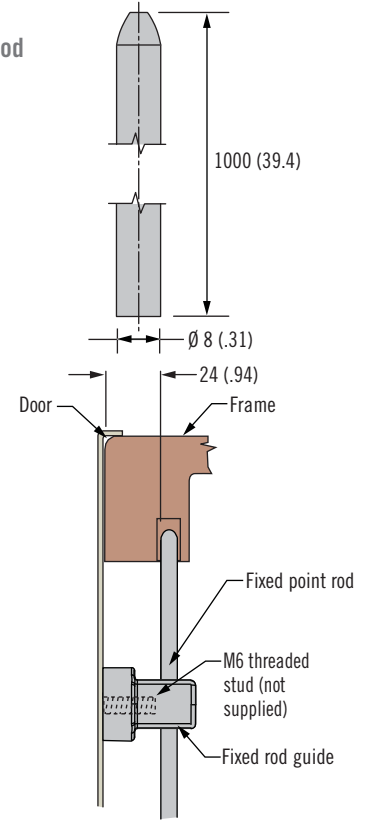
Part Number

Order rod and rod guide separately see tables
 Other rod lengths available. Please contact Southco

Rods



Fixed Point Rod



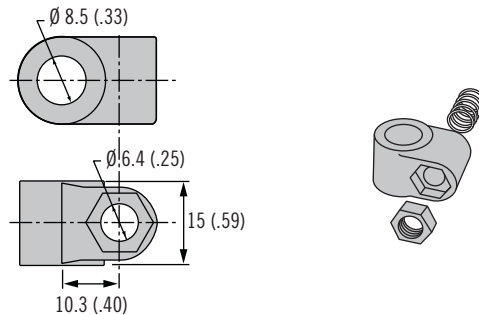
* Grip is 5 (.20) minimum to 12.5 (.49) maximum for stud length 30 (1.18).

Material	Fixed Point Rod Part Number
Aluminum	A5-55-1000-10
Steel	A5-55-1000-11

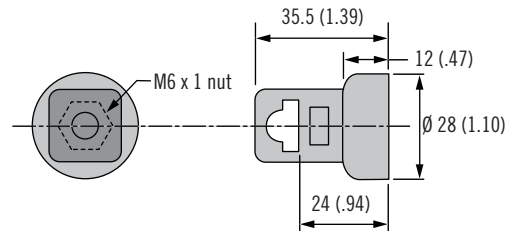
Material	Fixed Point Rod Part Number
Aluminum	A5-55-1000-10
Steel	A5-55-1000-11

Rod Guides

Adjustable



Fixed



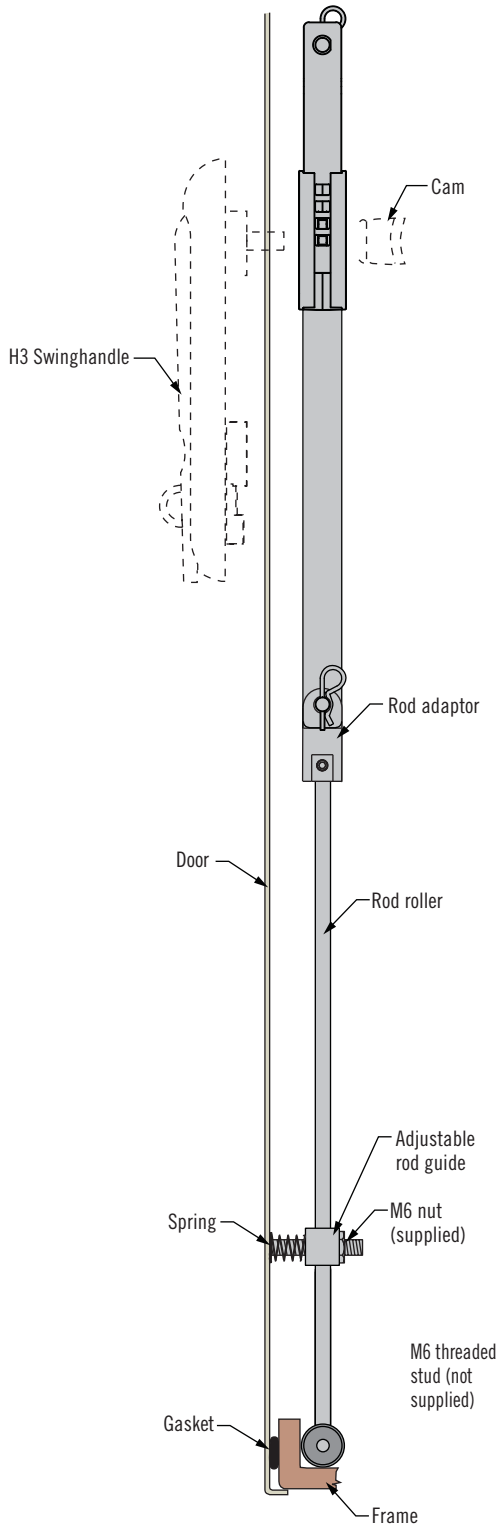
Adjustable Rod Guide Part Number (includes 2 rod guides, 2 springs and 2 M6 nuts)
A5-87-401

Fixed Rod Guide Part Number (one piece supplied)
A5-81-301-71

Dimensions in millimeters (inch) unless otherwise stated

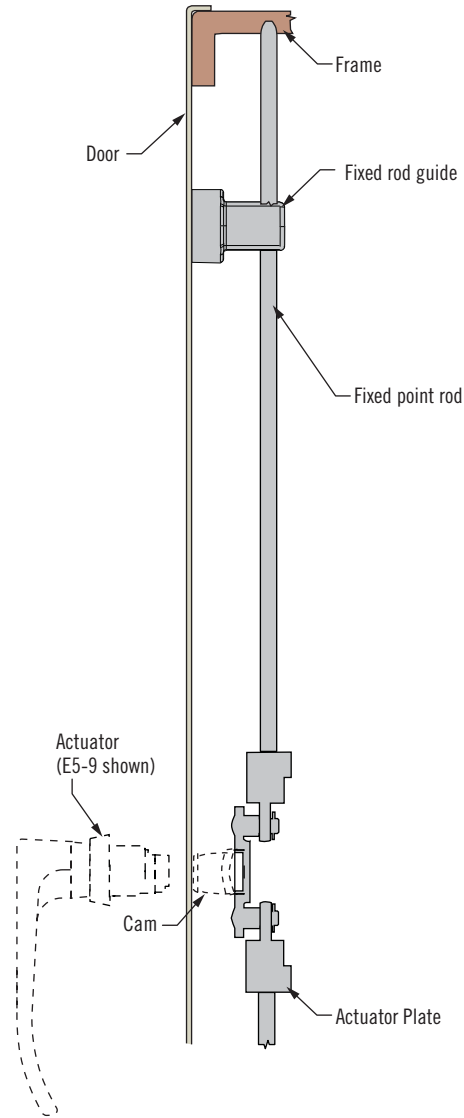
Linear Actuator Assembly

(adjustable with rod roller shown)



Actuator Plate Assembly

(fixed point shown)



Notes

Modular system allows for any configuration of rod and rod guides



A5 Flat Rod Systems

Rods, Guides, Adapters and Keepers

- Compatible with standard Southco latches, providing a variety of operating styles
- Mid Roller system allows latching outside of gasketed area

Material and Finish

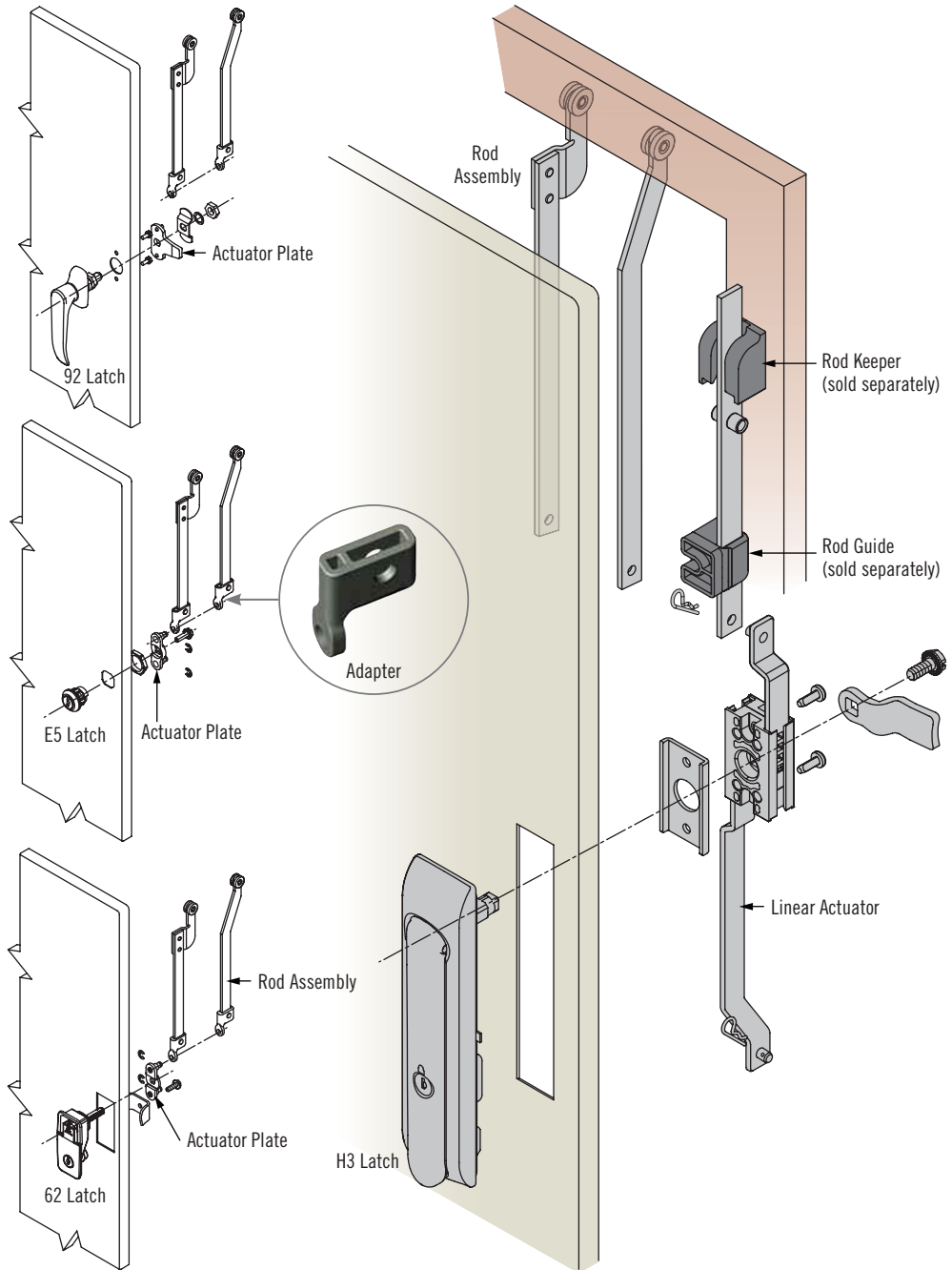
Rods: Steel, zinc nickel plated
 Rod rollers: Stainless Steel or Glass-filled nylon, black
 Rod guides: Glass-filled nylon, black
 Flat rod keeper: Zinc alloy, black powder coated

To select correct assembly:

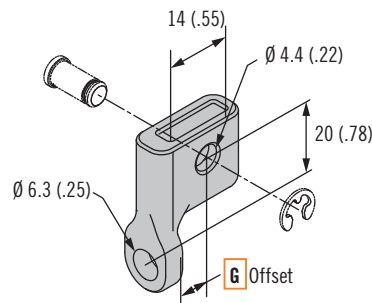
1. Determine rod style and length desired
2. Choose actuator plate or linear actuator to match latch family
3. Choose adapter to match latch family

Note

Important: Adapters are used with A5-F30 and A5-F50 Rods only.
 Product available to meet *TELCORDIA* GR-487. Contact Southco for details.
TELCORDIA is a registered trademark of Telcordia Technologies, Inc.



Adapter

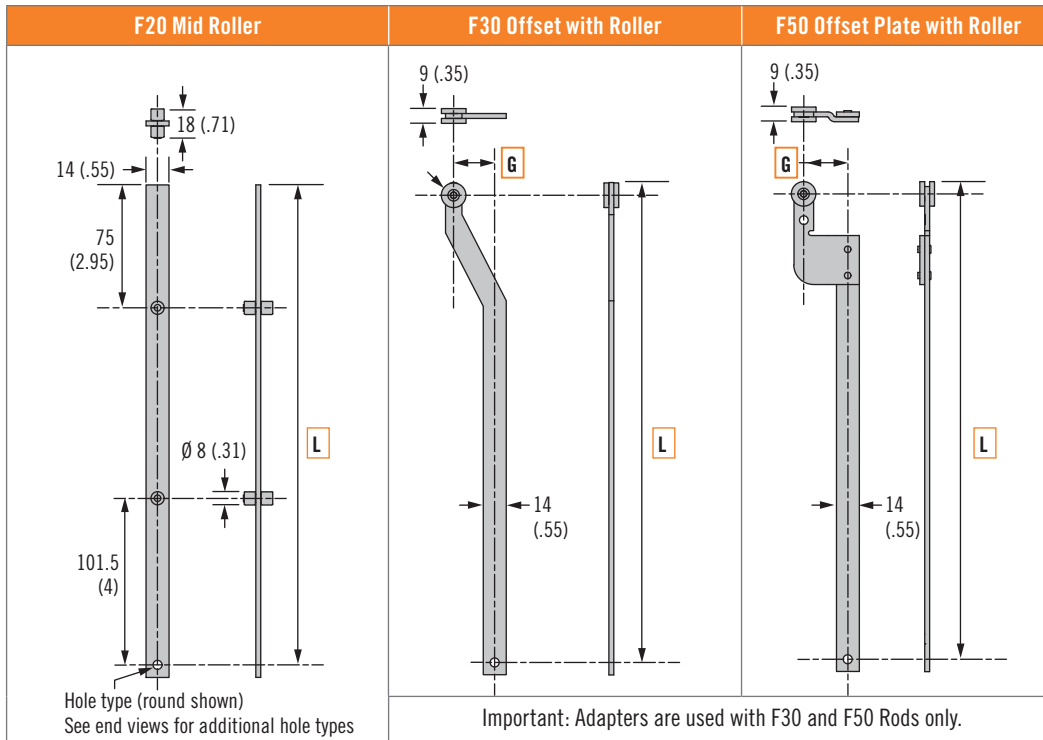


Latch Family	H3	92	E5	62
Adapter Type A	Adapter 1	Adapter 2	Adapter 3	Adapter 4
Offset G	3.25 (.13)	7.8 (.31)	17.25 (.68)	-7.55 (-.30)

Dimensions in millimeters (inch) unless otherwise stated

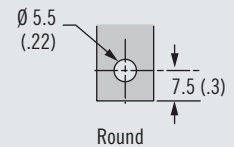
A5 Flat Rod Systems

Rods, Guides and Keepers



- Modular actuators to suit multiple latch families using A5 flat rods

Standard Hole Detail



Others available upon request



Rod Assembly Part Number

R Rod Style ← **L** Length (mm) 0200 - 1200

2 Mid roller (offset **G** must be 00)
3 Offset with roller end
5 Offset Plate with roller end

A5 - F R A - L A - G - 77

A Adapter Type ← **G** Offset Distance (mm)

0 None (H3 with linear actuator)
1 Adapter - 3.25mm (0.13) (H3 Latches)
2 Adapter - 7.8 (0.31) Offset (92 Latches)
3 Adapter - 17.25 (0.68) Offset (E5 Latches)
4 Adapter - -7.55 (-0.30) Offset (Medium 62 Latches)

20, 25 - (For Rod Style 3)
13, 16, 21, 27 - (For Rod Style 5)

Mid Roller Rod Guide A5-F90-71



Rod Keeper A5-F80-69



Flat Rod Actuator Plate Part Number							
Operating Latch Families	E5-5	E5-6	E5-9	H3-50	H3-60	62 Series M8 threaded shaft	92 Series M10 threaded shaft
Actuator Plate Part Number	A5-90-102-11			A5-90-303-11		A5-90-401-11	A5-90-501-11
Adapter Type A	A = 3		A = 1	A = 4		A = 2	

Adapters are used with round hole type rods only.

PUSH-TO-CLOSE LATCHES

Concealed Latches

Pages 208-221



Push-to-close latches simply slam closed, with no secondary steps required for latching. Concealed latches mount inside the enclosure to hide latch points for aesthetic or security reasons.

- Compact plastic latches provide economical solutions for small door applications
- Adjustable keeper brackets provide flexibility for accurate alignment
- Available in magnetic or mechanical latching



C3



O2



MT



E2



E4



A4

Match the strength and cost requirements of your push-to-close latch application with a variety of actuation styles – including slide, push-to-open, or pull-handle styles. Surface mount styles provide both the actuation capability and a convenient handgrip for opening the door.

- Non-locking and locking styles available
- Variety of size, design, and convenient actuation options
- Snap-in installation styles reduce installed cost
- Numerous corrosion resistant designs

Surface Mount Latches

Pages 222-251



M1



MP



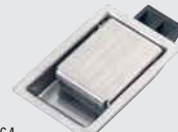
A3



93



64



R3





Push-to-Close Latches

Selection guide · Concealed

Use this selection guide to choose the right Push-to-Close Latches for your application



Multi-Point Capable



Padlockable



Stainless Steel

	Product Class	MATERIAL		PERFORMANCE
		Zinc Alloy and Steel	Plastic	Accommodates Misalignment
CONCEALED - PAGES 208-221			✓	
		✓	✓	✓
		✓		✓
			✓	
		✓	✓	✓
			✓	
			✓	
			✓	

Dimensions in millimeters (inch) unless otherwise stated

INSTALLATION		OPENING ACTION		ACCESS STYLE	
Round Hole	Snap-In	Pull	Push	Internal Release	Multi-Point Capable 
	✓	✓		✓	
			✓	✓	✓
			✓		
	✓		✓		
✓	✓	✓		✓	
		✓		✓	
		✓			
		✓		✓	



Push-to-Close Latches

Selection guide · Surface mount

Use this selection guide to choose the right Push-to-Close Latches for your application



Key-Locking Available


















Key-Choice System



Multi-Point Capable






Stainless Steel

	Product Class	MATERIAL			PERFORMANCE	
		Stainless Steel 	Zinc Alloy and Steel	Plastic	Maximum Working Load	Grip Range
	M1	✓		✓	270 - 835 N (60 - 187 lbf)	20 - 32 (.75 - 1.25)
	MP	✓		✓	270 N (60 lbf)	20 - 26 (.79 - 1.03)
	M1			✓	310 N (70 lbf)	27 - 35 (1.06 - 1.38)
	MP		✓	✓	15 N (3.5 lbf)	35 (1.38)
	A3			✓	25 - 220 N (5 - 50 lbf)	2.54 - 6.4 (.10 - .25)
	93		✓	✓	330 - 560 N (75 - 125 lbf)	20 - 25 (.81 - 1.0)
	R3		✓		560 N (125 lbf)	15 (.59)
	R3		✓		560 N (125 lbf)	16.5 (.65)
	R4			✓	290 N (65 lbf)	41.7 (1.64)
	M1			✓	135 - 500 N (30 - 112 lbf)	6.4 - 24.8 (.25 - .98)
	80			✓	90 N (20 lbf)	6 (.24)
	64	✓	✓		55 - 2700 N (12 - 607 lbf)	1.2 - 37.9 (.05 - 1.49)
	MT	✓			---	---
	60			✓	---	---

VISIBLE - PAGES 222-251

Dimensions in millimeters (inch) unless otherwise stated

INSTALLATION			OPENING ACTION					ACCESS STYLE			
Round Hole Install	Flush / Low Profile	Snap-In	Lift	Turn	Slide	Pull	Push	Key-Locking 	Key-Choice System 	Internal Release	Multi-Point capable 
✓	✓		✓					✓		✓	
✓	✓		✓					✓		✓	
✓	✓			✓		✓	✓				
	✓					✓	✓				
	✓	✓			✓			✓			
	✓			✓			✓	✓			
	✓		✓					✓	✓	✓	✓
	✓		✓					✓		✓	
	✓		✓					✓			
	✓		✓				✓	✓			
	✓	✓					✓				
	✓		✓					✓		✓	✓
✓						✓	✓			✓	
		✓					✓				



C3 Push-to-Close Latch

Pull-to-open · Grabber catch · Snap-in

- Spring-loaded over-center latching
- One assembly includes catch and keeper

Material and Finish

PC/ABS, black and glass-filled nylon, black, mineral filled nylon, black

Performance Details

Operating temperature range: -30°C (-20°F) to 60°C (140°F)

Flammability rating: UL94-HB

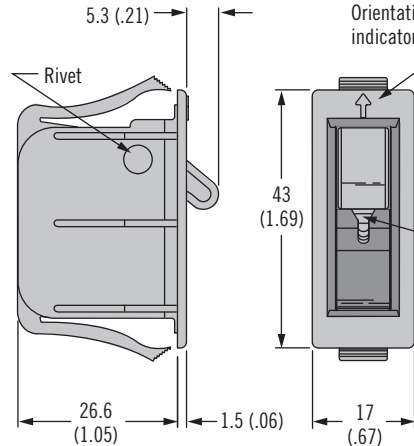
Installation Notes

Maximum tightening torque on mounting screws (not supplied)

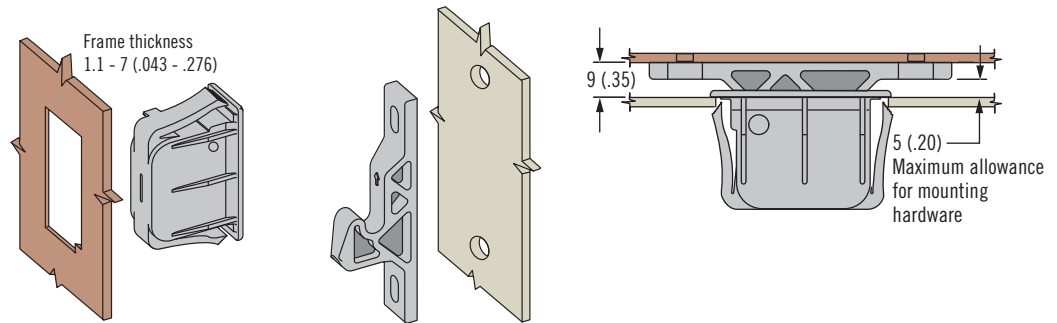
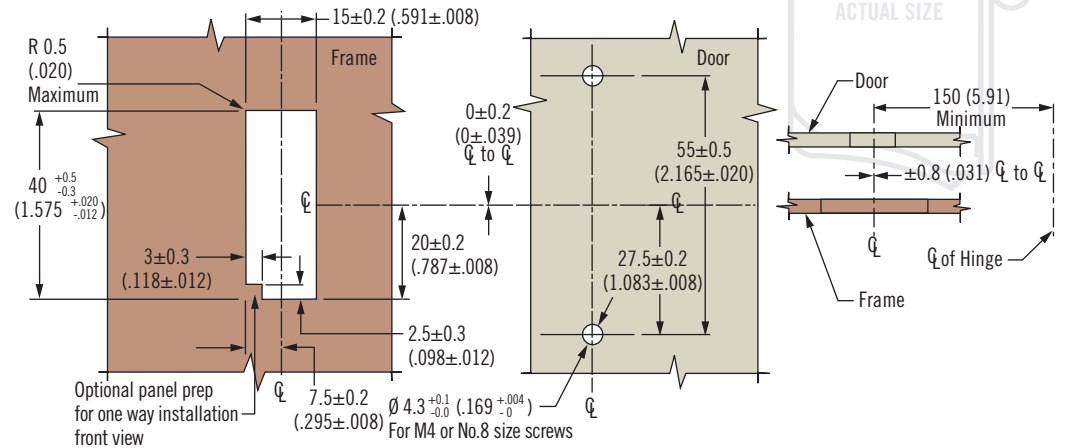
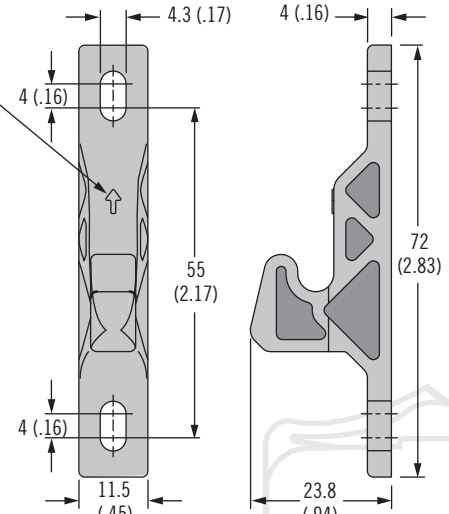
Keeper: 2.8 N·m (24.8 in·lbf)

Orient **keeper** to latch. The arrow on the keeper should point towards the cam. Mount to door and adjust for smooth latching

Catch



Keeper



Part Number

See table

Approximate Pull-Up Force	Spring Color	Part Number		
		Frame Thickness Range		
		1.1 - 2.9 (.043 - .114)	2.9 - 5.3 (.114 - .209)	5.3 - 7 (.209 - .276)
13 N (3 lbf)	Blue	C3-303	C3-503	C3-703
22 N (5 lbf)	Silver	C3-305	C3-505	C3-705
44 N (10 lbf)	Black	C3-310	C3-510	C3-710

Dimensions in millimeters (inch) unless otherwise stated



C3 Push-to-Close Latch

Pull-to-open · Grabber catch with integral Microswitch

- Opens and closes switch contacts with door operation
- One assembly includes catch and keeper
- Spring loaded over-center latching

Material and Finish

PC/ABS, black and glass-filled nylon, black

Performance Details

Operating temperature range: -40°C (-40°F) to 60°C (140°F)

Flammability rating: UL94-V0

Installation Notes

Maximum tightening torque on mounting screws (not supplied): Catch 1.1 N·m (9.7 in·lbf)

Keeper 2.8 N·m (24.8 in·lbf)

Orient **keeper** to latch. The arrow on the keeper should point towards the cam. Mount to door and adjust for smooth latching.

Notes

This product is specifically designed to be used as a mechanical grabber catch with an electric switch. The switch is designed to operate an indicator light or form part of a non-safety related logic circuit. This is not designed for use as a safety interlock.

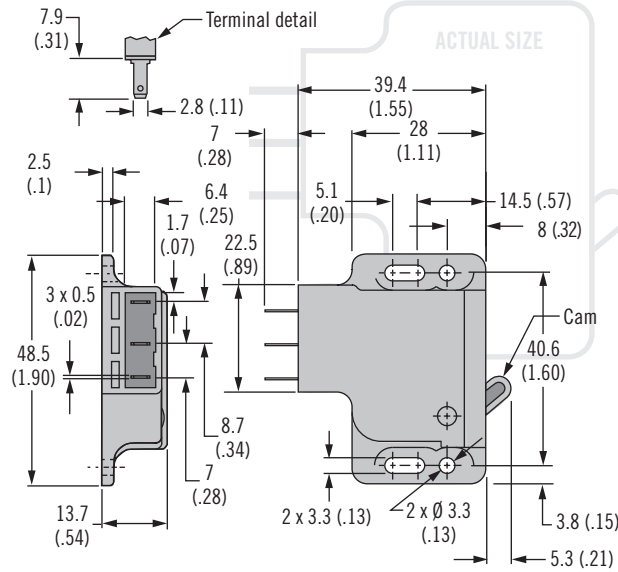
Terminal cover is used for protection during shipping only. Use strain relief on wires.

Minimum distance from frame (or surface on which catch sub-assembly is mounted) to centerline of door hinge is 150 (5.9)

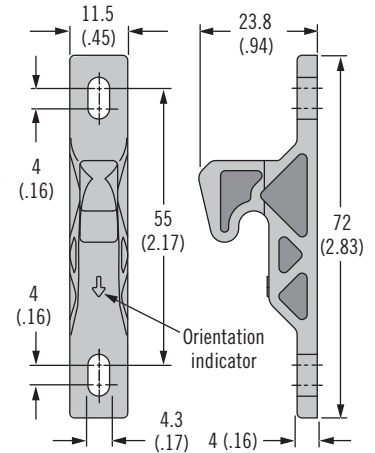
Part Number

See table

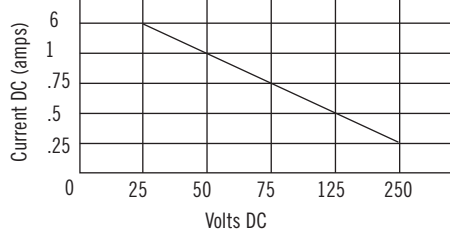
Catch



Keeper

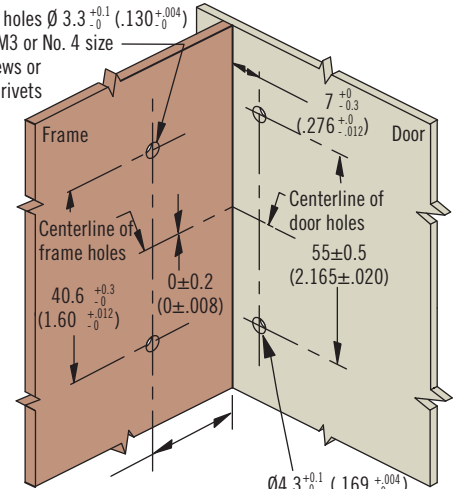


Switch specification. Subminiature VDE, UL approved. Switch is fitted with fast-on terminals. Max AC voltage 250V, max AC current 6A. See graph below for DC resistive load.



Over 50 V DC, inductive loads should be greatly reduced

Two holes $\varnothing 3.3^{+0.1}_{-0.1}$ (.130^{+0.004}) for M3 or No. 4 size screws or $\varnothing 3$ rivets

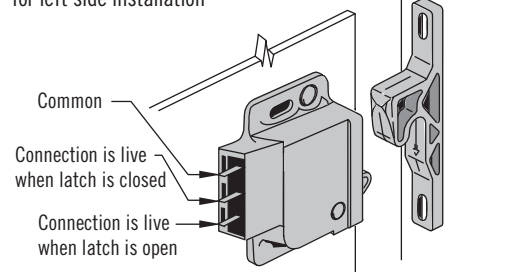


15.7^{+0.1}₋₀ (.618^{+0.004}₀) or for adjustability 24.7^{-0.3}₊₀ (.972⁺⁰_{-0.012}) (see note)

Note: These holes and dimensions are used only if adjustability through the use of slotted holes in catch is desired.

Right Side Installation Shown

Invert catch and keeper for left side installation



Approximate Pull-Up Force	Spring Color	Part Number
13 N (3 lbf)	Blue	C3-1803
22 N (5 lbf)	Silver	C3-1805
44 N (10 lbf)	Black	C3-1810

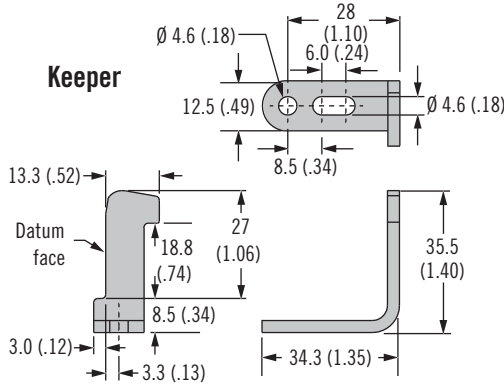
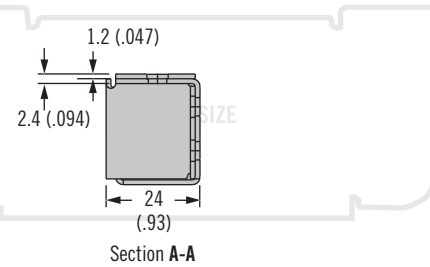
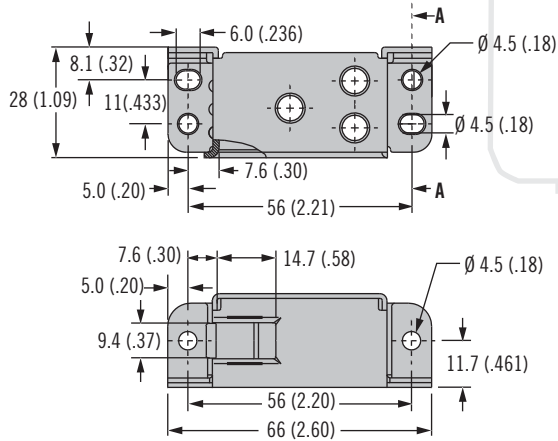
Dimensions in millimeters (inch) unless otherwise stated

A4 Push-to-Close Latch

Push-to-open · Large



Housing Assembly



Description	Part Number
Latch	A4-30-201-12
Keeper	A4-36-201-12

- Heavy-duty construction
- Push-to-close, push-to-open

Material and Finish

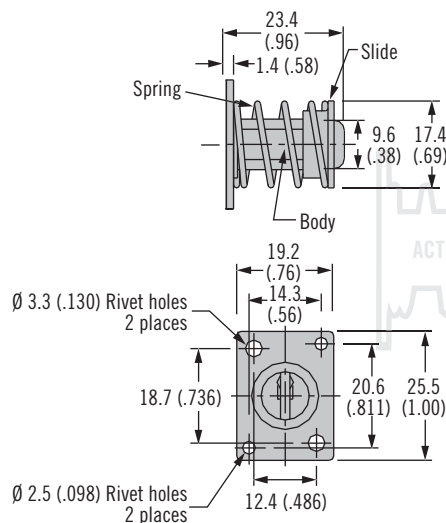
Steel, zinc plated

A4 Push-to-Close Latch

Push-to-open · Small

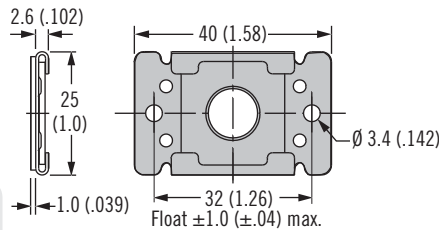


Pin Latch



Optional Floating Receptacle

Notes: Floating part of receptacle faces pin latch



Part Number	
Pin latch	A4-20-501-10
Optional floating receptacle	A4-26-502-10

- Accommodates misalignment
- Push-to-close, push-to-open

Material and Finish

Steel, zinc plated and thermoplastic, black



E4 Push-to-Close Latch

Push-to-open · Touch latch · Small

- Concealed latch points
- Door ejection feature
- Snap-in installation

Material and Finish

Latch and keeper: Acetal, black
Alignment guide: Acetal, white

Performance Details

Average tensile load: 15 N (3.5 lbf)

Operating temperature range:
-40°C (-40°F) to 105°C (220°F)

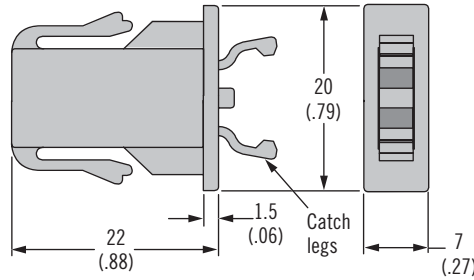
Flammability rating: UL94-HB

Installation Notes

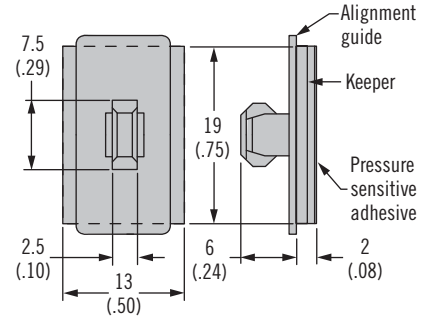
Be sure the mounting surface is clean and capable of retaining a satisfactory adhesive bond.

Self-adhesive keepers are designed to function under intermittent break-away loads

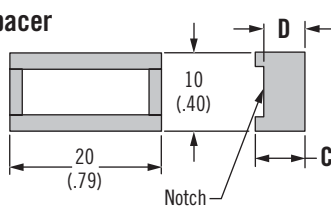
Latch



Keeper Assembly

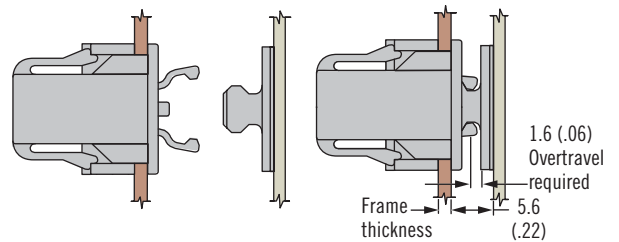


Spacer



Unlatched

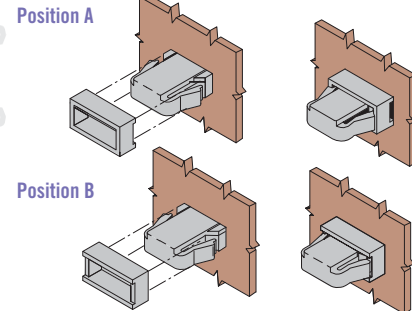
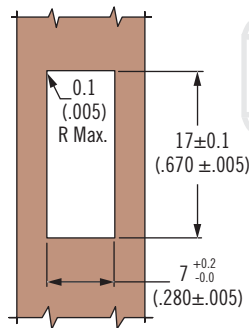
Latched



Installation

1. Prepare frame. Snap latch into place.

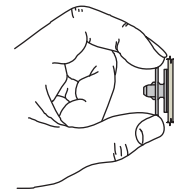
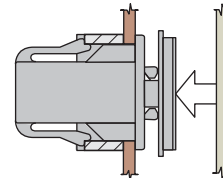
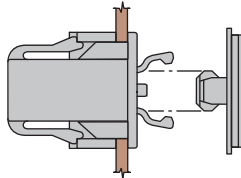
2. Install spacer (if required).



3. With alignment guide in place, engage keeper with latch. (If catch legs are retracted, push them into the latch housing to release before proceeding).

4. Peel protective backing from keeper. Close door against adhesive.

5. Remove alignment guide from keeper and discard.



Part Number

See table

Frame Thickness		Part Number	Spacer Position Installed	Spacer Thickness		Spacer Color
Minimum	Maximum			C	D	
0.8 (.030)	1 (.040)	E4-10-102-10	A	7.5 (.295)	6.9 (.270)	Black
1.4 (.055)	1.7 (.065)		B			
1.8 (.070)	2 (.080)	E4-10-103-10	A	6.5 (.255)	5.3 (.210)	Natural
2.9 (.115)	3.2 (.125)		B			
4.6 (.182)	4.9 (.192)	E4-10-104-10	A	3.6 (.143)	2 (.080)	Gray
6.2 (.245)	6.5 (.255)		B			
8.1 (.320)	8.6 (.340)	E4-10-101-10	Spacer not required			

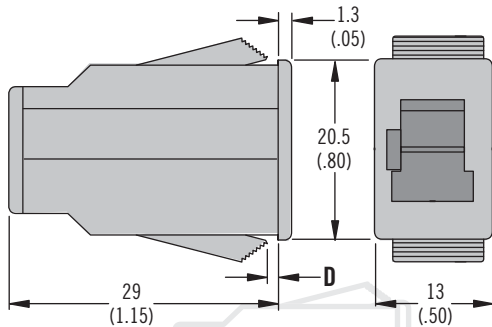
Dimensions in millimeters (inch) unless otherwise stated

E4 Push-to-Close Latch

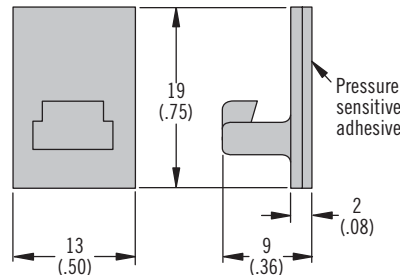
Push-to-open · Touch latch · Large



Latch

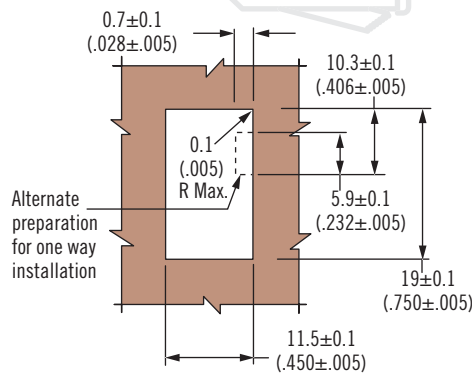


Keeper Assembly

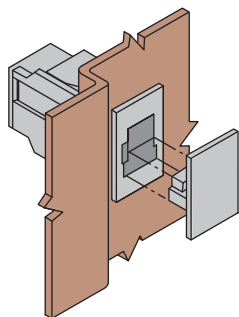


Installation

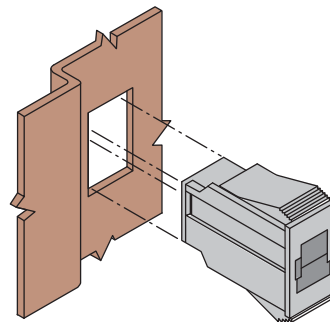
1. Prepare frame



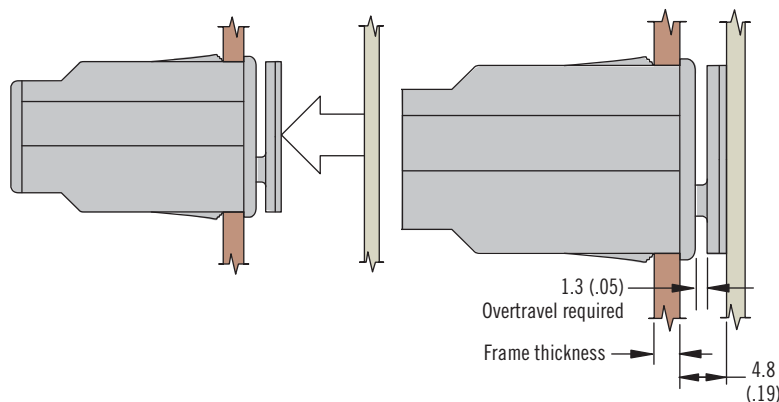
3. Re-engage keeper with latch



2. Snap latch into place



4. Peel protective backing from keeper
Close door against adhesive



- Concealed latch points
- Door ejection feature
- Snap-in installation

Material and Finish

Latch and keeper: Acetal, black and thermoplastic polyester, black

Performance Details

Average tensile load:

Self-adhesive keeper: 50 N (11 lbf)

Integrally molded keeper:

120 N (27 lbf)

Operating temperature range:

-40°C (-40°F) to 105°C (220°F)

Flammability rating: UL94-HB

Installation Notes

Be sure the mounting surface is clean and capable of retaining a satisfactory adhesive bond.

Keeper can be molded into application door

Self-adhesive keepers are designed to function under intermittent break-away loads

Frame Thickness		D	Part Number
Minimum	Maximum		
1 (.04)	3 (.12)	0.9 (.035)	E4-10-201-10
3 (.12)	5 (.20)	2.9 (.115)	E4-10-202-10
5 (.20)	7 (.28)	4.9 (.196)	E4-10-203-10

Part Number

See table



02 Push-to-Close Latch

Pull-to-open · Magnetic catch · Snap-in

- Snap-in installation
- Optional side mount bracket

Material and Finish

Housing:
Pole pieces and mounting bracket:
Steel, zinc plated

Small, large: Barium ferrite
Medium: Strontium ferrite

Performance Details

Size	Average breakaway force	Standard deviation
Small 300 series	8 N (1.8 lbf)	2.1 N (.47 lbf)
Medium 100 series	46 N (10 lbf)	5.9 N (1.3 lbf)
Large 200 series	64 N (14 lbf)	7.3 N (1.6 lbf)
Double magnet 800 series	105 N (23 lbf)	18 N (1.0 lbf)

Operating temperature range:
-30°C (-20°F) to 115°C (240°F)

Flammability rating
UL94-HB

Installation Notes

For non-ferrous applications.
Screw-mounted and adhesive backed strikes are available. Order separately. See page 217.

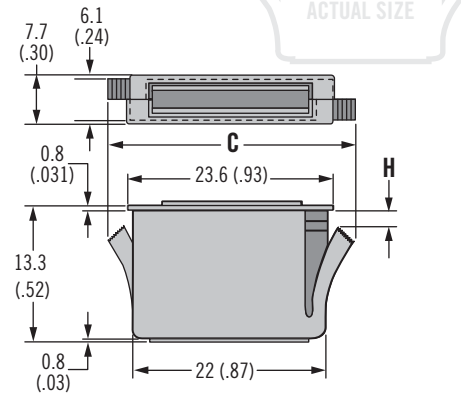
Notes

Performance values shown are supplied as a general guide only.

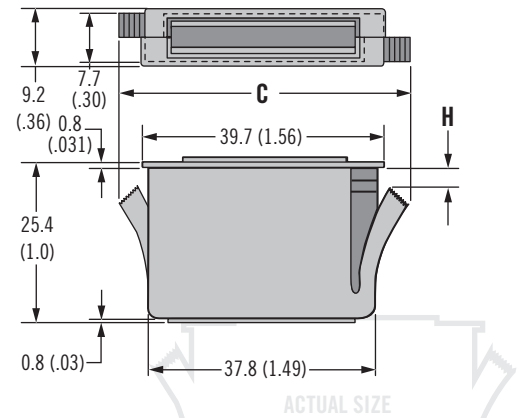
Part Number

See table

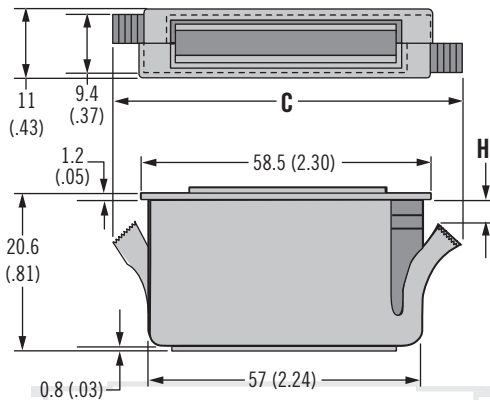
Small



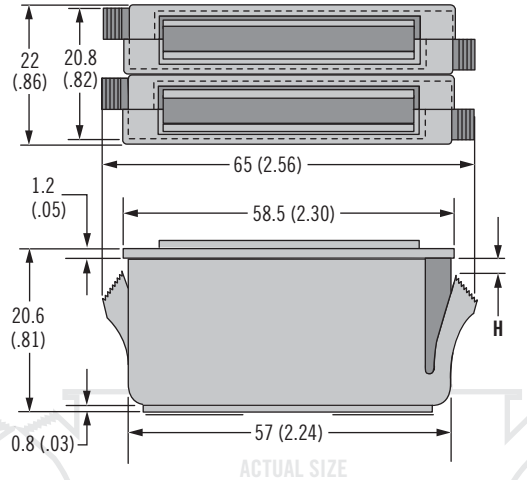
Medium



Large



Large double magnet

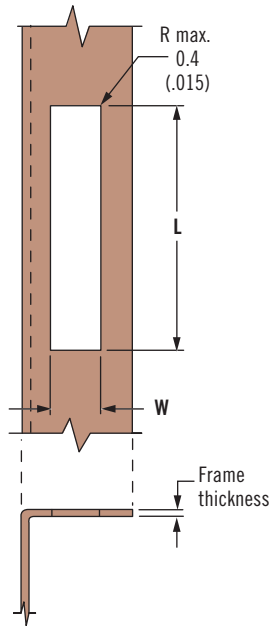


Size	C	H	Frame Thickness		Magnet Part Number	
			Minimum	Maximum	Black	White
Small	27.9 (1.10)	0.9 (.035)	0.5 (.020)	2 (.080)	02-10-301-10	02-10-301-20
	26.7 (1.05)	2.4 (.095)	2 (.080)	3.6 (.140)	02-10-302-10	02-10-302-20
Medium	47 (1.85)	1 (.040)	0.5 (.020)	2 (.080)	02-10-101-10	02-10-101-20
	46.2 (1.82)	2.5 (.100)	2 (.080)	3.6 (.140)	02-10-102-10	02-10-102-20
Large	45.5 (1.79)	4 (.160)	3.6 (.140)	5.1 (.200)	02-10-103-10	02-10-103-20
	65.3 (2.57)	0.3 (.010)	0.5 (.020)	2 (.080)	02-10-201-10	02-10-201-20
	64.5 (2.54)	1.8 (.070)	2 (.080)	3.6 (.140)	02-10-202-10	02-10-202-20
Large double magnet	63.3 (2.49)	3.3 (.130)	3.6 (.140)	5.1 (.200)	02-10-203-10	02-10-203-20
	~	0.3 (.010)	0.5 (.020)	2 (.080)	02-10-801-10	~
	~	1.8 (.070)	2 (.080)	3.6 (.140)	02-10-802-10	~
~	~	3.3 (.130)	3.6 (.140)	5.1 (.200)	02-10-803-10	~

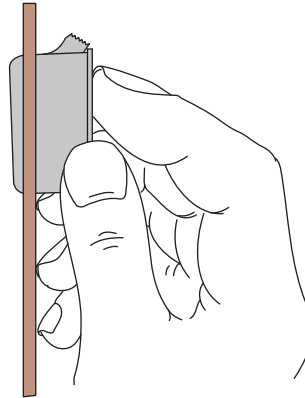
Dimensions in millimeters (inch) unless otherwise stated

Installation

1. Punch rectangular slot

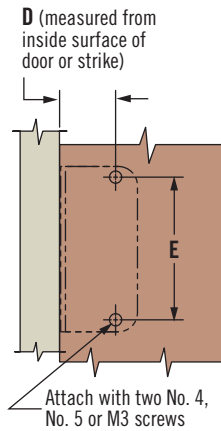
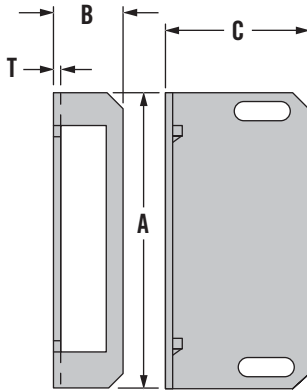


2. Snap catch into slot



Mounting Bracket

For applications where frame is not suitable for punching (order separately)



Size	A	B	C	D	E ±0.1 (±.005)	T	For Use with these Magnets ONLY	Bracket Part Number
Small	41.3 (1.63)	11.1 (.44)	13.5 (.53)	7.9±2.4 (.31±.09)	35 (1.38)	1 (.042)	02-10-301-10 02-10-301-20	02-16-301-11
Medium	51 (2.00)	12.7 (.50)	24.6 (.97)	17.5±3.2 (.69±.13)	44.5 (1.75)		02-10-101-10 02-10-101-20	02-16-101-11
Large	76 (3.00)	14.3 (.56)	18.7 (.73)	12.7±3.2 (.50±.13)	70 (2.75)		02-10-201-10 02-10-201-20	02-16-201-11
Large double magnet	76 (3.00)	25.4 (1.00)	18.7 (.73)	12.7±3.2 (.50±.13)	70 (2.75)	1.6 (.062)	02-10-801-10	02-16-801-11

- Snap-in installation
- Optional side mount bracket

Installation Notes

Size	L ±0.1 (.005)	W ±0.1 (.005)
Small	22.2 (.875)	6.4 (.25)
Medium	38.1 (1.50)	8.1 (.32)
Large	57.1 (2.25)	9.6 (.38)
Double magnet	57.1 (2.25)	21 (.828)

Part Number

See table



02 Push-to-Close Latch

Pull-to-open · Magnetic catch · Snap-in

- Round hole
- Snap-in installation
- Adhesive installation
- Optional side mount bracket

Material and Finish

Housing: Polypropylene, black
 Pole pieces: Steel, zinc plated
 Magnet: Barium ferrite

Performance Details

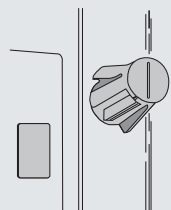
Size	Average breakaway force	Standard deviation
100 series	46 N (10 lbf)	5.9 N (1.3 lbf)
200 series	64 N (14 lbf)	7.3 N (1.6 lbf)
300 series	8 N (1.8 lbf)	2.1 N (.47 lbf)
400 series	14 N (3.1 lbf)	2.2 N (.49 lbf)
600 series	49 N (11 lbf)	6.4 N (1.4 lbf)

Operating temperature range:
 -30°C (-20°F) to 115°C (240°F)

Flammability rating: UL94-HB

Installation Notes

For non-ferrous applications. Screw-mounted and adhesive backed strikes are available. Order separately. See page 217.



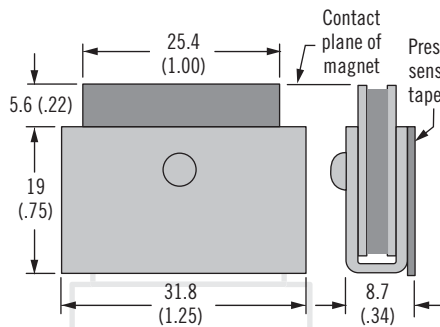
Notes

Performance values shown are supplied as a general guide only

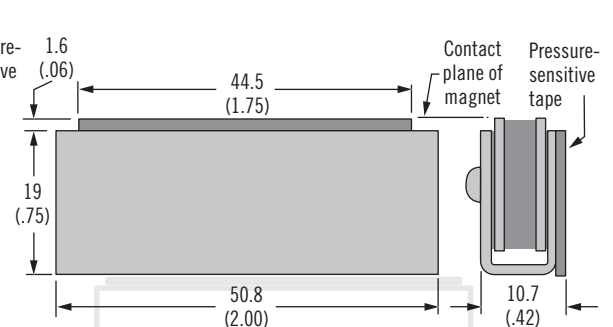
Part Number

See table

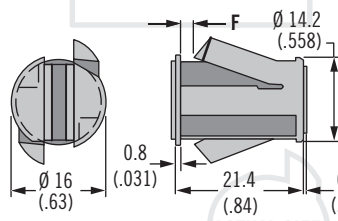
Series 100 - Part Number 02-30-121-10



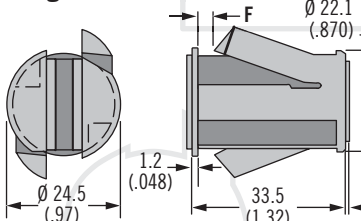
Series 200 - Part Number 02-30-221-10



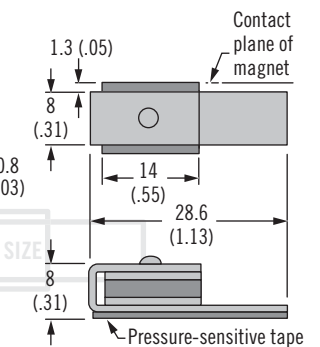
Small - 400 Series



Large - 600 Series

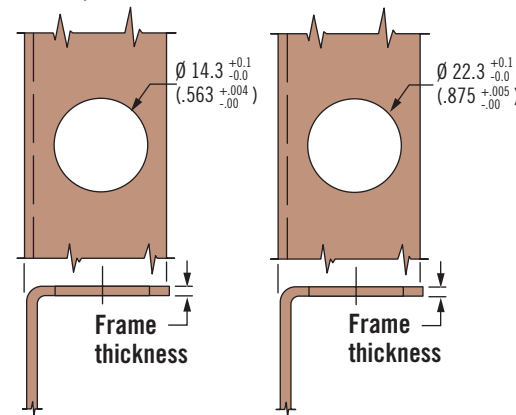


Series 300 - Part Number 02-30-321-10

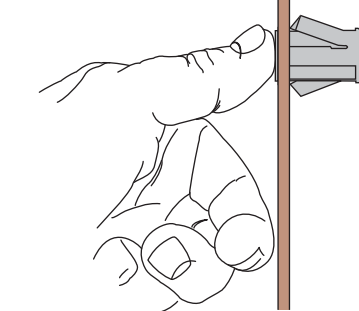


Installation

1. Drill or punch hole

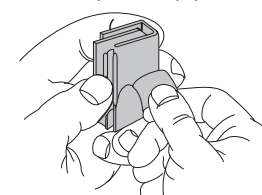


2. Snap catch into hole

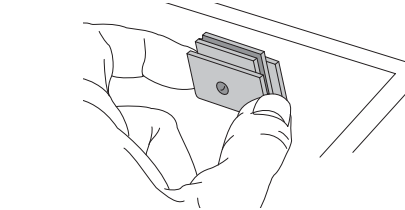


Installation

1. Remove protective paper



2. Place in position



Notes: Be sure the mounting surface is clean and capable of retaining a satisfactory adhesive bond

Size	øD	F	Frame Thickness		Magnet Part Number
			Minimum	Maximum	
Small	ø 14.3 ^{+0.1} / _{-0.0} (.563 ^{+0.004} / _{-0.00})	0.8 (.030)	0.5 (.020)	2 (.080)	02-20-411-10
		2.3 (.090)	2 (.080)	3.5 (.140)	02-20-412-10
		3.8 (.150)	3.5 (.140)	5 (.200)	02-20-413-10
Large	ø 22.3 ^{+0.1} / _{-0.0} (.875 ^{+0.005} / _{-0.00})	0.5 (.020)	0.5 (.020)	2 (.080)	02-20-611-10
		2 (.080)	2 (.080)	3.5 (.140)	02-20-612-10
		3.5 (.140)	3.5 (.140)	5 (.200)	02-20-613-10

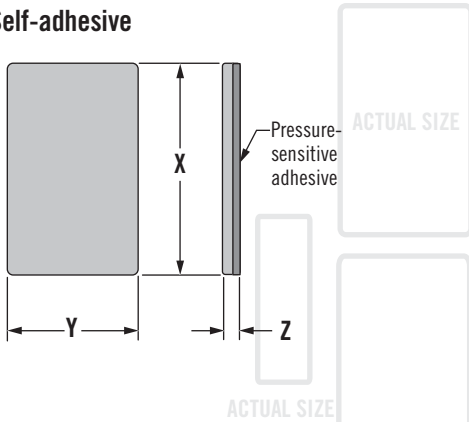
Dimensions in millimeters (inch) unless otherwise stated

02 Push-to-Close Latch

Steel strikes



Self-adhesive



For Use with Series Catch	Strike Part Number	X	Y	Z
300	02-14-301-14	24	8	2
400		(.94)	(.31)	(.08)
100	02-14-101-14	32	19	2.4
600		(1.25)	(.75)	(.094)
200	02-14-201-14	51	19	2.4
800		(2.00)	(.75)	(.094)

- Ferrous keepers for magnet catch
- Self-adhesive or screw mount

Material and Finish

Steel, zinc plated
Adhesive:

Neoprene foam with acrylic

Installation Notes

Be sure the mounting surface is clean and capable of retaining a satisfactory adhesive bond.

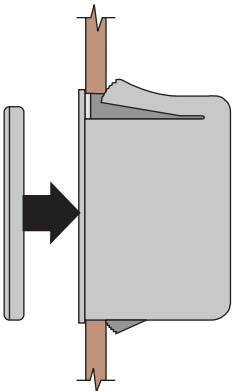
Self-adhesive mounted strikes are designed to function under intermittent break-away loads. Use screw-mounted strikes for continuous load applications.

Part Number

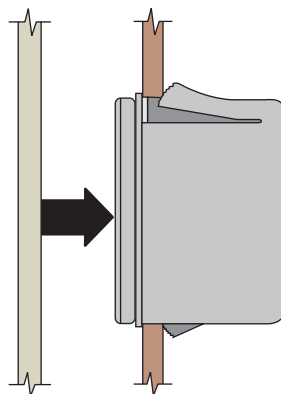
See table

Installation

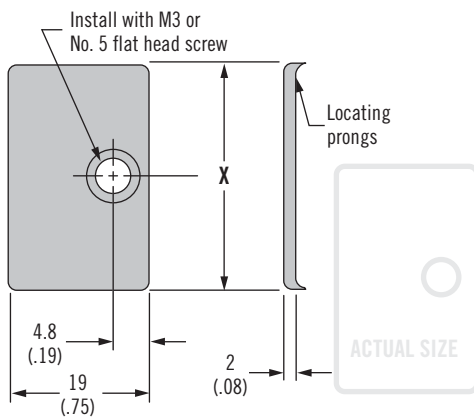
1. Position strike on installed catch



2. Remove protective paper. Close door or panel onto strike



Screw-Mounted



For Use With Series Catch	Strike Part Number	X
100	02-14-102-11	32 (1.25)
600		
200	02-14-202-11	51 (2.00)
800		



MT Push-to-Close Latch

Pull-to-open · Cabinet catches

- Ergonomic design
- Dampening pad to eliminate door slam

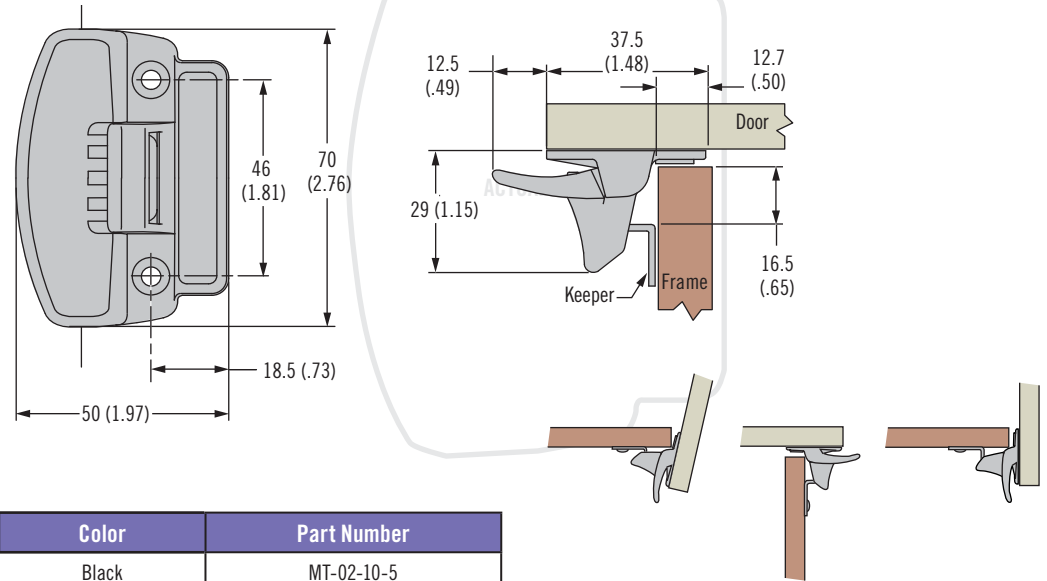
Material and Finish

Latch: Acetal, black
Keeper: Steel, zinc plated

Part Number

See table
Latch and keeper supplied

Latch



MT Push-to-Close Latch

Pull-to-open · Cabinet catches

- Over-center for vibration resistance
- Corrosion-resistant

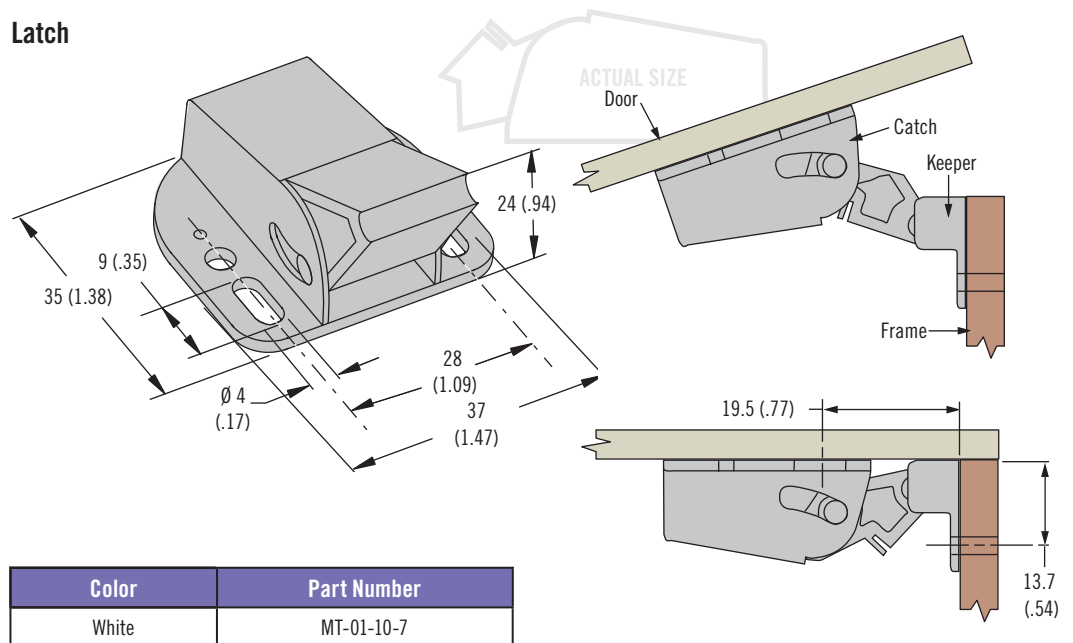
Material and Finish

Nylon, white and stainless steel

Part Number

See table
Latch and keeper supplied

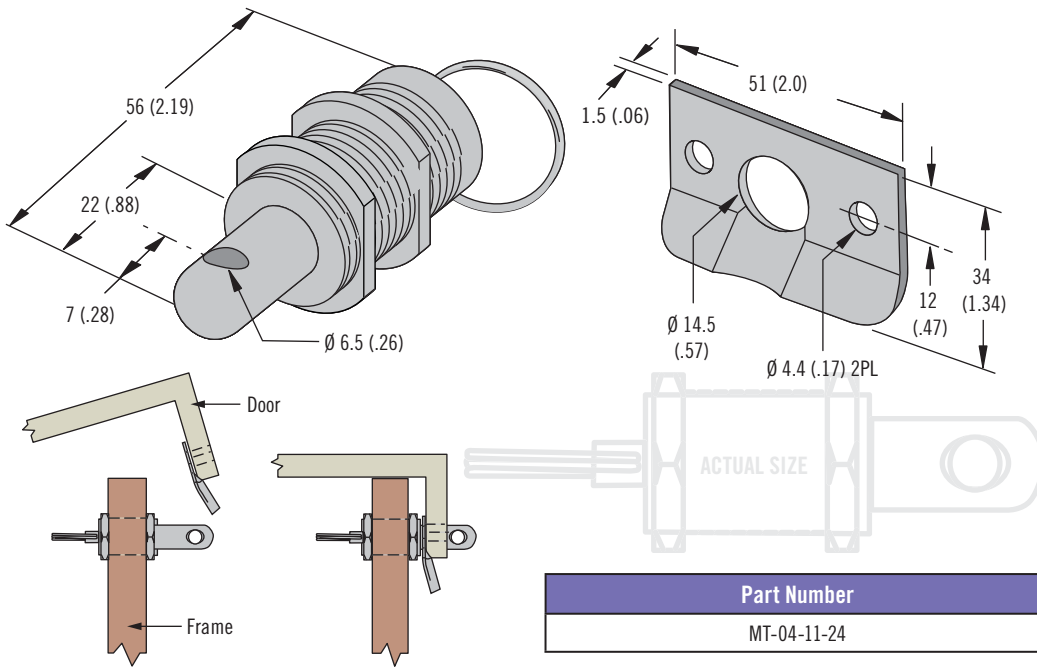
Latch



Dimensions in millimeters (inch) unless otherwise stated

MT Push-to-Close Latch

Pull-to-open · Padlockable



- Remote actuation
- Corrosion-resistant

Material and Finish

Latch and keeper:
Stainless steel, passivated

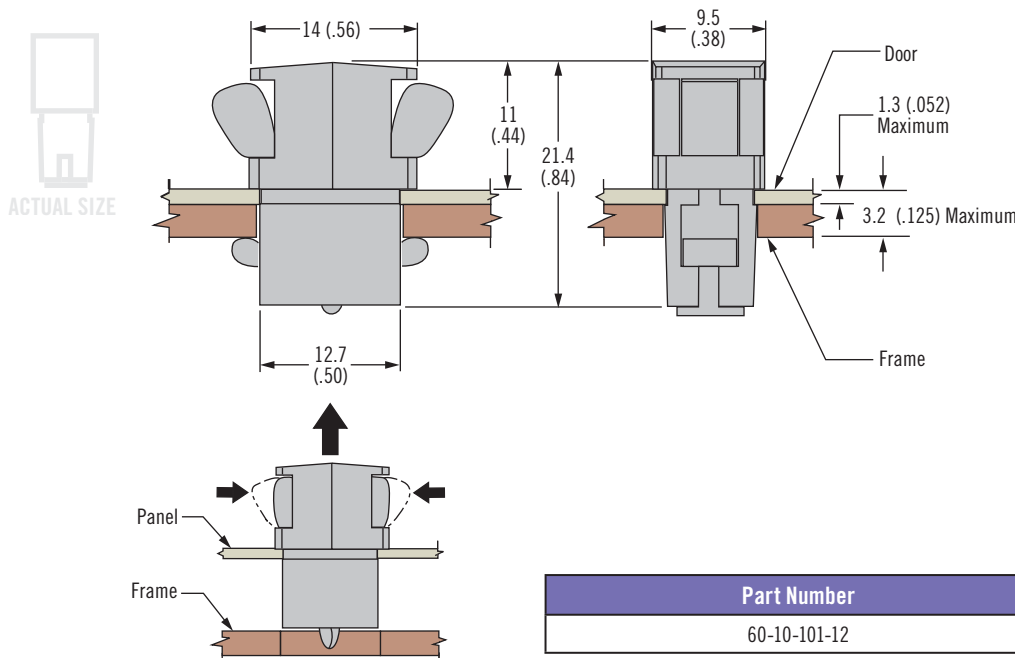


Part Number

See table
Latch and keeper supplied

60 Push-to-Close Latch

Squeeze to open



- Single hole installation
- Suitable for limited space applications

Material and Finish

Acetal, black

Part Number

See table



E2 Push-to-Close Latch

Push-button to open · Hidden panel latching system

- Concealed latch points
- Door ejection feature
- Accommodates misalignment
- Single or two point latching

Material and Finish

Steel, zinc plated and thermoplastic, white, aluminum, natural

Performance Details

Keeper style	Maximum Static load	Ultimate load
Fixed	1300 N (300 lbf)	2200 N (500 lbf)
Floating	750 N (170 lbf)	1400 N (310 lbf)

Operating temperature range:
-18°C (-0°F) to 120°C (250°F)

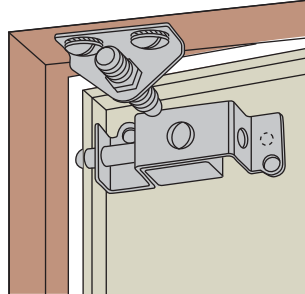
Flammability rating: UL94-V0

*Nominal keeper location from inside surface of door.

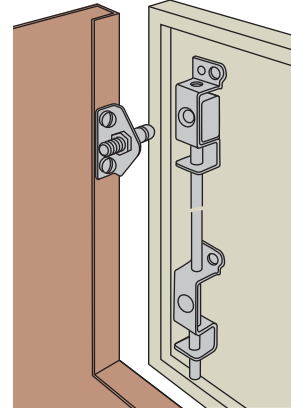
Adjustable 6.4 (.25) either way to allow for variations in mounting, gasketing, etc

Available in Two Versions - Near Edge and Remote

Near Edge

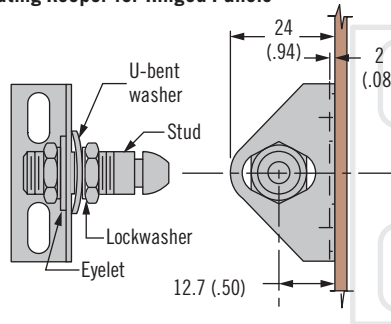


Remote

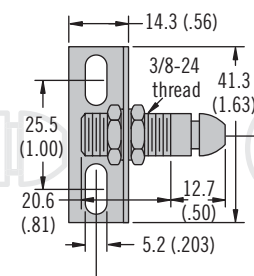


1. Select Keeper

Floating Keeper for Hinged Panels

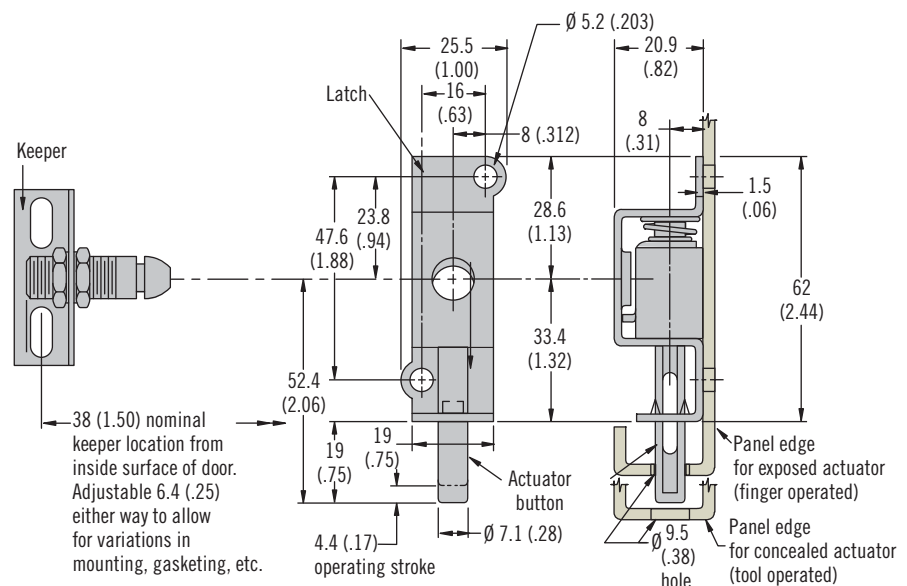


Fixed Keeper for Lift-Off Panels



2. Determine Latch Location - Near Edge or Remote (Single or Two Point)

Near Edge



Part Number

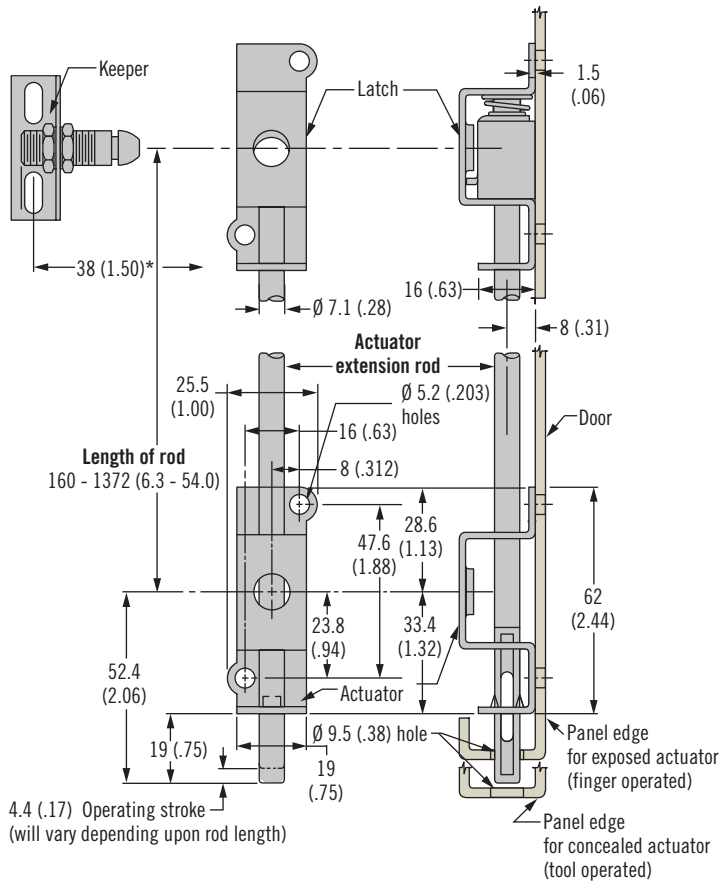
See table

Near Edge Complete Assembly Part Number	
With Fixed Keeper	With Floating Keeper
E2-50-101-10	E2-50-101-20

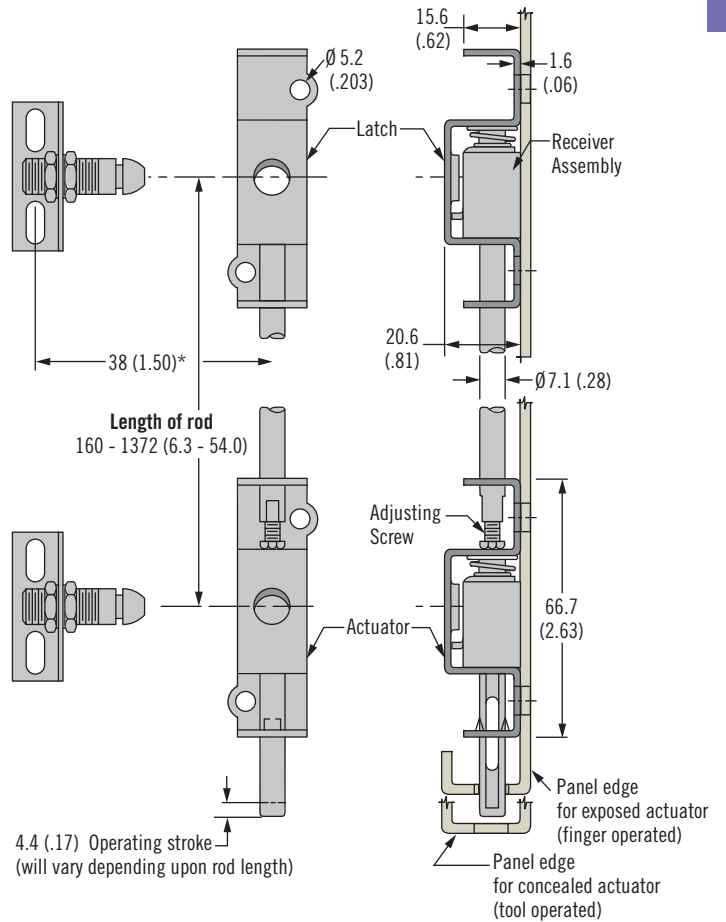
A complete near edge assembly comes with keeper

Dimensions in millimeters (inch) unless otherwise stated

Remote - Single Point



Remote - Two Point



Remote Single Point Part Number	
Fixed keeper	E2-55-101-10
Floating keeper	E2-55-102-10
Rod 500 mm	E2-46-0500-16
Rod 1250 mm	E2-46-1250-16
Latch	E2-92-101
Actuator	E2-91-101

Remote Two Point Part Number	
Fixed keeper	E2-55-101-10
Floating keeper	E2-55-102-10
Rod 500 mm (19.69)	E2-42-0500-16
Rod 1250 mm	E2-42-1250-16
Latch	E2-92-102
Actuator	E2-93-102

A complete remote single point assembly consists of 4 components: keeper, rod, latch and actuator

A complete remote two point assembly consists of 4 components: keeper, rod, latch and actuator

To order rod lengths other than the standard lengths, use part number:

E2-42-XXX-16

(XXX = length in mm)

Minimum = 160 mm

Maximum = 1372 mm

Minimum order = 50 units



M1 Push-to-Close Latch

38mm (1.5") · Stainless steel

- Single, round-hole installation
- Locking style restricts access
- Premium finish and corrosion resistance
- Privacy lock on locking version

Material and Finish

Latch: 316 grade stainless steel, bright polished
 Spacer: Nylon, black
 Contact Southco for other finishes

Performance Details

Maximum static load:
 545 N (122 lbf)

Accessories

One key supplied per latch for additional keys order
 M7-88-9121324-S



Spacer: M1-510-96-1
 (Sold separately)



Keeper: M1-510-19-8

Mounting screws: M1-510-96-4

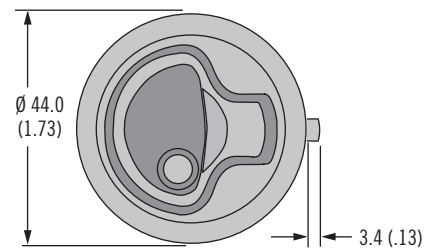
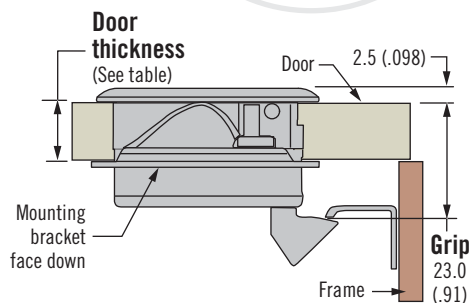
Installation Notes

Use the reference table to determine if a spacer is required for the door thickness and the correct mounting bracket orientation. The spacer shown is in the forward position.

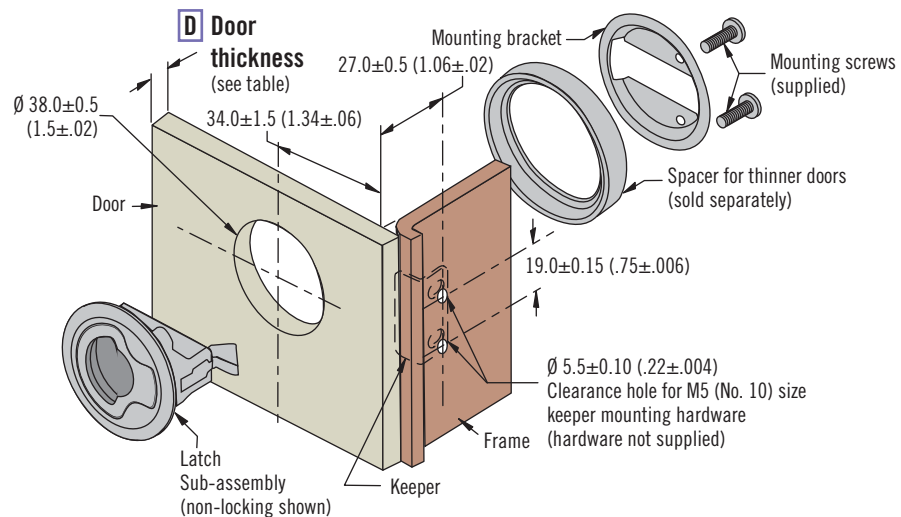
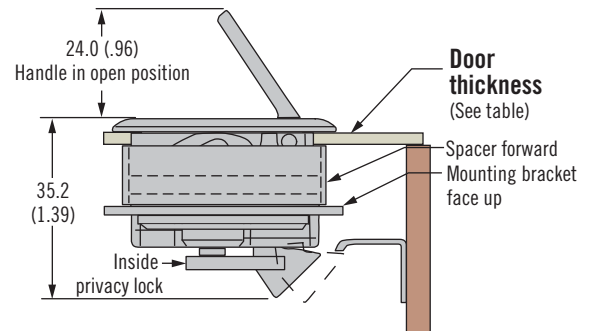
Part Number Selection



Non-locking



Locking



Door Thickness	Spacer Orientation	Mounting Bracket Orientation
1.0 - 5.0 (.04 - .20)	Forward	Face Up
5.0 - 9.0 (.20 - .36)	Reverse	Face Up
9.0 - 14.5 (.36 - .57)	(not required)	Face Up
14.5 - 21.0 (.57 - .83)	(not required)	Face Down

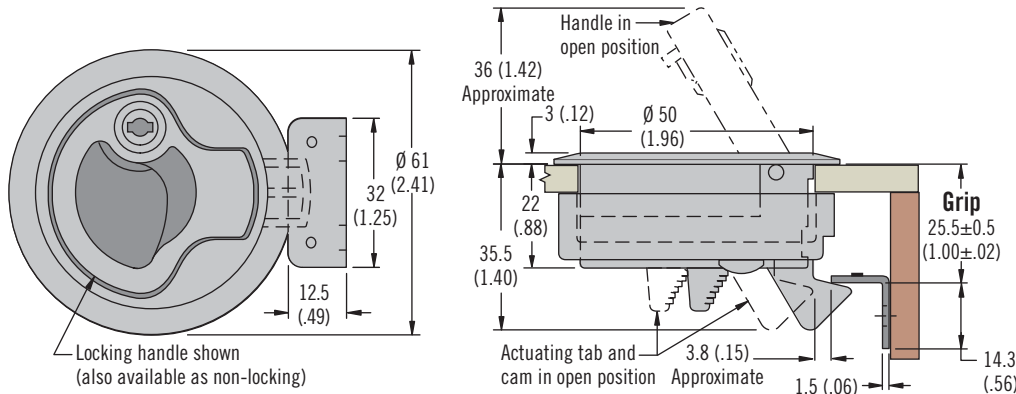
M1-15 - L 1 - 8

L Lock style

- 4 Locking (one tubular key supplied)
- 6 Non-locking

M1 Push-to-Close Latch

50mm (2") · Stainless steel · Plastic



- Single, round-hole installation
- Corrosion-resistant materials
- Inside actuation when locked or unlocked

Material and Finish

Stainless steel 316 grade, electropolished or PC/PBT blend, black, white or beige

Performance Details

Maximum working load:
 Stainless Steel: 835 N (187 lbf)
 PC/ABT blend 270 N (60 lbf)

Operating temperature range:
 -18 °C (0 °F) to 60 °C (140 °F)

Flammability rating:
 UL94-HB (plastic version)

Installation Notes

Maximum tightening torque on mounting screws: 1.7 N·m (15 in·lbf)

Accessories

Keeper
 Part number: M1-519-4

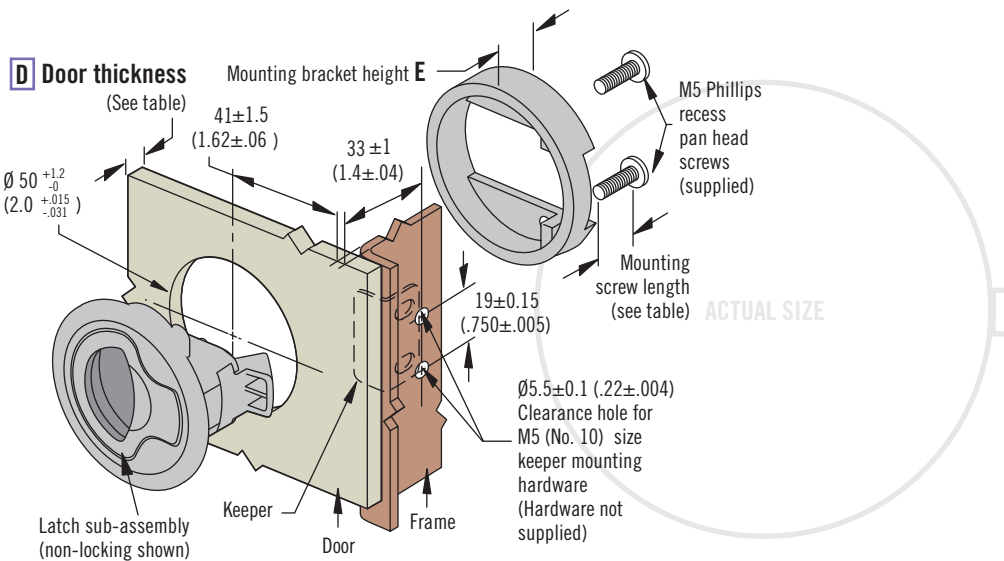
For lock style 4
 Key (pair)

Part number: M1-546

For lock style 7

Overmolded key S008 (pair)

Part number:
 M1-525-39-S008



D Door Thickness		Mounting Bracket Height E	Mounting Screw Length	Replacement Screw Part Number
Minimum	Maximum			
2 (.075)	7 (.275)	14 (.55)	16 (.63)	M1-0-27358-01
7 (.275)	12 (.475)	14 (.55)	20 (.81)	M1-0-27358-02
12 (.475)	17 (.675)	3.8 (.15)	16 (.63)	M1-0-27358-01
17 (.675)	22 (.875)	3.8 (.15)	20 (.81)	M1-0-27358-02

D Door thickness

- 2 - 7 (.075 - .275)
- 7 - 12 (.275 - .475)
- 12 - 17 (.475 - .675)
- 17 - 22 (.675 - .875)

F Finish

- 1 White Thermoplastic
- 7 Beige Thermoplastic
- 8 Stainless steel (omit for black)

L Lock style

- 4 Locking (2 keys supplied)
- 6 Non-locking
- 7 Key-locking keyed alike S008 (2 overmolded keys supplied) (Only available for stainless steel version)

M1 - L D - F

Part Number Selection

See page 102 for complimentary styled compression version



M1 Push-to-Close Latch

64mm (2.5") size · Stainless steel

- Single, round-hole installation
- Corrosion-resistant materials
- Inside actuation when locked or unlocked

Material and Finish

Stainless steel 316 grade, electropolished

Performance Details

Maximum working load:
835 N (187 lbf)

Operating temperature range:
-18°C (0°F) to 60°C (140°F)

Installation Notes

Maximum tightening torque on mounting screws: 1.7 N·m (15 in·lbf)

Accessories

Keeper

Part number: M1-525-19-4

For lock style 4

Key (pair)

Part number: M1-546



For lock style 7

Overmolded key S008 (pair)

Part number: M1-525-39-S008

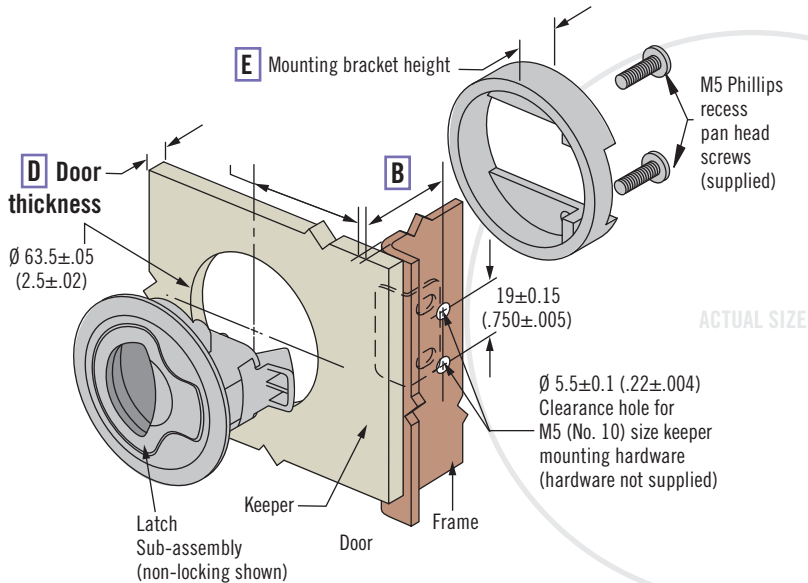
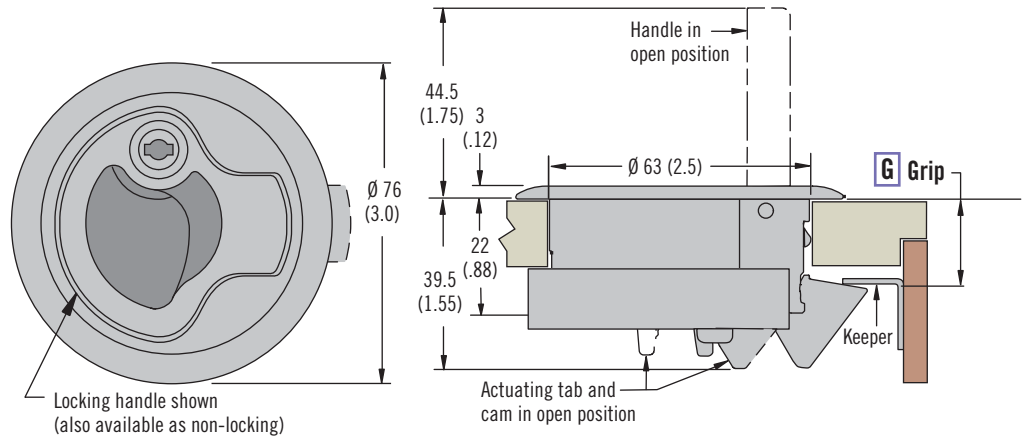


Replacement mounting screw

Part number: M1-0-27358-02

Part Number Selection

See page 103 for complimentary styled compression version



G Grip	E Mounting Bracket Height	D Door Thickness		B
		Minimum	Maximum	
20±0.5 (.75±.02)	22 (.875)	2 (.075)	12 (.475)	27 (1.10)
32±0.5 (1.25±.02)	22 (.875)	2 (.075)	12 (.475)	39 (1.54)
20±0.5 (.75±.02)	12 (.475)	12 (.475)	22 (.875)	27 (1.10)
32±0.5 (1.25±.02)	12 (.475)	12 (.475)	22 (.875)	39 (1.54)



- L Lock style**
- 4 Locking keyed alike (2 keys supplied)
 - 6 Non-locking
 - 7 Key-locking keyed alike S008 (2 overmolded keys supplied)

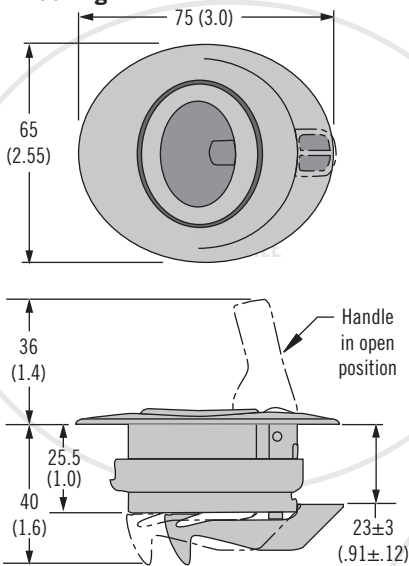
Dimensions in millimeters (inch) unless otherwise stated

MP Push-to-Close Latch

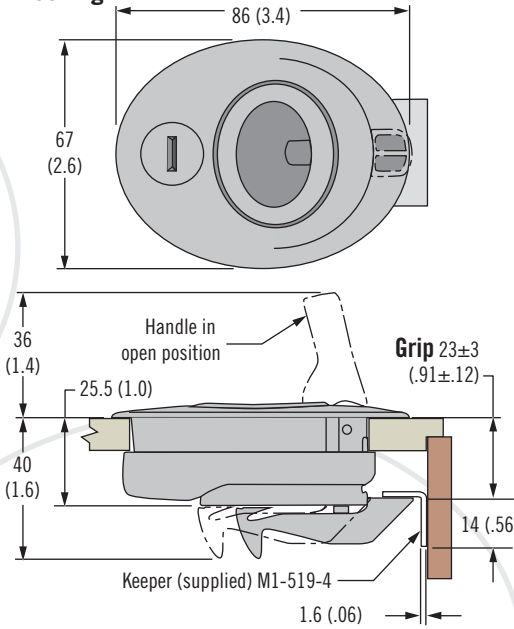
50mm (2") size · Plastic



Non-Locking



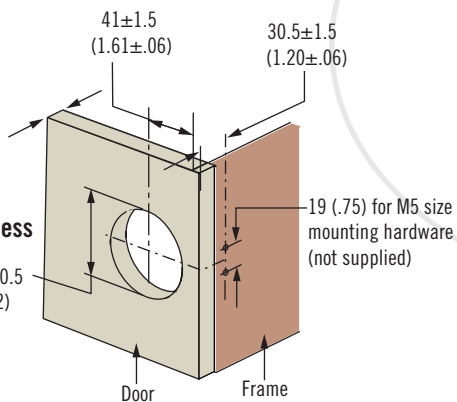
Locking



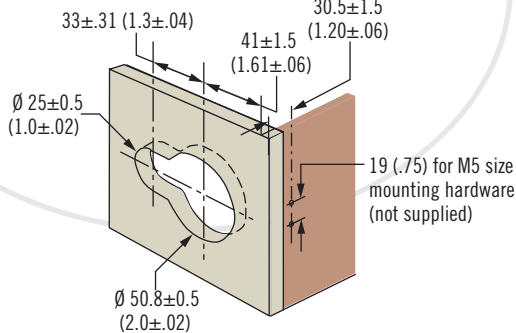
D

Door thickness

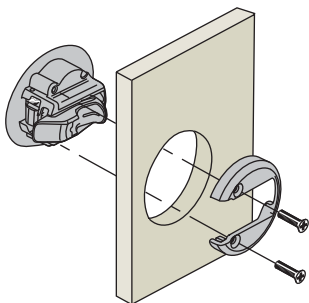
Ø 50.8±0.5 (2.0±.02)



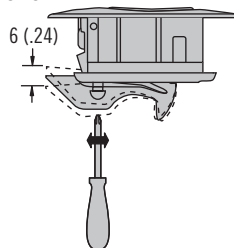
ACTUAL SIZE



Installation



Grip Adjustment



- Adjustable Grip
- Round-hole installation
- Inside actuation when locked or unlocked

Material and Finish

Housing cover, cup and handle: Stainless steel 316 grade, electropolished
 Housing: PC/PBT blend, black or white

Performance Details

Maximum working load: 270 N (60 lbf)
 Operating temperature range: -18°C (0°F) to 60°C (140°F)
 Flammability rating: UL94-HB

Installation Notes

Maximum tightening torque on mounting screws (supplied): 1.7 N·m (15 in-lbf)

Accessories

- Keeper
Part number: M1-519-4
- Key 948 (pair)
Part number: MF-97-948-41



Replacement mounting screw
Part number: MP-520-28-4

Part Number Selection

MP - 03 - 1 L D - F 0

- L** Lock style
 - 0 Non-locking
 - 1 Key-locking keyed alike 948 (2 keys supplied)
- D** Door thickness
 - 0 10 - 16 (.39 - .63)
 - 1 16 - 22 (.63 - .87)
- F** Finish
 - 00 316 Stainless cover over black housing
 - 55 Black housing
 - 77 White housing



M1 Push-to-Close Latch

Pull-to-open

- Single, round-hole installation
- Flush pop out knob
- Corrosion-resistant materials

Material and Finish

PC/ABS, black, chrome plated or gold colored PVD

Performance Details

Maximum working load:
310 N (70 lbf)

Operating temperature range:
-30°C (-22°F) to 60°C (140°F)

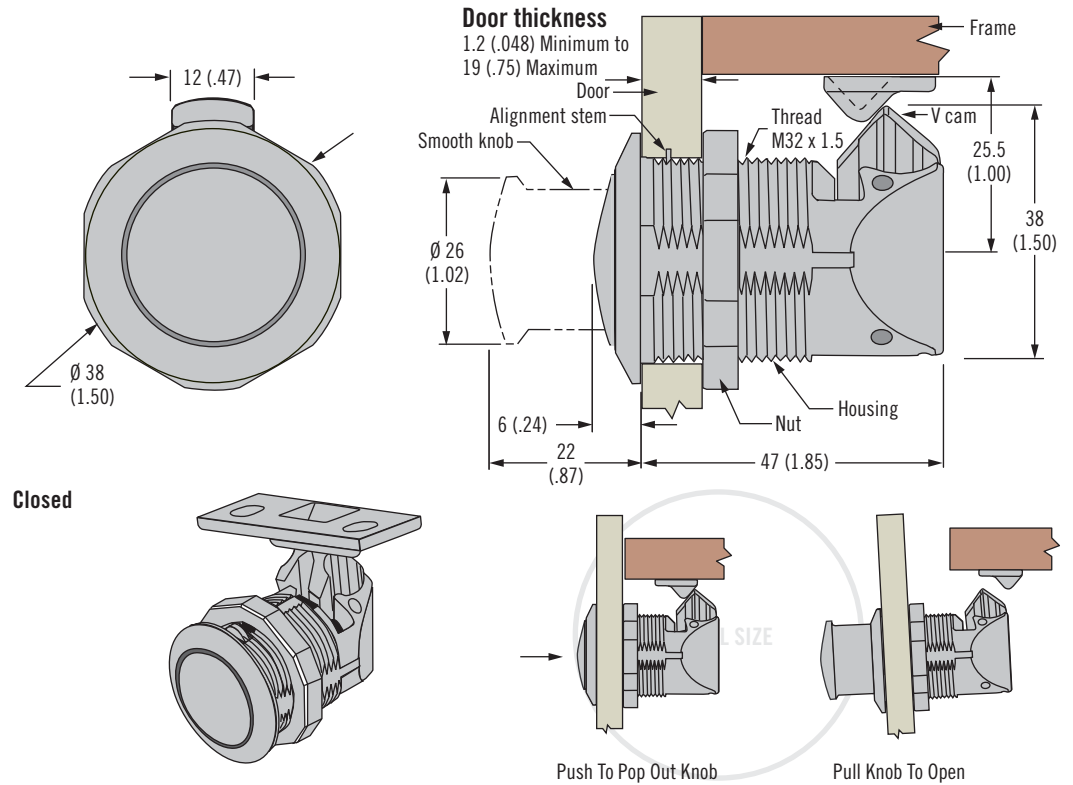
Flammability rating: UL94-HB

Installation Notes

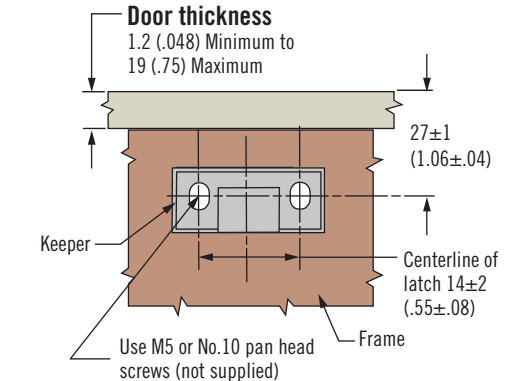
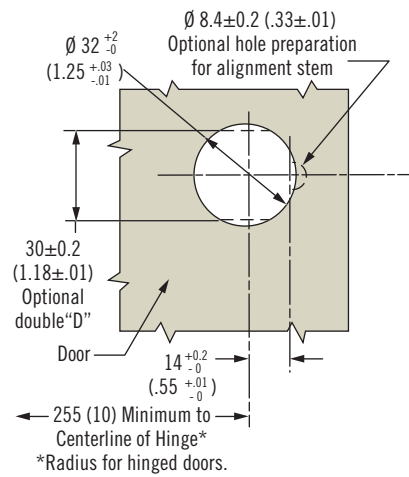
Maximum tightening torque on mounting nut:
4.2 N·m (37 in·lbf)

Accessories

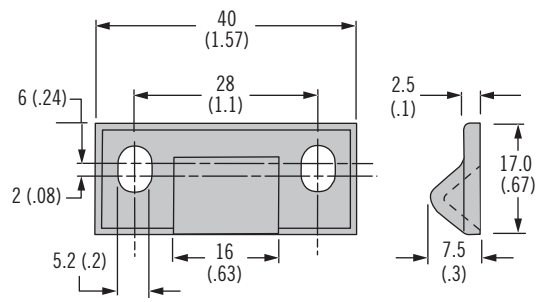
Replacement Keeper
Part number: M1-2A-9-105-41



Installation



Keeper



Part Number

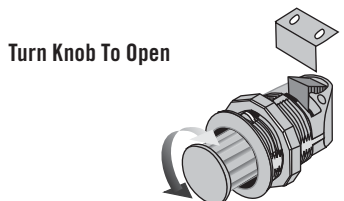
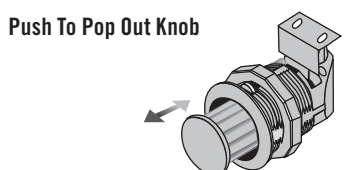
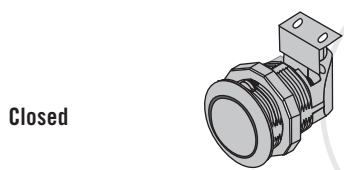
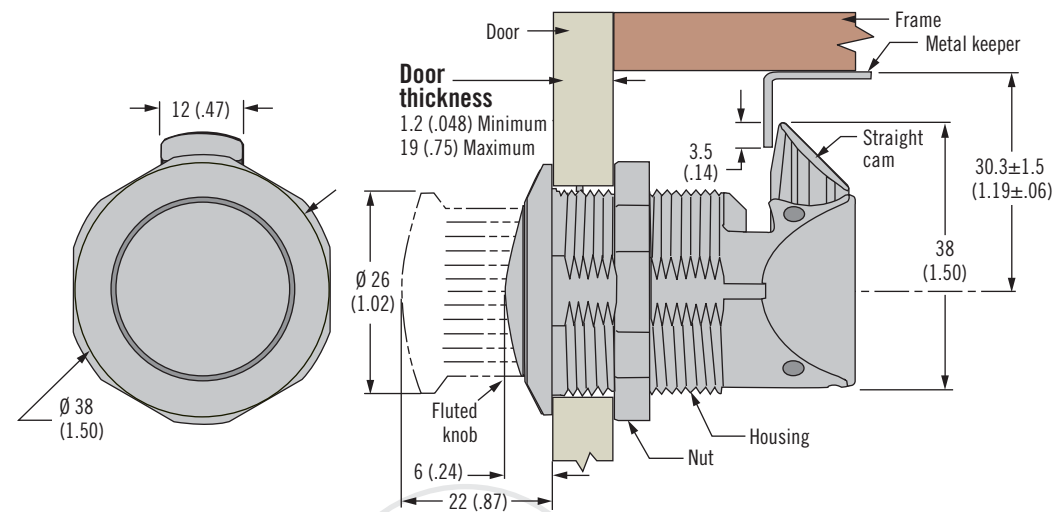
See table

Finish	Part Number
Chrome	M1-2A-15-1
Black	M1-2A-15-5
Gold	M1-2A-15-8

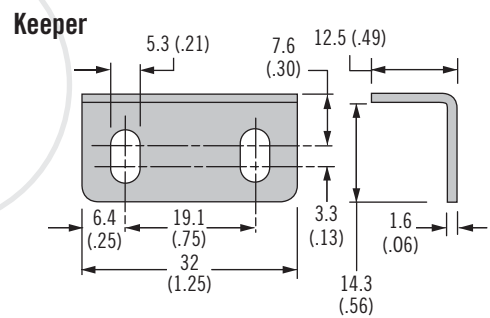
Dimensions in millimeters (inch) unless otherwise stated

M1 Push-to-Close Latch

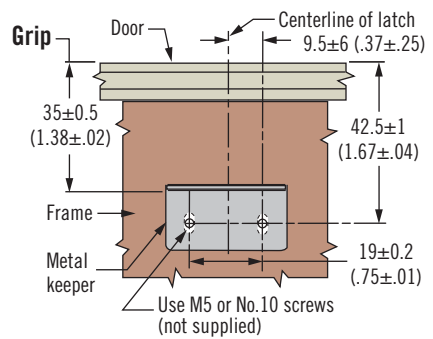
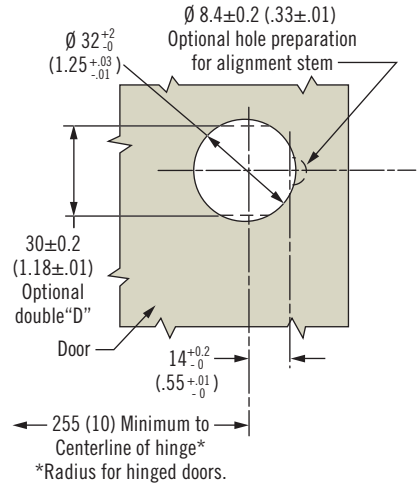
Turn-to-open



ACTUAL SIZE



Installation



- Single, round-hole installation
- Flush pop out knob
- Corrosion-resistant materials

Material and Finish

PC/ABS, black, chrome plated or gold colored PVD

Performance Details

Maximum working load:
310 N (70 lbf)

Operating temperature range:
-30°C (-22°F) to 60°C (140°F)

Flammability rating: UL94-HB

Installation Notes

Maximum tightening torque on mounting nut:
4.2 N·m (37 in·lbf)

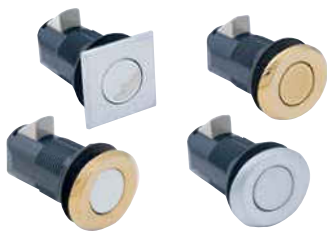
Accessories

Replacement Keeper
Part number: M1-519-4

Part Number

See table

Finish	Part Number
Chrome	M1-2A-13-1
Black	M1-2A-13-5
Gold	M1-2A-13-8



MP Point Push-to-Close Latch

Pull-to-open

- Single, round-hole installation
- Flush pop out knob
- Corrosion-resistant materials
- Keeper sold separately

Material and Finish

Housing: Glass-filled nylon
 Flange and knob: Zinc alloy, plated
 Cam: Zinc alloy
 Fixed keeper: Stainless steel
 Hooded keeper: Nylon, black

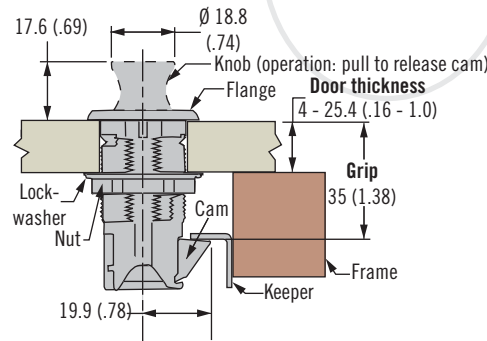
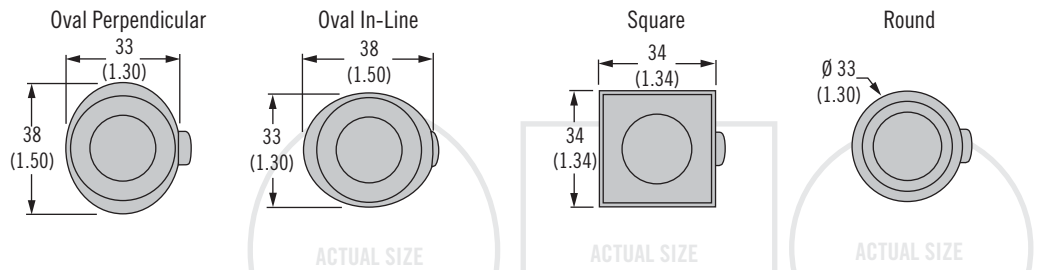
Installation Notes

Maximum tightening torque on mounting nut: 4.5 N·m (40 in·lbf)
 Fixed keeper: Use M5 or No. 10 screws to mount (not supplied)
 Hooded keeper: Use M5 or No. 10 screws to mount (not supplied)

Accessories

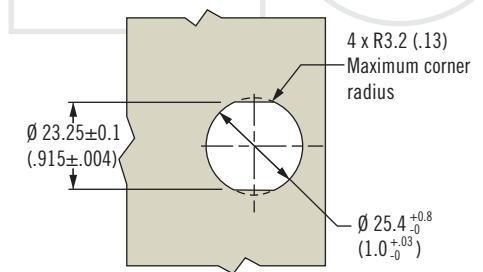
Matching pulls available see page 515

H Housing Style

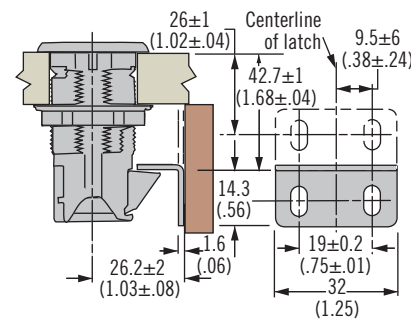


Installation

Latch Only (for keeper installation below)

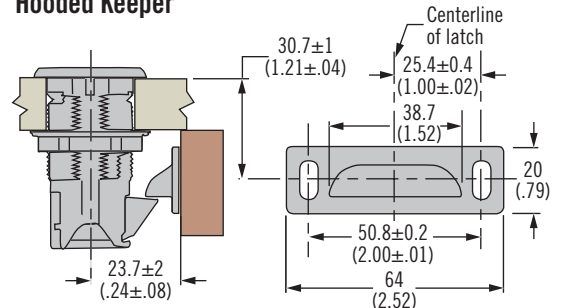


Fixed Keeper



Fixed Keeper	
M1-519-4	

Hooded Keeper



Hooded Keeper	
MP-510-16-4	

Part Number Selection

Latch only, keepers sold separately.

MP - 05 - H 2 - F K

H Housing style
 11 Oval perpendicular 21 Square
 12 Oval in-line 31 Round

F Flange finish
 1 Chrome plated 4 Diamond brass plated
 2 Satin chrome plated 5 Black powder coated
 3 Brushed nickel plated 6 Satin nickel plated

K Knob finish
 1 Chrome plated 4 Diamond brass plated
 2 Satin chrome plated 5 Black powder coated
 3 Brushed nickel plated 6 Satin nickel plated

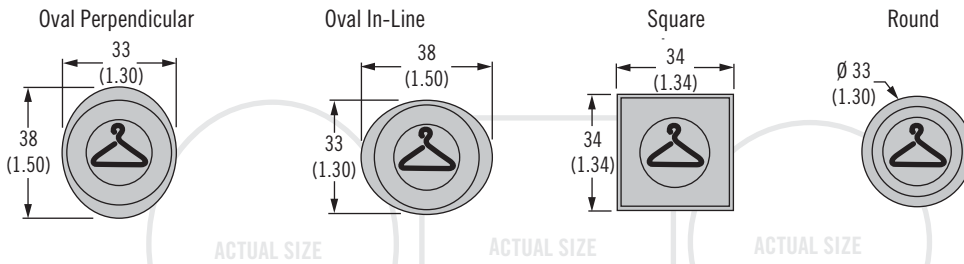
Dimensions in millimeters (inch) unless otherwise stated

MP Point Coat Hook

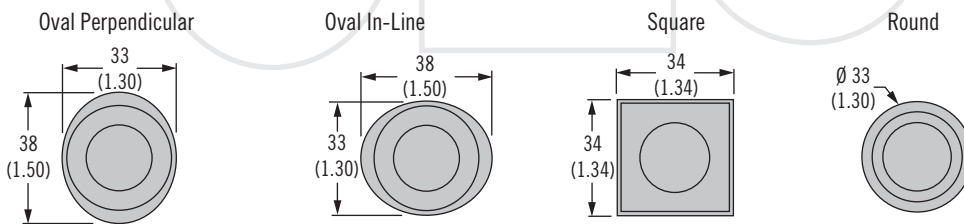
Pop-up hook



H Housing Style (with hanger image, I = 2)



H Housing Style (without hanger image, I = 3)



- Flush pop out hook
- Single, round hole installation
- Corrosion-resistant materials

Material and Finish

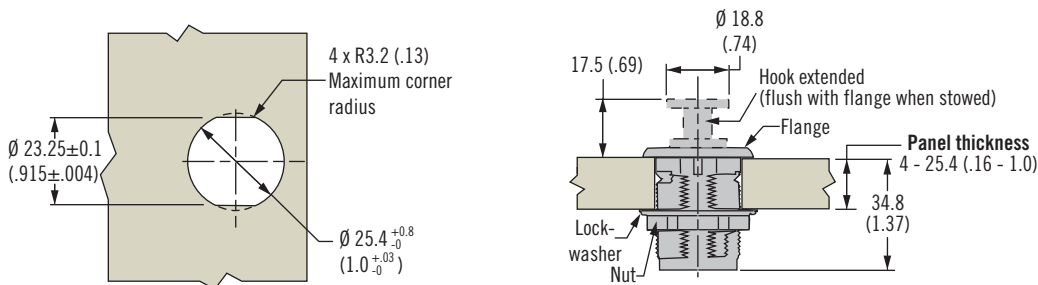
Housing: Glass-filled nylon

Flange and hook: Zinc alloy, plated

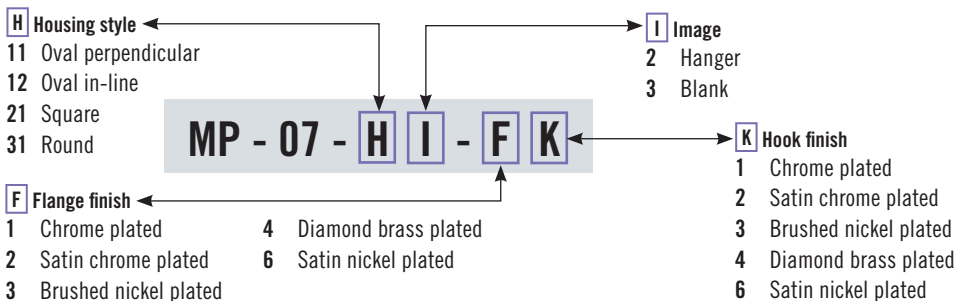
Installation Notes

Maximum tightening torque on mounting nut: 4.5 N·m (40 in-lbf)

Installation



Part Number Selection





A3 Push-to-Close Latch

Slide-to-open · Flush · Locking

- Single hole snap-in installation
- Corrosion-resistant materials

Material and Finish

Latch: ABS, black
Spring: Stainless steel

Performance Details

Operating temperature range:
-40°C (-40°F) to 60°C (140°F)
Flammability rating: UL94-V0

Installation Notes

Prepare a burr free hole
Door thickness must include plating or paint thickness

Accessories

Flat key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01

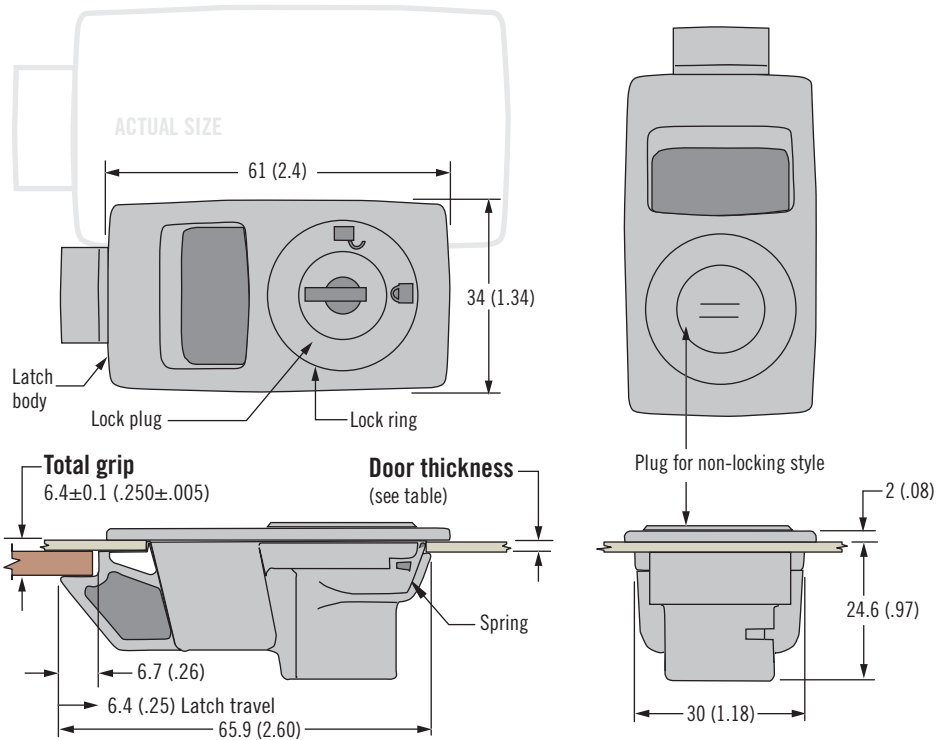


Overmolded key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01-05

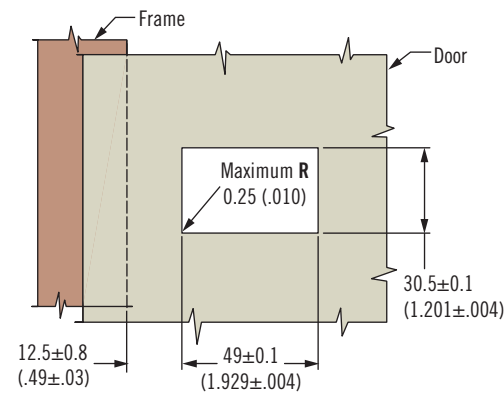


Part Number

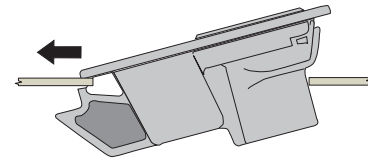
See table



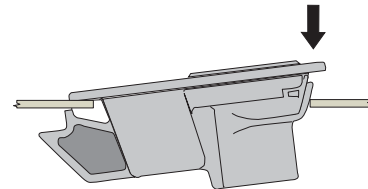
Installation



1. Slip front of latch through hole, push forward



2. Snap back end of latch into position



Door Thickness	Part Number		
	Non-Locking	Key-Locking Keyed Alike CH751 (No Keys Supplied)	Key-Locking Keyed Alike CH751 (2 Flat Keys Supplied)
0.9 (.035) to 1.2 (.047)	A3-80-525-12	A3-85-525-12	A3-87-525-12
1.3 (.051) to 1.6 (.062)	A3-80-625-12	A3-85-625-12	A3-87-625-12

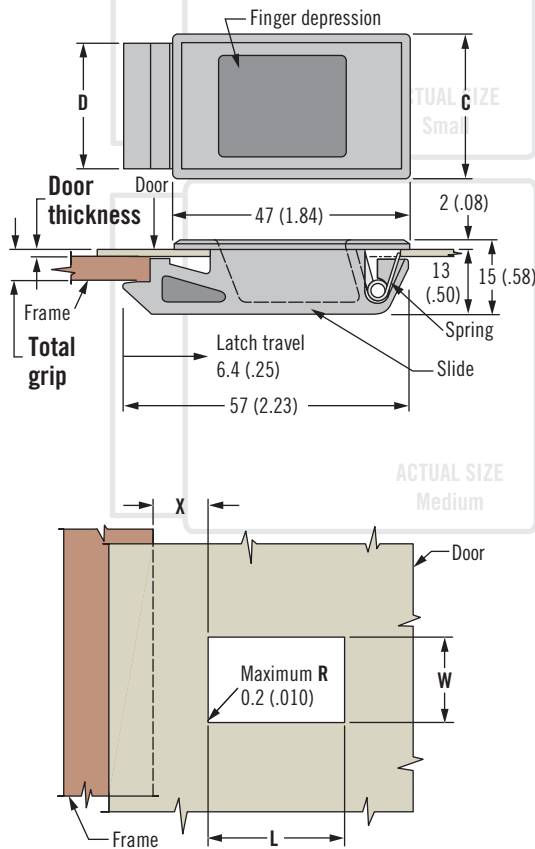
Dimensions in millimeters (inch) unless otherwise stated

A3 Push-to-Close Latch

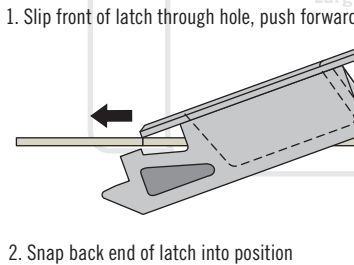
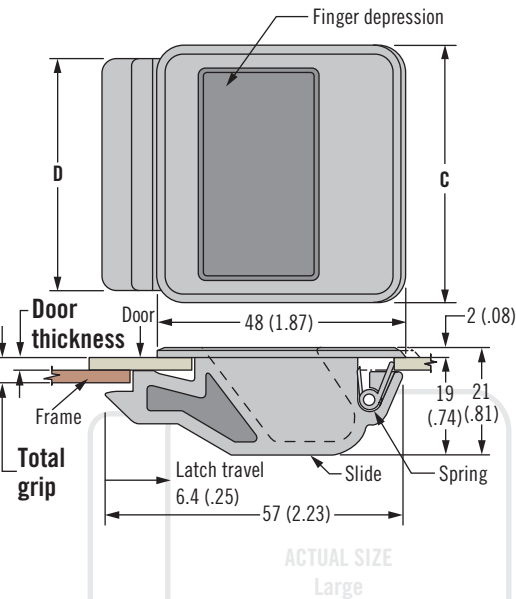
Slide-to-open · Flush



Small and Medium



Large (deeper depression)



Series	Installation		
	L	W	X
Small	38.1±0.1 (1.50±.005)	25.4±0.1 (1.0±.005)	12.7±0.7 (.5±.03)
Medium		44.5±0.1 (1.75±.005)	
Large			

Size	Door Thickness	Total Grip	Dimensions		Part Number	
			C	D	UL94-HB	UL94-V0
Small	1.2±0.1 (.050±.005)	6.4±0.1 (.250±.005)	28 (1.11)	25 (.99)	A3-40-525-12	A3-99-187-12
	1.6 ⁺⁰ _{-.02} (.060±.005)	6.4±0.1 (.250±.005)	28 (1.11)	25 (.99)	A3-40-625-12	A3-99-130-12
Medium	2.2 ^{+0.2} ₋₀ (.090±.005)	6.4±0.1 (.250±.005)	47 (1.86)	44 (1.74)	A3-50-925-12	A3-99-144-12
Large	2.2 ^{+0.2} ₋₀ (.090±.005)	6.4±0.1 (.250±.005)	50 (1.95)	44 (1.74)	A3-99-122-12	A3-99-253-01

- Single hole snap-in installation
- Corrosion-resistant materials

Material and Finish

Latch: ABS, black
Spring: Stainless steel

Performance Details

Maximum working load:
40 series 180 N (40 lbf)

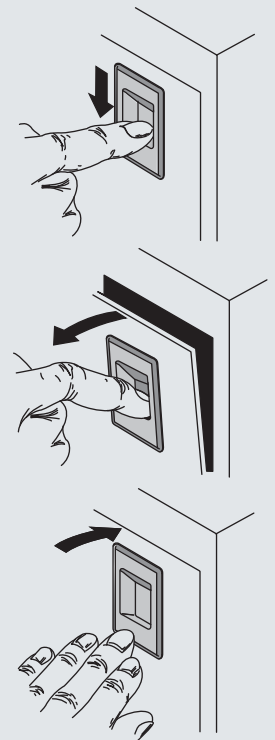
50 and 99 series
220 N (50 lbf)

Operating temperature range:
-40°C (-40°F) to 60°C (140°F)

Flammability rating:
UL94-HB or UL94-V0

Installation Notes

- Prepare a burr free hole
- Door thickness must include plating or paint thickness



Part Number

See table



A3 Push-to-Close Latch

Slide-to-open · Ergo tab style

- Single hole snap-in installation
- Corrosion-resistant materials

Material and Finish

Latch: PC/ABS, black

Spring: Stainless steel

Performance Details

Maximum working load:

Medium: 90 N (20 lbf)

Large: 130 N (29 lbf)

Operating temperature range:

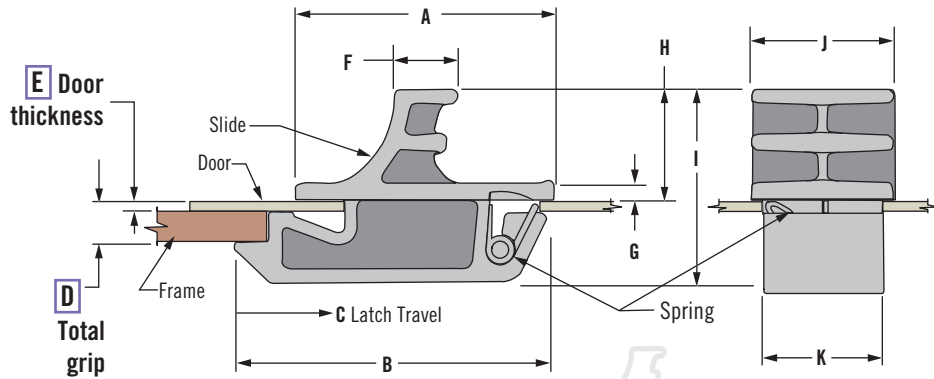
-40°C (-40°F) to 60°C (140°F)

Flammability rating: UL94-V0

Installation Notes

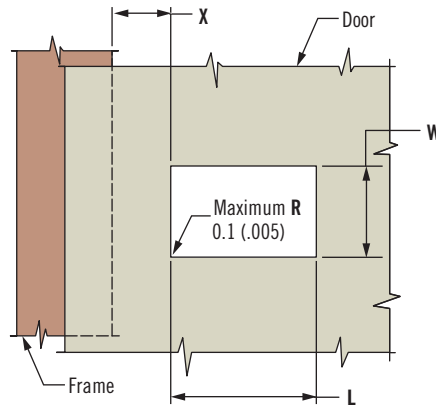
Prepare a burr free hole

Door thickness must include plating or paint thickness

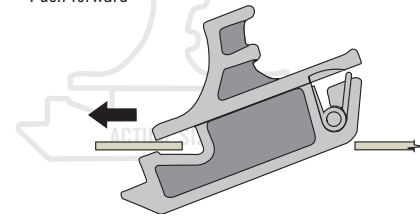


Installation

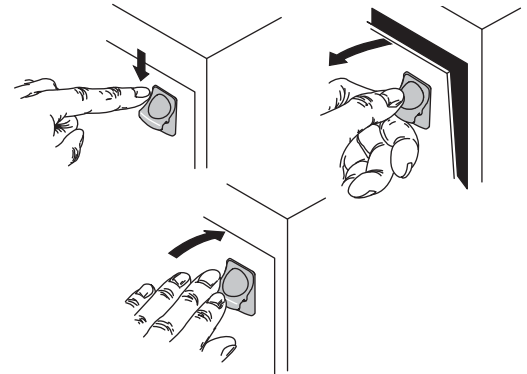
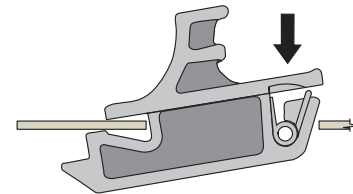
1. Prepare burr-free hole



2. Slip front of latch through hole
Push forward



3. Snap back end of latch into position



Size	Installation		
	L	W	X
Medium	12.7±0.1 (.500±.005)	7.8±0.05 (.307±.002)	6.4±0.8 (.25±.03)
Large	22.2±0.1 (.875±.005)	14.3±0.1 (.562±.005)	9.5±0.8 (.38±.03)

Part Number

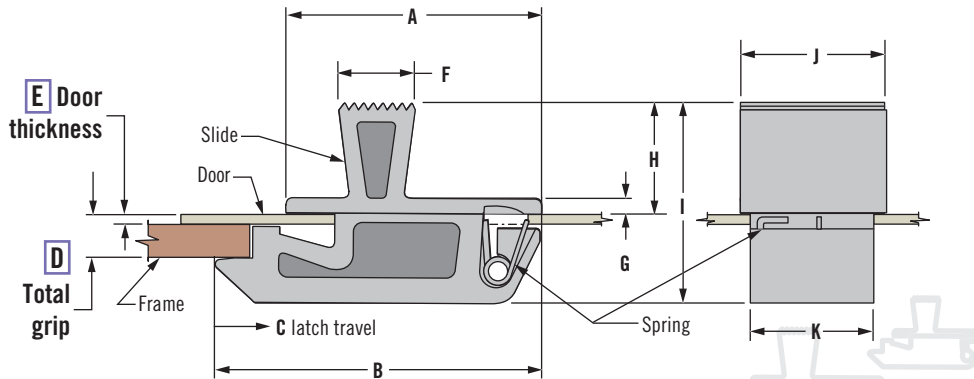
See table

E Door Thickness	D Total Grip	Dimensions									Part Number	Size
		A	B	C	F	G	H	I	J	K		
1 ± 0.1 (.04±.005)	3 ± 0.1 (.12±.005)	19 (.75)	22.2 (.87)	4 (.16)	5.1 (.20)	1.5 (.06)	8.3 (.33)	15.5 (.61)	9.5 (.37)	7.6 (.30)	A3-70-412-25	Medium
1.2+0.2-0 (.05±.005)	4.8 ± 0.1 (.19±.005)	30.1 (1.19)	36.2 (1.43)	4.3 (.17)	7.2 (.28)	2.2 (.09)	12.8 (.50)	22.4 (.88)	16.5 (.65)	14 (.55)	A3-60-519-25	Large

Dimensions in millimeters (inch) unless otherwise stated

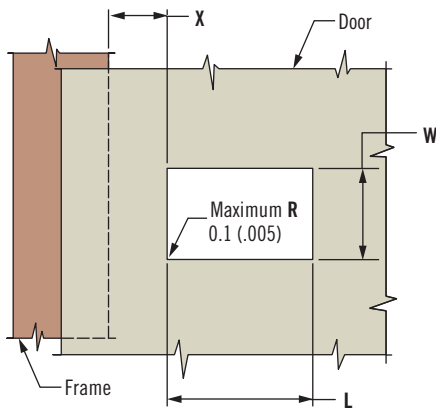
A3 Push-to-Close Latch

Slide-to-open · Tab style

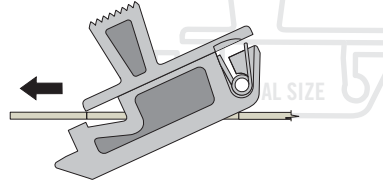


Installation

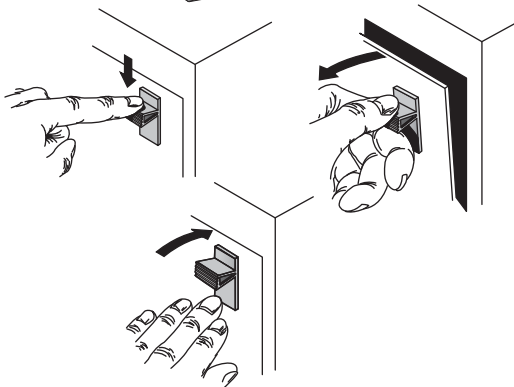
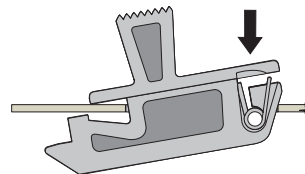
1. Prepare burr-free hole



2. Slip front of latch through hole
Push forward.



3. Snap back end of latch into position



Size	Installation		
	L	W	X
Small	8.33±0.05 (.328±.002)	4.57±0.05 (.180±.002)	4.8±0.8 (.19±.03)
Medium	12.7±0.1 (.500±.005)	7.8±0.05 (.307±.002)	6.4±0.8 (.25±.03)
Large	22.2±0.1 (.875±.005)	14.3±0.1 (.562±.005)	9.5±0.8 (.38±.03)

- Single hole snap-in installation
- Corrosion-resistant materials

Material and Finish

Latch: ABS, black

Spring: Stainless steel

Performance Details

Maximum working load:

Small 25 N (5 lbf)

Medium 90 N (20 lbf)

Large 130 N (30 lbf)

Operating temperature range:

-40°C (-40°F) to 60°C (140°F)

Flammability rating: UL94-HB

Installation Notes

Prepare a burr free hole

Door thickness must include plating or paint thickness

Part Number

See table

E Door Thickness	D Total Grip	Dimensions									Part Number	Size
		A	B	C	F	G	H	I	J	K		
.76±.08 (.030±.003)	2.54±0.13 (.100±.005)	11.9 (.47)	15.1 (.59)	3 (.12)	4.0 (.16)	0.8 (.03)	5.6 (.22)	11.1 (.44)	6.0 (.23)	4.4 (.17)	A3-10-310-12	Small
1±0.1 (.04±.005)	3±0.1 (.12±.005)	18 (.70)	22.5 (.87)	4 (.16)	5.5 (.22)	1.5 (.06)	8.5 (.33)	15.5 (.61)	9.5 (.37)	7.5 (.30)	A3-20-412-12	Medium
1.2+0.2-0 (.05±.005)	4.8±0.1 (.19±.005)	29 (1.13)	36 (1.41)	4.3 (.17)	9 (.34)	2 (.08)	13 (.50)	22.5 (.87)	16.5 (.64)	14 (.55)	A3-30-519-12	Large



93 Push-to-Close Latch

Push button to open

- Push button opening
- Single hole installation
- Optional ejector spring helps prevent rattles

Material and Finish

Latch: ABS, black
Spring: Stainless steel

Performance Details

Maximum working load:
530 N (120 lbf)

Flammability rating: UL94-HB

Installation Notes

Maximum tightening torque on mounting nut: 7.9 N·m (70 in lbf)

Accessories

Flat key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01



Overmolded key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01-05



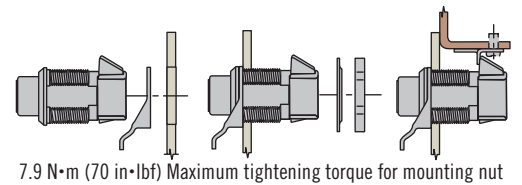
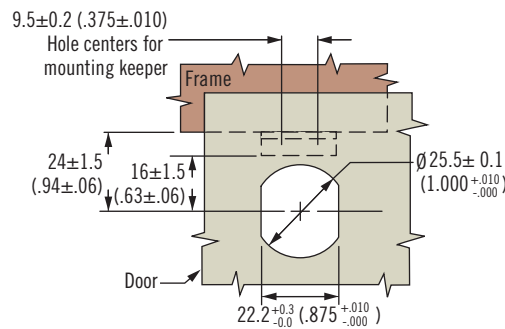
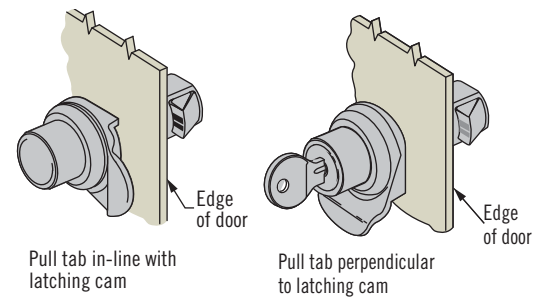
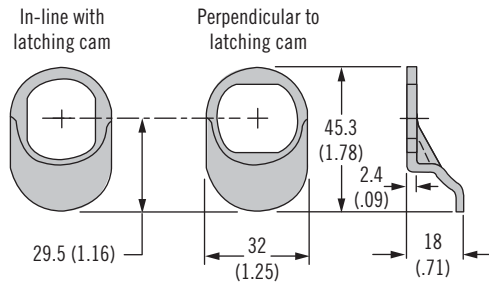
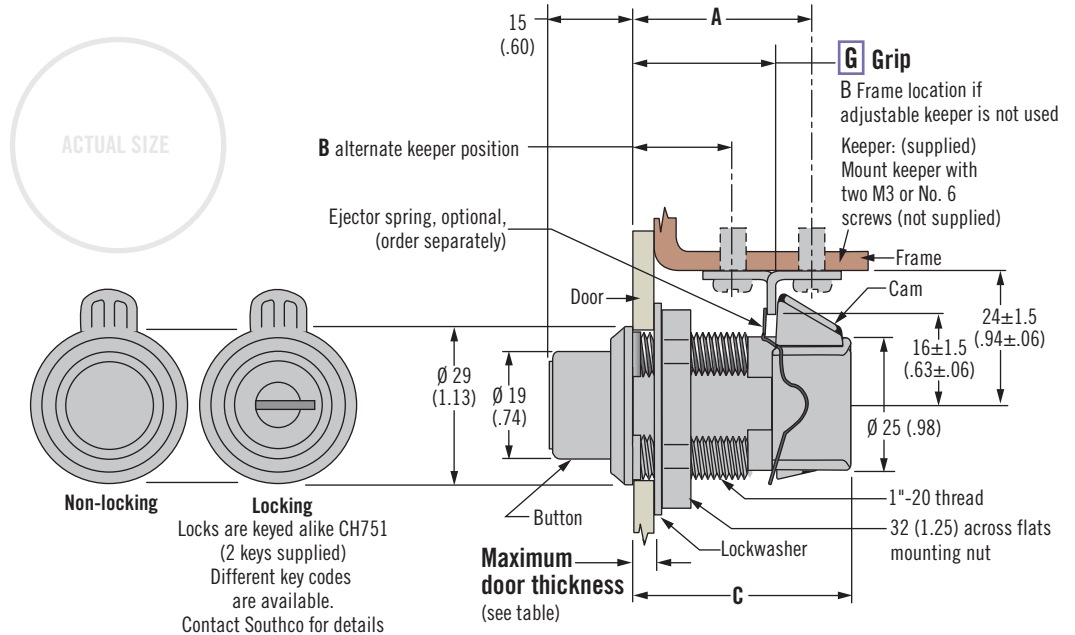
Pull tab (optional) part number:
In-line 93-21-301-14
Perpendicular 93-21-322-14

Keeper (replacement) part number:
93-14-101-24

Ejector spring (optional)
part number: 93-22-302-18

Part Number

See table



Style	Maximum Door Thickness	G Grip	Dimensions			Latch Part Number	
			A	B	C Ref	Key-Locking (2 Flat Keys Supplied)	Non-Locking
Pull tab in-line with latching Cam	10.3 (.407)	23 ^{+0.1} _{-0.07} (.907 ⁺⁰ _{-.032})	29.5±1.5 (1.16±0.06)	14.5±1.5 (.57±0.06)	37 (1.47)	93-303	93-304
Pull tab perpendicular to latching Cam	10.3 (.407)	23 ^{+0.1} _{-0.07} (.907 ⁺⁰ _{-.032})	29.5±1.5 (1.16±0.06)	14.5±1.5 (.57±0.06)	37 (1.47)	93-313	93-314
Latch only	12.7 (.500)	25±0.4 (1.000 ⁺⁰ _{-.032})	32±1.5 (1.25±0.06)	17±1.5 (.66±0.06)	40 (1.57)	93-307	93-308

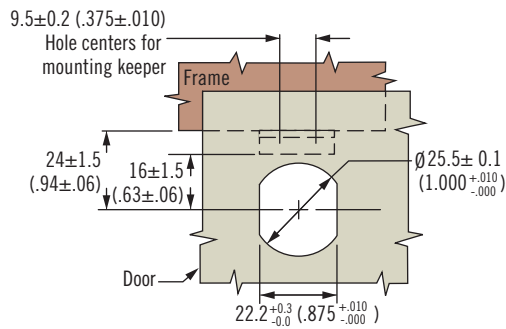
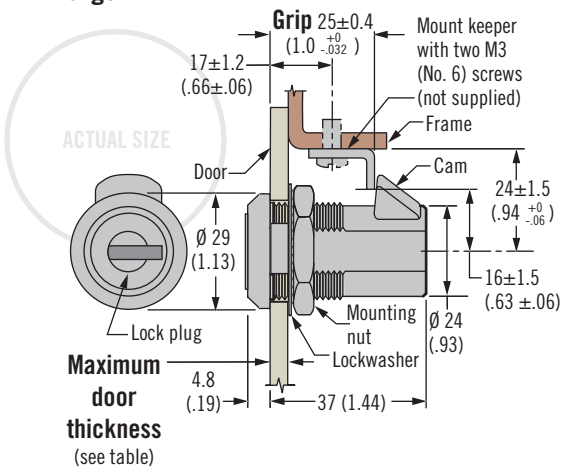
Dimensions in millimeters (inch) unless otherwise stated

93 Push-to-Close Latch

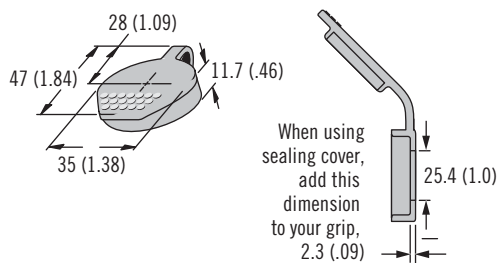
Key actuated



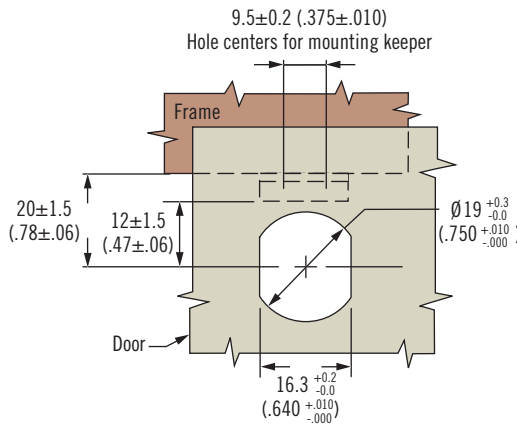
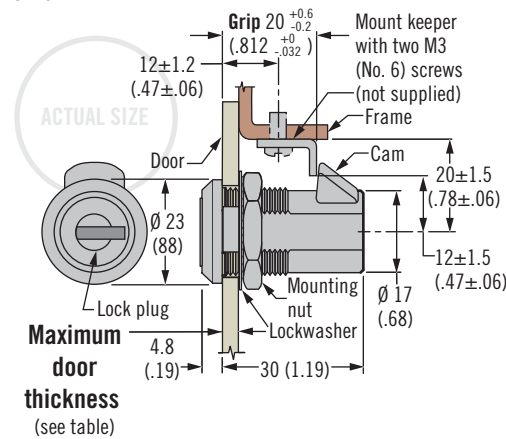
Large



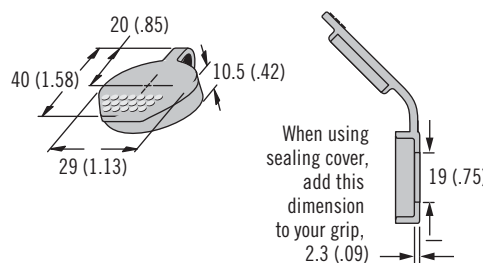
Sealing Cover (optional)



Small



Sealing Cover (optional)



- Key only operation for access restriction
- Single hole installation

Material and Finish

Latch: Zinc alloy, zinc plated or black powder coated

Performance Details

Maximum working load:

Large: 560 N (125 lbf)

Small: 330 N (75 lbf)

Operating temperature range:

-18°C (0°F) to 65°C (150°F)

Flammability rating: UL94-HB

Installation Notes

Maximum tightening torque on mounting nut: 7.9 N·m (70 in-lbf)

Accessories

Flat key, keyed alike CH751 (2 keys per ring)

Part number: PK-10-01



Overmolded key, keyed alike CH751

(2 keys per ring)

Part number: PK-10-01-05



Pull tab (optional - large size only):

Part number:

In-line: 93-21-301-14

Perpendicular: 93-21-322-14

Keeper (replacement)

Part number: 93-14-101-11

Part Number

See table

Size	Maximum Door Thickness	Latch Part Number		Lock Core Finish	Sealing Cover (Optional) Part Number
		Locking Keyed Alike CH751 (2 Flat Keys Supplied)			
Large	12.7 (.500)	93-10-101-10	Bright	90-4	
Small	9.5 (.375)	93-10-201-50	Black	90-2	
		93-10-201-10	Bright		



93 Push-to-Close Latch

Turn-to-open · Knob style

- Turn-to-open
- Single hole installation

Material and Finish

Latch: Zinc alloy, chrome plated
Knob: Polycarbonate, black

Performance Details

Maximum working load:

Large: 560 N (125 lbf)

Small: 330 N (75 lbf)

Operating temperature range:
-18°C (0°F) to 65°C (150°F)

Flammability rating: UL94-HB

Installation Notes

Maximum tightening torque on mounting nut: 7.9 N·m (70 in·lbf)

Accessories

Flat key, keyed alike CH751
(2 keys per ring)

Part number: PK-10-01



Overmolded key, keyed alike CH751
(2 keys per ring)

Part number: PK-10-01-05



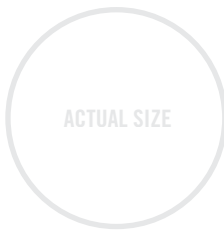
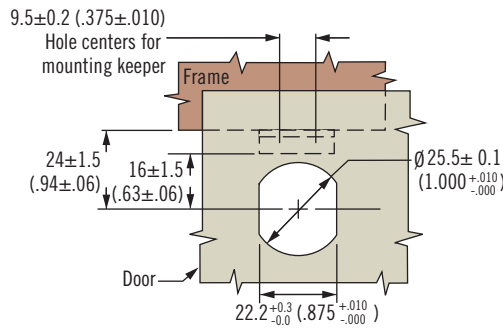
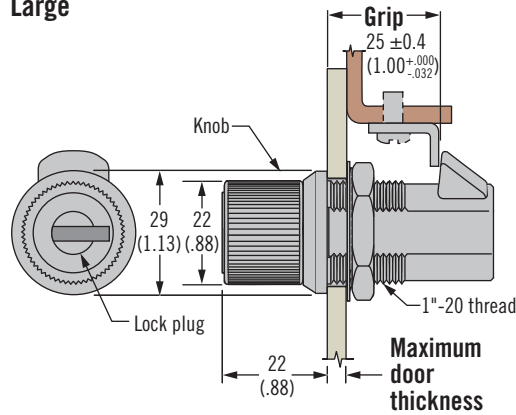
Keeper (replacement)

Part number: 93-14-101-11

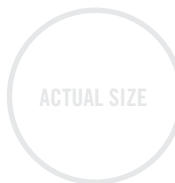
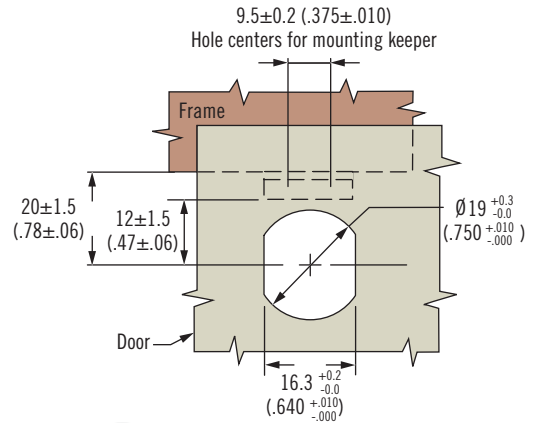
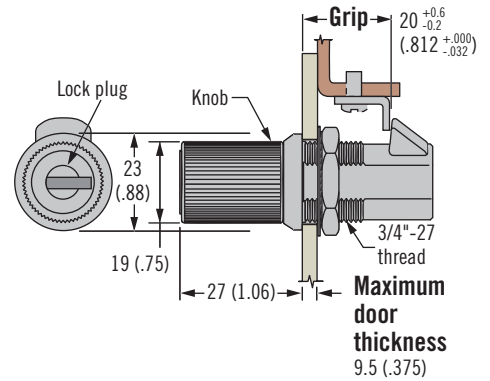
Part Number

See table

Large



Small

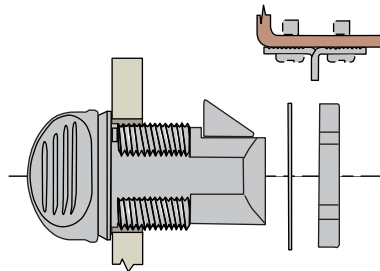
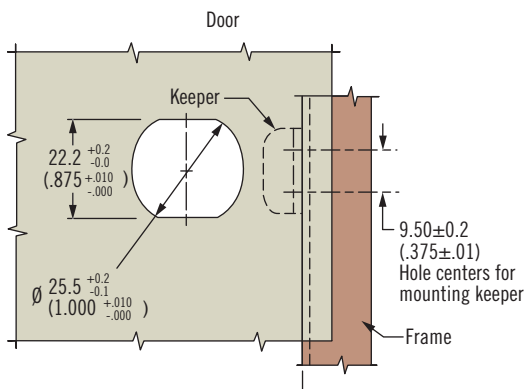
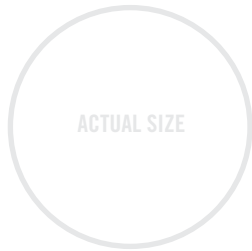
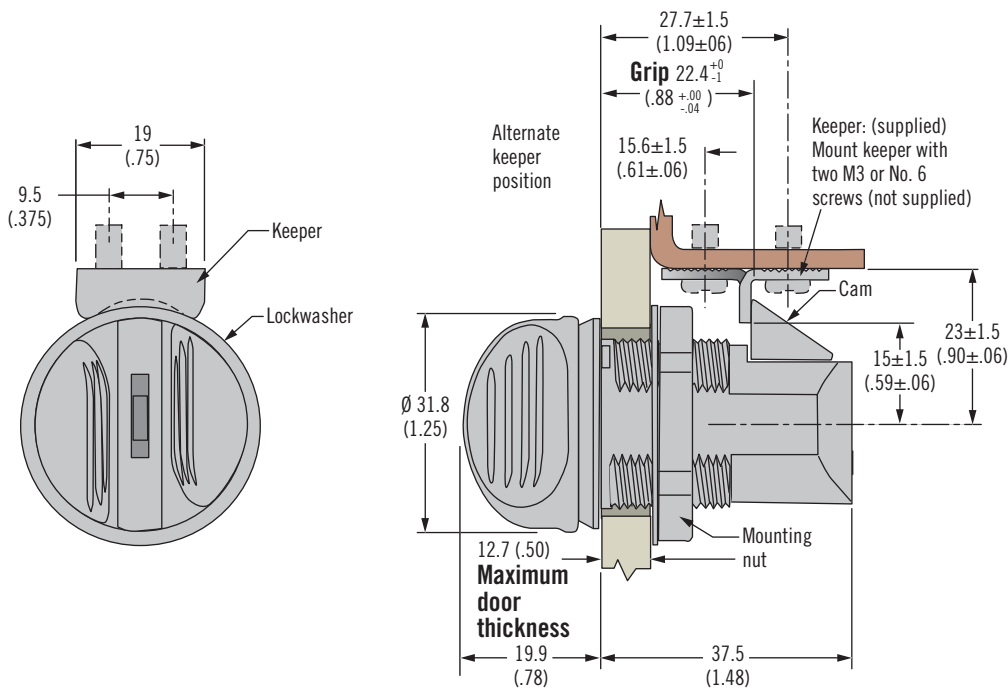


Size	Latch Part Number		Lock Core Finish
	Locking (2 Flat Keys Supplied)	Non-locking	
Large	93-10-102-50	93-10-103-50	Black
	93-10-102-10	93-10-103-10	Bright
Small	93-10-202-50	93-10-203-50	Black
	93-10-202-10	93-10-203-10	Bright

Dimensions in millimeters (inch) unless otherwise stated

93 Push-to-Close Latch

Turn-to-open · Wing style



Latch Part Number (2 Flat Keys Supplied)
93-402

- Turn-to-open
- Single hole installation

Material and Finish

Glass-filled nylon and acetal, black

Performance Details

Maximum working load:
425 N (100 lbf)

Operating temperature range:
-20°C (0°F) to 65°C (150°F)

Flammability rating: UL94-HB

Installation Notes

Maximum tightening torque on mounting nut: 6 N·m (53 in·lbf)

Accessories

Flat key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01



Overmolded key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01-05



Keeper (replacement):
Part number: 93-14-101-24

Part Number

See table



R3 Push-to-Close Latch

Pull-to-open · Paddle handle · Baggage door latch

- Environmentally sealed
- Emergency release
- For use with R4 rotary latches

Material and Finish

Latch assembly: Zinc alloy, black or white powder coated or chrome plated

Slide bolt: Zinc alloy, zinc plated

Striker mounting plates and brackets: Steel, zinc plated

Performance Details

Maximum working load: 560 N (125 lbf)

Installation Notes

Maximum tightening torque on mounting screws: 2 N·m (14 in·lbf)

Notes

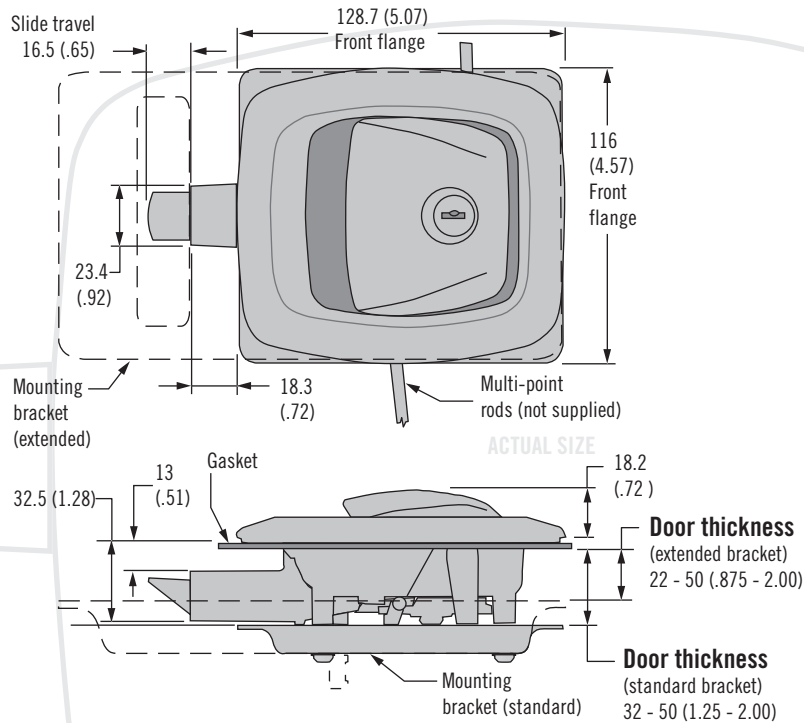
*For lock core selection and a complete overview of the *SOUTHCO*® Key-Choice System see page 158

Part Number

Order latch, bracket and mounting screws separately.

For latch see table

For bracket and mounting screws see page 239



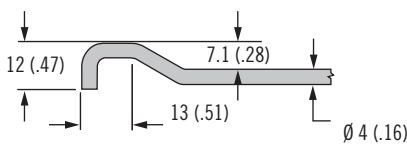
Multi-Point Capable

For applicable rotary latches see page 255.

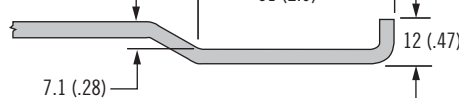
Actuating rods are not supplied
Recommended rod configuration shown below

Latch shown in actuated (unlatched) position (slide retracted)

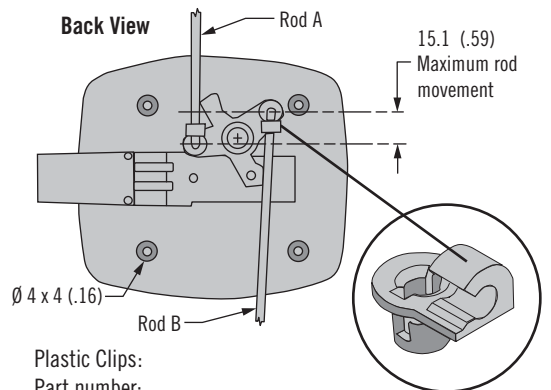
Rod A



Rod B



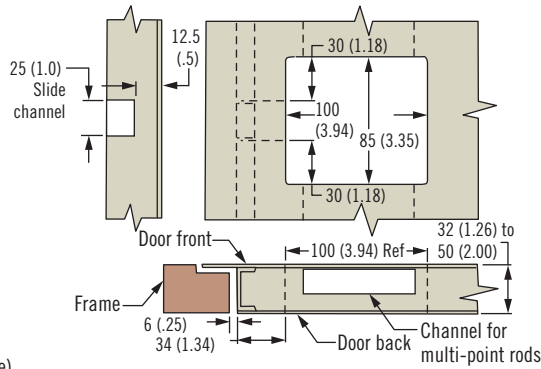
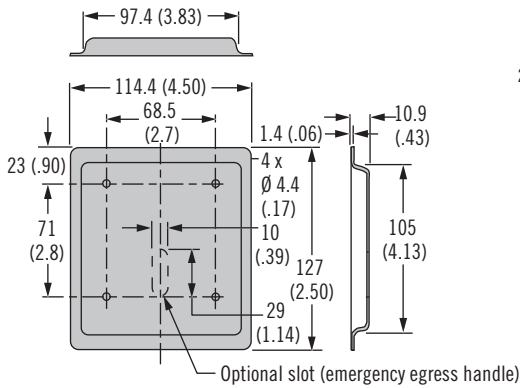
Back View



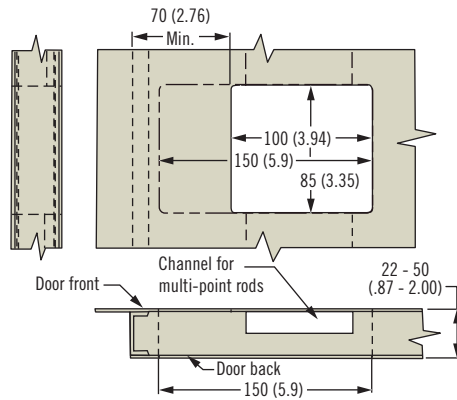
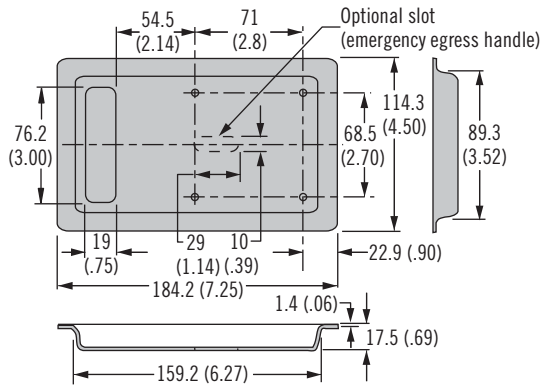
Plastic Clips:
Part number:
R4-0-43922 for 4mm rods are available as an option

Latch Finish	Part Number			
	Locking (CH751) (2 Flat Keys Included)	Locking (Reversible Key) R001 (2 Flat Keys Included)	Locking (No Core)*	Non-Locking
Chrome, polished	R3-20-350-10	R3-20-320-10	R3-20-390-10	R3-20-300-10
Black powder coated	R3-20-350-50	R3-20-320-50	R3-20-390-50	R3-20-300-50
White powder coated	R3-20-350-70	R3-20-320-70	R3-20-390-70	R3-20-300-70

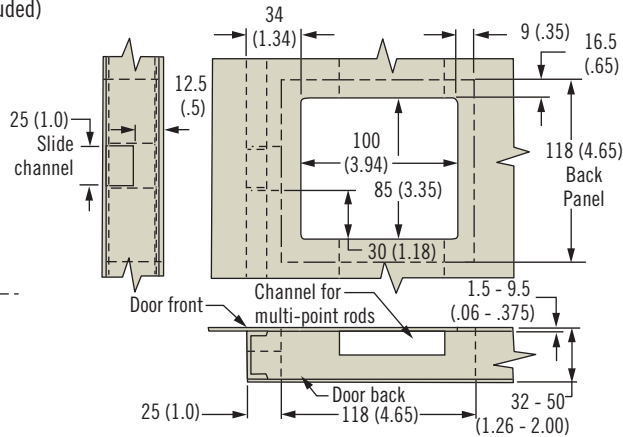
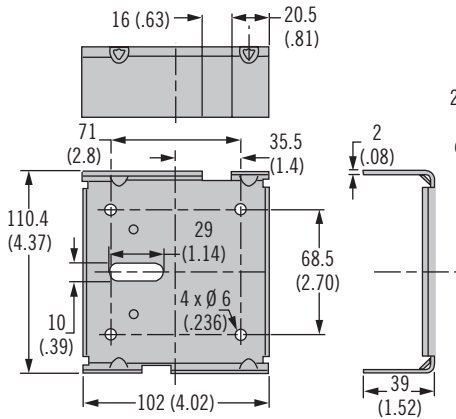
Standard Bracket



Extended Bracket



U-Bracket (slot for emergency egress handle included)



Accessories

Flat key, keyed alike CH751

(2 keys per ring)

Part number: PK-10-01



Overmolded key, keyed alike CH751

(2 keys per ring)



Part number: PK-10-01-05

Overmolded key, keyed alike R001
(2 keys per ring)

Part number: PK-10-01-05-KR001

Emergency egress handle (optional):

Part number: R3-21-110



Notes

U-bracket is intended for sheet metal door applications

Part Number

Order latch, bracket and mounting screws separately.

For latch see page 238

For bracket and mounting screws see table

Bracket Part Number		No. 8 Self Tapping Screw (Part Number By Length)				
		R3-23-250-01	R3-23-250-02	R3-23-250-03	R3-23-250-04	R3-23-250-05
		16 (.625) Long	19 (.750) Long	25.4 (1.00) Long	32 (1.250) Long	38 (1.500) Long
Standard Bracket	R3-23-160-11-01	32 (1.250)	32 (1.250) - 38 (1.500)	38 (1.500) - 44 (1.750)	44 (1.750) - 50 (2.00)	—
Extended Bracket	R3-23-162-11-01	22 (.875) - 25 (1.00)	25 (1.000) - 32 (1.250)	32 (1.250) - 38 (1.500)	38 (1.500) - 44 (1.750)	44 (1.750) - 50 (2.00)
U-Bracket	R3-23-161-11	1.5 (.0620) - 4.8 (.187)	4.8 (.187) - 9.5 (.375)	—	—	—
Door thickness						



R3 Push-to-Close Latch

Pull-to-open · Paddle handle · Entry door latch

- Environmentally sealed
- Dual sided access and locking

Material and Finish

Latch assembly: Zinc alloy, black powder coated or white or chrome plated

Slide bolt: Zinc alloy, zinc plated

Striker mounting plates and brackets: Steel, zinc plated

Performance Details

Maximum working load: 560 N (125 lbf)

Operating temperature range: -18°C (0°F) to 60°C (140°F)

Installation Notes

Maximum tightening torque on mounting screws: 2 N·m (14 in·lbf)

Accessories

Overmolded key, keyed alike CF305 (2 keys per ring)

Part number: PK-10-01-09-CF305



Replacement screws

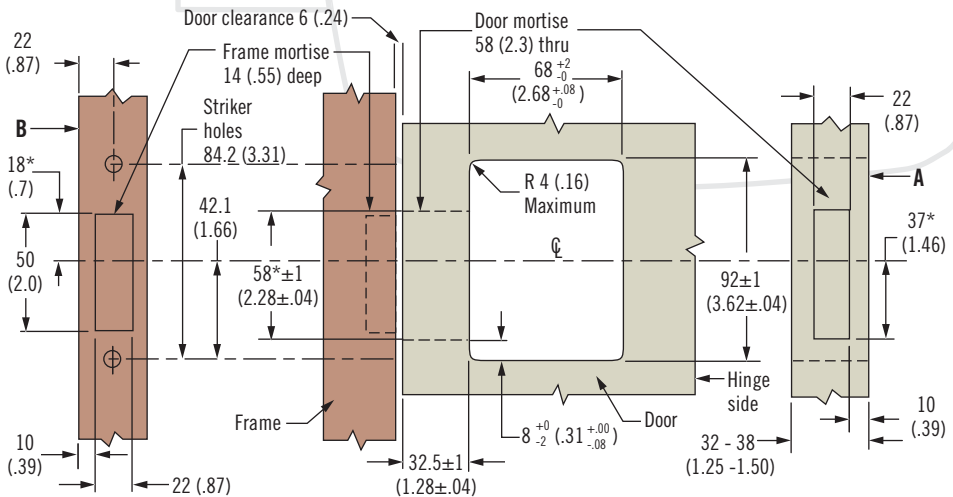
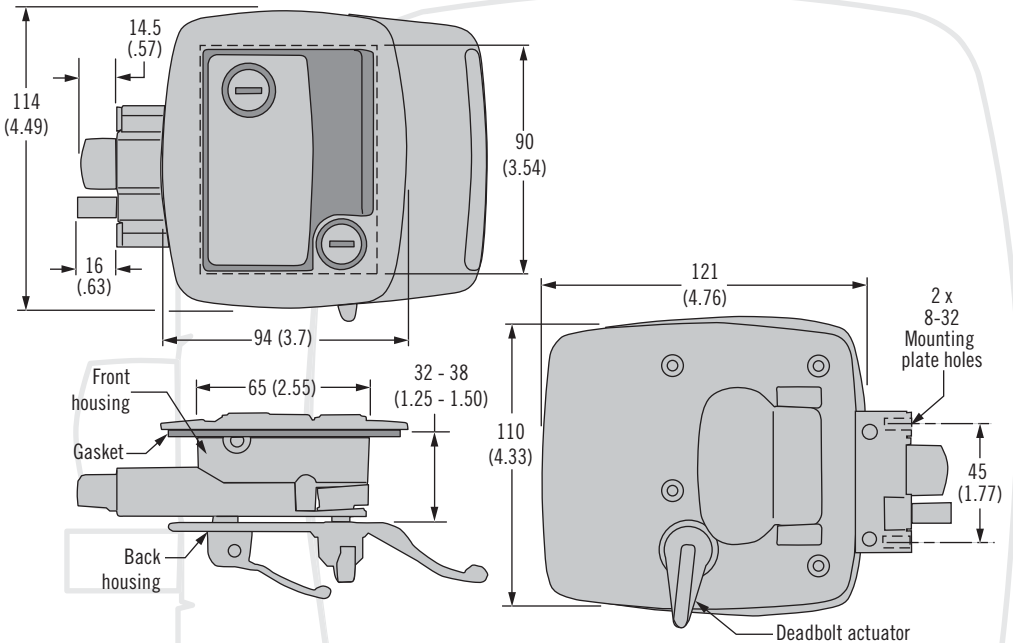
Part number: R3-13-310

Notes

Mounting plate, striker plate and all mounting screws except striker plate screws are provided with each lock set.

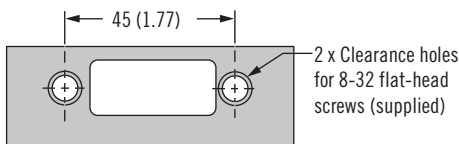
Part Number

See table



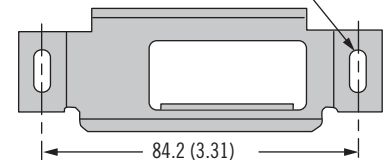
*For left hand mounting mirror the dimensions marked with * by moving them to the other side of the centerline.

Mounting Plate



Striker Plate

2 x Clearance holes for screws (not supplied)



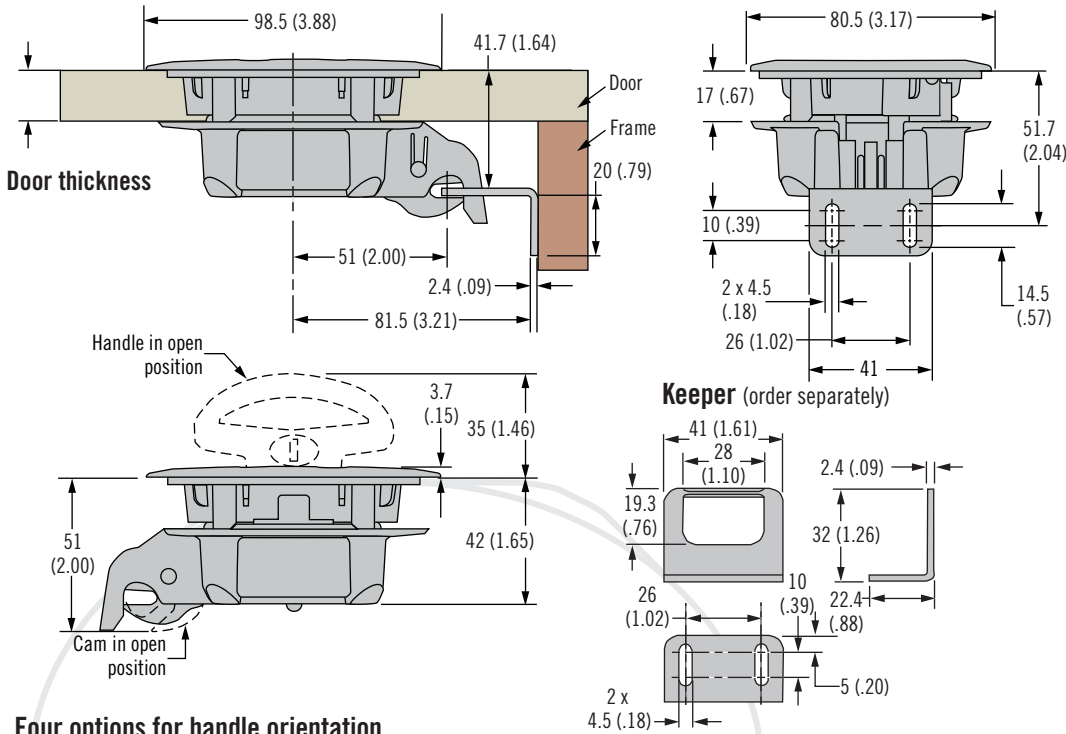
Finish	Latch Part Number
Chrome, polished	R3-10-311-10
Black powder coated	R3-10-311-50
White Powder coated	R3-10-311-70

Part Number	
Mounting plate	R3-13-190
Striker plate	R3-13-180

Dimensions in millimeters (inch) unless otherwise stated

R4 Push-to-Close Latch

Lift-to-open · Flush



- Lift-to-open
- Single hole installation
- Rotary latching

Material and Finish

Glass-filled nylon and acetal, black

Performance Details

Maximum working load:

290 N (65 lbf)

Operating temperature range:

-20°C (0°F) to 65°C (150°F)

Flammability rating: UL94-HB

Installation Notes

Maximum tightening torque on mounting screws 1.4 N·m (12.4 in·lbf)

Accessories

Flat key, keyed alike R001

(2 keys per ring)

Part number: PK-10-01-KR001



Keeper: Part number R4-64-11

Mounting screws (replacement):

Recessed T15 TORX® / Slot M4.2 x 1.4:

Part number: M1-0-33211-24 or R4-0-51779-24

Part Number Selection

Order latch, keeper and spacers separately

See table for spacer width and number required by door thickness

TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC

L Lock-style ← **F** Finish upper housing

0 Non-locking 5 Black

1 Key-locking keyed alike R001 (2 keys supplied) 7 White

D Door Thickness ← **F** Finish lower housing

0 1 to 23.9 (.04 to .94) 5 Black

1 24 to 27 (.94 to 1.1) 7 White

R4 - 60 - 2 L D - F F

Part Number	Spacer Thickness	Door Thickness					
		1 - 4.9 (.04 - .19)	5 - 9.9 (.19 - .39)	10 - 14.9 (.39 - .59)	15 - 19.9 (.59 - .78)	20 - 23.9 (.78 - .94)	24 - 27.9 (.94 - 1.1)
Part Number R4-64-13-1 Spacers Required	4 (.16)	0	1	0	1	0	0
Part Number R4-64-13-2 Spacers Required	8 (.31)	2	1	1	0	0	0



M1 Push-to-Close Latch

Lift-to-open · Flush

- Lift-to-open
- Single hole installation
- Dual sided latching

Material and Finish

Latching slides and mounting bracket:
Glass-filled reinforced nylon, black
Housing and paddle:
Polycarbonate/ABS, black

Performance Details

Maximum working load:
500 N (112 lbf)
Flammability rating: UL94-HB

Installation Notes

Maximum tightening torque on TORX® mounting screws:
1.8 N·m (16 in·lbf)

Accessories

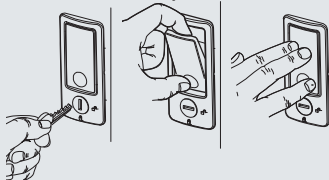
Flat key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01



Overmolded key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01-05

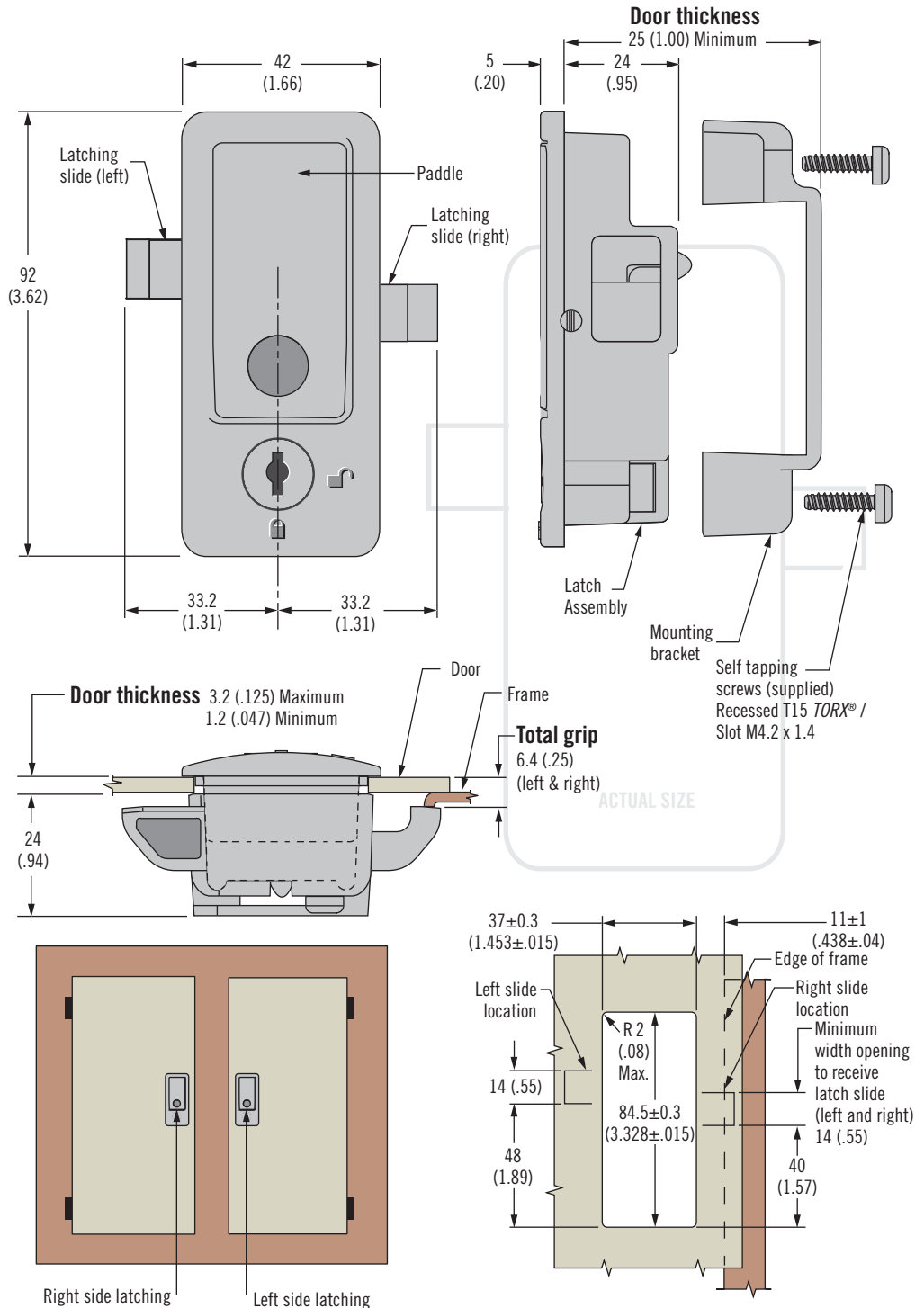


1. Unlock
2. Press and pull to open
3. Push to close



Part Number

See table



Part Number (2 Flat Keys Supplied)	
Right side latching	M1-2F-1-25
Dual side latching	M1-2F-2-25
Left side latching	M1-2F-3-25

TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC

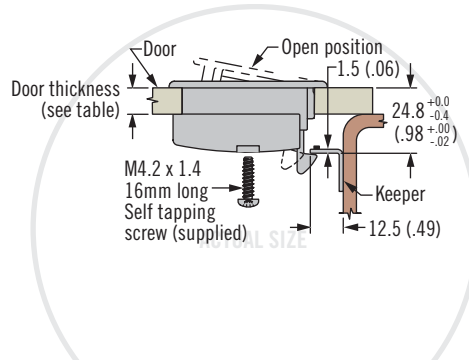
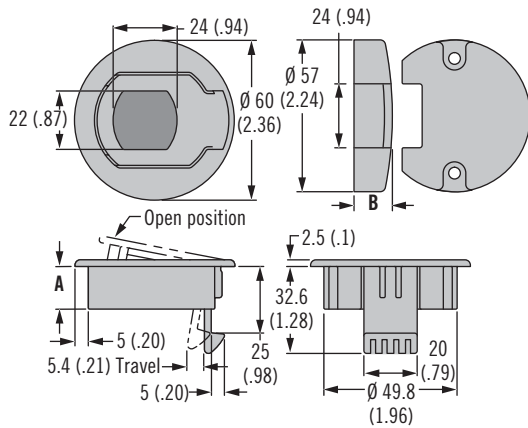
Dimensions in millimeters (inch) unless otherwise stated

M1 Push-to-Close Latch

Lift-to-open · Flush



Mounting Cup



Door Thickness Range	A	B	Part Number
1 - 7 (.04 - .28)	16 (.63)	20.4 (.80)	M1-81
7 - 13 (.28 - .51)	16 (.63)	14.3 (.57)	M1-82
13 - 19 (.51 - .75)	22 (.87)	14.3 (.57)	M1-83

- Low profile
- Non-corrosive and non-conductive

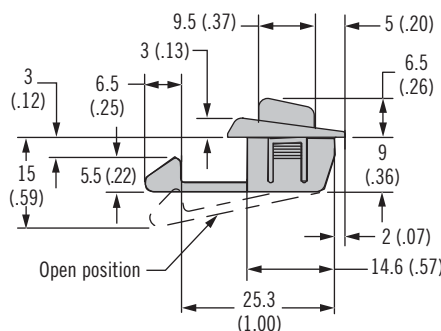
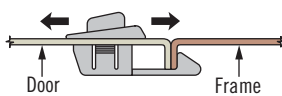
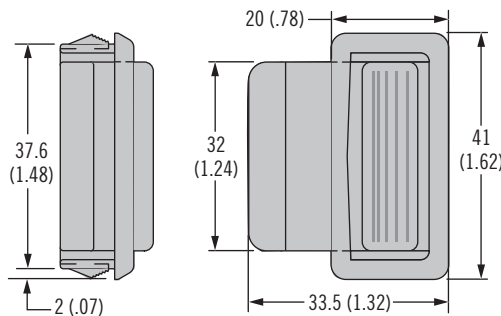
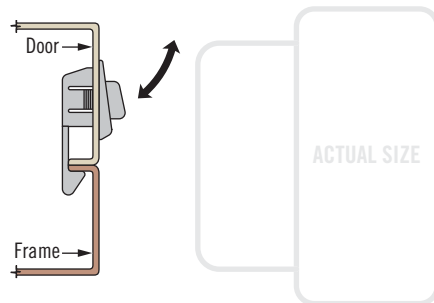
Material and Finish

Latch: Acetal, black

Mounting hardware: Stainless steel

80 Push-to-Close Latch

Push-to-open · Snap-in



Color	Part Number
White	80-201
Black	80-202

- Snap-in installation
- Non-corrosive and non-conductive
- Suitable for sliding or hinged doors

Material and Finish

Acetal, black or white



64 Push-to-Close Latch

Pull-to-open · Paddle latch · Miniature

- Single hole installation
- Concealed mounting
- Plastic slide

Material and Finish

Stainless steel, passivated and brushed finish and glass-filled reinforced nylon, black

Performance Details

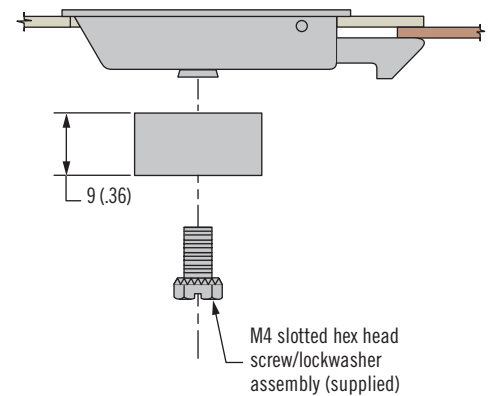
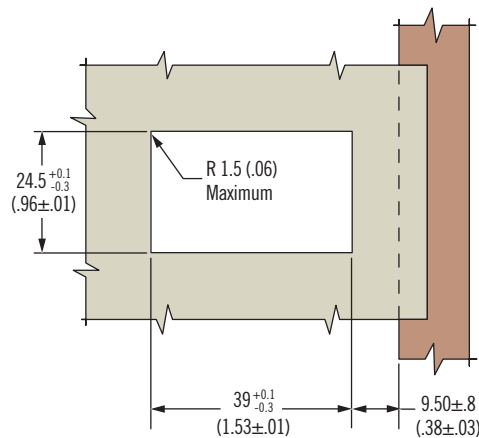
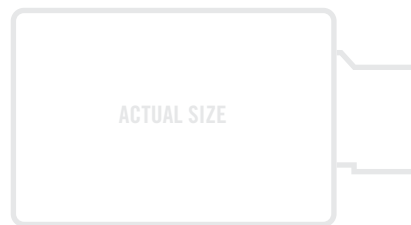
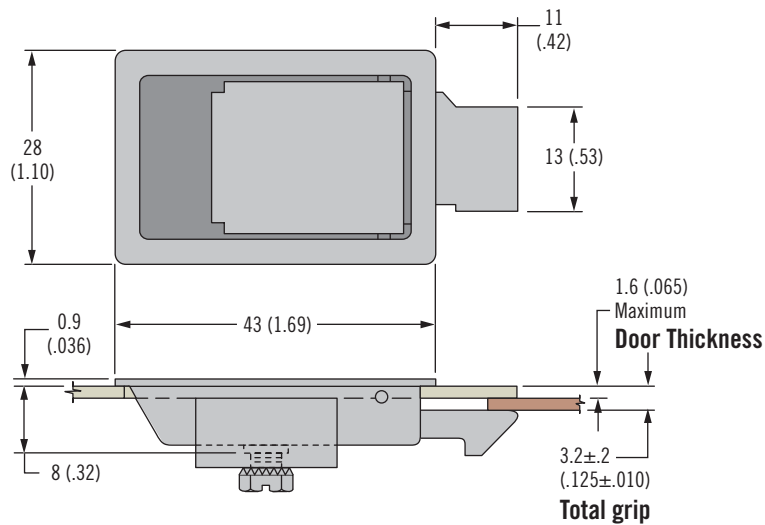
Maximum working load:
90 N (20 lbf)

Operating temperature range:
-18°C (0°F) to 100°C (210°F)

Flammability rating: UL94-V0

Installation Notes

Maximum tightening torque on mounting screws: 0.9 N·m (8 in·lbf)



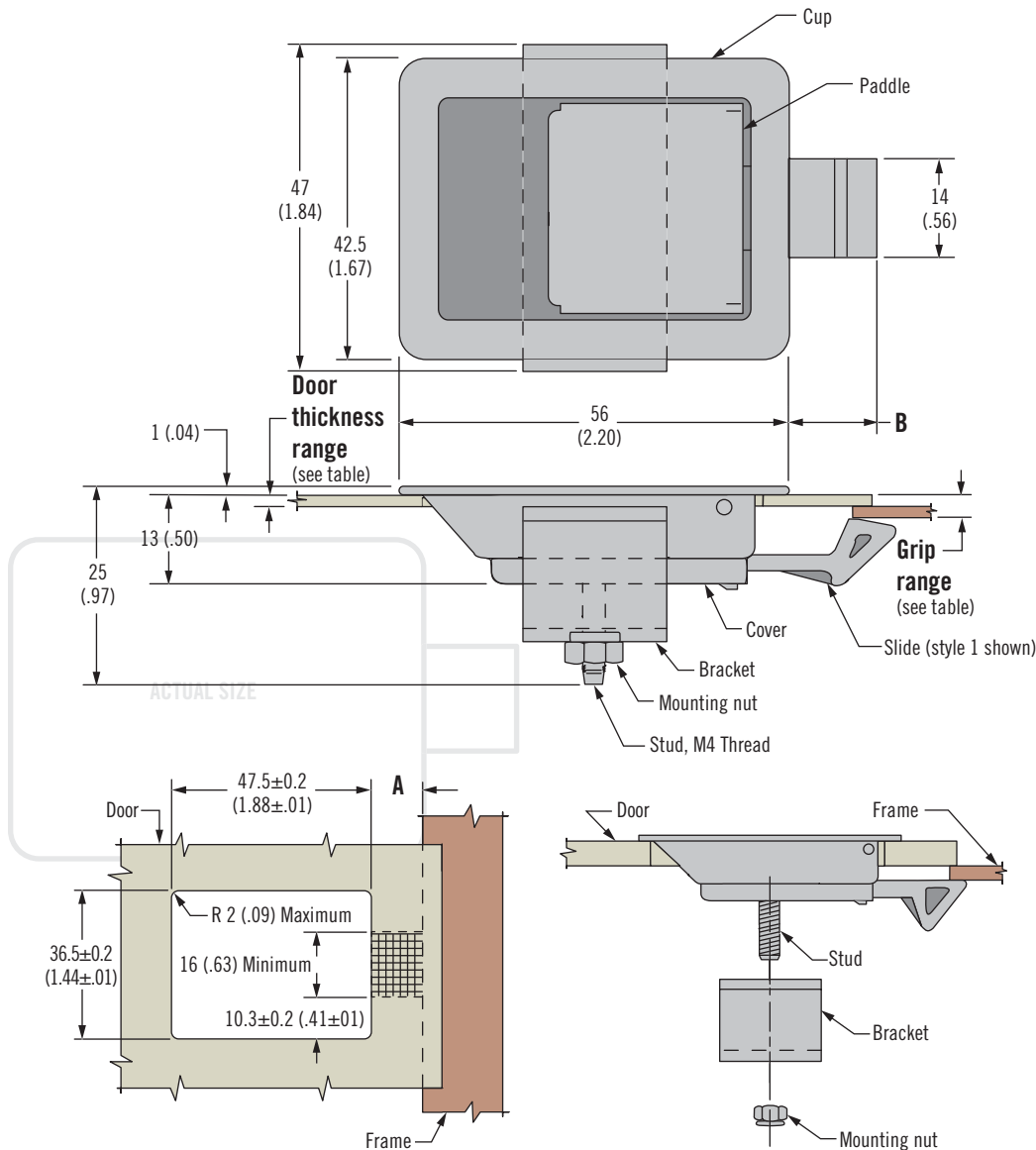
Part Number

See table

Part Number
64-01-10

64 Push-to-Close Latch

Pull-to-open · Paddle latch · Small



- Single hole installation
- Concealed mounting
- Plastic slide

Material and Finish

Stainless steel, passivated and brushed or black powder coated and glass-filled reinforced nylon, natural

Performance Details

Maximum working load:

Style	Max. Static Load N (lbf)
1	130 (30)
2	110 (25)
3	90 (20)
4	70 (15)
5	55 (12)

Operating temperature range:

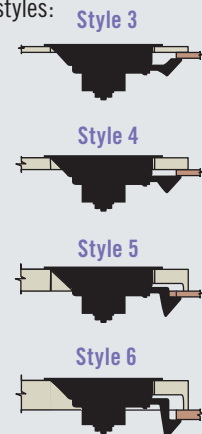
-18°C (0°F) to 100°C (210°F)

Flammability rating: UL94-V0

Installation Notes

Door thickness must not exceed T dimension (see table) in area through which slide will operate. It may be necessary to reduce thickness of door in area indicated by grid.

Slide styles:



Grip Range		Slide Style	A		B	T (See Notes)	Part Number Brushed Finish			
Minimum	Maximum		Min.	Max.			Door Thickness Range			
3.7 (.144)	Maximum	1	10.4 (.41)	12.7 (.50)	12.4 (.49)	1.6 (.063)	64-10-111-50	~	~	~
3.9 - 7.3 (.154 - .288)	Maximum						11.1 - 14.6 (.437 - .576)	18.6 - 22 (.734 - .868)		
6.4 (.250)	Maximum	3	11.9 (.47)	14.2 (.56)	14.2 (.56)	3.2 (.125)	64-10-113-50	64-10-133-50	~	~
6.7 (.27)	Maximum						64-10-124-50	64-10-114-50	~	~
7.1 (.281)	Maximum	4	11.9 (.47)	14.2 (.56)	14.2 (.56)	6.4 (.250)	64-10-125-50	64-10-135-50	64-10-115-50	64-10-115-50
12.3 (.48)	Maximum						64-10-126-50	~	64-10-116-50	64-10-116-50
7.1 (.281)	Maximum	5	11.9 (.47)	14.2 (.56)	14.2 (.56)	7.1 (.281)	64-10-125-50	64-10-135-50	64-10-115-50	64-10-115-50
18.6 (.73)	Maximum						64-10-126-50	~	64-10-116-50	64-10-116-50
7.1 (.281)	Maximum	6	11.9 (.47)	14.2 (.56)	14.2 (.56)	7.1 (.281)	64-10-125-50	64-10-135-50	64-10-115-50	64-10-115-50
18.6 (.73)	Maximum						64-10-126-50	~	64-10-116-50	64-10-116-50

Notes

For an assembly with black powder coated finish change last digit from 0 to 5 - Example: 64-10-111-55



64 Push-to-Close Latch

Pull-to-open · Paddle latch · Small

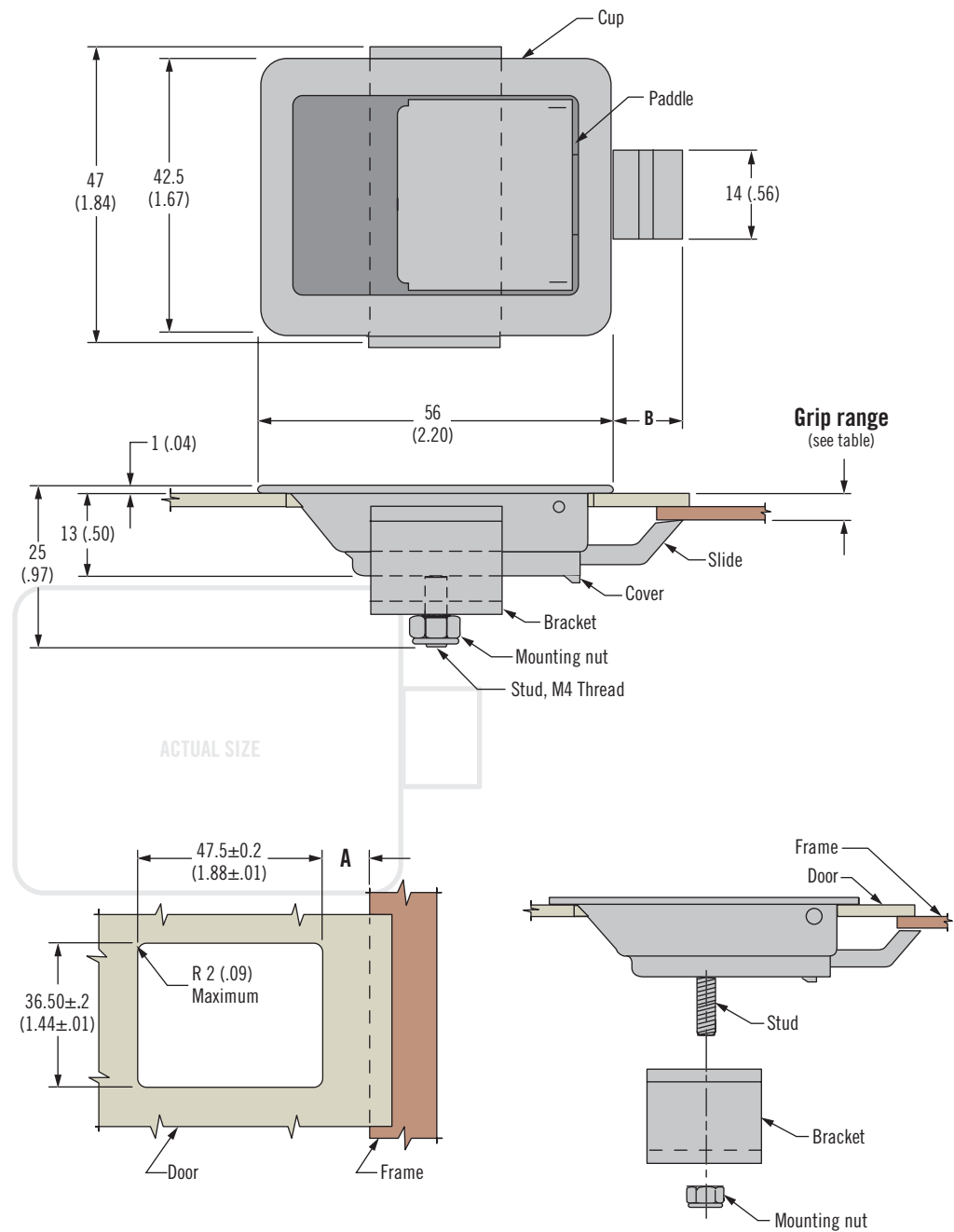
- Single hole installation
- Concealed mounting
- Metal slide

Material and Finish

Stainless steel passivated and brushed or black powder coated, steel, chrome plated

Performance Details

Maximum working load:
222 N (50 lbf)



Part Number

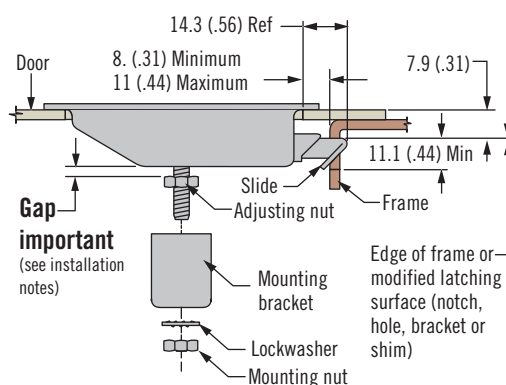
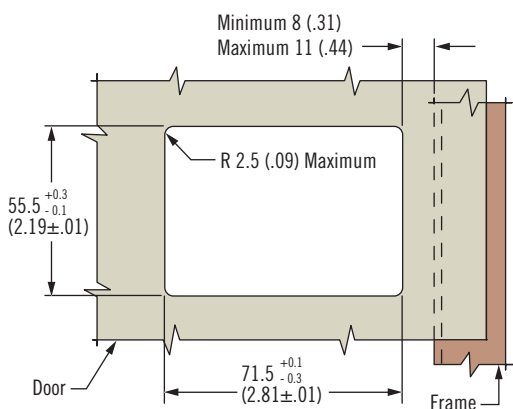
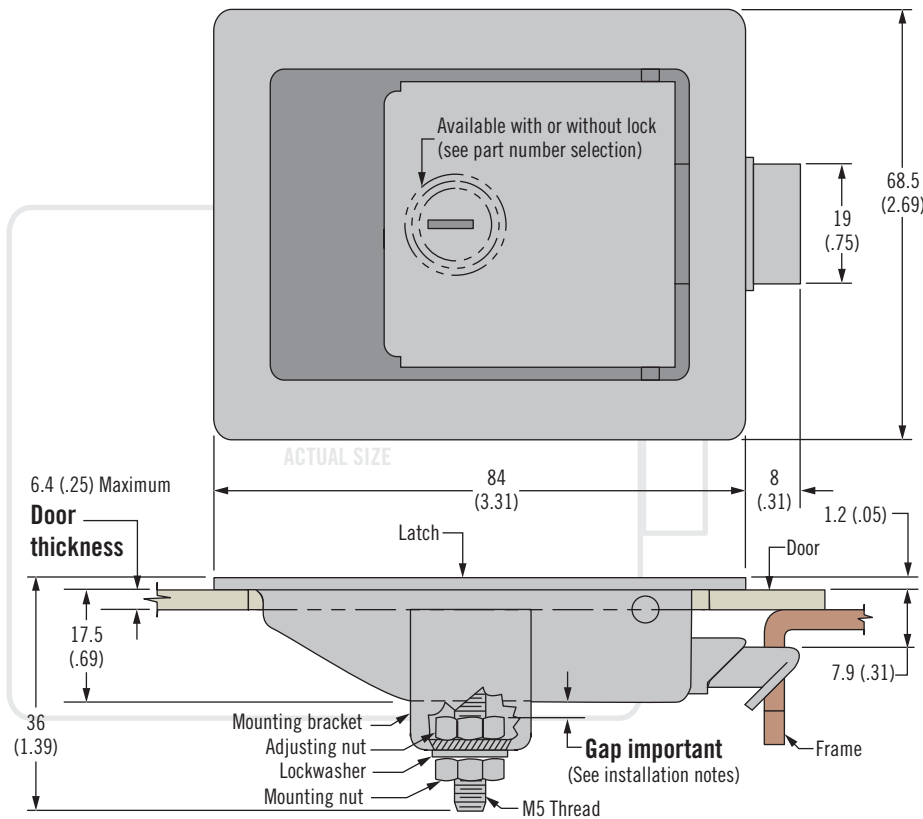
See table

Grip Range		Part Number		A		B
Minimum	Maximum	Stainless Steel, Brushed	Stainless Steel Black Powder coated	Minimum	Maximum	
1.2 (.05)	2 (.08)	64-11-10	64-11-12	10.4 (.41)	12.7 (.50)	11.5 (.45)
2 (.08)	2.8 (.11)	64-11-20	64-11-22	11.2 (.44)	13.5 (.53)	11.9 (.47)
2.8 (.11)	3.6 (.14)	64-11-30	64-11-32	11.9 (.47)	14.2 (.56)	12 (.48)

Dimensions in millimeters (inch) unless otherwise stated

64 Push-to-Close Latch

Pull-to-open · Paddle latch · Medium



- Single hole installation
- Concealed mounting
- Metal slide

Material and Finish

Stainless steel brushed, steel, zinc plated or steel, black powder coated or silver

Performance Details

Maximum working load:
570 N (125 lbf)

Installation Notes

Measure your door thickness and set adjusting nut so that Gap is equal to door thickness within plus 0.8 (.03), minus 0.0 (.00).

Accessories

Flat key, keyed alike H257
(2 keys per ring)
Part number: 64-0-33578

Part Number Selection

64 - 2 **L** - 1 **M**

L Lock style

- 1 Non-locking
- 2 Key-locking keyed alike H257 (2 Flat keys supplied)

M Material

- 0 Stainless steel, brushed
- 1 Steel, black powder coated
- 3 Steel, zinc plated
- 5 Steel, powder coated silver



64 Push-to-Close Latch

Pull-to-open · Paddle latch · Large

- Single hole installation
- Concealed mounting
- Metal slide

Material and Finish

Stainless steel, brushed, steel, zinc plated or steel, black powder coated

Performance Details

Maximum working load:
1110 N (250 lbf)

Installation Notes

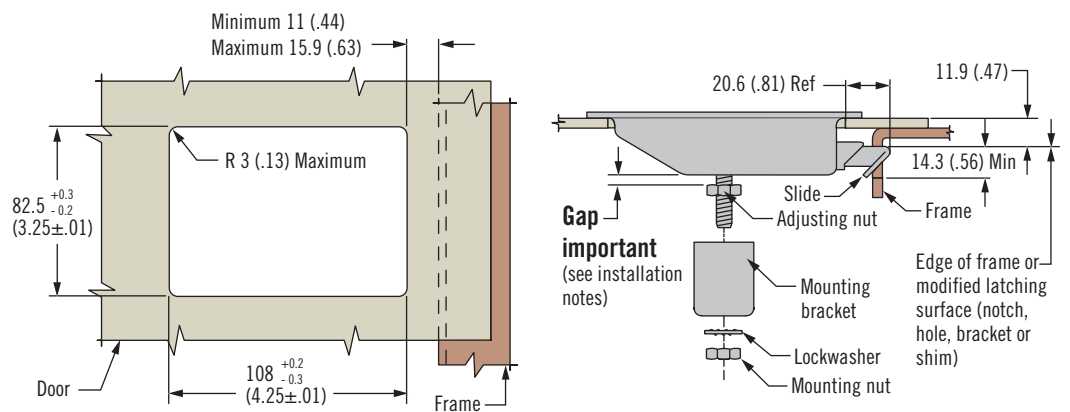
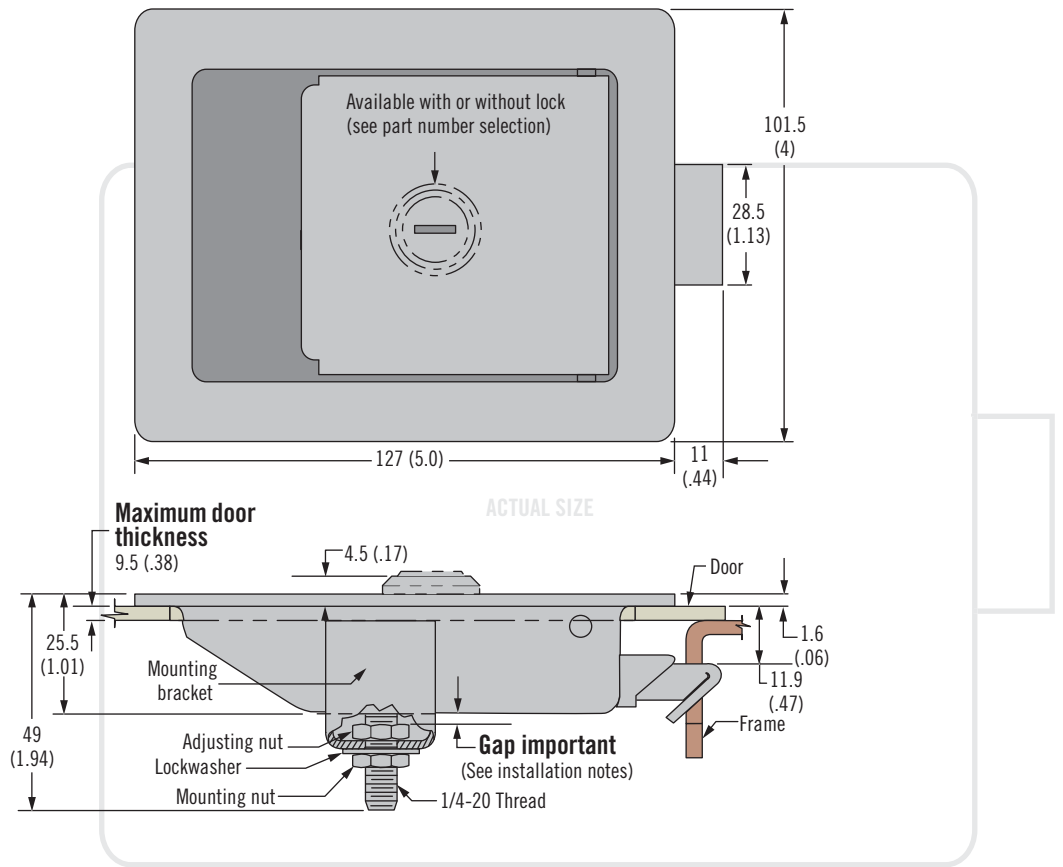
Measure your door thickness and set adjusting nut so that GAP is equal to door thickness within plus 0.8 (.03), minus 0.0 (.00)

Accessories

Flat key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01



Overmolded key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01-05



Part Number Selection



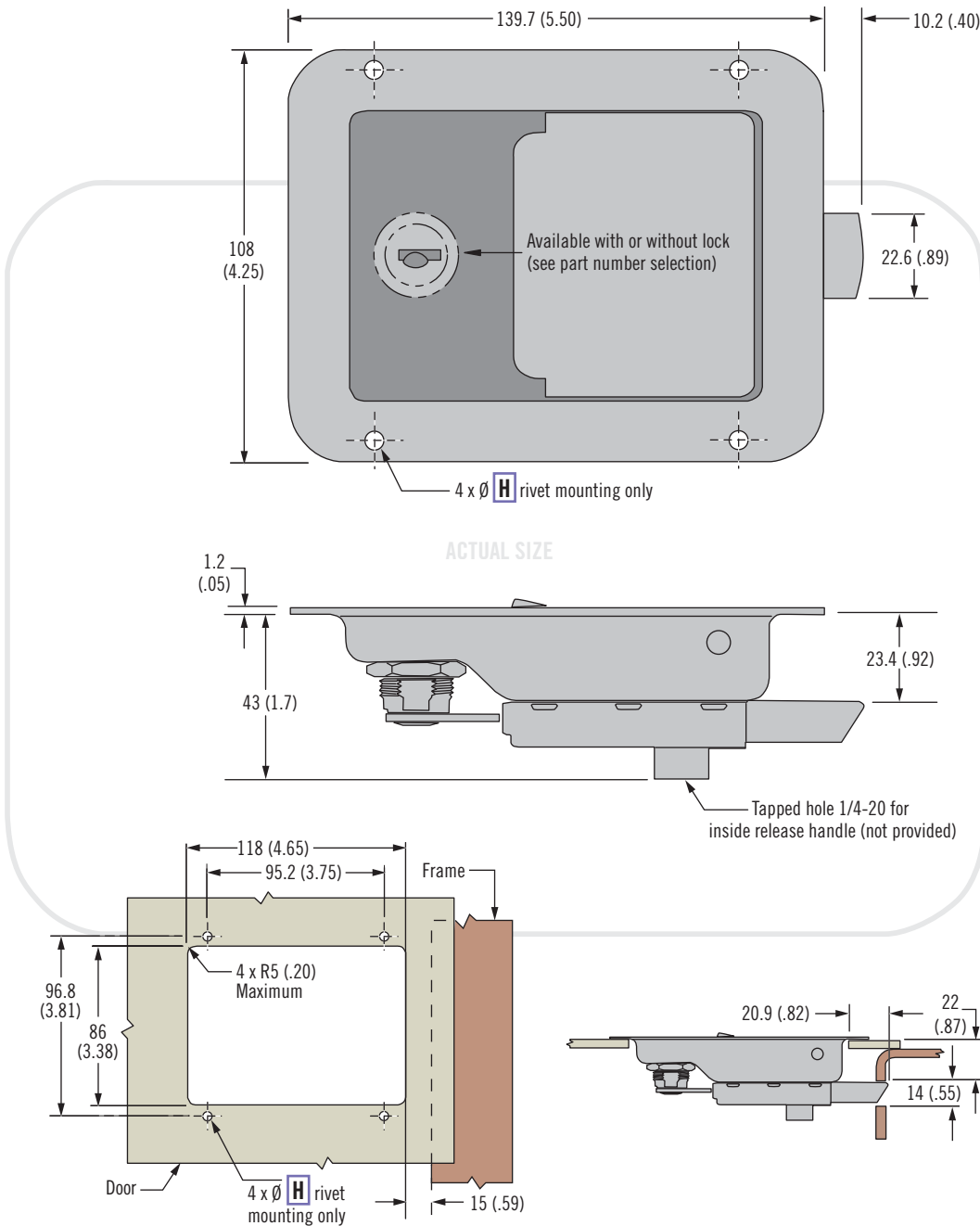
- L** Lock style
- 1 Non-locking
 - 2 Key-locking keyed alike CH751 (2 Flat keys supplied)

- M** Material
- 4 Steel, zinc plated
 - 5 Stainless steel brushed
 - 9 Steel, black powder coated

Dimensions in millimeters (inch) unless otherwise stated

64 Push-to-Close Latch

Pull-to-open · Paddle latch · Large



- Single hole installation
- Multiple mounting styles
- Inside actuation in locked or unlocked position

Material and Finish

Stainless steel, polished, steel, zinc plated or steel, black powder coated

Slide bolt and lock assembly:
Zinc plated or powder coated

Performance Details

Maximum working load:
560 N (125 lbf)

Accessories

Flat key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01



Overmolded key, keyed alike CH751
(2 keys per ring)
Part number: PK-10-01-05



Part Number Selection

64 - 50 - 4 L H - M

- M** Material
- 10 Steel, zinc plated
 - 20 Stainless steel polished
 - 50 Steel, black powder coated

- L** Lock style
- 0 Non-locking
 - 1 Key-locking keyed alike CH751 (2 Flat keys supplied)

- H** Housing
- 0 Weld
 - 1 Rivet through hole 4.9 (.19)
 - 2 Rivet through hole 5.2 (.20)



64 Push-to-Close Actuator

Pull-to-open · Paddle handle actuator · Multi-point · Large

- For use with R4 rotary latches
- Multiple mounting styles

Material and Finish

Stainless steel, polished, steel, zinc plated or black powder coated

Accessories

Flat key, keyed alike CH751 (2 keys per ring)
Part number: PK-10-01

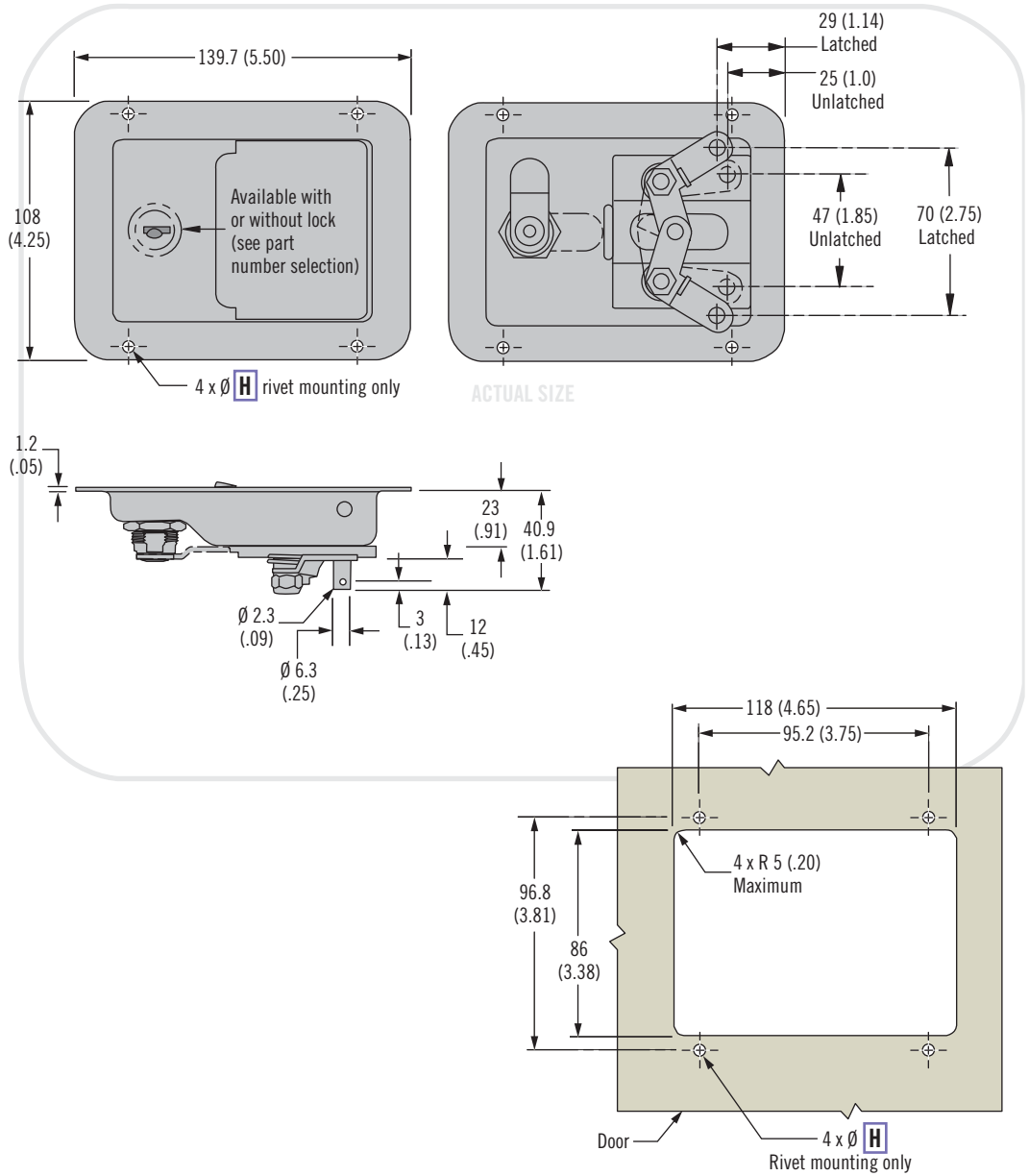


Overmolded key, keyed alike CH751 (2 keys per ring)
Part number: PK-10-01-05

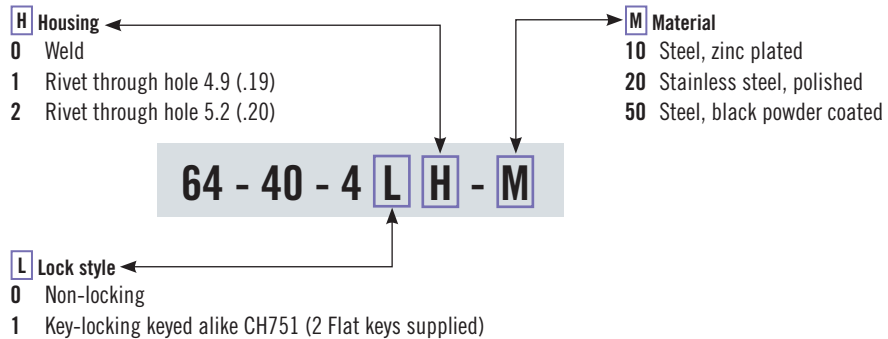


Notes

Contact Southco for recommended cable or rods
For applicable rotary latches see page 254



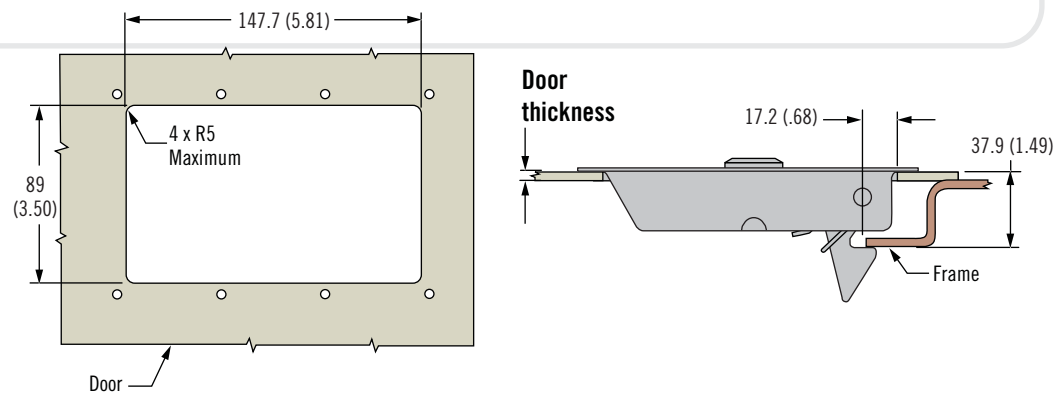
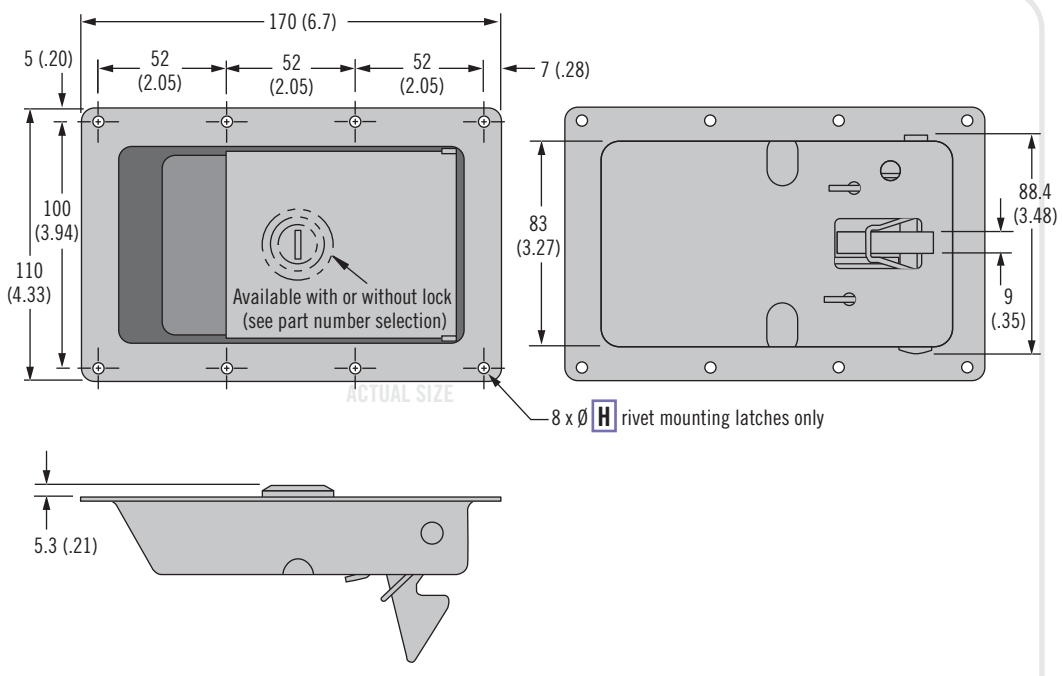
Part Number Selection



Dimensions in millimeters (inch) unless otherwise stated

64 Push-to-Close Latch

Pull-to-open · Paddle latch · Heavy-duty pivot



- Robust design resists binding from dirt and debris
- Multiple mounting styles

Material and Finish

Steel, zinc plated or black powder coated

Slide bolt and lock assembly:
Zinc plated or powder coated

Performance Details

Maximum working load:
2700 N (607 lbf)

Accessories

Flat key, keyed alike 14603
(2 keys per ring)
Part number: PK-10-01-14603



Part Number Selection

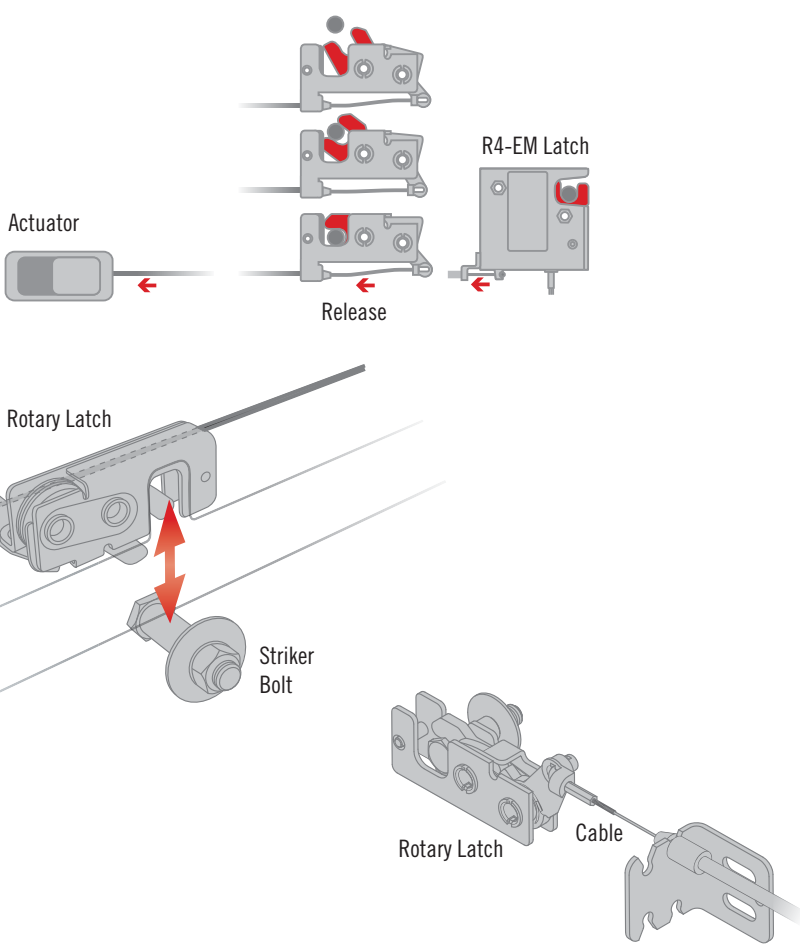
64 - 60 - 5 L H - M

- L Lock style**
 - 0 Non-locking
 - 1 Key-locking keyed alike 14603 (2 Flat keys supplied)
- H Housing**
 - 0 Weld
 - 1 Rivet through hole 4.9 (.19)
 - 2 Rivet through hole 5.2 (.20)
- M Material**
 - 10 Steel, zinc plated
 - 50 Steel, black powder coated

ROTARY LATCH SYSTEMS

THE SYSTEM: A UNIQUE, COMPLETE ROTARY LATCH SOLUTION

When choosing a remote access rotary latching system, it is important to select a solution that has been designed with three distinct components: rotary latch, cable and actuator. Southco's rotary latch system uses these three components to create remote, manual actuation suitable for a variety of application needs. To operate the system, the end user simply triggers the actuator and the attached cable activates the rotary latch, allowing the door or panel to open. The door closes just as easily, with simple push-to-close operation.



ROTARY LATCHES

Pages 256 - 263

Southco offers a full range of robust, concealed latches.

- Electronic and manual access options
- Available in four sizes
- Rugged steel construction provides reliable performance, stainless steel option
- Heavy-duty styles comply with FMVSS standards
- Two stage engagement for added protection against false latching



R4-10

R4-20

R4-30

R4-50



R4-EM-1&2

R4-10

ACTUATORS

Pages 264 - 271

Actuators are available in a wide variety of designs, materials and finishes for interior and exterior applications.

- Key locking options
- Single point and multipoint actuation
- Suitable for mechanical override when used in conjunction with Southco's Electronic Access Solutions (EAS)



AC-10

AC-15

AC-30

AC-40



AC-50

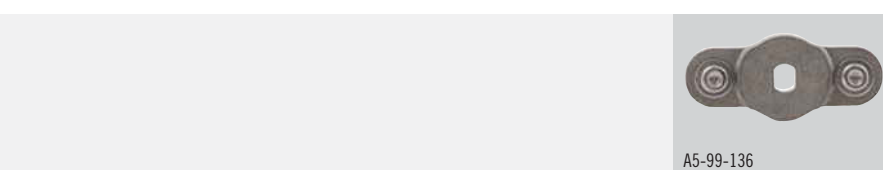
AC-75

CABLES AND MOUNTING HARDWARE

Pages 272 - 275

Cables are used to connect the actuators to the latch and allow release of latch.

- Suits "straight line" and "routed" applications
- Mounting hardware to allow for flexibility in applications



A5-99-136

R4-0-43922

Mounting Bracket



Rotary Latch Systems

Rotary latches overview

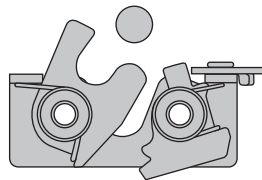
Southco offers a complete line of rotary latches, actuators and cables across a range of sizes and strengths for direct, remote or multi-point actuation. Our complete system makes the specification of all components easy for our customers and offers a broad range of benefits:

- The FMVSS-206 compliant heavy-duty rotary latches are suitable for passenger entry doors
- The double rotor feature of the R4-50 heavy-duty latch accommodates misalignment between the latch and striker bolt
- The hardened steel cam and trigger assemblies promote long-term, reliable performance even in applications that will endure harsh environments
- The two-stage engagement provides positive latching at very low closing forces even when the door is not fully closed

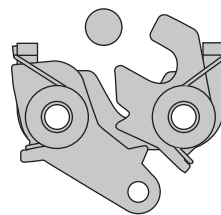


Rotary Latch Styles

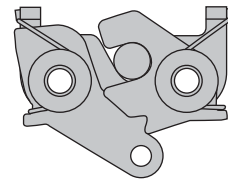
Single Rotor



Single Stage

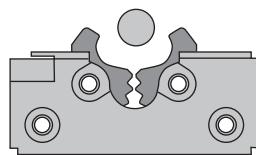


Unlatched Position

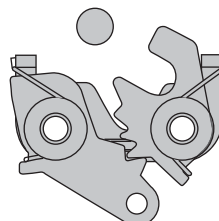


Fully Latched Position

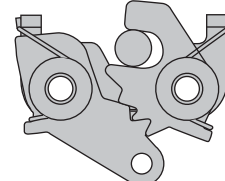
Double Rotor



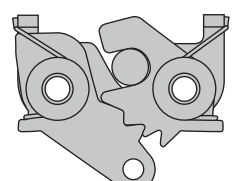
Two Stage



Unlatched Position







Secondary Latched Position

















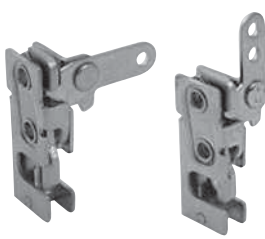
Fully Latched Position

Dimensions in millimeters (inch) unless otherwise stated

Selection guide • Rotary latches and actuators

Rotary Latches	Product Family	Maximum Working Load Rating	Single or Double Rotor	Single or Two Stage	Features	Applications	Industries	Page
Non-FMVSS Compliant	 R4-10	Light-duty	Single rotor	Single and two stage	Compact, flexible actuation styles, light-duty, economical	Engine covers, baggage doors, access panels, tool boxes	Off-highway, agricultural, truck, bus, recreational vehicles, industrial equipment, enclosures	256 -259
	 R4-20	Medium-duty	Single rotor	Single and two stage	Compact, flexible actuation styles, medium-duty, economical	Engine covers, baggage doors, access panels, tool boxes	Off-highway, agricultural, truck, bus, recreational vehicles, industrial equipment, enclosures	262
FMVSS Compliant	 R4-30	Heavy-duty	Single rotor	Two stage	Significant accommodation for misalignment between the latch and keeper, heavy-duty	Entry doors, engine covers baggage doors, large access panels	Off-highway, agricultural, truck, bus, recreational vehicles, industrial equipment	260 - 261
	 R4-50	Heavy-duty	Double rotor	Two stage	Maximum accommodation for misalignment between the latch and keeper, heavy-duty	Entry doors, engine covers, baggage doors, large access panels	Off-highway, agricultural, truck, bus, recreational vehicles, industrial equipment	263

Actuators	Product Family	Description	Sealed / Non-Sealed	Locking / Non-Locking	Recommended Rotary Latch	Page
Single Point	 AC-15	Surface mount actuator	Sealed	Non-locking/locking	All	265
	 AC-50	Squeeze handle	Non-sealed	Non-locking	All	270
	 AC-60	T-handle cable actuator	Non-sealed	Non-locking	R4-10, R4-20, R4-30	268
	 AC-70	Aluminum paddle cable actuator	Non-sealed	Non-locking	R4-10, R4-20, R4-30	268
	 AC-75	Plastic paddle cable AC actuator	Non-sealed	Non-locking	R4-10, R4-20, R4-30	269
	 AC-80	Push-button cable actuator	Non-sealed	Non-locking	R4-10, R4-20, R4-30	269
	 AC-M1	Flush paddle actuator	Non-sealed	Non-locking/locking	R4-10, R4-20, R4-30	271
Multi-Point	 AC-10	Flush mount actuator	Sealed	Locking	All	264
	 AC-20	Paddle entry actuator	Sealed	Locking	All	--
	 AC-30	Push-button entry actuator	Sealed	Locking	All	266
	 AC-40	Push-button handle entry actuator	Sealed	Locking	All	267
	 R3-20	Push-to-close latch	Sealed	Locking	All	238
	 64-40	Paddle actuator	Non-sealed	Locking	R4-10, R4-20, R4-30	250
	 E5	Push-to-close, two point	Non-sealed	Non-locking/locking	R4-10, R4-20, R4-30	128



R4 Rotary Latch

Mini · Concealed · Single and two stage

- Single or multi-point latch capability
- Compatible with wide array of actuators
- EN 45545-3 E60 Compliant (For standard version only)
- Integrated bumper version for anti-vibration feature

Material and Finish

Steel, zinc plated or 304 stainless steel, passivated

Performance Details

Average ultimate load: 4600 N (1100 lbf)

Installation Notes

See page 259

Accessories

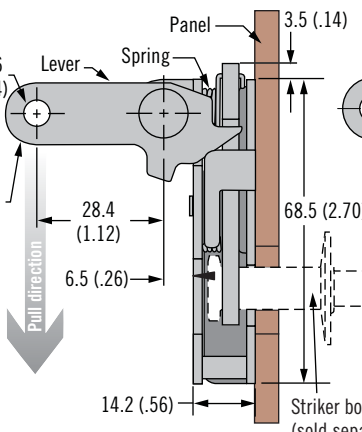
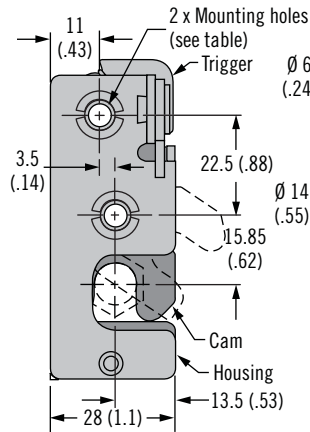
Striker bolt see page 259

Cables and retainer clips see pages 272-275

Notes

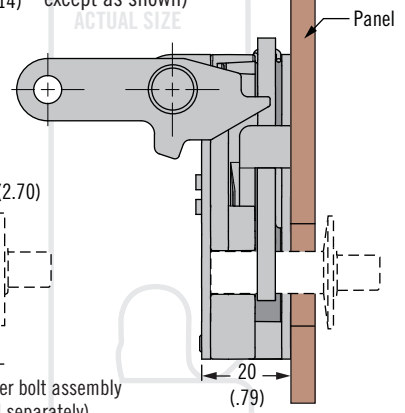
Electromechanical rotary latch available see page 23

Single Stage - Perpendicular (left hand actuation shown)

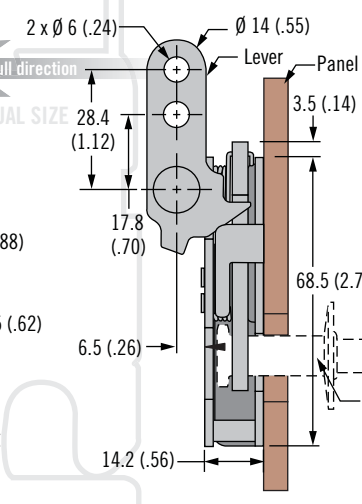
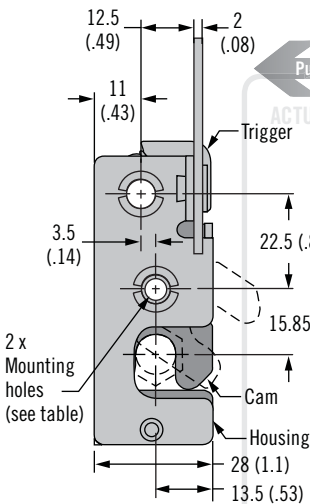


Integrated Bumper Version

(dimensions same as standard version except as shown)

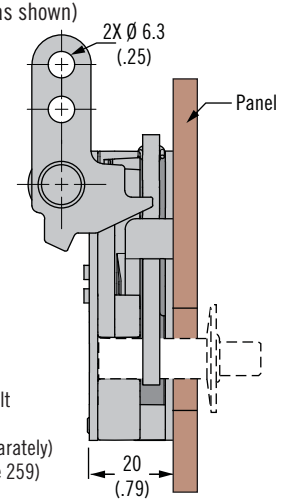


Single Stage - In-Line (left hand actuation shown)

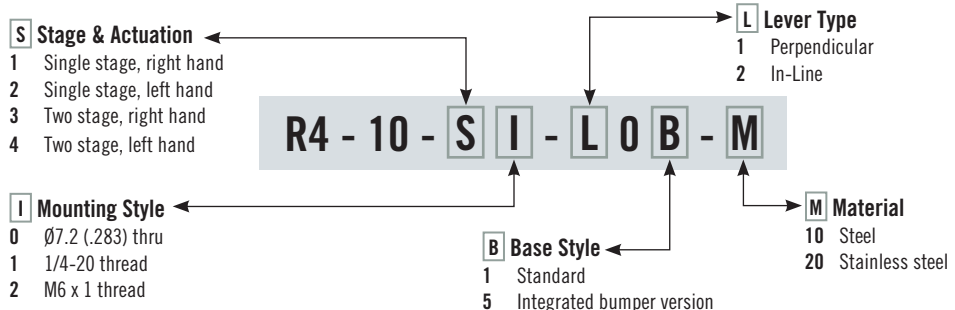


Integrated Bumper Version

(dimensions same standard version except as shown)



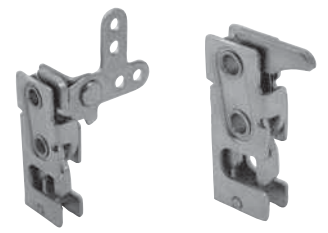
Part Number Selection



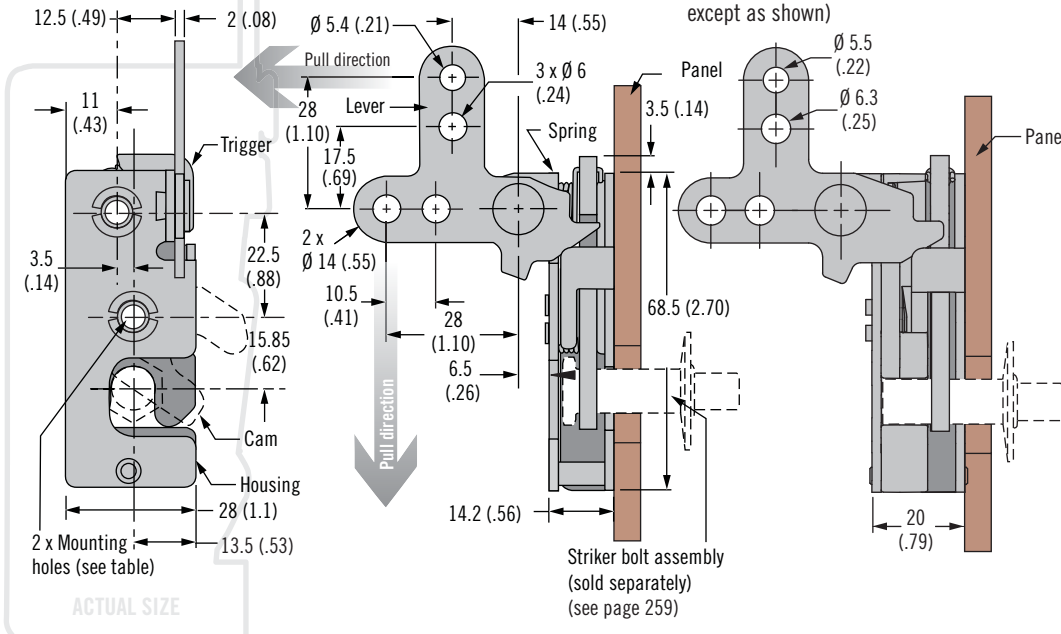
Dimensions in millimeters (inch) unless otherwise stated

R4 Rotary Latch

Mini · Concealed · Single and two stage



Single Stage - Two Point (left hand actuation shown)



Integrated Bumper Version (dimensions same as standard version except as shown)

- Single or multi-point latch capability
- Compatible with wide array of actuators
- EN 45545-3 E60 Compliant (For standard version only)
- Integrated bumper version for anti-vibration feature

Material and Finish

Steel, zinc plated or 304 stainless steel, passivated

Performance Details

Average ultimate load
Steel: 4600 N (1100 lbf)
Stainless Steel: 4000 N (900 lbf)

Installation Notes

See page 259

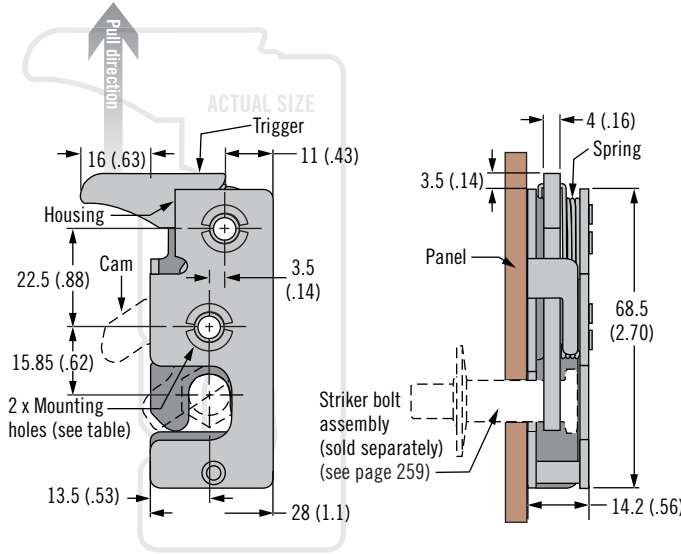
Accessories

Striker bolt see page 259
Cables and retainer clips see page 272-275

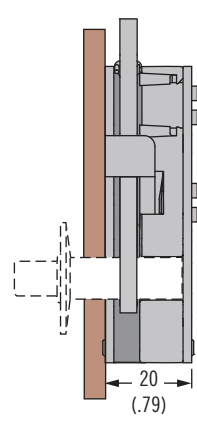
Notes

Electromechanical rotary latch available see page 23

Single Stage - Hand Actuation



Integrated Bumper Version (dimensions same as standard version except as shown)



Part Number Selection

S Stage & Actuation

- 1 Single stage, right hand
- 2 Single stage, left hand
- 3 Two stage, right hand
- 4 Two stage, left hand

L Lever Type

- 3 Two point
- 4 Hand actuation

I Mounting Style

- 0 Ø7.2 (.283) thru
- 1 1/4-20 thread
- 2 M6 x 1 thread

B Base Style

- 1 Standard
- 5 Integrated bumper version

M Material

- 10 Steel
- 20 Stainless steel

R4 - 10 - S I - L O B - M





R4 Rotary Latch

Mini · Concealed · Single and two stage

- Single or multi-point latch capability
- Compatible with wide array of actuators
- EN 45545-3 E60 Compliant (For standard version only)
- Integrated bumper version for anti-vibration feature

Material and Finish

Steel, zinc plated or 304 stainless steel, passivated

Performance Details

Average ultimate load
 Steel: 4600 N (1100 lbf)
 Stainless steel: 4000 N (900 lbf)

Installation Notes

See page 259

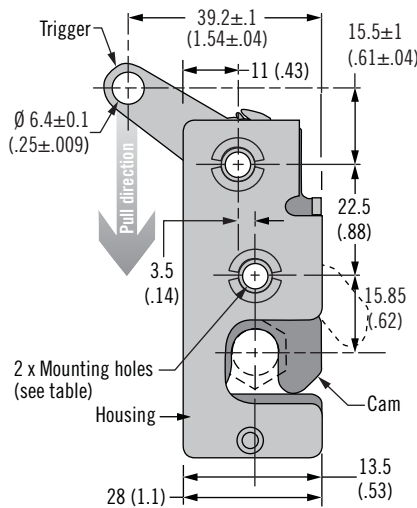
Accessories

Striker bolt see page 259
 Cables and retainer clips see pages 272-275

Notes

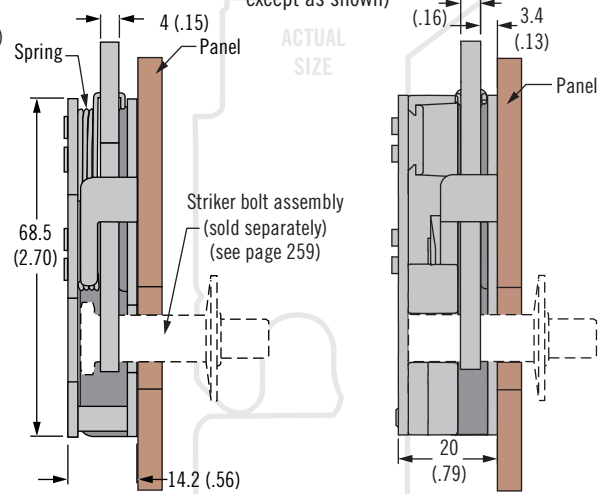
Electromechanical rotary latch available see page 23

Single Stage - Bottom (left hand actuation shown)

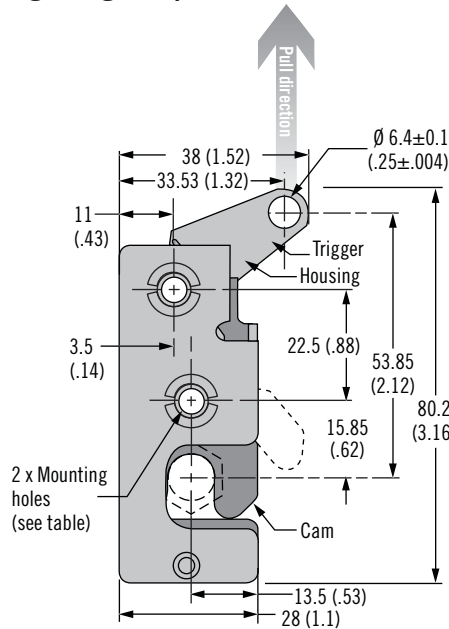


Integrated Bumper Version

(dimensions same as standard version except as shown)

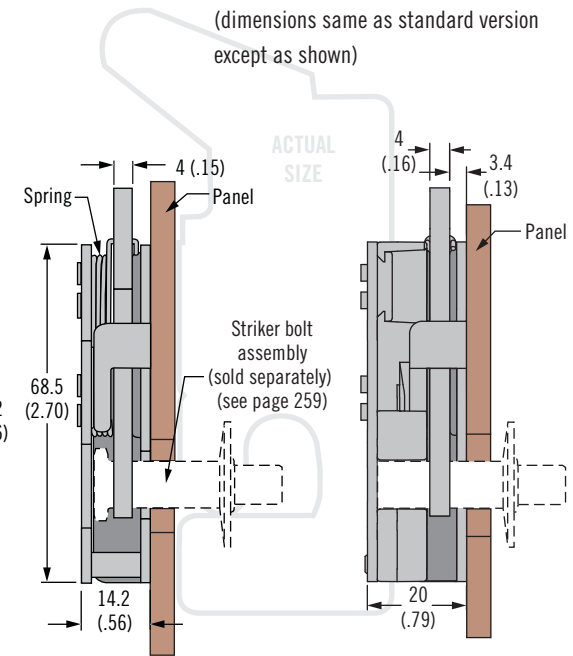


Single Stage - Top (left hand actuation shown)



Integrated Bumper

(dimensions same as standard version except as shown)



Part Number Selection

S Stage & Actuation

- 1 Single stage, right hand
- 2 Single stage, left hand
- 3 Two stage, right hand
- 4 Two stage, left hand

L Lever Type

- 5 Bottom
- 6 Top

I Mounting Style

- 0 Ø7.2 (.283) thru
- 1 1/4-20 thread
- 2 M6 x 1 thread

B Base Style

- 1 Standard
- 5 Integrated bumper version

M Material

- 10 Steel
- 20 Stainless steel

R4 - 10 - S I - L O B - M

Dimensions in millimeters (inch) unless otherwise stated

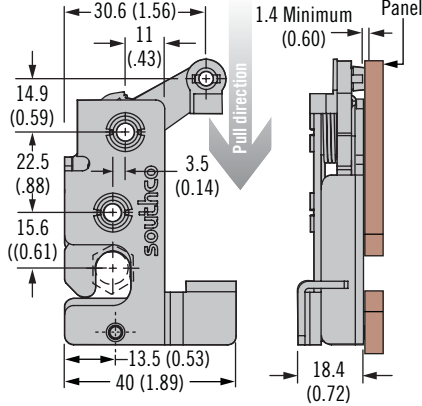


R4 Rotary Latch

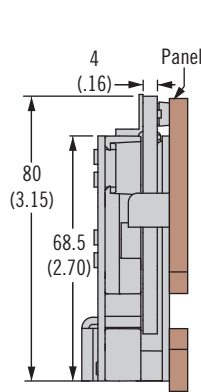
Integrated Cable Mounting Bracket · Stainless Steel
Mini · Concealed · Single stage

Single Stage - Top

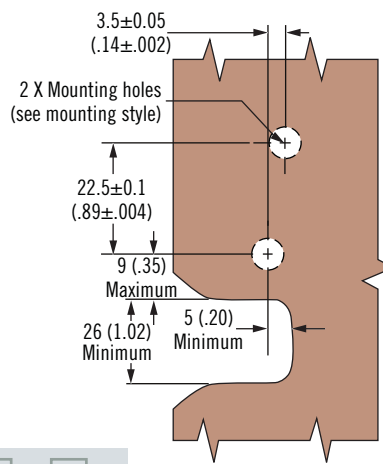
(left hand actuation shown)



Integrated Bumper Version



Panel Preparation



R4 - 10 - S I - 50 B - M

S Stage & Actuation

- 1 Single stage, right hand
- 2 Single stage, left hand

I Mounting Style

- 0 $\varnothing 7.2$ (.283) thru
- 1 1/4-20 thread
- 2 M6 x 1 thread

B Base Style

- 2 Standard
- 6 Integrated bumper version

M Material

- 10 Steel
- 20 Stainless steel

Material and Finish

304 stainless steel

Performance Details

Average ultimate load:
4000 N (900 lbf)

Accessories

- Striker bolt
- Cables and retainer clips

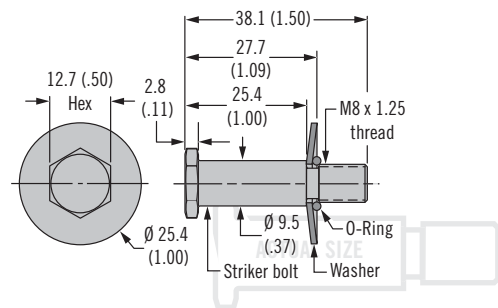
R4 Rotary Latch

Striker bolt · Mini · Installation



Striker Bolt Assembly - Standard

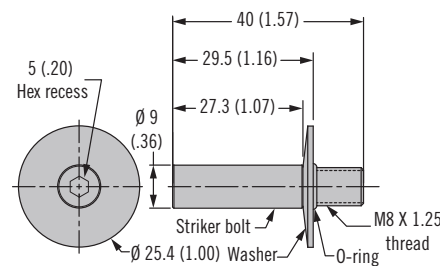
(sold separately)



Striker Bolt Part Number - Standard	
Part Number	Material
R4-90-121-10	Steel
R4-90-121-20	Stainless Steel
Striker Bolt Part Number - Integrated Bumper Version	
R4-90-124-10	Steel
R4-90-124-20	Stainless Steel

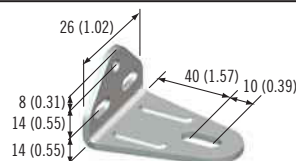
Striker Bolt Assembly - Integrated Bumper

(sold separately)



Striker 90° Mounting Bracket

Striker Mounting Bracket Part Number
R4-0-50114

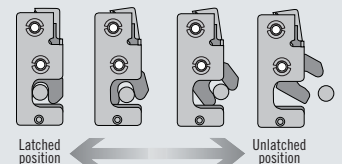


- Striker bolt for R4-10 series rotary latch

Material and Finish

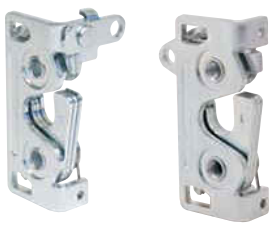
Steel, zinc plated or stainless steel

Operation



Part Number

See table



R4 Rotary Latch

Large · Concealed · Two stage

- Single or multi-point latch capability
- Compatible with wide array of actuators
- FMVSS 206 compliant
- EN 45545-3 E60 Compliant

Material and Finish

Steel, zinc plated or stainless steel

Performance Details

Average ultimate load:
 10675 N (2400 lbf) as shown
 14230 N (3200 lbf) with support bracket. Contact Southco for more information

Installation Notes

See page 261

Accessories

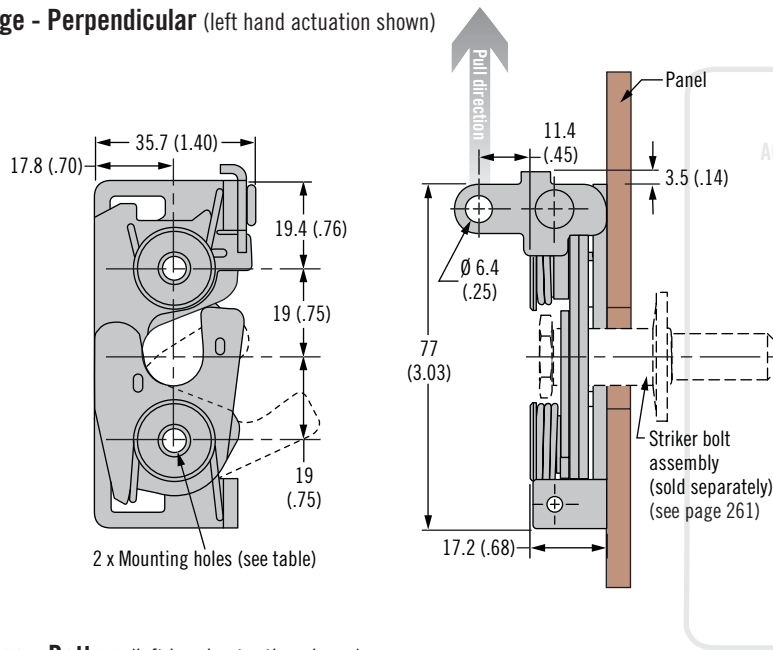
Striker bolt see page 261

Cables and retainer clips see pages 272-275

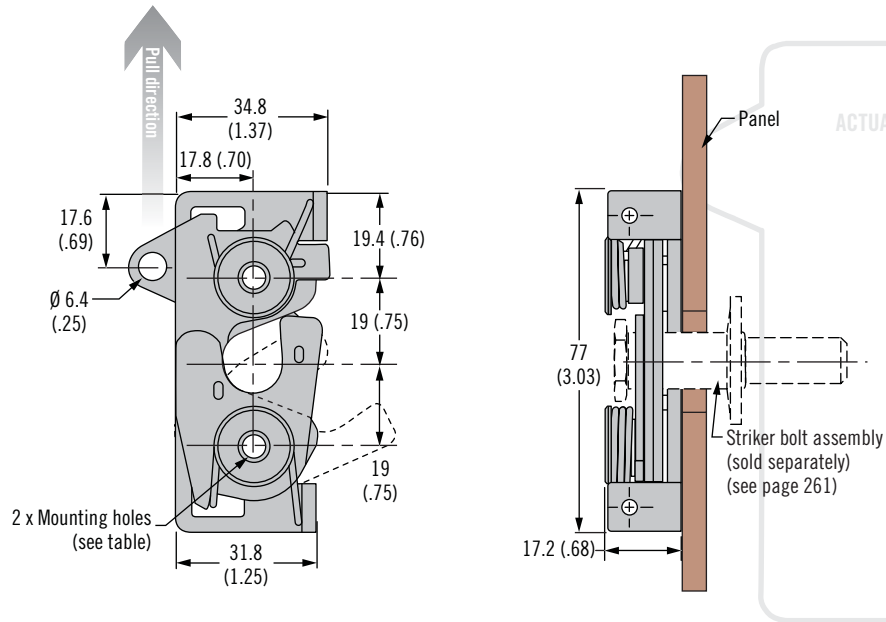
Notes

Electromechanical rotary latch available see page 23

Two Stage - Perpendicular (left hand actuation shown)



Two Stage - Bottom (left hand actuation shown)



Part Number Selection

S Stage & Actuation
 3 Two stage, right hand
 4 Two stage, left hand

L Lever Type
 1 Perpendicular
 3 Two point
 5 Bottom

I Mounting Style
 0 Ø7.2 (.283) thru
 1 1/4-20 thread
 2 M6 x 1 thread

M Material
 10 Steel
 20 Stainless steel

R4 - 30 - S I - L 0 1 - M

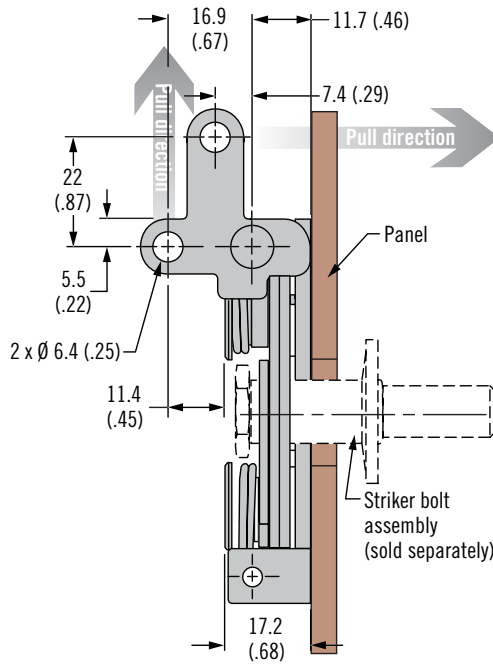
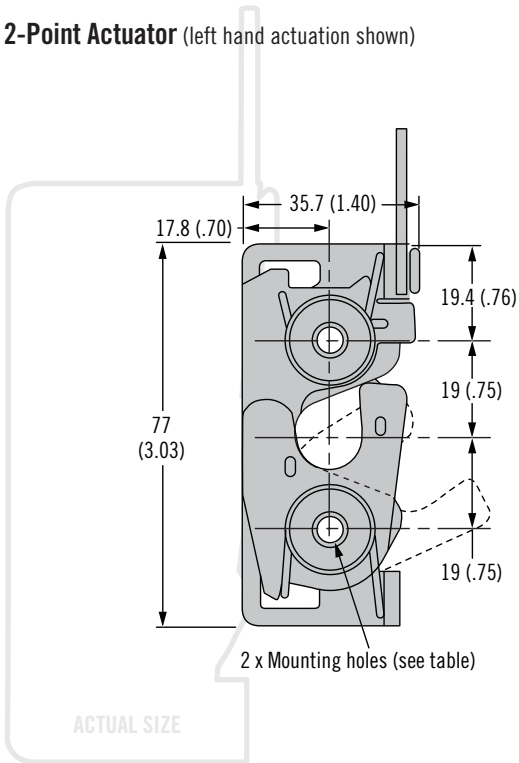
Dimensions in millimeters (inch) unless otherwise stated

R4 Rotary Latch

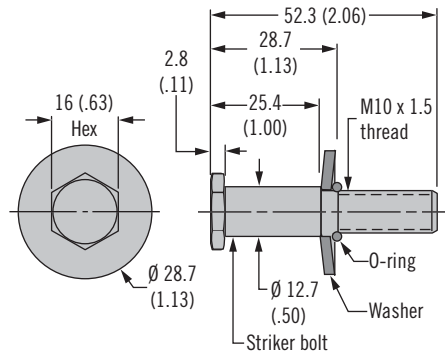
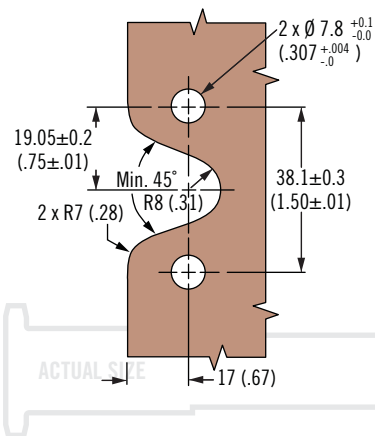
Large · Concealed · Two stage



2-Point Actuator (left hand actuation shown)



Striker Bolt Assembly (sold separately)

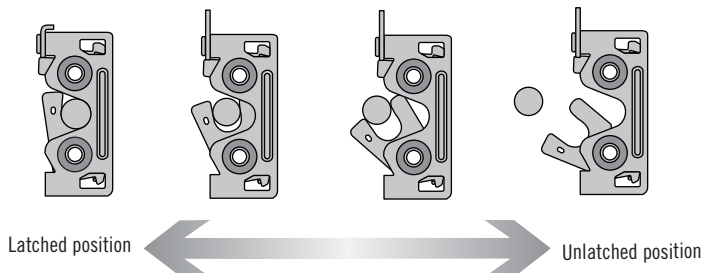


Striker Bolt Assembly Part Number

See table

Striker Bolt Part Number	
Part Number	Material
R4-90-321-10	Steel
R4-90-321-20	Stainless Steel

Operation





R4 Rotary Latch

Medium · Concealed · Single and two stage

- Single or multi-point latch capability
- Compatible with wide array of Actuators
- EN 45545-3 E60 Compliant

Material and Finish

Steel, zinc plated

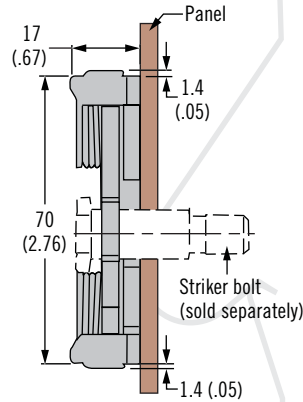
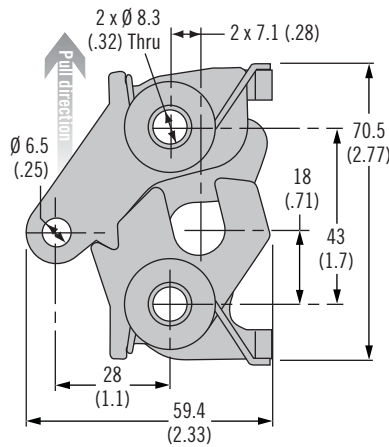
Accessories

Cables and retainer clips see pages 272-275

Notes

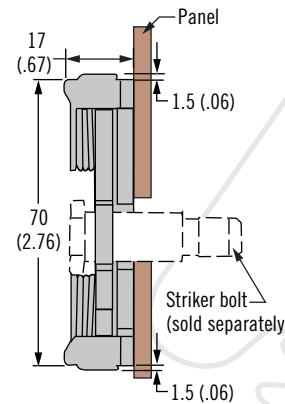
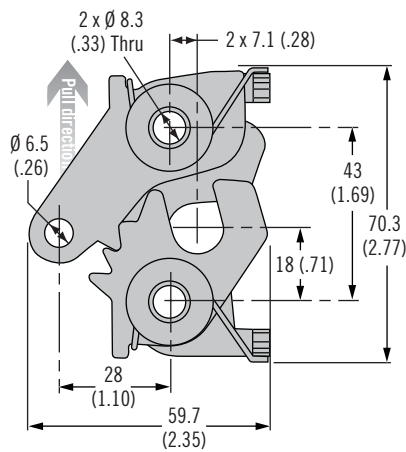
Electromechanical rotary latch available see page 23

Single Stage (left hand actuation shown)

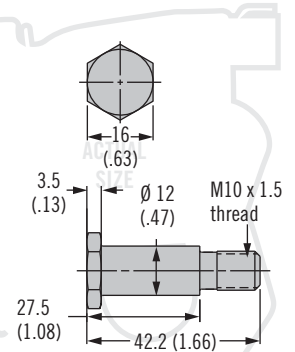


ACTUAL SIZE

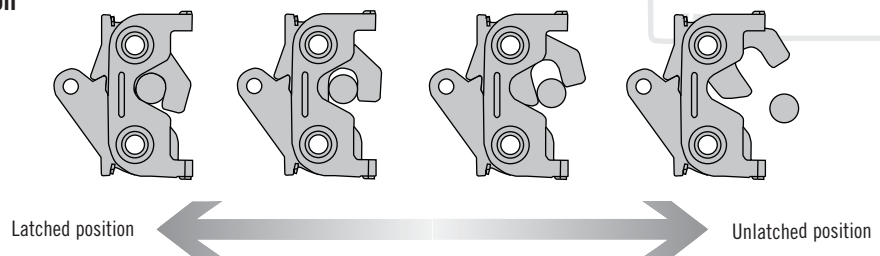
Two Stage (left hand actuation shown)



Striker Bolt (sold separately)



Operation



Part Number

See table

Order latch and striker separately

Position	Part Number		
	Left Hand Actuation	Right Hand Actuation	Striker Bolt
Single stage	R4-20-20-501-10	R4-20-10-501-10	R4-91-231-10
Two stage	R4-20-40-501-10	R4-20-30-501-10	

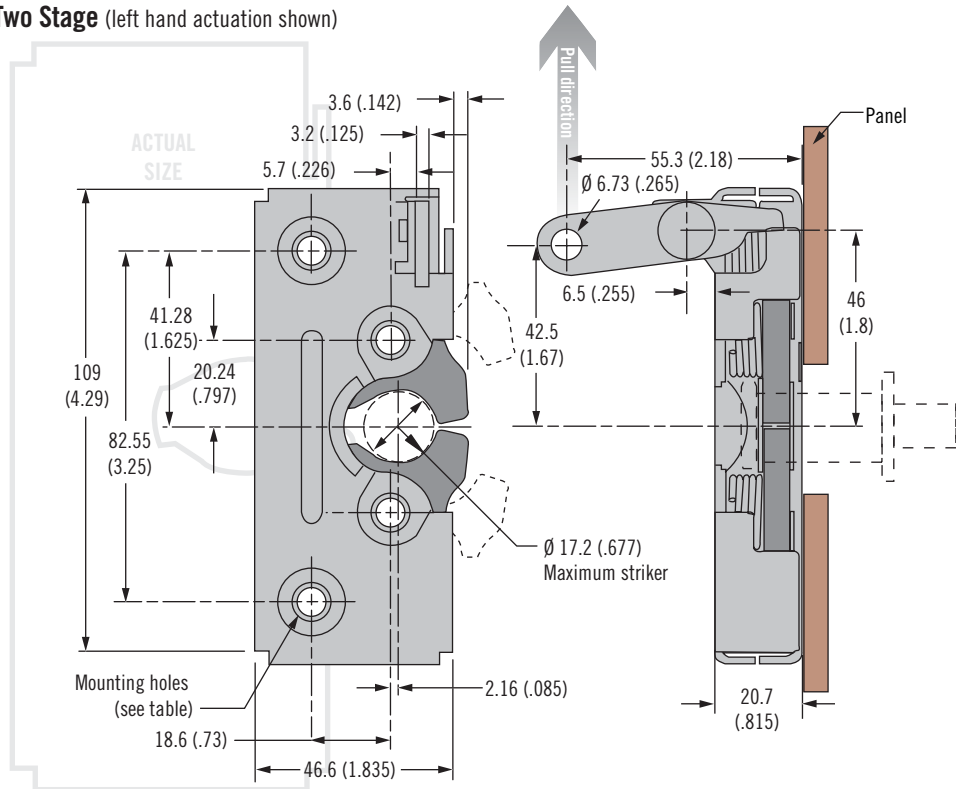
Dimensions in millimeters (inch) unless otherwise stated

R4 Rotary Latch

Heavy-duty · Two stage



Two Stage (left hand actuation shown)



- Single or multi-point latch capability
- Compatible with wide array of actuators
- FMVSS 206 compliant
- EN 45545-3 E60 Compliant

Material and Finish

Steel, zinc plated

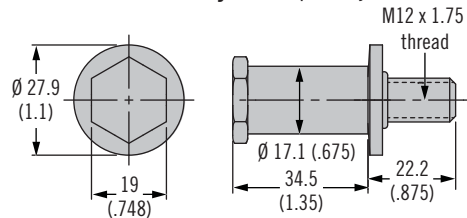
Accessories

Cables and retainer clips
see pages 272-275

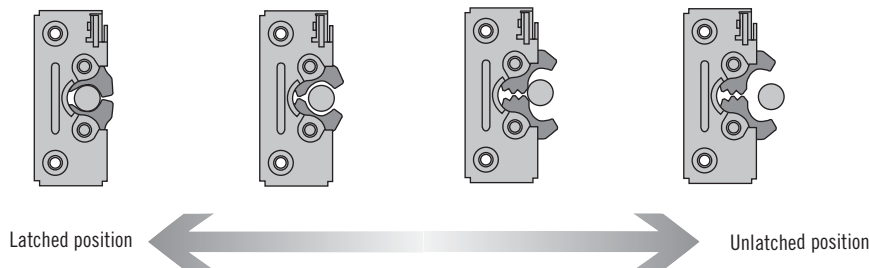
Notes

Electromechanical rotary latch
available see page 23

Striker Bolt Assembly (sold separately)



Operation



Mounting Style	Part Number		
	Left Hand Actuation	Right Hand Actuation	Striker Bolt
$\varnothing 7.2$ (.283) Thru	R4-50-40-101-10	R4-50-30-101-10	R4-90-441-10
1/4-20 Thread	R4-50-41-101-10	R4-50-31-101-10	
M6 X 1 Thread	R4-50-42-101-10	R4-50-32-101-10	

Part Number

See table
Order latch and striker bolt
separately



AC-10 Actuator

Large handle • Flush mount

- Rear mount installation
- Flush mounting style
- Single, multi-point or direct pull actuation capability
- Multiple key code options
- Non-Locking option

Material and Finish

Housing, handle, rotating linkage: glass-filled reinforced nylon, black

Threaded stud and cable bracket retainers: steel, zinc nickel

Housing and handle gaskets: adhesive backed foam, black

Installation Notes

Mounting nut (M6 x 1) not supplied. Installation torque of mounting nuts not to exceed 7 N•m (62 in-lbf)

Notes

AC-10 can only use snub end coupling (Type 6 or 7 cable).

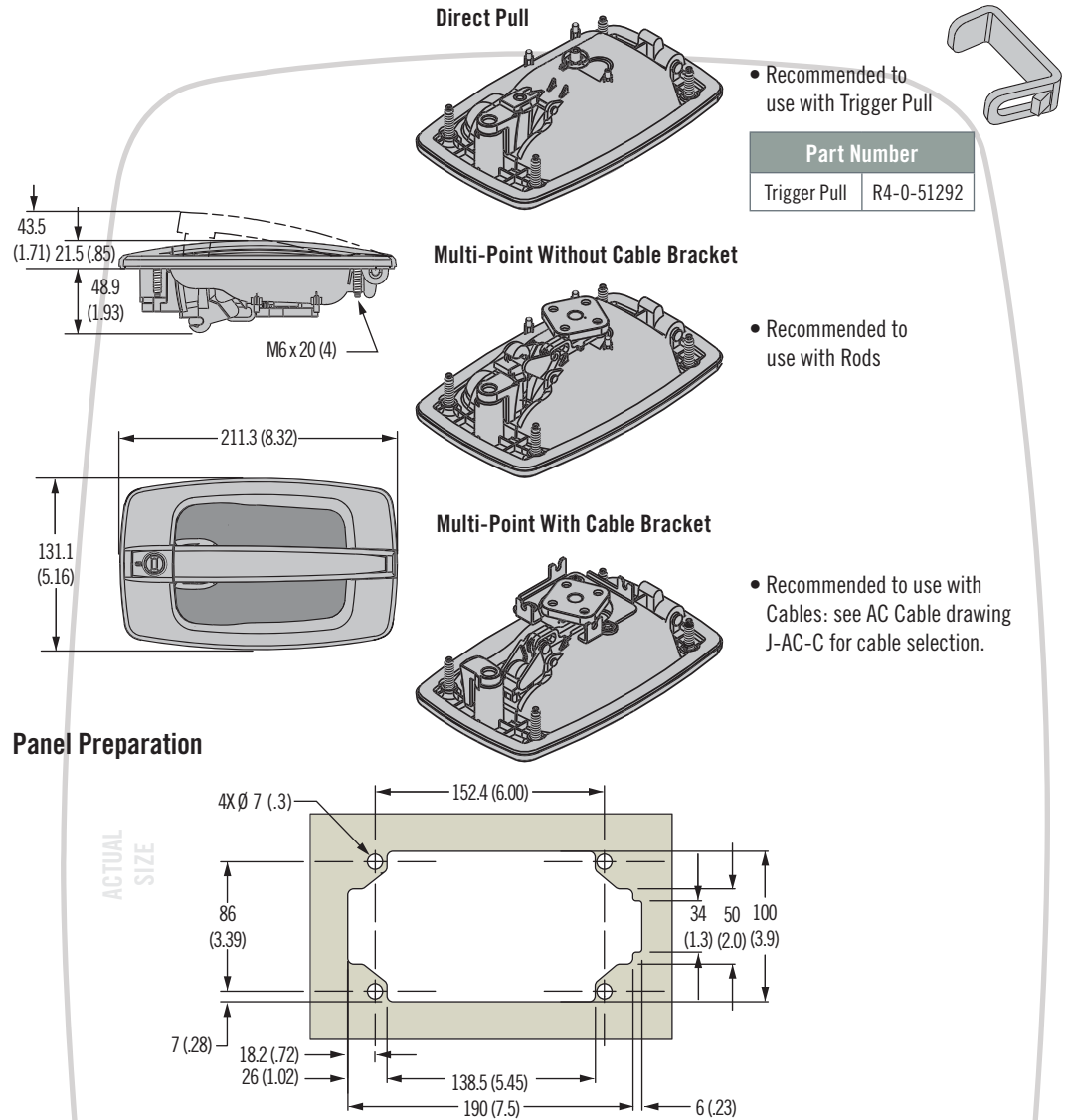
Part Number Selection

Notes:

For use with Rods / Cables, recommended Snap-in Retainer for Rotator Plate: Southco Part Number R4-0-43922. See Trade Drawing J-R4-0-43922 for more details and options.

For lock core selection, detailed key information and a complete overview of the *SOUTHCO*® Key-Choice System see PK Lock Cores section.

For unique key code options, please contact customer service.



S Actuation Style

- 1 Single Point, Direct Pull
- 2 Multi-Point, without Cable Bracket
- 3 Multi-Point, with Cable Bracket

L Locking Options

- 0 Non-Locking
- 1 Reversible key (No keys - R001)
- 2 Reversible key (2 keys included - R001)
- 3 Reversible key (keyed differently - 2 keys included)
- 4 Standard key (No keys - CH751)
- 5 Standard key (2 keys included - CH751)
- 6 Standard key (keyed differently - 2 keys included)
- 9 No Lock Plug installed (See notes for more information)

KC Key Codes

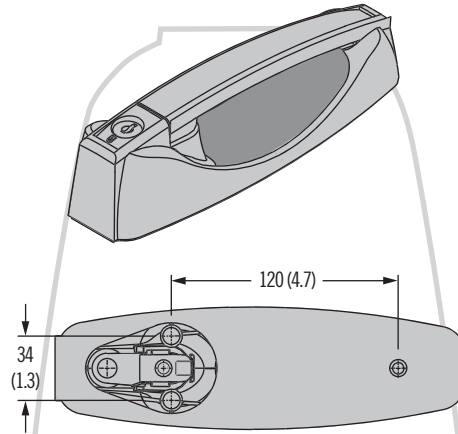
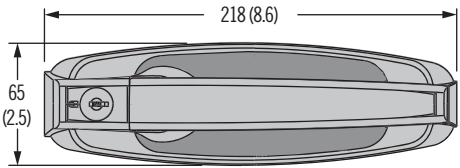
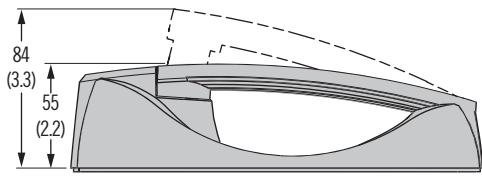
(Omit for Locking Options 0, 1, 2, 4, 5 and 9)
 *KD10 Keyed Differently (Only used if L =3 or 6)
 *MK10 Master Keyed Differently (Only used if L =6)

*Supplied in multiples of 10 with 10 different key codes.

AC - 10 - S L 1 - 11 - KC

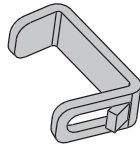
AC-15 Actuator

Large Handle • Surface Mount



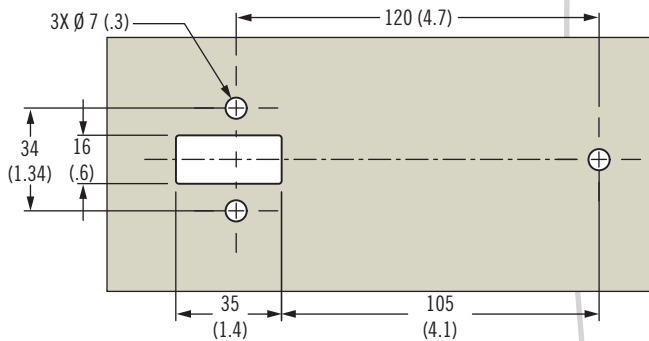
Trigger Pull

Actuator is recommended to use with Trigger Pull

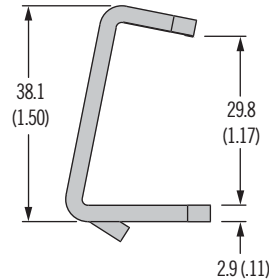


Part Number	
Trigger Pull	R4-0-51292

Panel Preparation



ACTUAL SIZE



- Rear mount installation
- Surface mounting style
- Direct pull actuation
- Multiple key code options
- Non-locking option

Material and Finish

Housing, handle, linkage:
glass-filled reinforced nylon, black
Threaded inserts: brass, natural
Housing and handle gaskets:
adhesive backed foam, black

Installation Notes

Mounting hardware (M6 x 1) not supplied. Recommended screw length=panel thickness + 10.0 (.39)
Installation torque of mounting nuts not to exceed 7 N•m (62 in-lbf)

Part Number Selection

Notes:

For lock core selection, detailed key information and a complete overview of the *SOUTHCO*® Key-Choice System see PK Lock Cores section.

For unique key code options, please contact Southco.

AC - 15 - 1 L 1 - 11 - KC

L Locking Options

- 0 Non-Locking
- 1 Reversible key (No keys - R001)
- 2 Reversible key (2 keys included - R001)
- 3 Reversible key (keyed differently - 2 keys included)
- 4 Standard key (No keys - CH751)
- 5 Standard key (2 keys included - CH751)
- 6 Standard key (keyed differently - 2 keys included)
- 9 No Lock Plug installed

KC Key Codes

(Omit for Locking Options 0, 1, 2, 4, 5 and 9)
*KD10 Keyed Differently (Only used if L=3 or 6)
*MK10 Master Keyed Differently (Only used if L=6)

*Supplied in multiples of 10 with 10 different key codes.



AC-30 Multi Point Actuator

Push-Button

- Single or multi-point actuation capability
- Accommodates wide panel thickness
- Multiple key code options
- Single hole install

Material and Finish

Button: Nylon

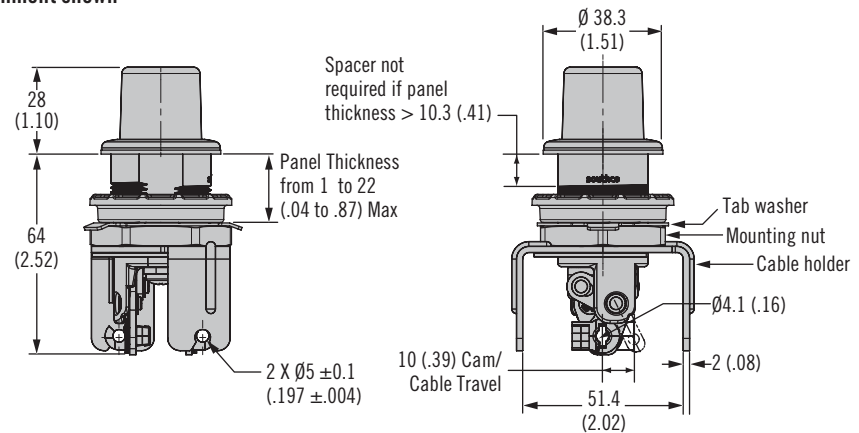
Housing: Zinc or Stainless steel

Lock Plug: Zinc

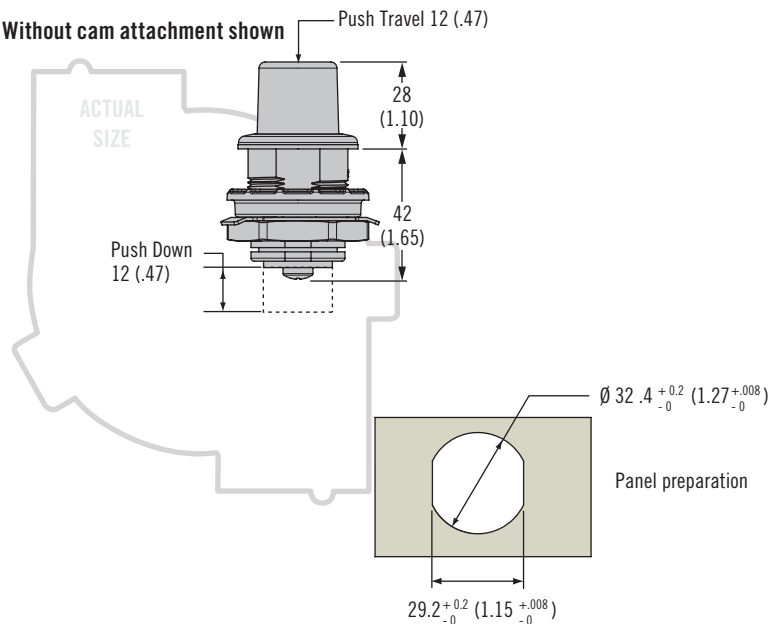
Cam, Washer, Rivet:

Stainless steel, passivated

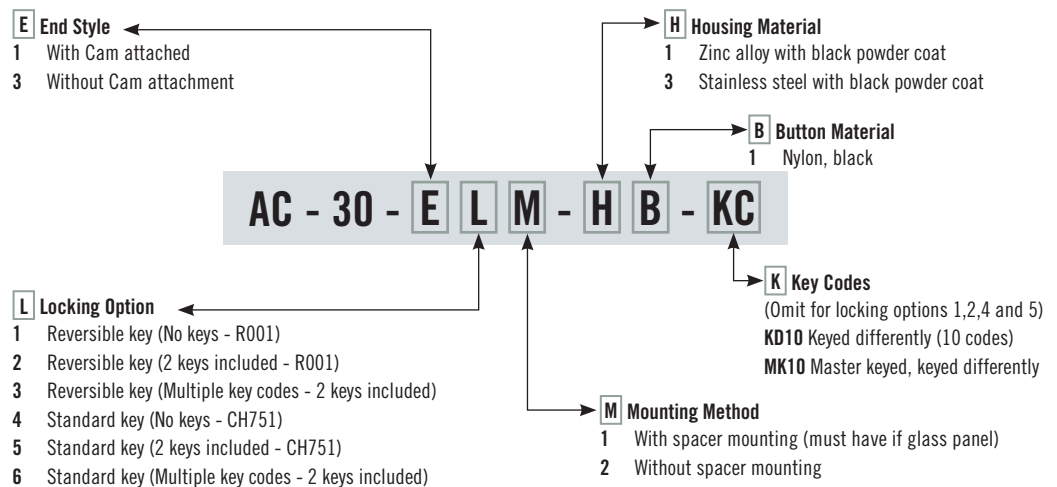
With cam attachment shown



Without cam attachment shown



Part Number Selection

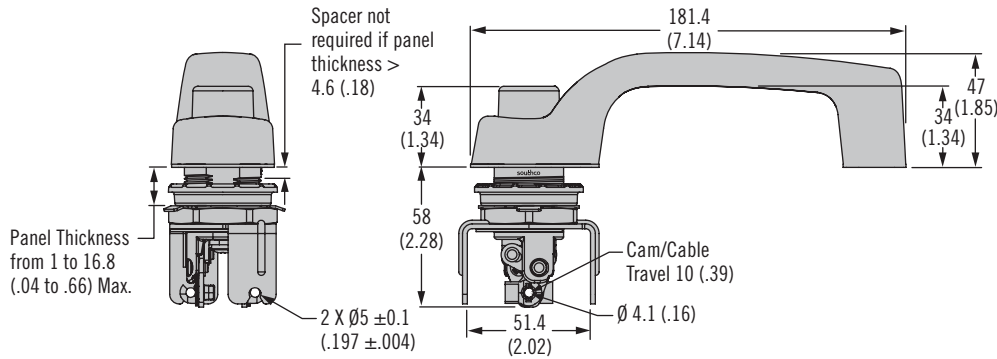


Dimensions in millimeters (inch) unless otherwise stated

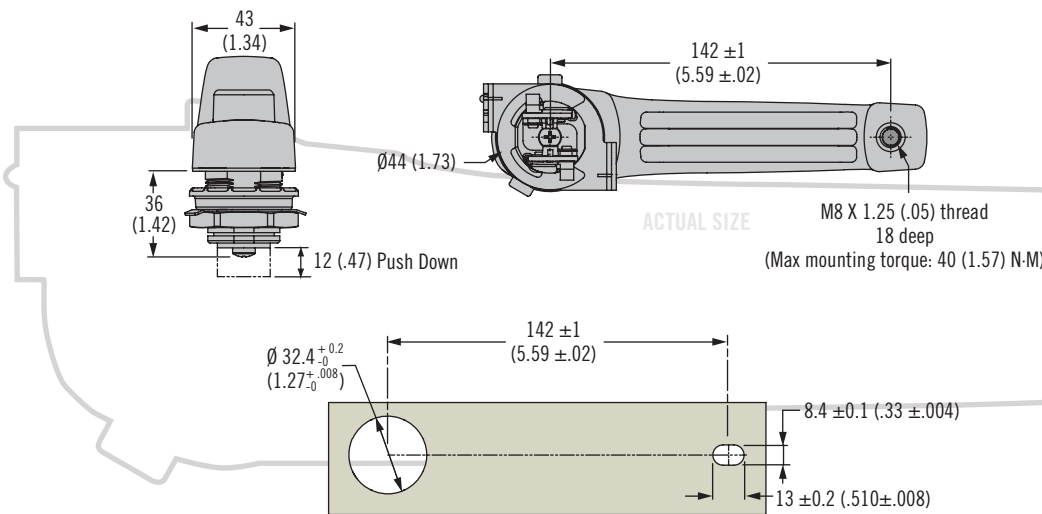
AC-40 Multi Point Actuator Push-Button Handle



With cam attachment shown



Without cam attachment shown

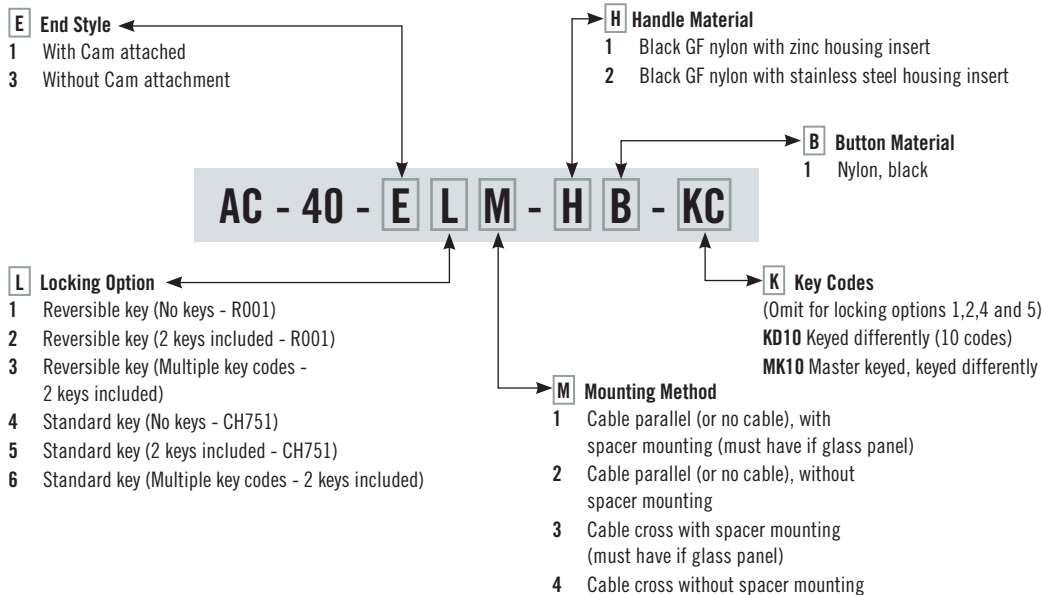


- Single or multi-point actuation capability
- Accommodates wide panel thickness
- Multiple key code options
- Easy Grip

Material and Finish

Button: Nylon
 Housing: Zinc Alloy or Stainless steel
 Lock plug: Zinc Alloy
 Cam, Washer, Rivet: Stainless steel, passivated

Part Number Selection





AC Single Point Actuator T-handle

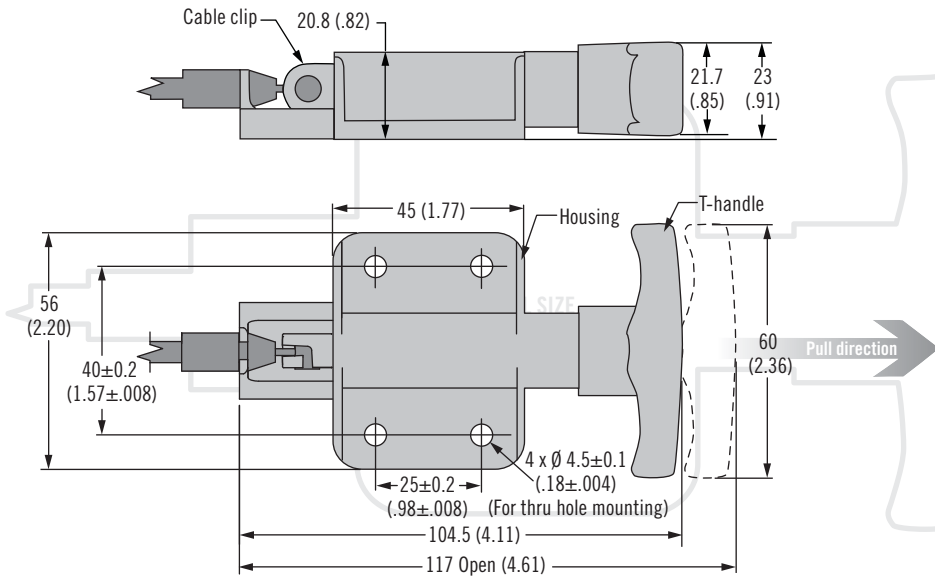
- Surface mount installation
- Generous grip area
- Pull to activate

Material and Finish

Housing: PC/ABS, black
 T-handle and slide: Glass-filled nylon, black
 Clip: Acetal, black
 Spring: Stainless steel, passivated

Part Number

See table



Part Number
AC-60-101-11



AC Single Point Actuator Plastic paddle and housing

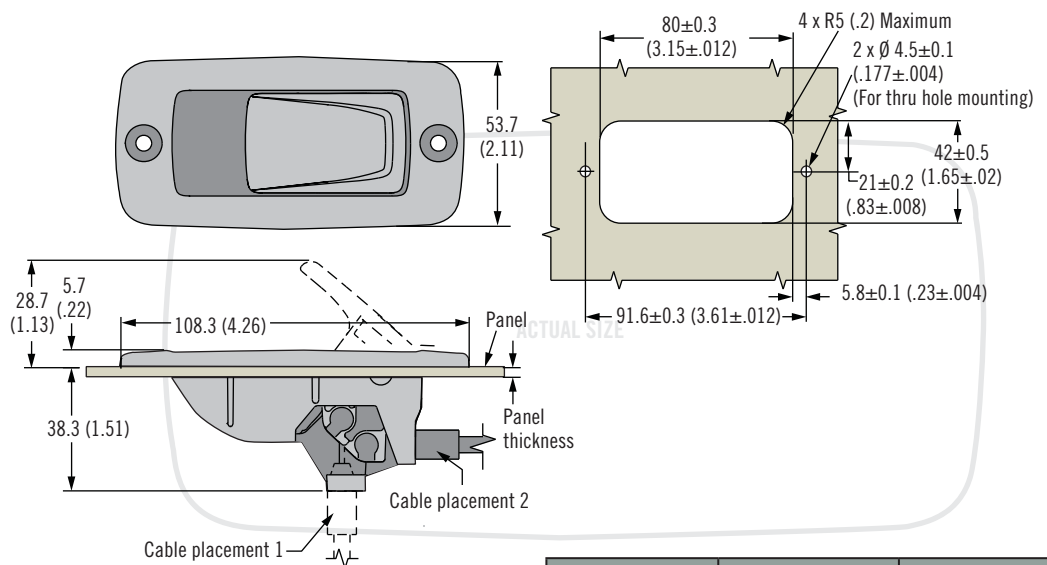
- Front mount installation
- Flush
- Two cable mounting options

Material and Finish

Paddle and housing: Glass-filled nylon, black
 Spring: Stainless steel, passivated

Part Number

See table

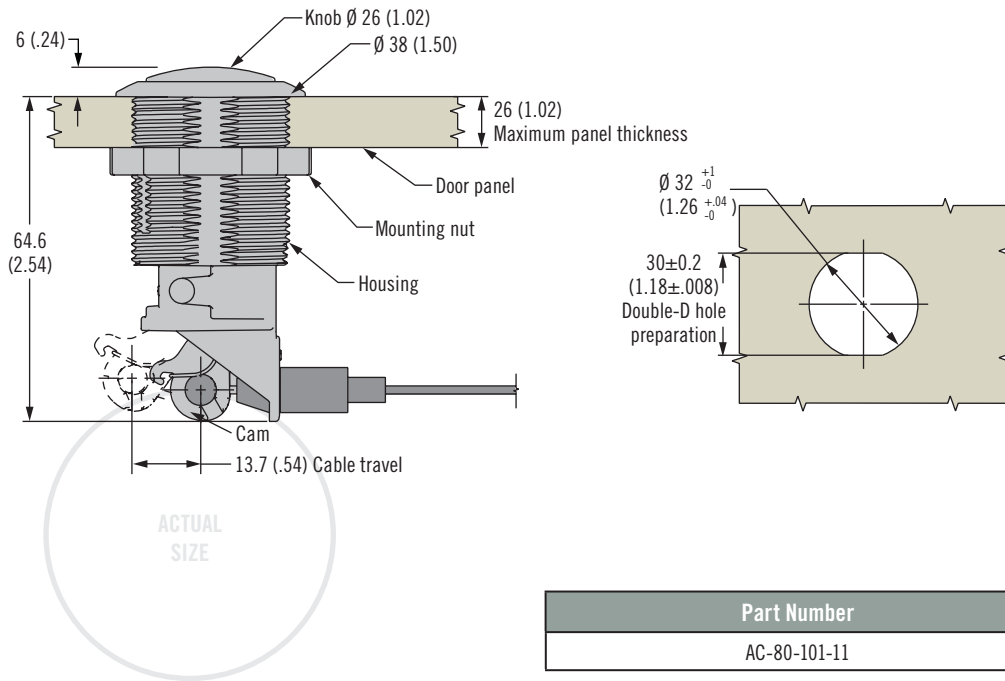


Part Number
AC-70-101-11

Cable Orientation	Panel Thickness	Cable Travel
Placement 1	12.5 (.49) maximum	11.1 (.44)
Placement 2	16 (.63) maximum	13.2 (.52)

Dimensions in millimeters (inch) unless otherwise stated

AC Single Point Actuator Push-button



- Flush
- Mounting hardware included

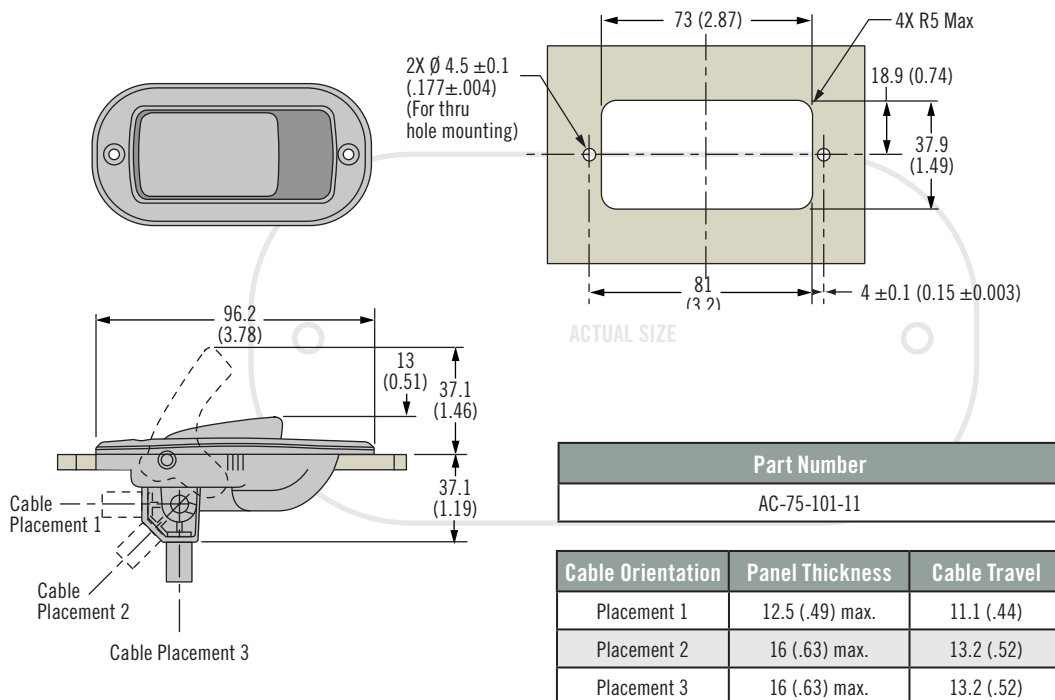
Material and Finish

Push button and housing:
PC/ABS, black
Cam: Glass-filled nylon, black
Spring: Stainless steel, passivated

Part Number

See table

AC Single Point Actuator Aluminum paddle and housing



- Front mount installation
- Three cable mounting options
- Low profile
- Robust material

Material and Finish

Paddle and housing:
Aluminum, black powder coated

Notes

AC-75 can only use snub end coupling (Type 6 or 7 cable).

Part Number

See table



AC-50 Single Point Actuator

Squeeze handle

- Single actuation capability
- Accommodates tubular construction or rounded mounting surfaces

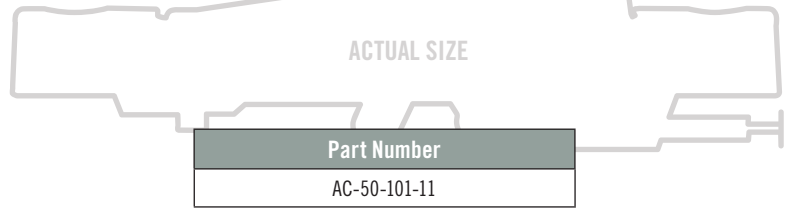
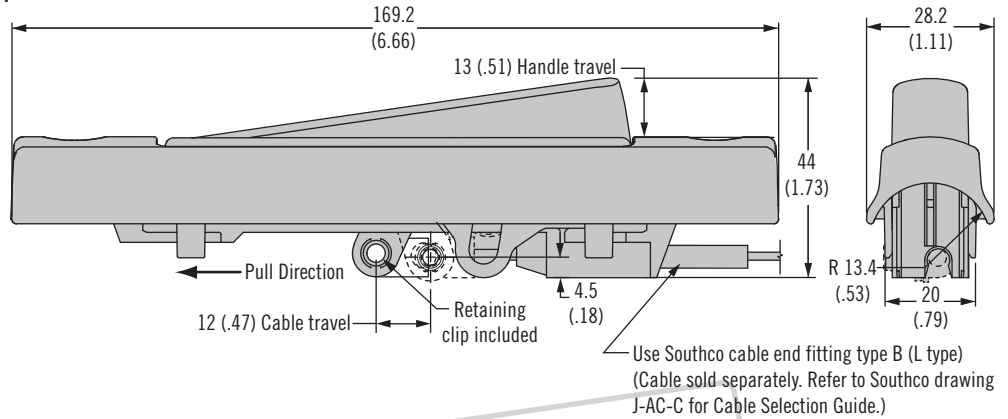
Material and Finish

Housing, handle: Glass-filled nylon, black

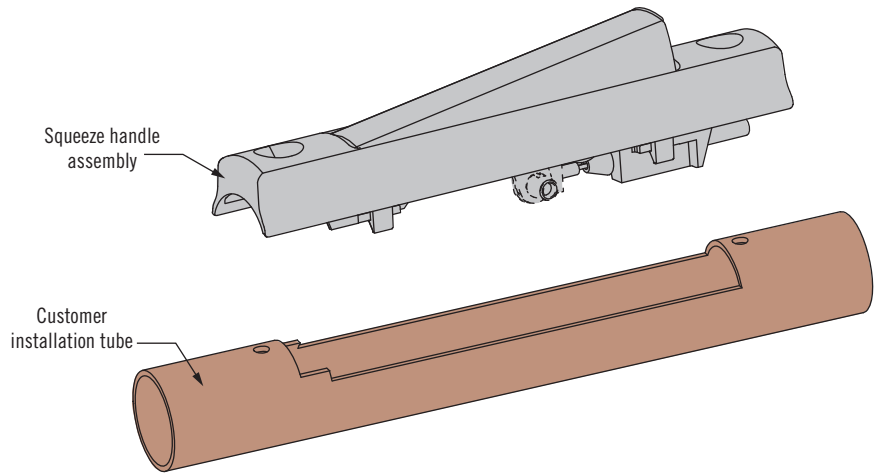
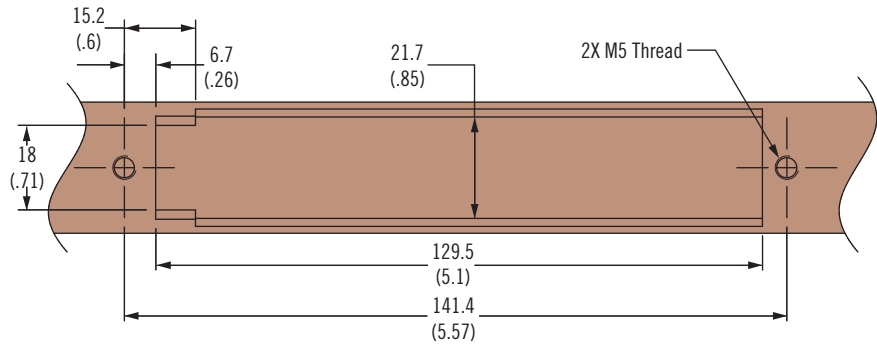
Installation Notes

Installation torque of screws not to exceed 2 N•m maximum (Countersunk screws or rivets recommended)

Squeeze Handle



Panel Preparation



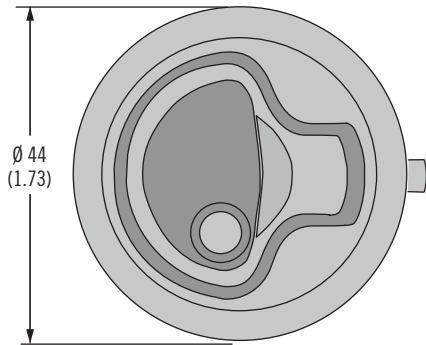
Dimensions in millimeters (inch) unless otherwise stated

AC Single Point Actuators

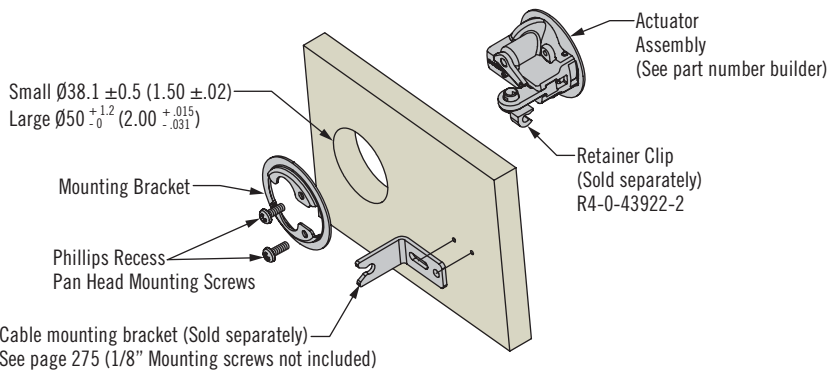
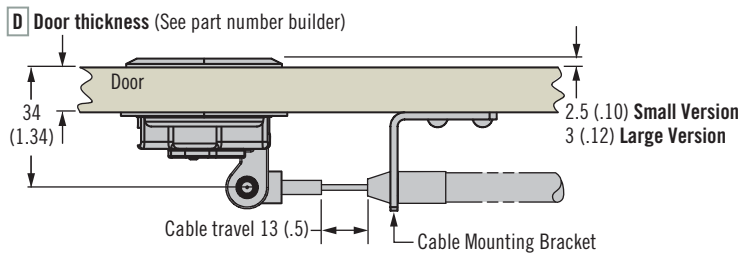
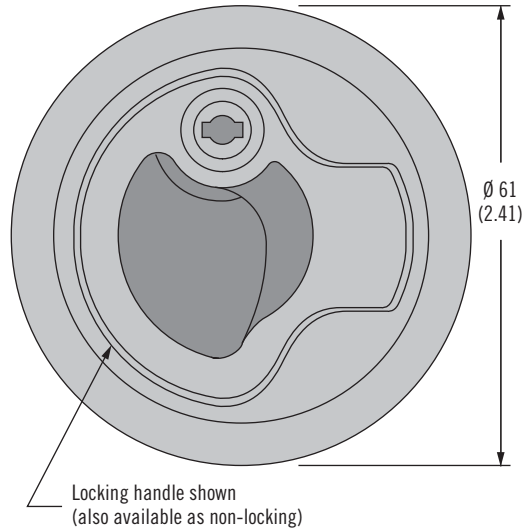
Stainless Steel · M1 Style Actuator



Small version
Shown actual size



Large version
Shown actual size



- Single, round-hole installation
- Locking style restricts access
- Premium finish and corrosion resistance

Material and Finish

Latch: 316 grade stainless steel, bright polished
 Spacer: Nylon, black
 Contact Southco for other finishes

Performance Details

Max. static load: 545 N (122 lbf)

Accessories (Small)

Spacer: M1-510-96-1

One key supplied per latch for additional keys order M7-88-9121324-S



Mounting screws: M1-510-96-4

Accessories (Large)

For lock style 4

Key (pair)

Part number: M1-546



For lock style 7

Overmolded key S008 (pair)

Part number:

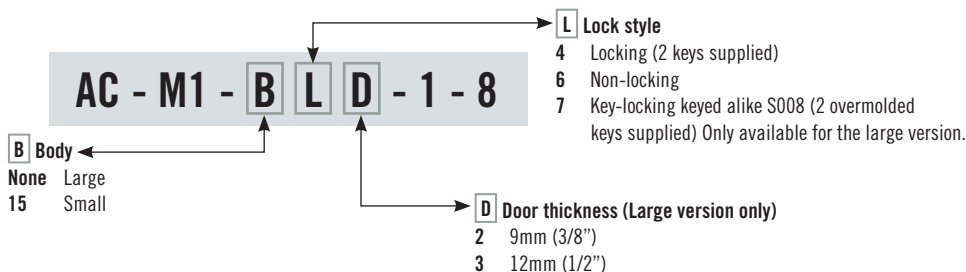
M1-525-39-S008



Cables

Constructed from marine grade stainless materials, the cable is suitable for multiple bends and can be further customized upon request.

Part Number Selection





AC Cables

Cable Assembly

- Connecting actuators with rotary latches
- Standard offering of cable assemblies

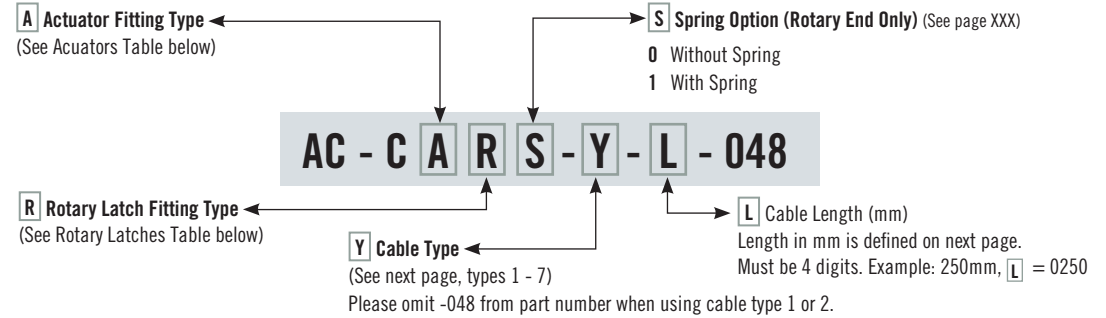
Material and Finish

Cable: Stainless steel

Liner: Acetal

Jacket: Polypropylene

Cable Assembly Part Number Selection



Fitting Type													
Barrel Fitting		L Fitting		Z Fitting		Eyelet Fitting		Ball Fitting		Threaded Fitting		Bare Cable	
A & R	Material	A & R	Material	A & R	Material	A & R	Material	A & R	Material	A & R	Thread	A & R	Material
A	Die-Cast	B	Plated Steel	C	Plated Steel	D	Stainless Steel	H	Stainless Steel	E	M4	0	Stainless Steel
J	Stainless Steel	K	Stainless Steel							F	8-32		

Actuators			
Single-Point		AC-60 Page 268	Barrel Fitting
		AC-70 Page 268	
		AC-80 Page 269	
		AC-75* Page 269	L Fitting
		AC-M1 Page 271	
	Multi-Point		AC-10* Page 264
		AC-30 Page 266	
		AC-40 Page 267	Eyelet Fitting
		R3-20 Page 238	
		64-40 Page 250	Bare Cable
		E5 Page 128	Bare Cable

*AC-10 and AC-75 must use Type 6 or 7 Cable

Rotary Latches			
Non-FMVSS Compliant		R4-10 Pages 256-259	L Fitting
		R4-20 Page 262	
FMVSS Compliant		R4-30 Pages 260-261	Ball Fitting
		R4-50 Page 263	
	Electronic Access		
		R4-EM Page 30	Ball Fitting
		R4-EM Page 32	
		R4-EM Page 28	
		EM-05 Page 40	

Dimensions in millimeters (inch) unless otherwise stated

Cable Assembly

Y Cable Type L Cable Length

Y = 1	<p>Type 1 - Bare Cable (P/N AC-CAB0-1-L as shown)</p> <p>±1.5 (up to 610) ±2.3 (611 to 1220) ±3.2 (1221 to 2540) ±4 (over 2540)</p>	Y = 2	<p>Type 2 - Coated Cable (P/N AC-CAB0-2-L as shown)</p> <p>±1.5 (up to 610) ±2.3 (611 to 1220) ±3.2 (1221 to 2540) ±4 (over 2540)</p>
Y = 3	<p>Type 3 - Jacketed Cable with End Coupling Retainers (Shown with Spring Option) (P/N AC-CBB1-3-L-048 as shown)</p> <p>K +6/-0 (Up to 1220) +10/-0 (1221 to 2540) +14/-0 (Over 2540)</p> <p>L (mm) REF.</p>		
Y = 4	<p>Type 4 - Jacketed Cable with Snap Ring and Threaded Retainers (P/N AC-COH0-4-L-048 as shown)</p> <p>L (mm) REF.</p> <p>K +6/-0 (Up to 1220) +10/-0 (1221 to 2540) +14/-0 (Over 2540)</p> <p>1.6 (.06) Max Cable Protrusion</p> <p>1/4 - 20 Threads</p>		
Y = 5	<p>Type 5 - Jacketed Cable with Snap Ring and End Coupling Retainers (P/N AC-CAH0-5-L-048 as shown)</p> <p>L (mm) REF.</p> <p>K +6/-0 (Up to 1220) +10/-0 (1221 to 2540) +14/-0 (Over 2540)</p> <p>1.6 (.06) Max Cable Protrusion</p>		
Y = 6	<p>Type 6 - Jacketed Cable with Snub End Coupling and Threaded Retainers (P/N AC-CAC1-6-L-048 as shown)</p> <p>K +6/-0 (Up to 1220) +10/-0 (1221 to 2540) +14/-0 (Over 2540)</p> <p>L (mm) REF.</p> <p>*AC-10 and AC-75 can only use Snub End Coupling.</p>		
Y = 7	<p>Type 7 - Jacketed Cable with Snub End Coupling and End Coupling Retainers (P/N AC-CAB1-7-L-048 as shown)</p> <p>K +6/-0 (Up to 1220) +10/-0 (1221 to 2540) +14/-0 (Over 2540)</p> <p>L (mm) REF.</p> <p>*AC-10 and AC-75 can only use Snub End Coupling.</p>		

- For full product specifications on cable assemblies, refer to trade drawing J-AC-C.

Notes

Minimum cable length = 115mm (4.5)

The distance between where the cable mounting bracket engages the cable assembly and the point of engagement with the rotary latch is available in different lengths.



AC Cables

Cable Assembly

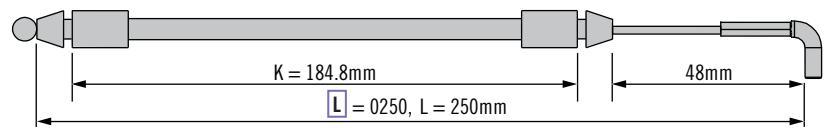
S Spring Option (Rotary Side Only)

0 Without Spring

1 With Spring

0 Without Spring

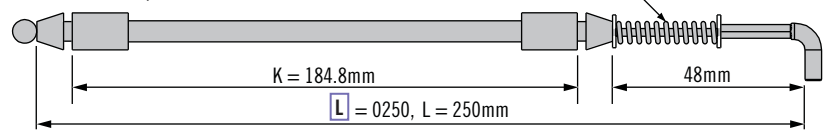
Actuator End (Option A shown)



Cable Part Number Example: AC-CAB0-3-0250-048

1 With Spring

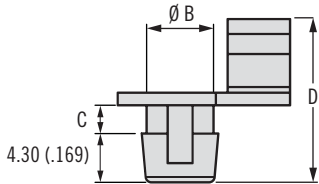
Actuator End (Option A shown)



Cable Part Number Example: AC-CAB1-3-0250-048



Retainer Clip



- For use with $\varnothing 4$ (.157) rod or Southco cable assembly

Material and Finish

Clip: Acetal

Bracket: Steel

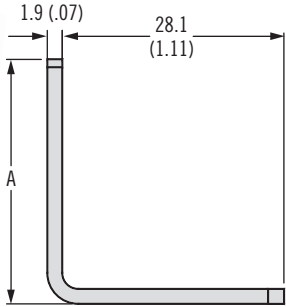
Part Number

See table

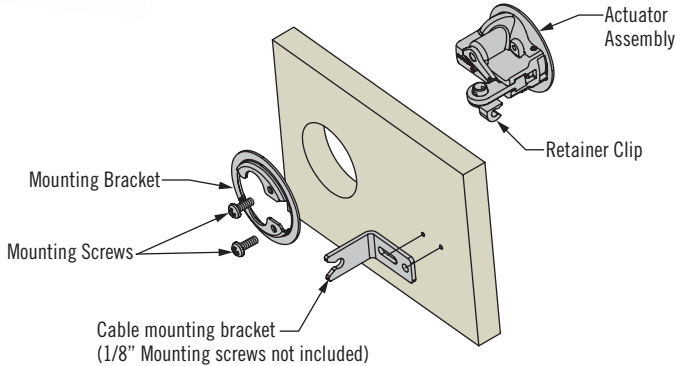
Latch Series	Part Number	Material	B	C	D	Panel Prep	
						Hole Diameter	Panel Thickness
R4-10	R4-0-43922	Acetal, Black	5.9 (.23)	2.5 (.10)	14.4 (.57)	6.3 (.25)	2.0 (.08)
R4-30							
R4-20	R4-0-43922-1	Acetal, White	6.3 (.25)	4.5 (.18)	16.4 (.65)	6.65 (.26)	4.0 (.16)
R4-50							



Cable Mounting Bracket



Part Number	A
R4-0-50253-1	28 (1.10)
R4-0-50253-2	31 (1.22)



DRAW LATCHES

Over-Center/ Under-Center

Pages 280-301



The expanded line of *SOUTHCO*[®] draw latches provides numerous options of over-center and under-center designs. Choose your ideal solution based on working load, space constraints, and styling considerations.

- Stylized latches are available for better aesthetic presentation
- Functional designs provide both economical and high strength solutions
- Curved wire bail or claw designs provide added resilience under shock loads



Rotary

Pages 302-307



Rotary cam design provides mechanical advantage to deliver a high degree of draw action for a firm grip and consistent closure that resists accidental opening. Compact all-metal construction provides high strength in low profile designs for co-planar and off-plane applications.

- Simple lift and turn action
- Consistent pull-up for gasket compression
- Multiple actuation styles



These high strength latch designs mount behind or within thicker mating panels for concealed operation. Their tool-actuated operation provides strong pull-up action to compress gasketing for airtight and watertight seals. Multiple mounting options fit butt-joint and right-angle applications.

- Heavy-duty clamping force
- Provides for air and watertight seals
- Multiple mounting options

Concealed

Pages 308-312



R2



R5

SOUTHCO® flexible draw latches use thermoplastic elastomer or rubber handles to provide latching flexibility, pull panels tight, absorb/reduce vibration, and maintain tension on the closed latch.

- Non-corrosive materials suitable for indoor or outdoor use
- Over-center style for consistent easy latching

Flexible

Pages 313-319



37



F7



37



C7



Draw Latches

Selection guide

Use this selection guide to choose the right draw latch for your application



Key-Locking Available



Padlockable






Stainless Steel



Vibration Resistant

		Latching Series	MATERIAL			INSTALLATION	
			Stainless Steel 	Zinc or Steel	Plastic and Rubber	Exposed Mounting	Concealed Mounting
OVER-CENTER PAGES 280-295		V7	✓	✓			✓
		97	✓	✓		✓	✓
		V2, V4	✓	✓		✓	
		TL	✓	✓		✓	✓
		A1	✓	✓		✓	✓
		07			✓		✓
UNDER-CENTER PAGES 296-301		91	✓	✓		✓	✓
ROTARY PAGES 302-307		K2	✓	✓		✓	
		K3, K4, K5	✓	✓		✓	
CONCEALED PAGES 308-312		R2		✓			✓
		R5		✓			✓
FLEXIBLE PAGES 313-319		C7			✓		✓
		37 Lever			✓	✓	
		F7			✓	✓	✓
		37 Pull			✓	✓	

PERFORMANCE					ACCESS STYLE			
Co-Planar	Non Co-Planar	Fixed Grip	Adjustable Grip	Vibration Resistance 	Key-Locking 	Tool Access	Padlockable 	Secondary Locking
✓		✓		✓	✓			
✓		✓		✓			✓	✓
✓		✓		✓			✓	
✓		✓		✓			✓	✓
✓			✓	✓			✓	
✓		✓		✓				✓
✓	✓		✓	✓			✓	✓
✓	✓	✓		✓				
✓	✓	✓		✓	✓	✓	✓	
✓			✓	✓		✓		
✓		✓		✓		✓		
✓		✓		✓				
✓		✓		✓				
✓	✓	✓		✓				
✓	✓	✓		✓				



V7 Draw Latch

Over-center · Stainless steel

- Sleek, smooth low profile design
- Locking and non-locking
- Robust, riveted, tamper-resistant construction

Material and Finish

316 Grade stainless steel
electropolished

Performance Details

Maximum working load:
1200 N (270 lbf)

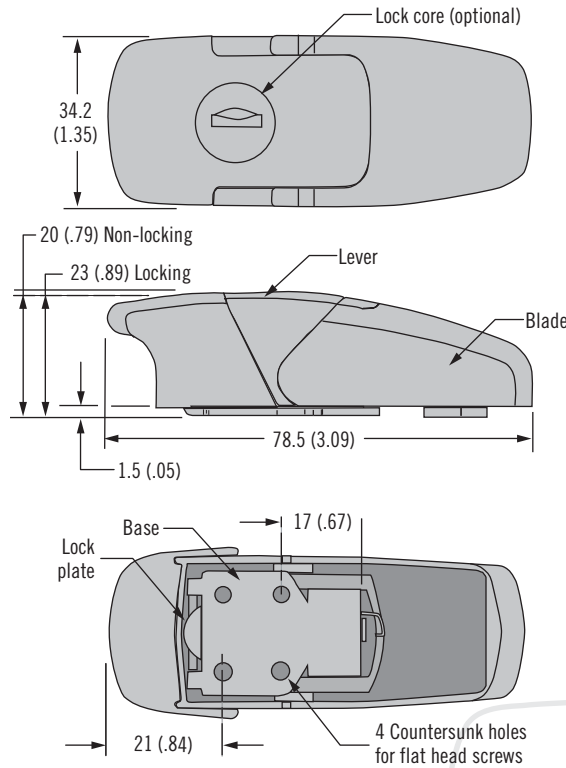
Installation Notes

Install assembly with six M3 (No. 4) flat head screws (not supplied)

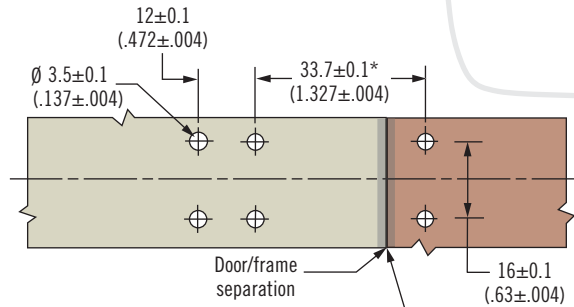
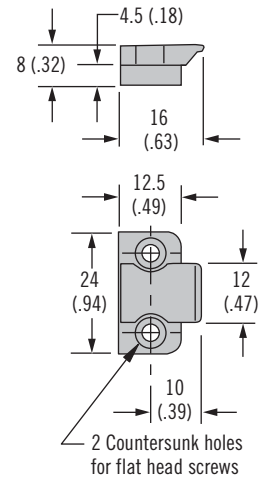
Keys

Overmolded key S008 (pair)
Part number: M1-525-39-S008

Latch



Keeper



*Gasket recommended to accommodate panel variations

Part Number

See table

Assembly complete with keeper

Description	Part Number
Non-locking	V7-20-101-24
Locking keyed alike key code S008 (2 keys supplied)	V7-20-111-24

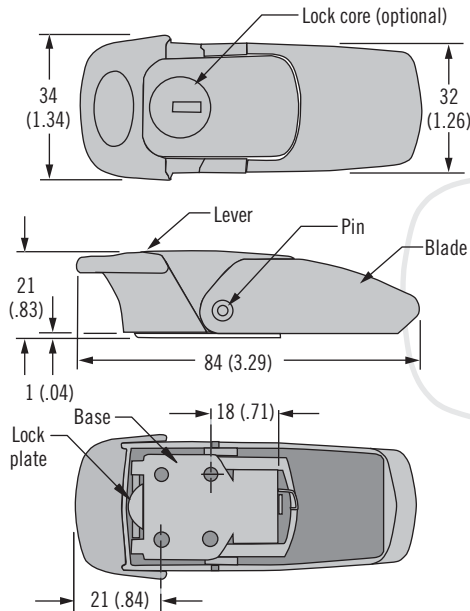
Dimensions in millimeters (inch) unless otherwise stated

V7 Draw Latch

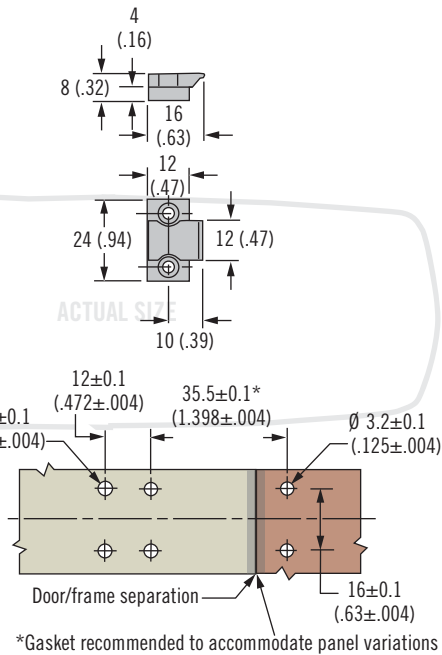
Over-center · Zinc alloy



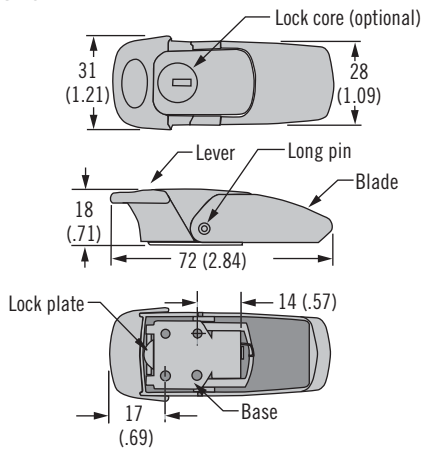
Latch Large



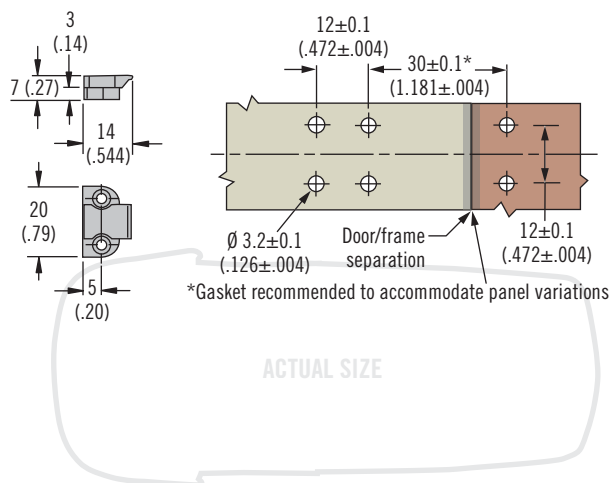
Keeper



Latch Small



Keeper



- Sleek, smooth low profile design
- Locking and non-locking
- Robust, riveted, tamper-resistant construction

Material and Finish

Zinc alloy, chrome plated or powder coated and stainless steel

Performance Details

Maximum working load:
1200 N (270 lbf)

Installation Notes

Install assembly with six M3 (No. 4) flat head screws (not supplied)

Keys

Key code S010 (pair)
Part number: V7-KEYS

Description	Part Number		
	Bright Chrome	Part Number	Black Powder Coated
Small, non-locking	V7-10-105-10	V7-10-105-20	V7-10-105-50
Small, locking (2 keys supplied)	V7-10-115-10	V7-10-115-20	V7-10-115-50
Large, non-locking	V7-20-101-10	V7-20-101-20	V7-20-101-50
Large, locking (2 keys supplied)	V7-20-111-10	V7-20-111-20	V7-20-111-50

Part Number

See table
Assembly complete with keeper



97 Draw Latch

Over-center

- Compact latch
- Multiple keeper options for application variances

Material and Finish

Stainless steel or steel, zinc plated

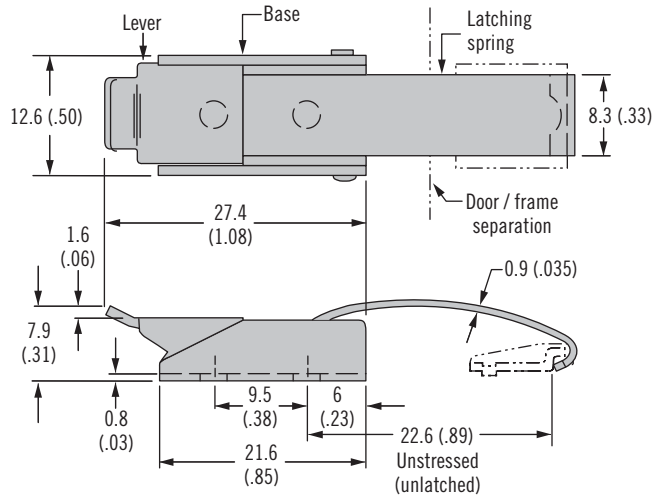
Performance Details

Clamping force: 135 N (30 lbf)

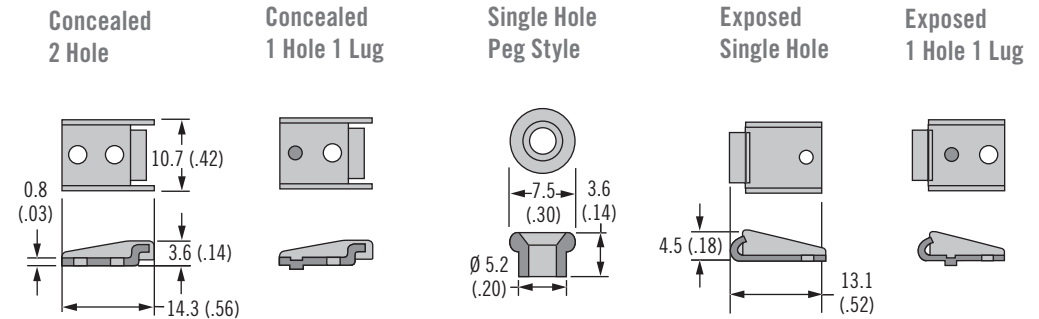
Installation Notes

Install assembly with M3 (No. 4) round head screws or 3 (.118) rivets (not supplied)

For peg style keeper use M3 (No. 4) flat head screws or rivets



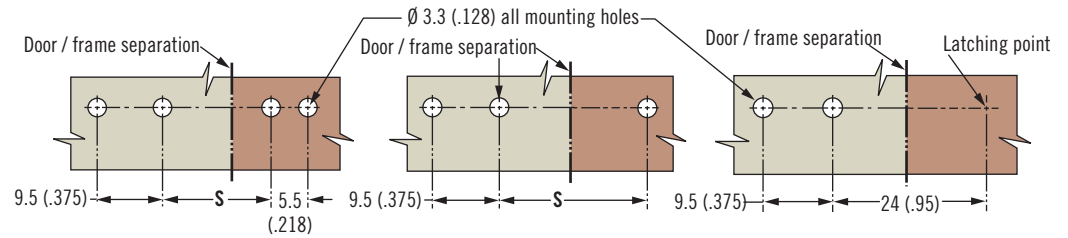
Keepers



Two Hole Keepers

Single Hole Keepers

Latch Only



Part Number

See table

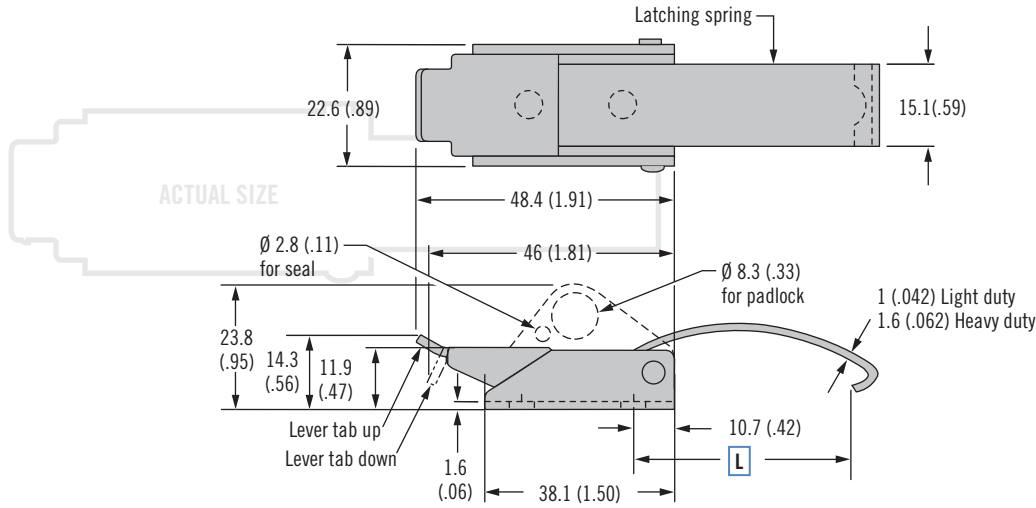
Order latch and keeper separately

Material	Part Number					
	Latch Only	Keepers				
		Concealed 2 Hole	Concealed 1 Hole 1 Lug	Single Hole Peg Style	Exposed Single Hole	Exposed 1 Hole 1 Lug
Steel	97-30-160-11	97-37-103-11	97-37-101-11	97-37-105-11	97-37-104-11	97-37-102-11
Stainless Steel	97-30-160-12	97-37-103-24	97-37-101-24	97-37-105-24	97-37-104-24	97-37-102-24
S Dimension		14.7 (.58)	14.7 (.58)	21.8 (.86)	33 (1.30)	27.4 (1.08)

Dimensions in millimeters (inch) unless otherwise stated

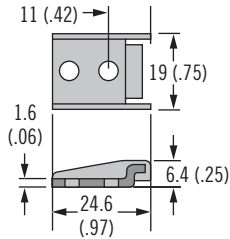
97 Draw Latch

Over-center

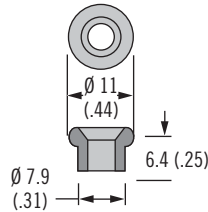


Keepers

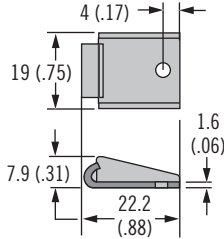
Concealed 2 Hole



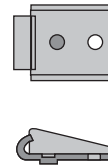
Single Hole Peg Style



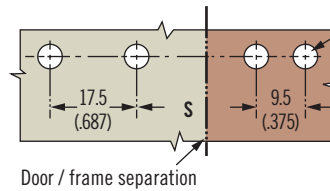
Exposed Single Hole



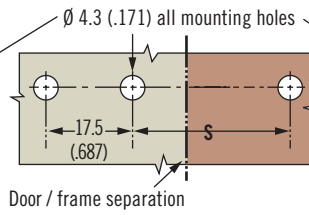
Exposed 1 Hole 1 Lug



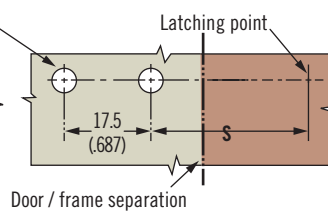
Two Hole Keepers



Single Hole Keepers



Latch Only



- Multiple link and keeper options for application variances
- Secondary locking style available

Material and Finish

Stainless steel, steel, zinc plated or steel, black powder coated

Performance Details

Heavy-duty:
Clamping force: 670 N (150 lbf)

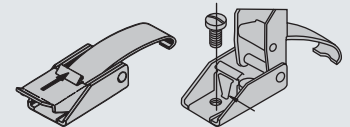
Light-duty:
Clamping force: 310 N (70 lbf)

Installation Notes

Install assembly with M4 (No. 8) round head screws or 4 (.156) rivets (not supplied). Peg needs flat head.

Accessories

Spring loaded secondary catch provides resistance against severe vibration and accidental opening.
Part number steel: 97-58-101-11
Part number stainless steel: 97-58-101-25



Part Number Selection

Order latch and keeper separately
For latch part number see builder
For keeper part number see table

S Style

- 1 Lever tab up
- 2 Lever tab down
- 3 Padlockable (tab up)

L Latching spring length/thickness

- | | |
|-----------------------|-----------------------|
| 1 Short (light-duty) | 5 Short (heavy-duty) |
| 2 Medium (light-duty) | 6 Medium (heavy-duty) |
| 3 Long (light-duty) | 7 Long (heavy-duty) |

97 - 50 - S L 0 - 1 M
Part Number for Latch Only
(No Keeper)

M Material

- 1 Steel, zinc plated
- 2 Stainless steel (light-duty only)
- 5 Steel, black powder coated

Keeper Style	Keeper Part Number		S Dimension		
	Steel	Stainless Steel	Short Link L = 29.4 (1.16)	Medium Link L = 42.1 (1.66)	Long Link L = 54.8 (2.16)
Concealed 2 hole	97-57-103-11	97-57-103-24	15.9 (.63)	28.6 (1.13)	41.3 (1.63)
Single hole peg style	97-57-105-11	97-57-105-24	29.4 (1.16)	42.1 (1.66)	54.8 (2.16)
Exposed single hole	97-57-104-11	97-57-104-24	47.6 (1.88)	60.3 (2.38)	73.0 (2.88)
Exposed 1 hole 1 lug	97-57-102-11	97-57-102-24	38.1 (1.50)	50.8 (2.00)	63.5 (2.50)
Latch only			31.8 (1.25)	44.5 (1.75)	57.1 (2.25)



97 Draw Latch

Over-center

- Multiple keeper options for application variances

Material and Finish

Steel, zinc plated or steel powder coated black

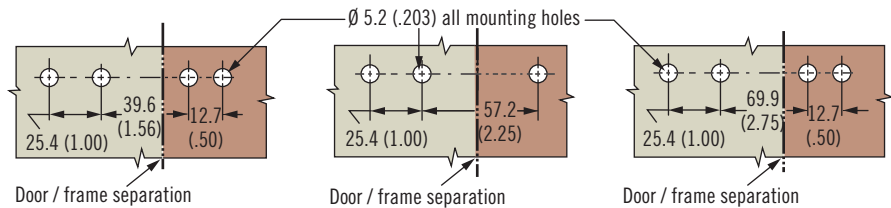
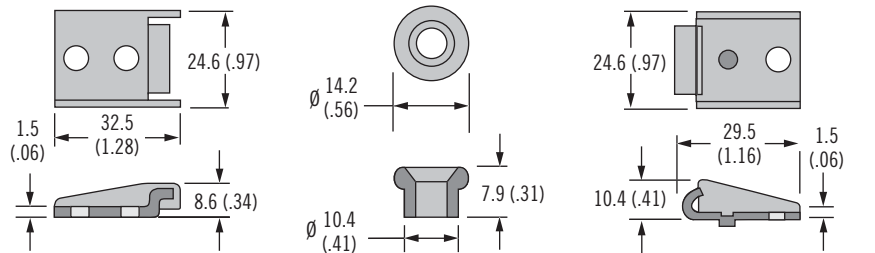
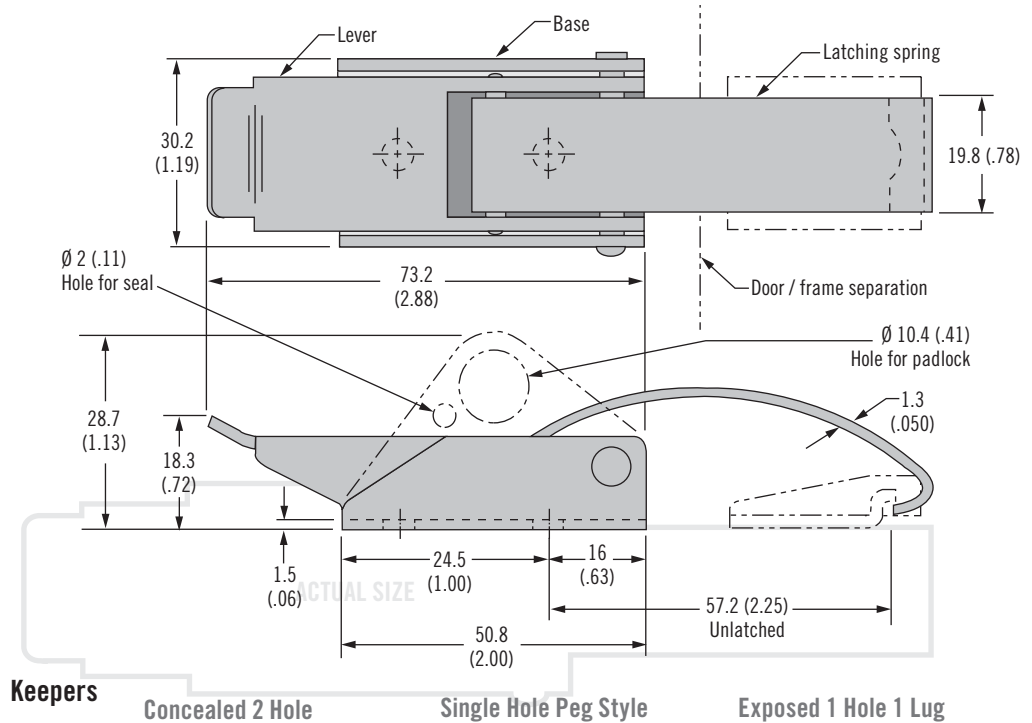
Performance Details

Clamping force: 290 N (65 lbf)

Installation Notes

Install assembly with M5 (No. 10) round head screws (not supplied) or 5 (3/16) rivets

For peg style keeper use M5 (No. 10) flat head screws or rivets



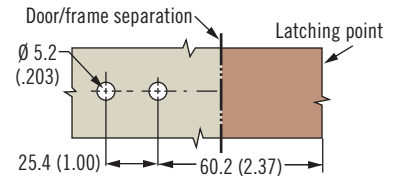
Part Number

See table

Order latch and keeper separately

Material	Latch Part Number	
	Lever Tab Up	Padlockable
Steel, Zinc Plated	97-60-120-11	97-60-320-11
Steel, Black Powder Coated	97-60-120-15	97-60-320-15

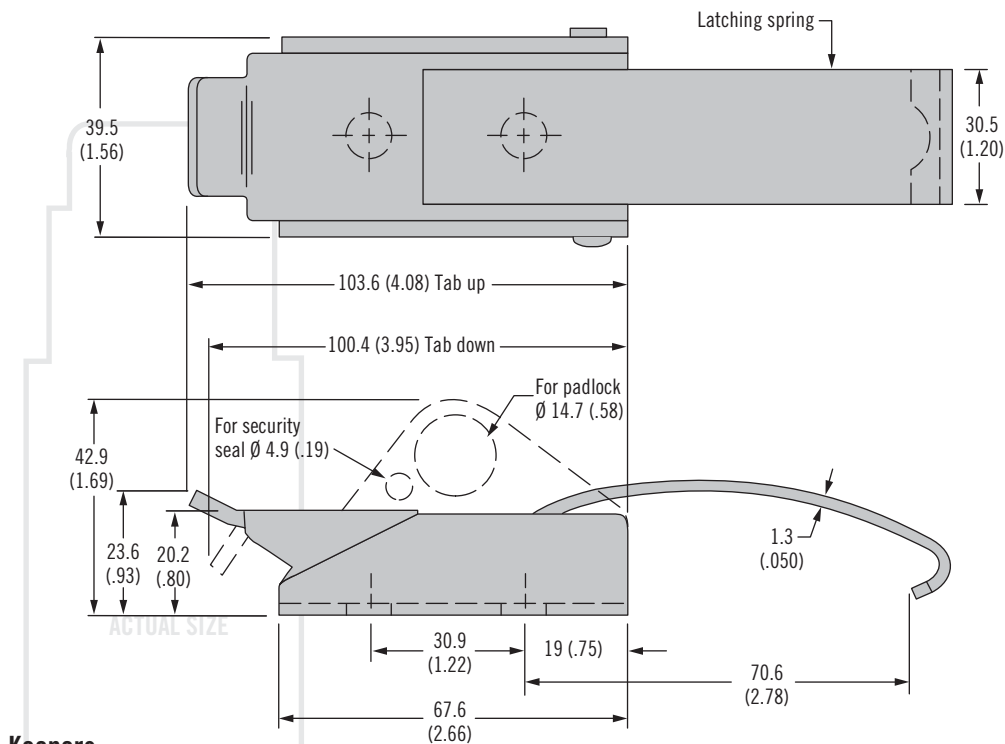
Latch Only



Material	Keeper Part Number		
	Concealed 2 Hole	Single Hole Peg Style	Exposed 1 Hole 1 Lug
Steel, Zinc Plated	97-67-103-11	97-67-105-11	97-67-104-11
Steel, Black Powder Coated	97-67-103-15	97-67-105-15	97-67-104-15

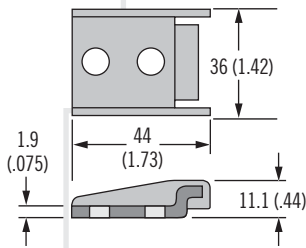
Dimensions in millimeters (inch) unless otherwise stated

97 Draw Latch Over-center

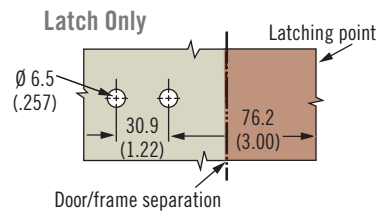
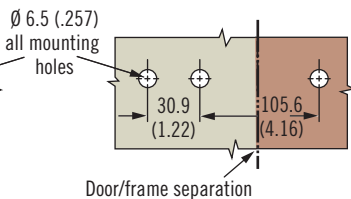
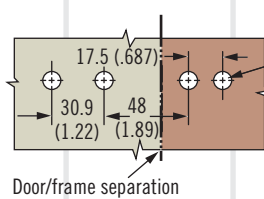
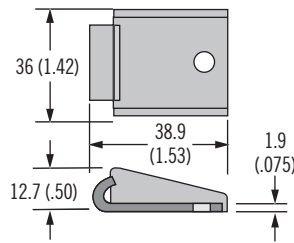


Keepers

Concealed 2 Hole



Exposed Single Hole



Material	Latch Part Number		
	Lever Tab Up	Lever Tab Down	Padlockable
Steel	97-70-120-11	97-70-220-11	97-70-320-11

Material	Keeper Part Number	
	Concealed 2 Hole	Exposed Single Hole
Steel	97-77-103-11	97-77-104-11

- Multiple keeper options for application variances

Material and Finish

Steel, zinc plated

Performance Details

Clamping force: 645 N (145 lbf)

Installation Notes

Install assembly with M6 (1/4) round head screws (not supplied) or 6 (1/4) rivets



V2 Draw Latch

Over-center

- Torsion spring to accommodate application variances

Material and Finish

Stainless steel or steel, zinc plated

Performance Details

Steel

Clamping force:

330 N (75 lbf) Minimum

700 N (160 lbf) Maximum

Stainless Steel

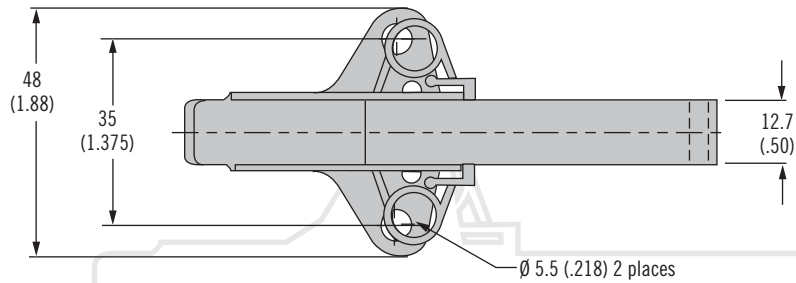
Clamping force:

260 N (60 lbf) Minimum

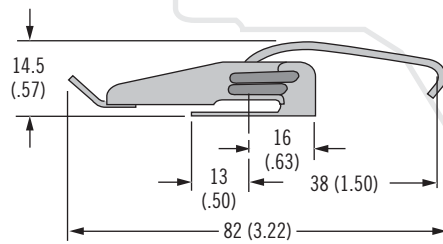
530 N (120 lbf) Maximum

Notes

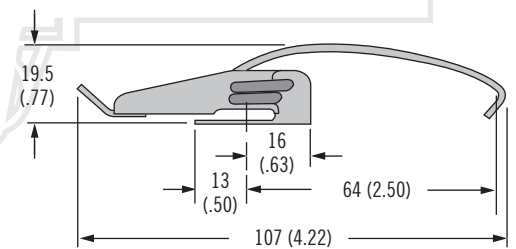
Spring loaded anchor plate compensates up to 2.3 (0.09) for irregularities in sealing and gasket set



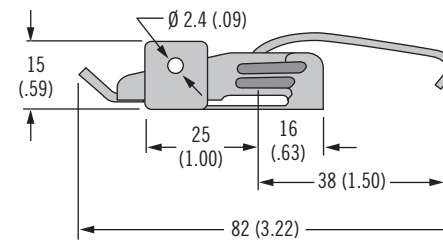
Short Blade



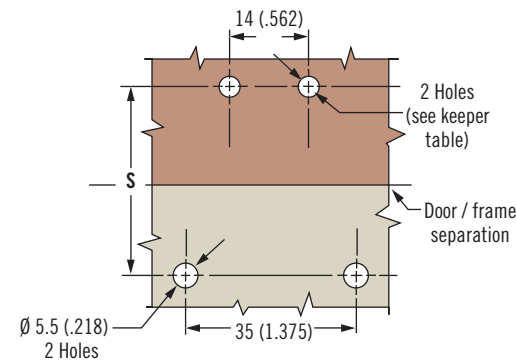
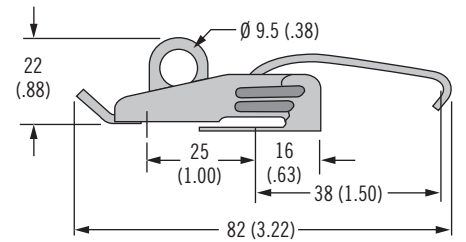
Long Blade



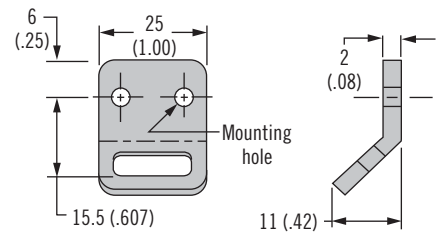
Wire Sealing



Padlockable



Keeper



Part Number

See table

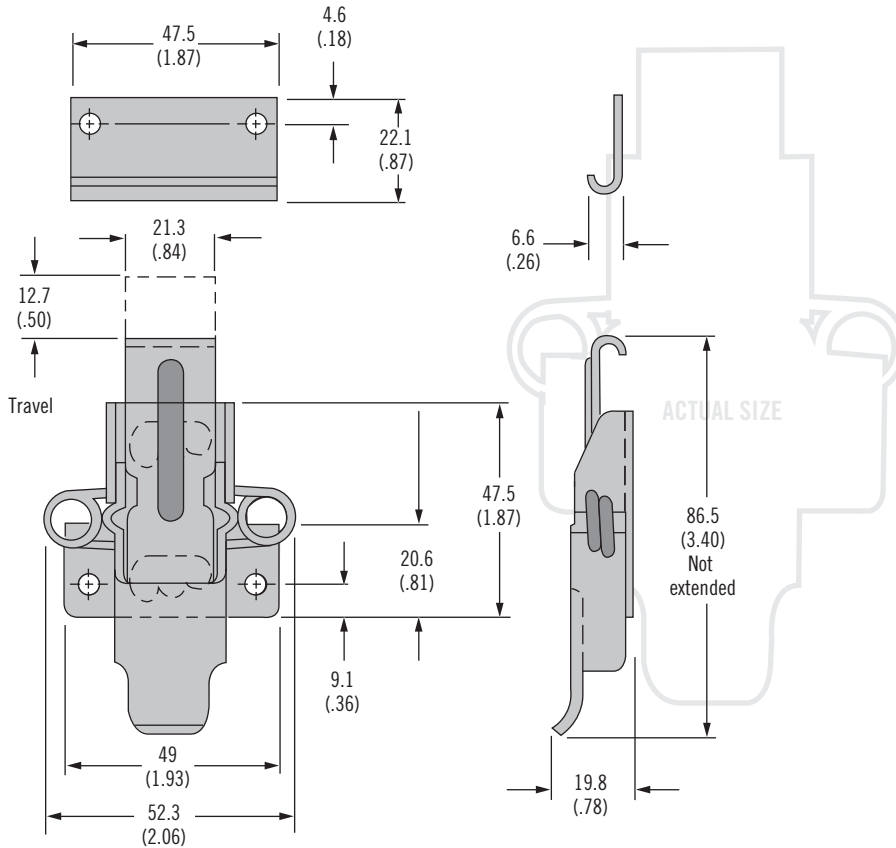
Order latch and keeper separately

Description	Style	S Dimension		Part Number	
		Minimum	Maximum	Steel	Stainless Steel
Latch	Short blade	55 (2.17)	57.3 (2.26)	V2-0025-07	V2-0025-52
	Long blade	80.7 (3.17)	83 (3.26)	V2-0068-07	~
	Wire sealing	55 (2.17)	57.3 (2.26)	V2-0034-07	V2-0034-52
	Padlockable	55 (2.17)	57.3 (2.26)	V2-0026-07	V2-0026-52
Keeper	Ø 3.4 (.135) mounting holes		V2-0018-07	V2-0018-52	
	Ø 5.5 (.218) mounting holes		V2-0054-07	V2-0054-52	

Dimensions in millimeters (inch) unless otherwise stated

V4 Draw Latch

Over-center



- Torsion spring to accommodate application variances

Material and Finish

Stainless steel or steel, zinc plated

Performance Details

Steel

Average ultimate load:
3500 N (786 lbf)

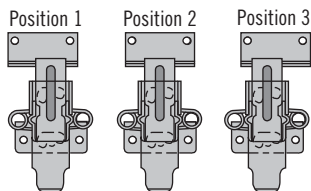
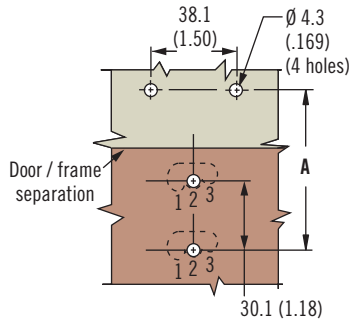
Stainless Steel

Average ultimate load:
3800 N (850 lbf)

Notes

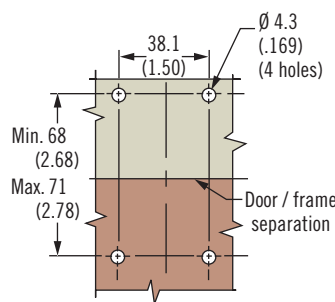
Spring loaded anchor plate compensates up to 2.3 (.09) for irregularities in sealing and gasket set

Adjustable Installation



Position Number	Dimensions A	
	Minimum	Maximum
1	71.4 (2.81)	73.7 (2.90)
2	69.9 (2.75)	72.1 (2.84)
3	68 (2.68)	70.6 (2.78)

Fixed Installation



Description	Part Number	
	Steel	Stainless Steel
Latch	V4-0006-02	V4-0006-52
Keeper	V4-0009-02	V4-0009-52

Part Number

See table

Order latch and keeper separately



TL Draw Latch

Over-center · Wire bail

- Compact latch
- Multiple link options for application variances

Material and Finish

Stainless steel or steel, zinc plated

Performance Details

Steel working load:

Compact heavy-duty:

1290 N (290 lbf)

Compact: 220 N (45 lbf)

Stainless steel working load:

Compact heavy-duty:

800 N (180 lbf)

Compact: 220 N (45 lbf)

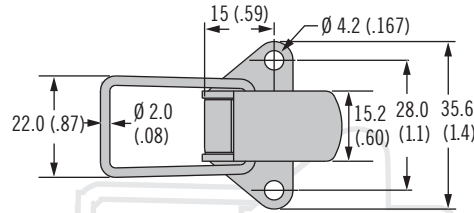
Installation Notes

Install assembly with M4 (No. 6) round head screws (not supplied) or 4 (.156) rivets

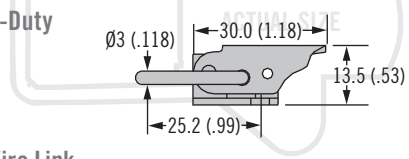
Notes

Order keepers separately, see page 290

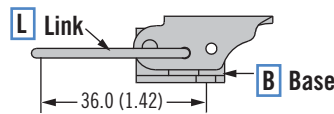
Exposed Mounting Holes



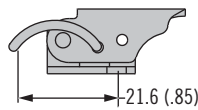
Heavy-Duty



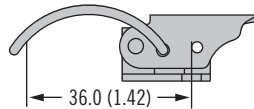
Flat Wire Link



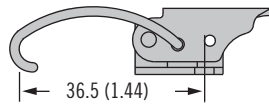
Short Curved Wire Link



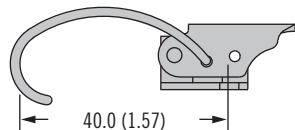
Long Curved Wire Link



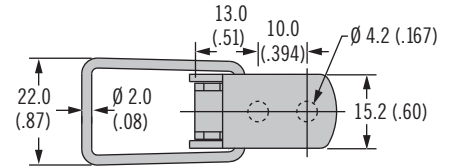
Shallow Hook Link



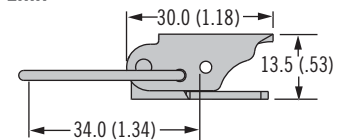
Deep Hook Link



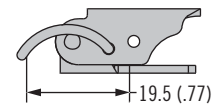
Concealed Mounting Holes



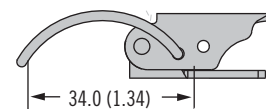
Flat Wire Link



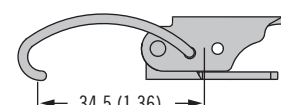
Short Curved Wire Link



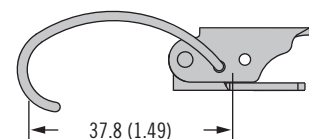
Long Curved Wire Link



Shallow Hook Link



Deep Hook Link



Part Number Selection

Latch only

See page 290 for keepers

L Link style

- 1 Flat
- 2 Short curved
- 3 Long curved
- 4 Shallow hook
- 5 Deep hook
- 6 Heavy-duty

F Finish

- 07 Steel, zinc plated
- 52 Stainless steel, passivated

TL - 20 - **B** 0 **L** - **F**

B Base type

- 1 Exposed
- 2 Concealed

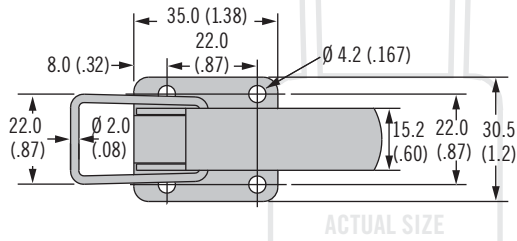
Dimensions in millimeters (inch) unless otherwise stated

TL Draw Latch

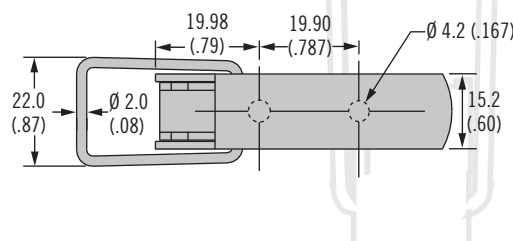
Over-center · Wire bail



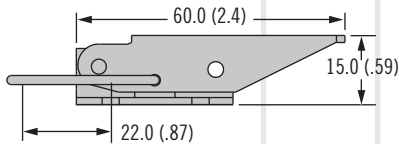
Exposed Mounting Holes



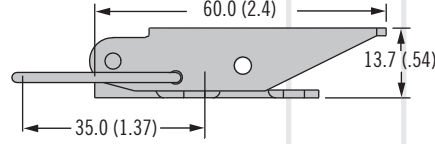
Concealed Mounting Holes



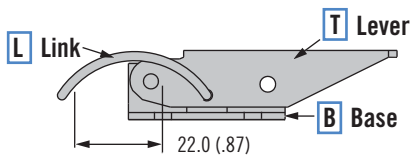
Flat Wire Link



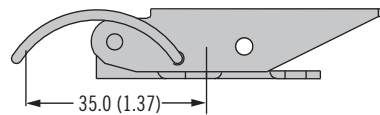
Flat Wire Link



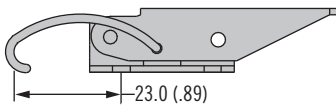
Curved Wire Link



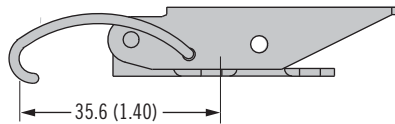
Curved Wire Link



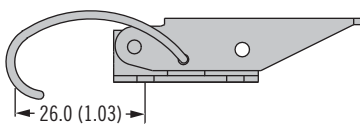
Shallow Hook Link



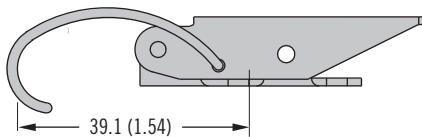
Shallow Hook Link



Deep Hook Link



Deep Hook Link



- Multiple link options for application variances
- Secondary locking style available

Material and Finish

Stainless steel or steel, zinc plated

Performance Details

Steel:

Working load: 220 N (45 lbf)

Stainless Steel:

Working load: 220 N (45 lbf)

Installation Notes

Install assembly with M4 (No. 6) round head screws (not supplied) or 4 (.156) rivets

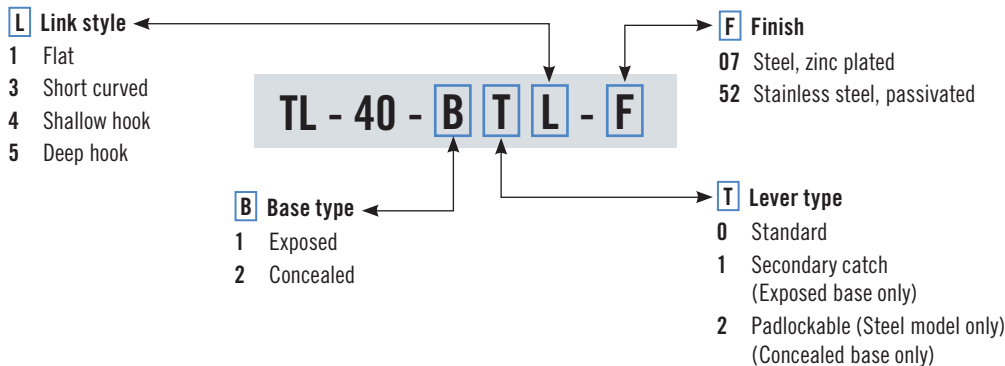
Notes

Order keepers separately, see page 290

Part Number Selection

Latch only

See page 290 for keepers





TL Keeper Keeper

- Multiple keeper options for application variances
- Suitable for all TL-20 and TL-40 latches

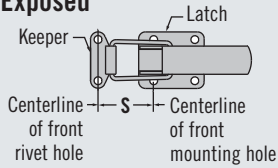
Material and Finish

Stainless steel, steel, zinc plated

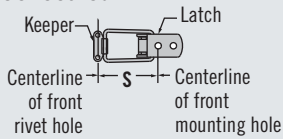
Installation Notes

Install assembly with M4 (No. 6) round head screws (not supplied) or 4 (.156) rivets

Exposed



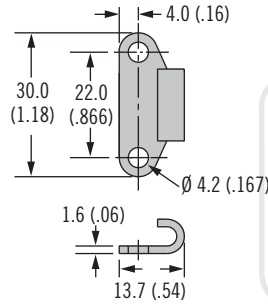
Concealed



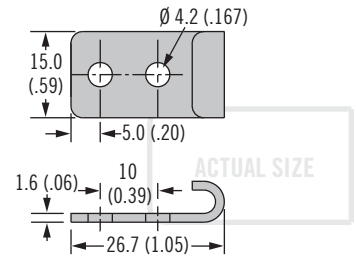
Part Number Selection

1. Select your latch choice in the draw latch column
2. Select your keeper style in the keeper style row
3. Where the column and row meet use the figure for your install S dimension

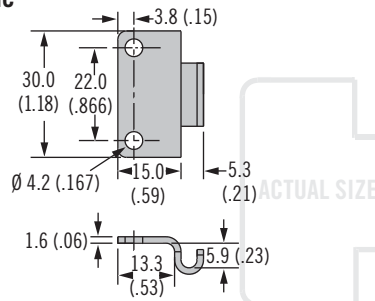
Small



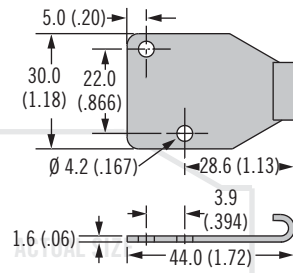
Narrow



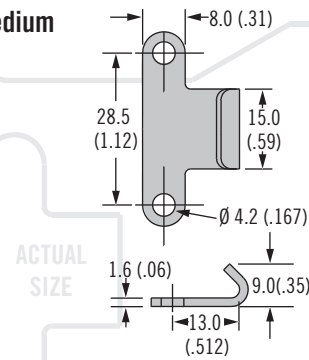
Right Angle



Large



Medium



- B** Base type
- 1 Small
 - 2 Narrow
 - 3 Right angle
 - 5 Large
 - 9 Medium

- F** Finish
- 07 Steel, zinc plated
 - 52 Stainless steel passivated

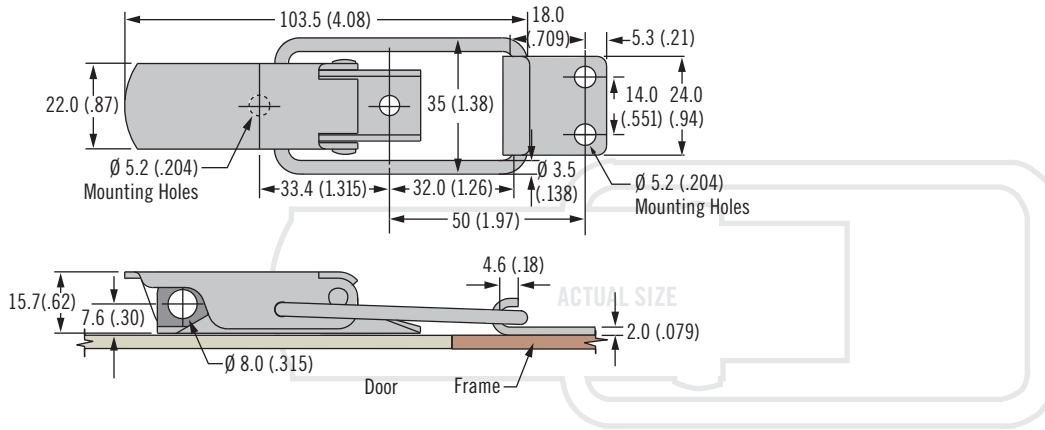
TL - 17 - 20 **B** - **F**

Keeper Style	Small	Narrow	Large	Medium
	TL-17-201-F	TL-17-202-F	TL-17-205-F	TL-17-209-F
Draw Latch	S Dimension			
TL-20-101	44.7 (1.76)	46.7 (1.84)	62.0 (2.44)	49.0 (1.93)
TL-20-102	30.3 (1.19)	32.3 (1.27)	47.6 (1.87)	34.6 (1.36)
TL-20-103	44.7 (1.76)	46.7 (1.84)	62.0 (2.44)	49.0 (1.93)
TL-20-106	33.9 (1.33)	35.9 (1.41)	51.2 (2.02)	38.2 (1.50)
TL-20-201	41.7 (1.64)	43.7 (1.72)	59.0 (2.32)	46.0 (1.81)
TL-20-202	28.2 (1.11)	30.2 (1.19)	45.5 (1.79)	32.5 (1.28)
TL-20-203	41.7 (1.64)	43.7 (1.72)	59.0 (2.32)	46.0 (1.81)
TL-40-101	30.7 (1.21)	32.7 (1.29)	48.0 (1.89)	35.0 (1.38)
TL-40-103	30.7 (1.21)	32.7 (1.29)	48.0 (1.89)	35.0 (1.38)
TL-40-201	43.7 (1.72)	45.7 (1.80)	61.0 (2.40)	48.0 (1.89)
TL-40-203	43.7 (1.72)	45.7 (1.80)	61.0 (2.40)	48.0 (1.89)

Dimensions in millimeters (inch) unless otherwise stated

TL Draw Latch

Over-center · Wire bail



Description	Part Number	
	Steel	Stainless Steel
Latch	TL-50-201-07	TL-50-201-52
Keeper	TL-17-501-07	TL-17-501-52

- Robust construction
- Padlockable

Material and Finish

Stainless steel or steel, zinc plated

Performance Details

Working load: 2490 N (560 lbf)

Installation Notes

Install assembly with M5 (No. 10) round head screws (not supplied) or 5 (.196) rivets.

Part Number

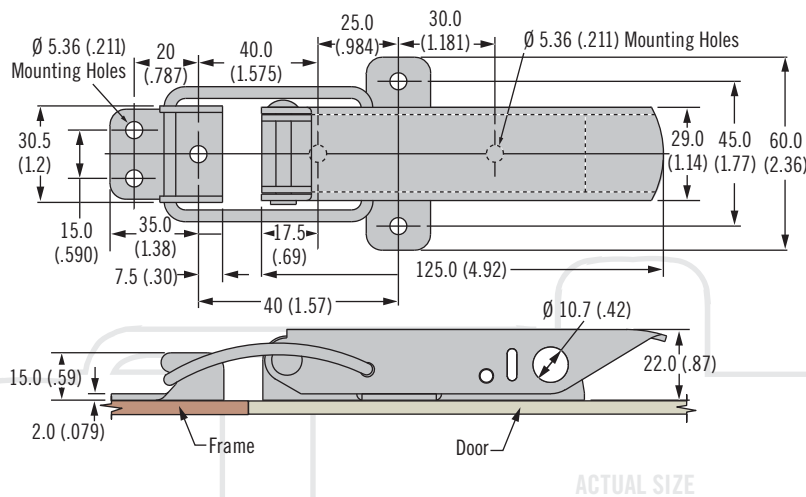
See table

Order latch and keeper separately



TL Draw Latch

Over-center · Wire bail



Description	Part Number
Draw Latch	TL-60-102-07
Keeper	TL-17-601-07

- Robust construction
- Padlockable

Material and Finish

Steel, zinc plated

Performance Details

Working load: 2670 N (600 lbf)

Installation Notes

Install assembly with M5 (No. 10) round head screws (not supplied) or 5 (.196) rivets

Part Number

See table

Order latch and keeper separately



A1 Draw Latch

Over-center · Adjustable

- Hooked latching rod
- Latching arm adjusts to fit your grip range

Material and Finish

Stainless steel or steel, zinc plated
Grip: Vinyl yellow

Performance Details

Latched at end of hook:

Small:

Maximum static load:
1200 N (270 lbf)

Medium:

Maximum static load:
1780 N (400 lbf)

Latched at center of radius:

Small:

Maximum static load:
1350 N (300 lbf)

Medium:

Maximum static load:
3110 N (700 lbf)

Installation Notes

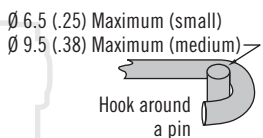
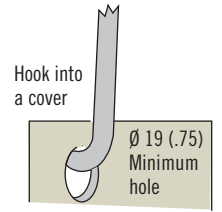
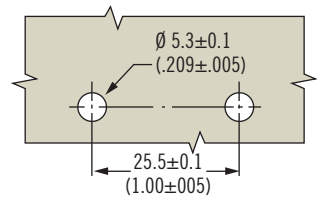
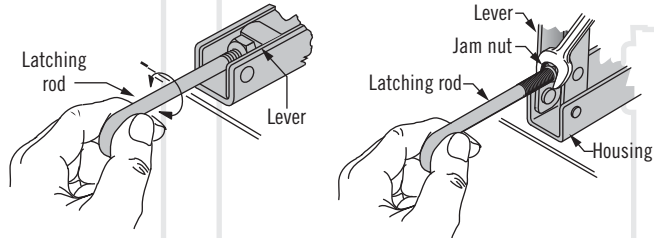
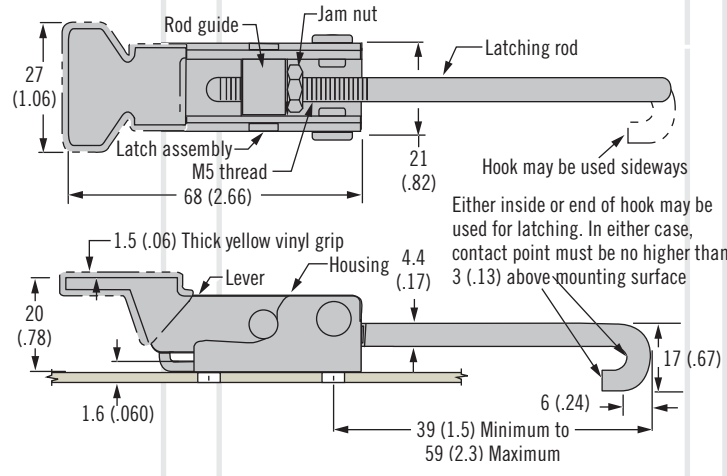
Small:

Install assembly with four M5
(No. 10) screws or rivets

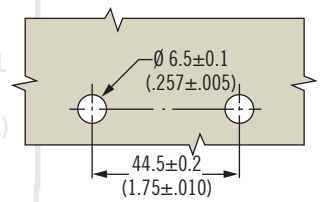
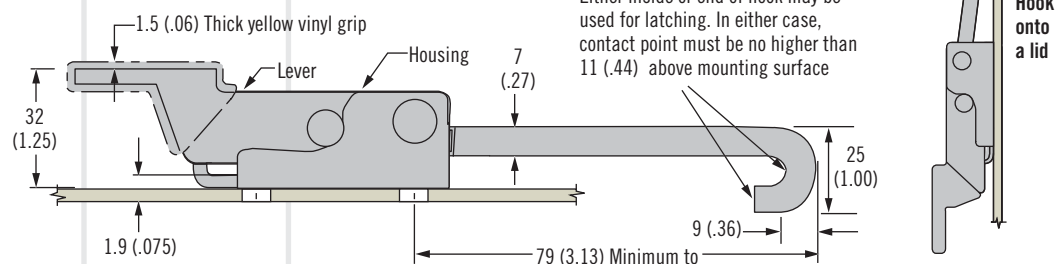
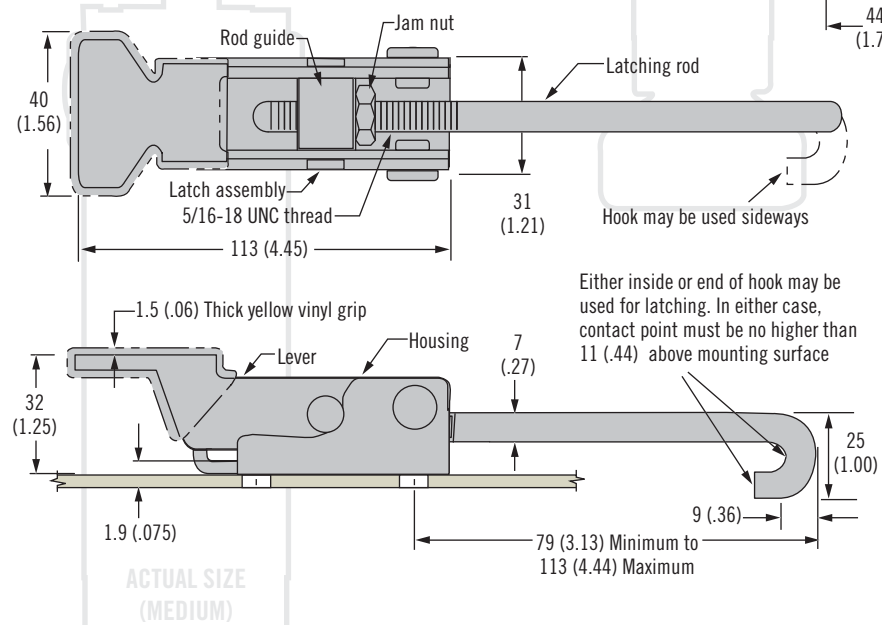
Medium:

Install assembly with four M6 (1/4)
screws or rivets

Small



Medium



Part Number Selection

B Base size **M** Finish

5 Small 10 Steel, zinc plated without yellow grip
7 Medium 20 Steel, zinc plated with yellow grip
 40 Stainless steel without yellow grip
 50 Stainless steel with yellow grip

A1 - 11 - B 02 - M

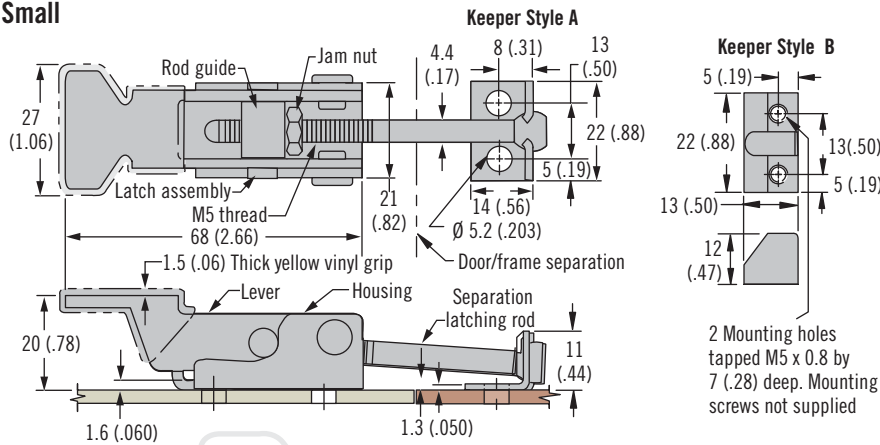
Dimensions in millimeters (inch) unless otherwise stated

A1 Draw Latch

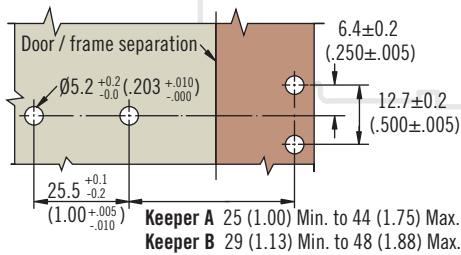
Over-center · Adjustable



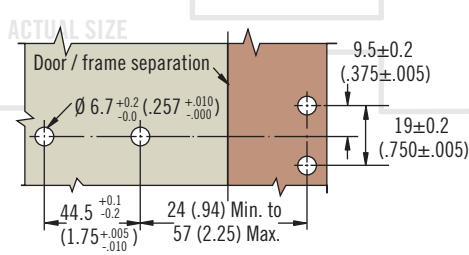
Small



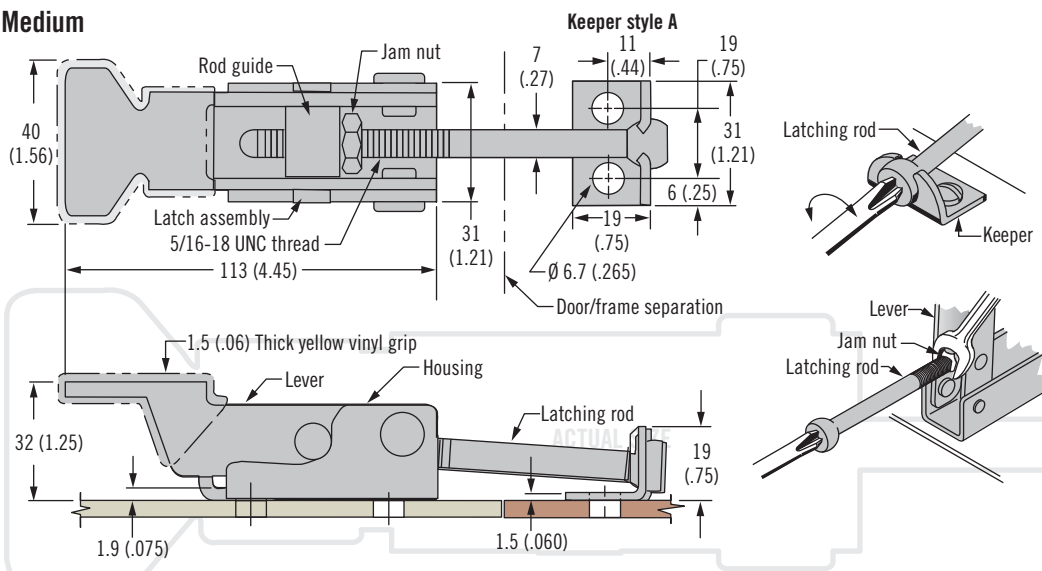
Small Panel Preparation



Medium Panel Preparation



Medium



• Adjustable grip

Material and Finish

Stainless steel or steel, zinc plated
Grip: Vinyl yellow

Performance Details

Small (keeper style A):
Maximum static load: 180 N (40 lbf)

Small (keeper style B):
Maximum static load:
1550 N (350 lbf)

Medium (keeper style A)
Maximum static load: 890 N (200 lbf)

Installation Notes

Small:
Install assembly with four M5
(No. 10) round head screws or rivets

Medium:
Install assembly with four M6 (1/4)
round head screws or rivets

Part Number Selection

Assembly complete with keeper

A1 - 10 - B 0 - K - M

B Base size

- 5 Small
- 7 Medium

K Keeper style

- 1 Type A
- 3 Type B (Small steel, zinc plated models only)

M Finish

- 10 Steel, zinc plated without yellow grip
- 20 Steel, zinc plated with yellow grip
- 40 Stainless steel without yellow grip
- 50 Stainless steel with yellow grip



A1 Draw Latch

Over-center · Adjustable

- Robust construction
- Adjustable grip

Material and Finish

Steel, zinc plated or black powder coated

Performance Details

Latched at end of hook:

Maximum static load:
2225 N (500 lbf)

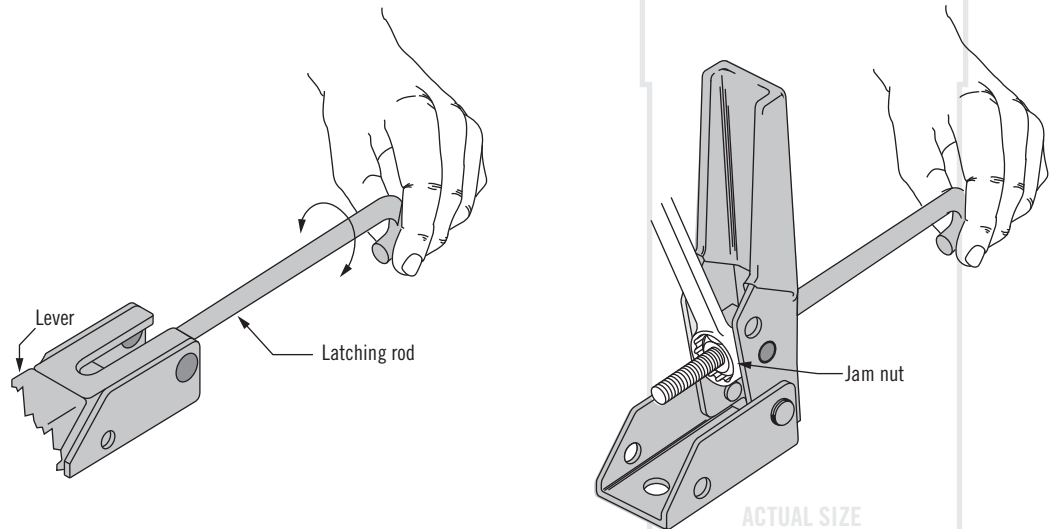
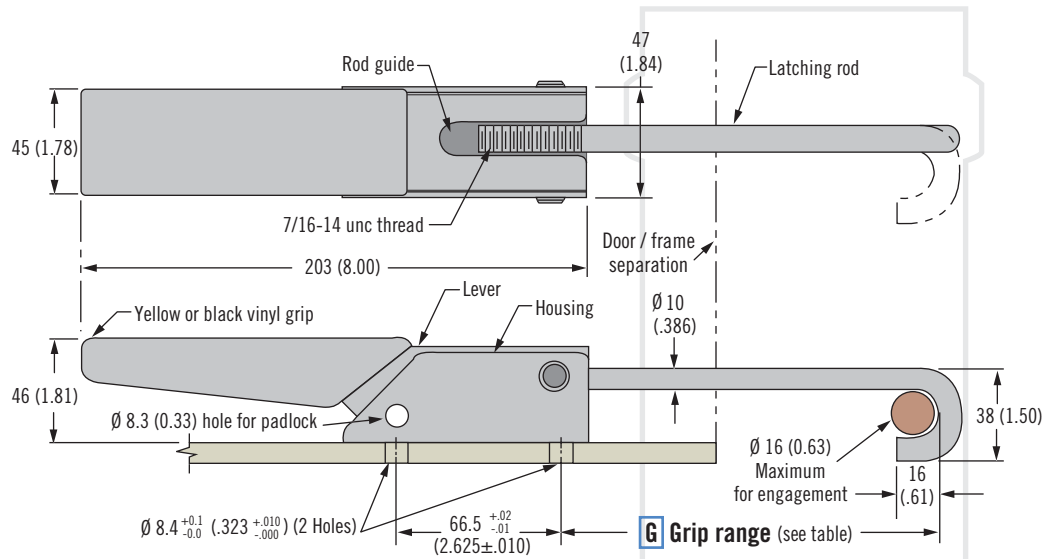
Latched at center of radius:

Maximum static load:
4450 N (1000 lbf)

Installation Notes

Install assembly with two M8 (5/16) bolts (not supplied)

Hook may be used sideways. Either inside or end of hook may be used for latching. In either case, contact point must be no higher than 25 (1.00) above mounting surface



Part Number

See table

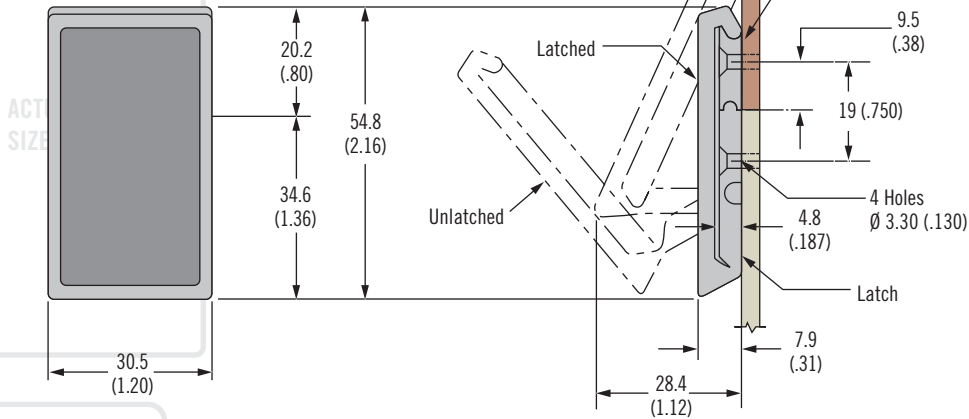
G Grip Range		Part Number	
Minimum	Maximum	Bright latch with yellow vinyl grip	Black latch with black vinyl grip
89 (3.50)	114 (4.50)	A1-11-902-20	A1-11-902-31

07 Draw Latch

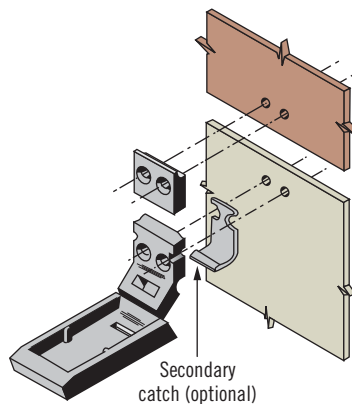
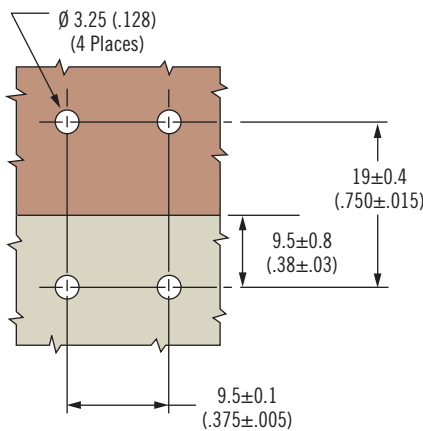
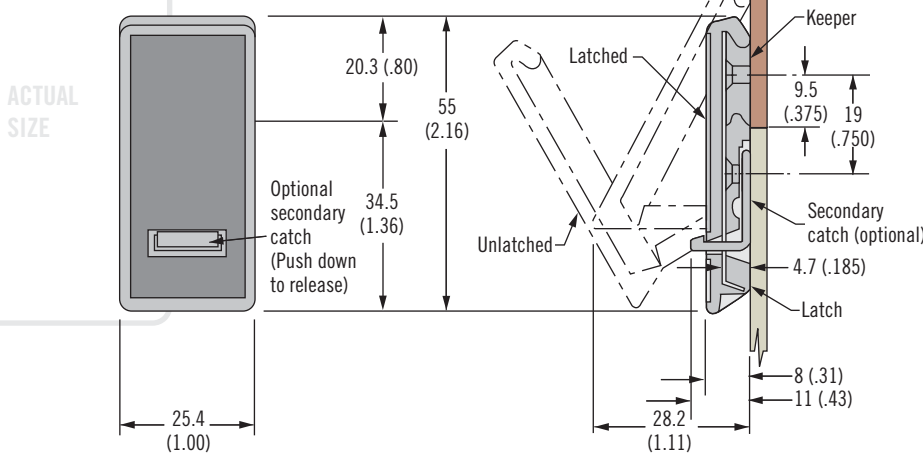
Over-center · Living hinge



Standard Style



Secondary Catch Style



- Low profile one piece molded latch
- Concealed mounting
- Secondary catch option to prevent accidental opening

Material and Finish

Polypropylene black or white
Secondary catch: acetal black or red

Performance Details

Maximum working load:
Standard: 445 N (100 lbf)
Secondary catch: 310 N (70 lbf)
Operating temperature range:
0°C (32°F) to 65°C (150°F)
Flammability rating: UL94-HB

Installation Notes

Install assembly with four Ø 3 (.125) flat head rivets or M3 (No. 4) flat head screws (not supplied)

B Base type

- 2 Standard
- 5 Secondary catch

F Finish

- 11 White (standard only)
- 12 Black (standard only)
- 70 Black with red secondary catch
- 72 Black with black secondary catch

07 - 10 - B 01 - F

Part Number Selection

Assembly complete with keeper



91 Draw Latch

Under-center · Adjustable

- Adjustable grip
- Kick out feature disengages from keeper
- Secondary catch option to prevent accidental opening

Material and Finish

Stainless steel or steel, zinc plated

Performance Details

Maximum working load:

With 91-600 keeper:

1325 N (300 lbf)

With K4-2338 keeper:

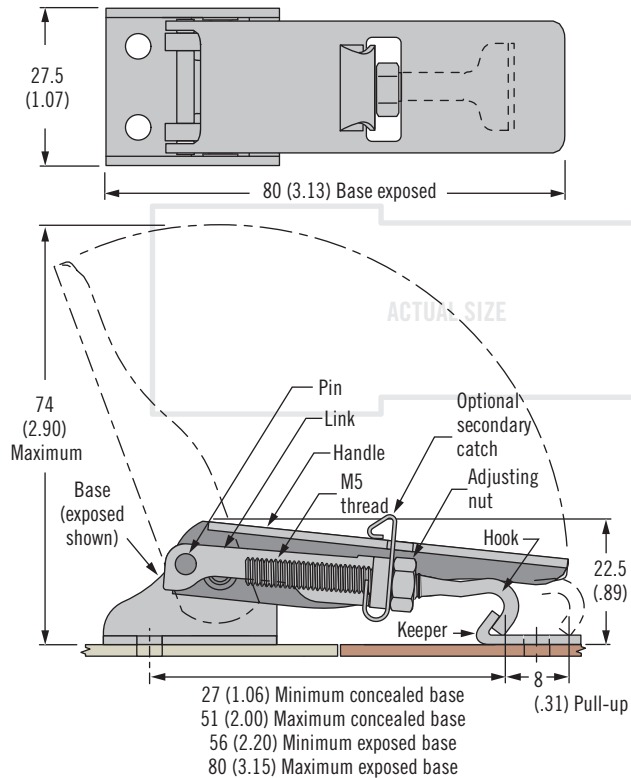
1550 N (350 lbf)

Installation Notes

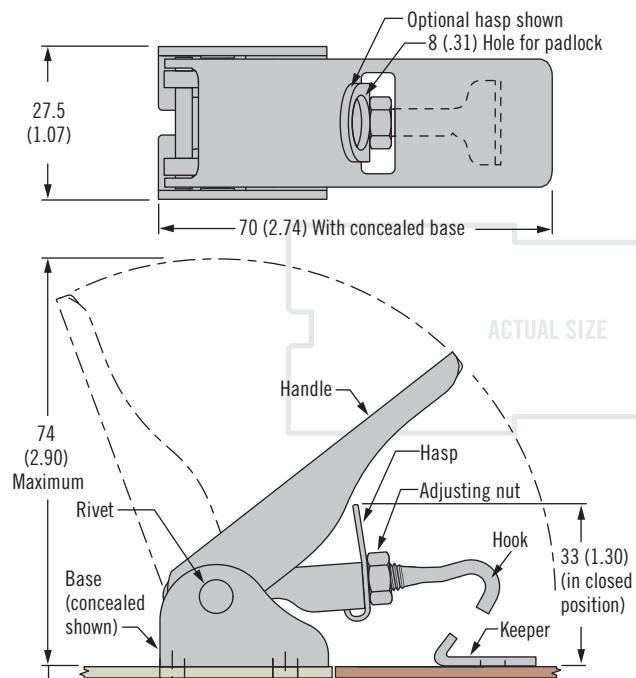
M4 (No. 8) screws (not supplied)

Latch

Exposed Base (Secondary catch option shown)



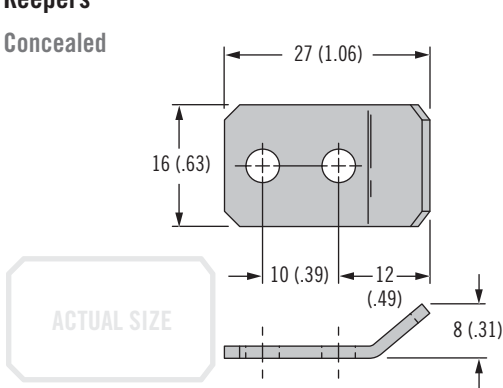
Concealed Base (Hasp option shown)



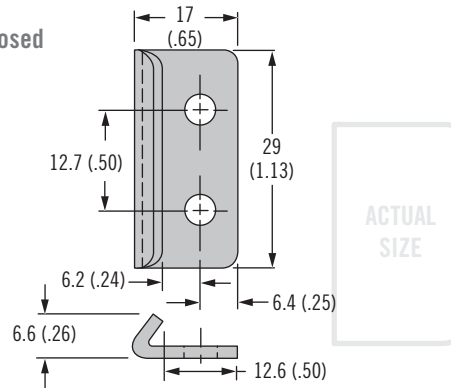
Dimensions in millimeters (inch) unless otherwise stated

Keepers

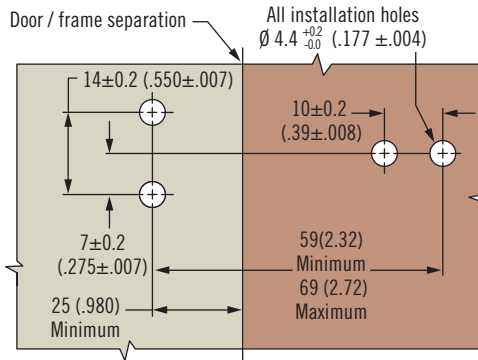
Concealed



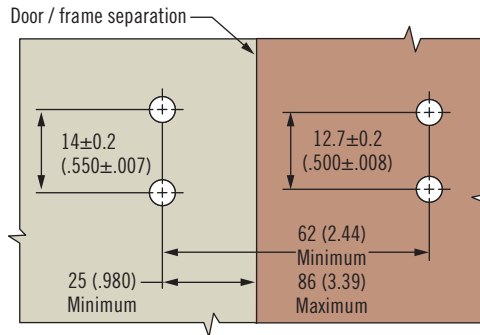
Exposed



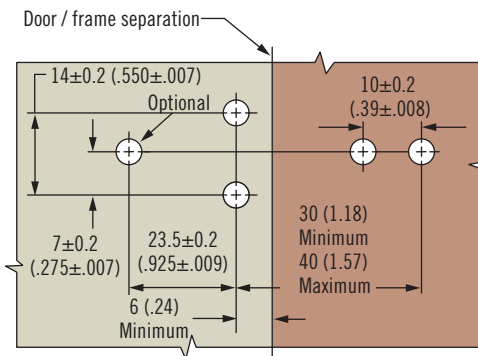
Exposed Base and Concealed Keeper



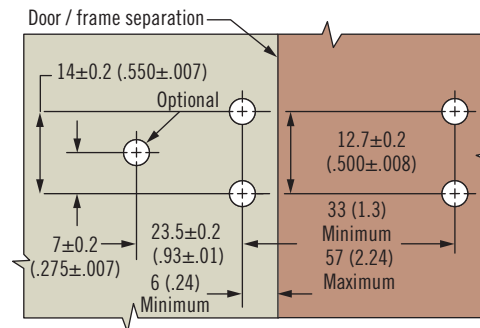
Exposed Base and Exposed Keeper



Concealed Base and Concealed Keeper



Concealed Base and Exposed Keeper



B Base type

- 1 Concealed
- 2 Concealed with secondary catch
- 3 Concealed with padlock hasp
- 5 Exposed
- 6 Exposed with secondary catch
- 7 Exposed with padlock hasp

F Finish

- 07 Steel, zinc plated
- 52 Stainless steel

91 - 5 - **B** 2 - **F**

Part Number Selection

Order latch and keeper separately
 For latch part number see builder
 For keeper part number see table

Finish	Keeper Part Number	
	Concealed	Exposed
Steel	91-600-07	K4-2338-07
Stainless Steel	91-600-52	K4-2338-52
Stainless Steel, Black	91-600-63	K4-2338-63

Dimensions in millimeters (inch) unless otherwise stated





91 Draw Latch

Under-center · Adjustable

- Adjustable grip
- Secondary catch option to prevent accidental opening

Material and Finish

Stainless steel or steel, zinc plated

Performance Details

Maximum working load

Stainless steel: 710 N (160 lbf)

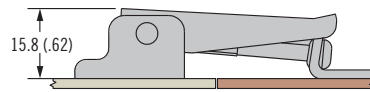
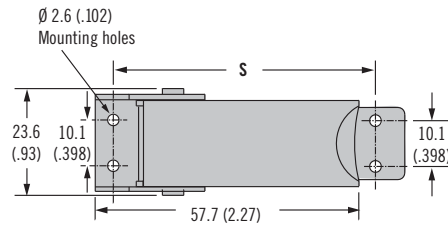
Steel, zinc plated: 1200 N (270 lbf)

Installation Notes

Ø 2.5 (No. 3) screws (not supplied)

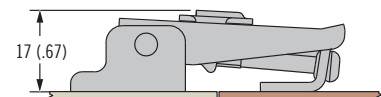
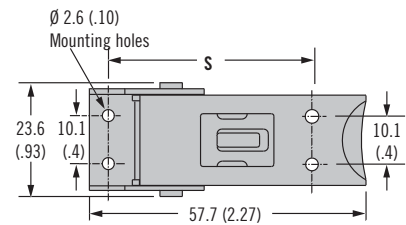
Latch

Standard



Latch shown with 91-630-XX exposed keeper

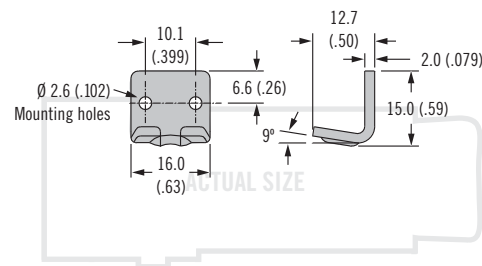
Secondary Catch



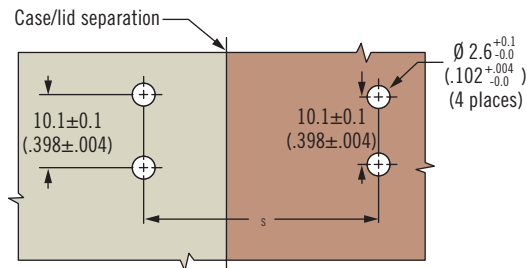
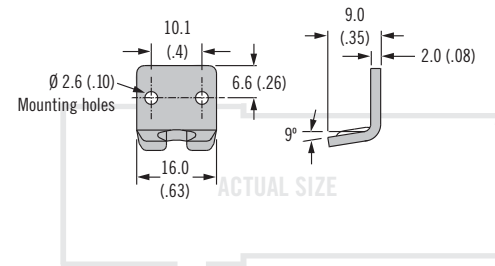
Latch shown with 91-634-XX concealed keeper

Keeper

Exposed



Concealed



Part Number

See table

Order latch and keeper separately

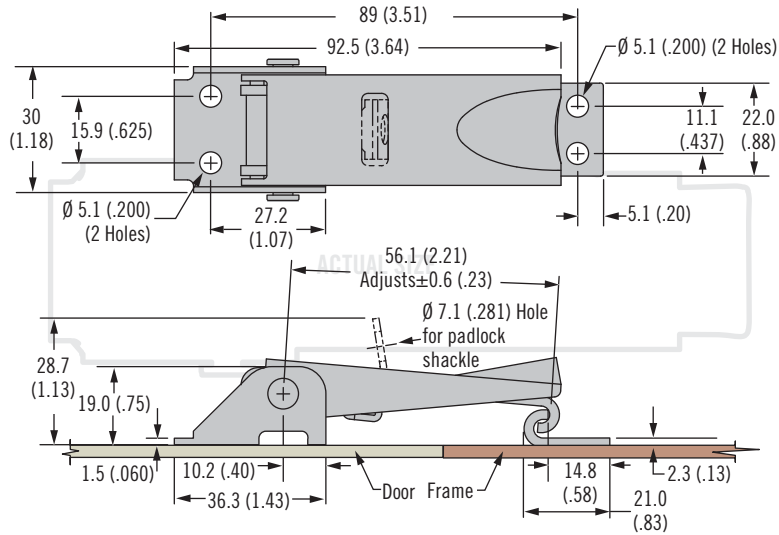
Material	Latch Part Number	
	Standard	Secondary Catch
Steel	91-351-07	91-361-07
Stainless Steel	91-351-52	91-361-52

S	Keeper Type	Steel	Stainless Steel
		39 - 47 (1.53 - 1.85)	91-634-07
52 - 60 (2.04 - 2.36)	Exposed	91-630-07	91-630-52

Dimensions in millimeters (inch) unless otherwise stated

91 Draw Latch

Under-center · Adjustable



Type	Part Number	
	Steel	Stainless Steel
Standard Latch	91-752-07	91-752-52
Latch with Padlock Hasp	91-772-07	91-772-52

• Adjustable grip

Material and Finish

Stainless steel or steel, zinc plated

Performance Details

Maximum working load:
2670 N (600 lbf)

Installation Notes

M5 (No. 10) screws (not supplied)

Part Number

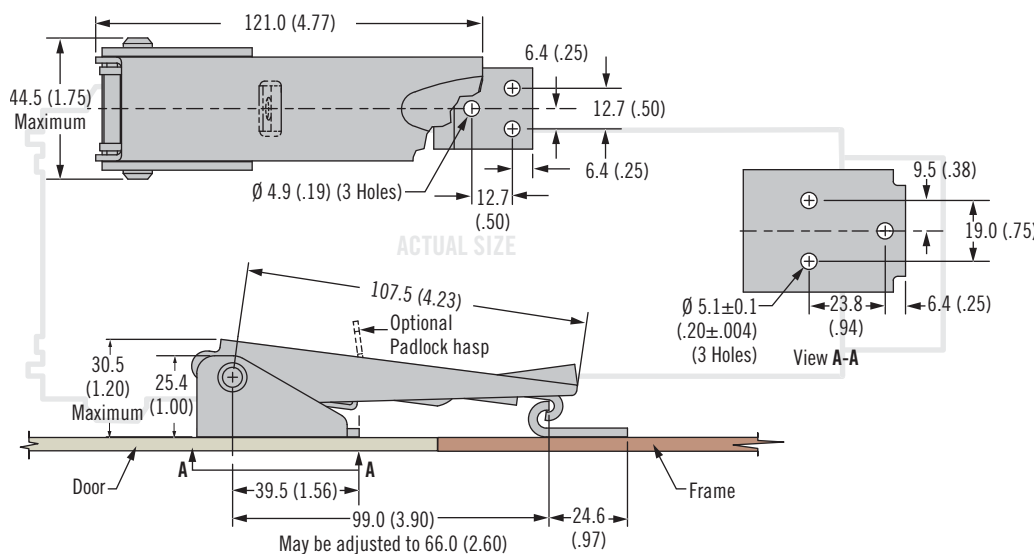
See table

Assembly complete with keeper



91 Draw Latch

Under-center · Adjustable



Type	Part Number
Standard Latch	91-812-52
Latch with Padlock Hasp	91-832-52

• Adjustable grip

Material and Finish

Stainless steel

Performance Details

Maximum working load:
3560 N (800 lbf)

Installation Notes

Install assembly with M4 (No. 10) screws (not supplied)

Part Number

See table

Assembly complete with keeper



K2 Draw Latch

Rotary · Stylized wing

- Lift and Turn operation
- Consistent pull-up

Material and Finish

Stainless steel or steel, black powder coated

Performance Details

Steel:

Maximum working load:
1230 N (275 lbf)

Stainless steel:

Maximum working load:
845 N (190 lbf)

Operating temperature range:
-40°C (-40°F) to 80°C (175°F)

Installation Notes

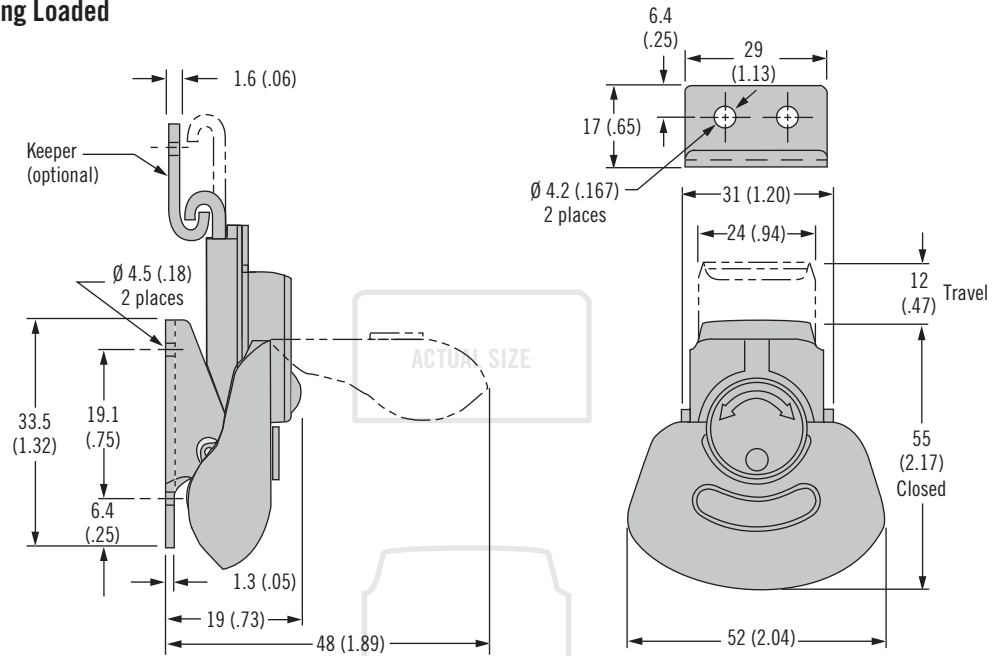
Install assembly with $\varnothing 4$ (.157) rivets or M4 (No. 8) screws (not supplied)

Notes

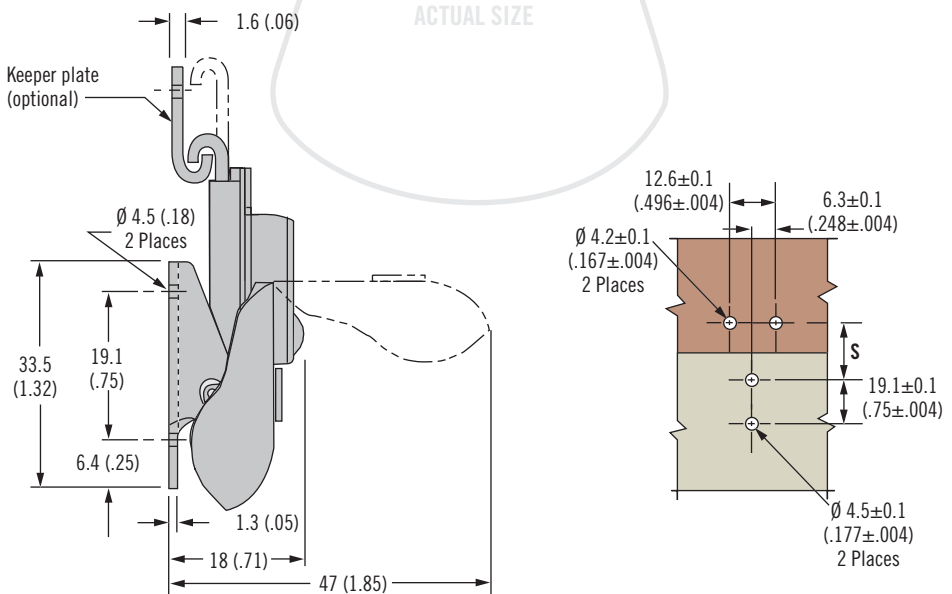
Spring loaded:

Ideal for applications where shock and vibration occur. Compensates up to 1.7 (.07) for mounting hole irregularities, panel variations and gasket set. Also provides an additional allowance of 2.3 (.09) deflection when loaded.

Spring Loaded



Fixed



Part Number

See table

Order latch and keeper separately

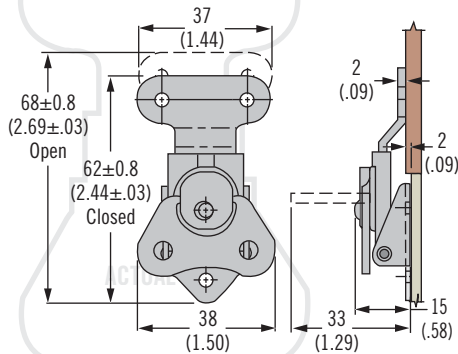
Latch	Part Number			S
	Style	Steel, Black Powder Coated	Stainless Steel	
	Spring loaded	K2-3005-89	K2-3005-51	
Fixed	K2-3001-89	K2-3001-51	32±0.2 (1.25±.01)	
Keeper		K4-2338-89	K4-2338-51	

Dimensions in millimeters (inch) unless otherwise stated

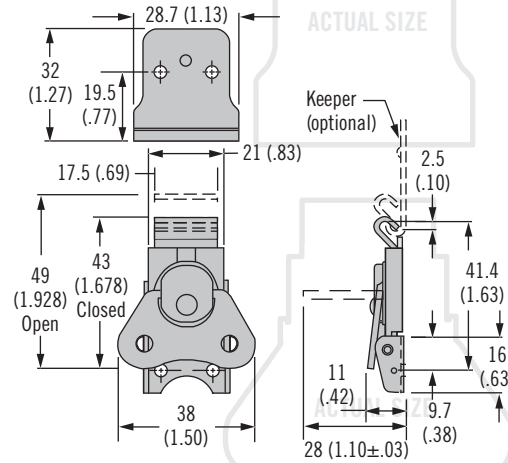
K3 Draw Latch Rotary



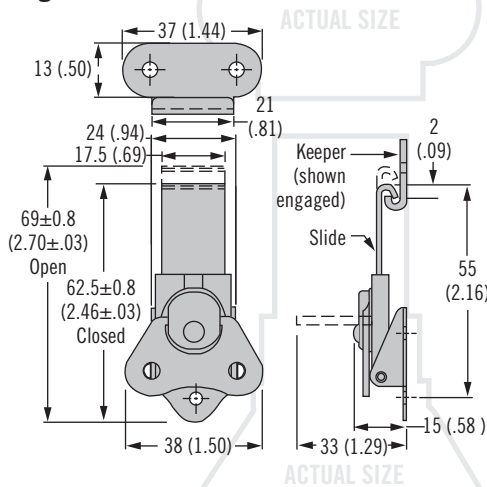
Hinge Lock



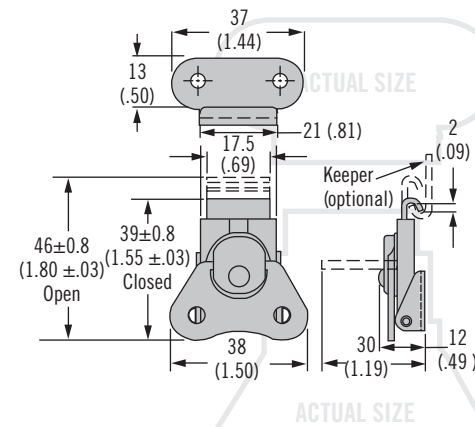
Low Profile



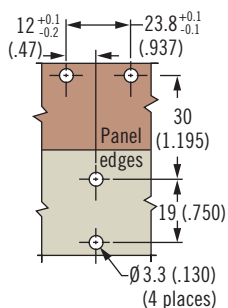
Long Slide



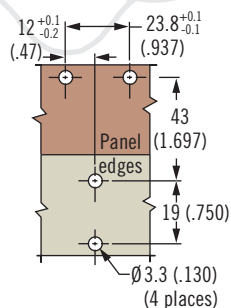
Short Anchor Plate



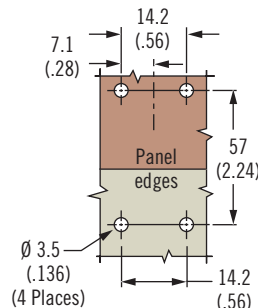
Hinge Lock



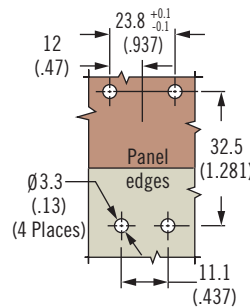
Long Slide



Low Profile



Short Base



- Adjustable grip

Material and Finish

Stainless steel or steel, zinc plated

Installation Notes

Install assembly with Ø 3 (.125) rivets or M3 (No. 4) screws (not supplied)

Notes

Hinge lock style has an integrally attached keeper

Material	Latch Part Number				Keeper Part Number	
	Hinge Lock	Long Slide	Low Profile	Short Base	Keeper	Low Profile Keeper
Steel	K3-1746-07	K3-2347-07	K3-2694-07	K3-1660-07	K3-0334-07	K3-2696-07
Stainless Steel	~	K3-2347-52	~	K3-1660-52	K3-0334-52	~

Part Number

See table

Order latch and keeper separately



K3 Draw Latch

Rotary

- Lift and Turn operation
- Consistent pull-up

Material and Finish

Stainless steel or steel, zinc plated

Installation Notes

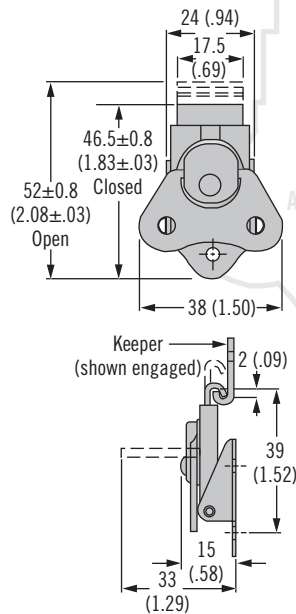
Install assembly with $\varnothing 3$ (.125) rivets or M3 (No. 4) screws (not supplied)

Notes

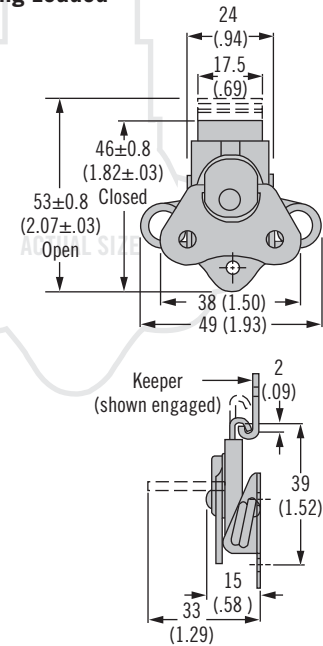
Spring loaded:

Ideal for applications where shock and vibration occur. Compensates up to 4 (.156) for mounting hole irregularities, panel variations and gasket set.

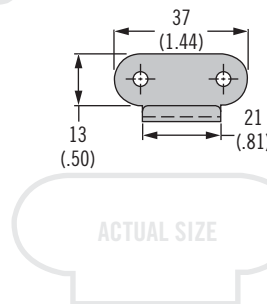
Riveted



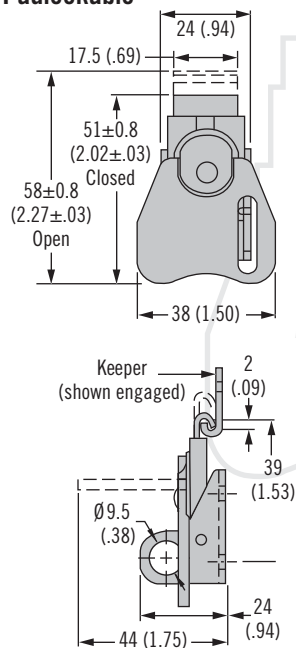
Spring Loaded



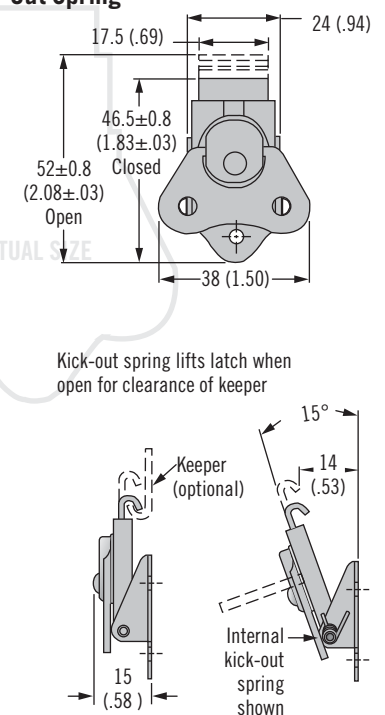
Keeper



Padlockable



Kick-Out Spring



Kick-out spring lifts latch when open for clearance of keeper

Material	Part Number				
	Riveted	Spring Loaded	Padlockable	Kick-Out Spring	Keeper
Steel	K3-1625-07	K3-1735-07	K3-2403-07	K3-1887-07	K3-0334-07
Stainless Steel	K3-1625-52	K3-1735-52	K3-2403-52	K3-1887-52	K3-0334-52

Part Number

See table

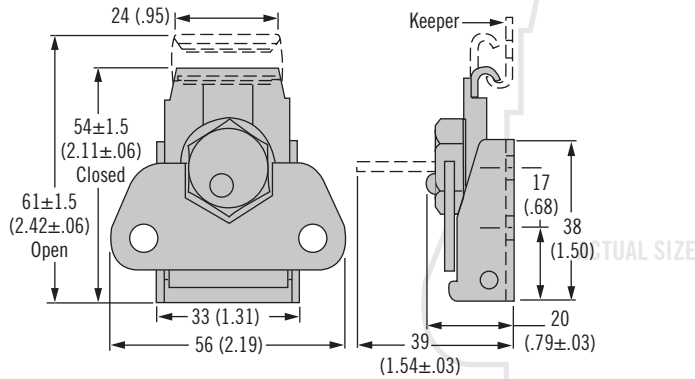
Order latch and keeper separately

Dimensions in millimeters (inch) unless otherwise stated

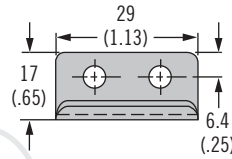
K4 Draw Latch Rotary



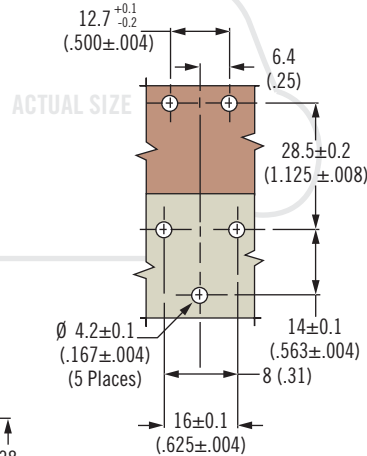
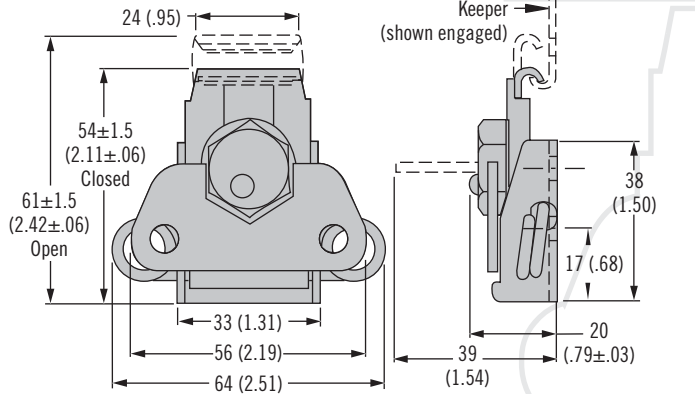
Riveted



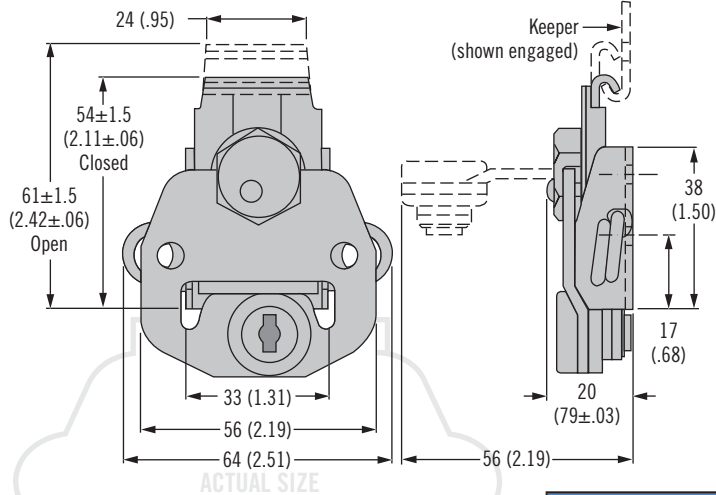
Keeper



Spring Loaded



Key Lockable



Type	Part Number	
	Latch	Keeper
Riveted	K4-2714-07	K4-2338-07
Spring loaded	K4-2359-07	
Key lockable	K4-2833-07	

- Lift and Turn operation
- Consistent pull-up

Material and Finish

Steel, zinc plated

Installation Notes

Install assembly with $\varnothing 4$ (.157) rivets or M4 (No. 8) screws (not supplied)

Notes

Spring loaded:
Ideal for applications where shock and vibration occur. Compensates up to 4 (.156) for mounting hole irregularities, panel variations and gasket set.



K5 Draw Latch

Rotary

- Lift and Turn operation
- Consistent pull-up

Material and Finish

Stainless steel or steel, zinc plated

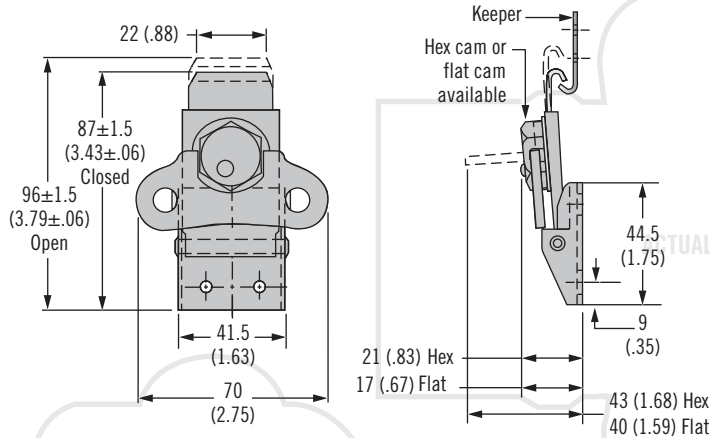
Installation Notes

Install assembly with $\varnothing 5$ (3/16) rivets or M5 (No. 10) screws (not supplied)

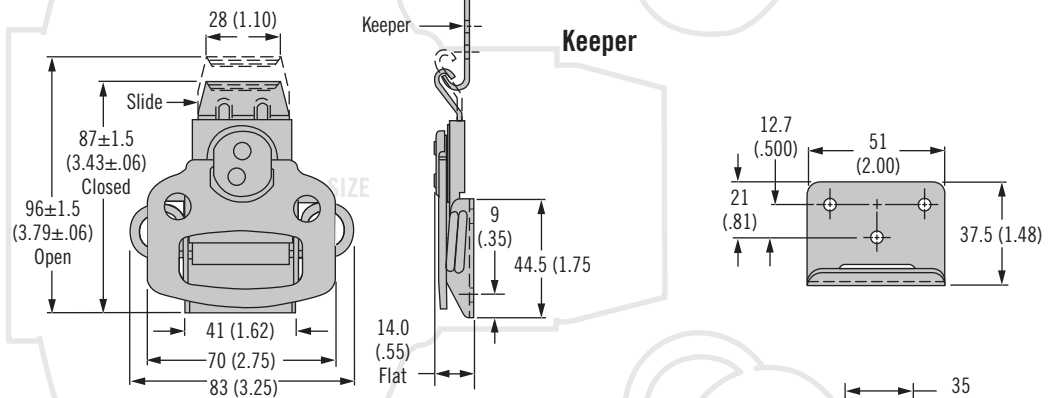
Notes

Spring loaded and low profile: Ideal for applications where shock and vibration occur. Compensates up to 4 (.16) for mounting hole irregularities, panel variations and gasket set.

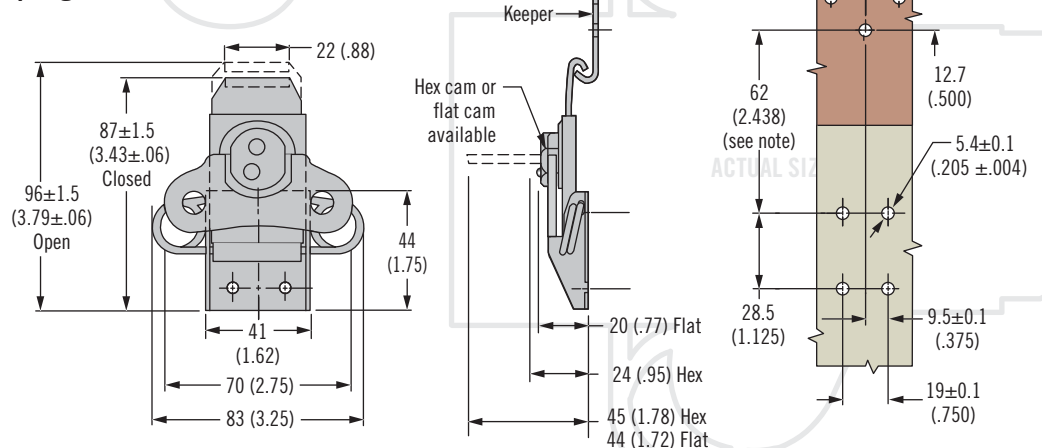
Riveted (hex cam shown)



Low Profile (flat cam shown)



Spring Loaded (flat cam shown)



Part Number

See table

Order latch and keeper separately

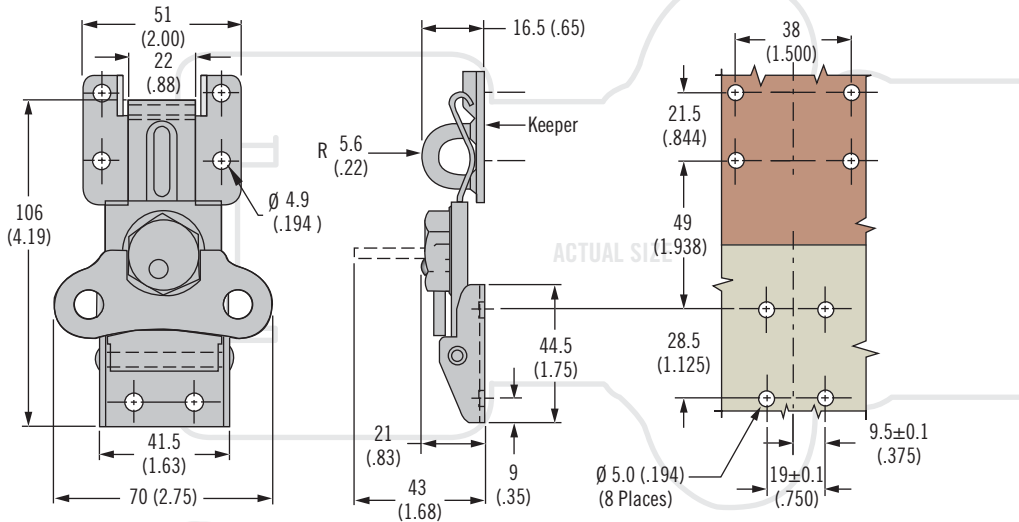
Material	Part Number					
	Riveted Hex Cam	Riveted Flat Cam	Low Profile Flat Cam	Spring Loaded Hex Cam	Spring Loaded Flat Cam	Keeper
Steel	K5-2812-07	K5-2857-07	K5-2814-07	K5-2858-07	K5-2856-07	K5-2811-07
Stainless Steel	~	K5-2857-52	~	~	K5-2856-52	K5-2811-52

Dimensions in millimeters (inch) unless otherwise stated

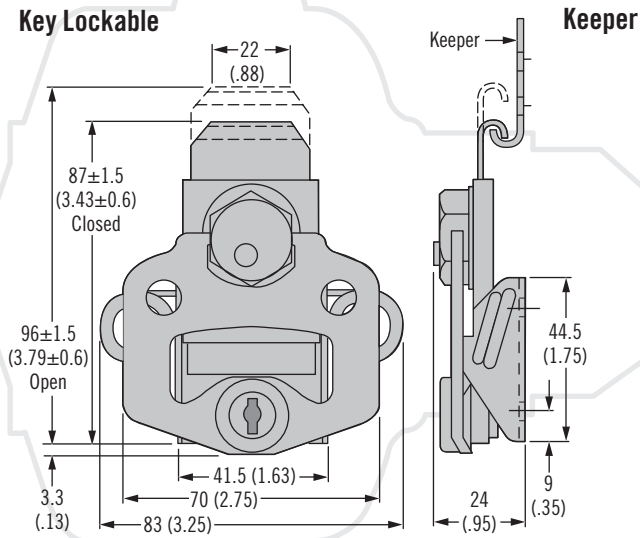
K5 Draw Latch Rotary



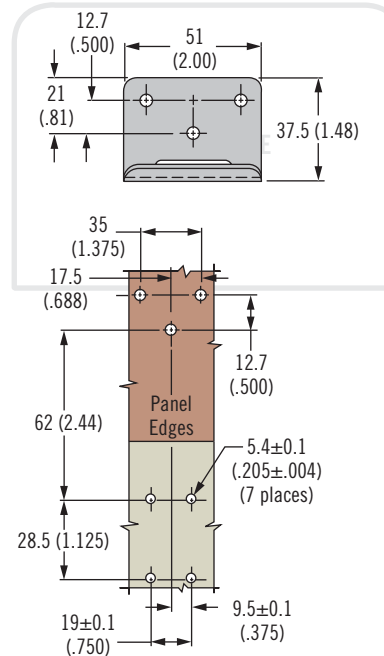
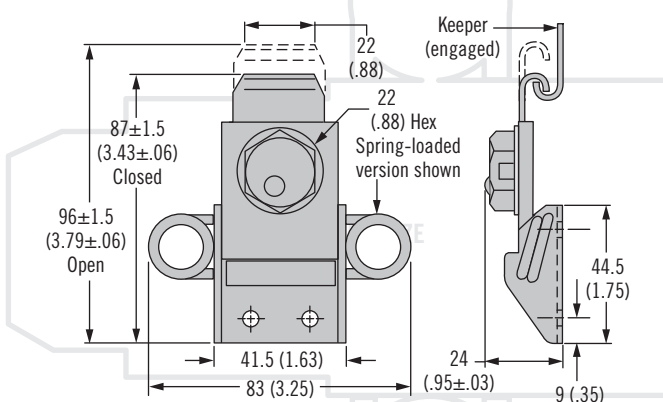
Padlockable (riveted hex cam shown)



Key Lockable



Tool Operated (spring loaded shown)



- Lift and Turn operation
- Consistent pull-up

Material and Finish

Steel, zinc plated

Installation Notes

Install assembly with Ø 5 (3/16) rivets or M5 (No. 10) flat head screws (not supplied)

Notes

Spring loaded:
Ideal for applications where shock and vibration occur. Compensates up to 4 (.16) for mounting hole irregularities, panel variations and gasket set.

Latch Part Number	
Padlockable Riveted Hex Cam	K5-2754-07
Padlockable Riveted Flat Cam	K5-1993-07
Padlockable Flat Cam, Spring Loaded	K5-1994-07
Key Lockable	K5-2813-07
Tool Operated, Spring Loaded	K5-2819-07
Tool Operated, Riveted	K5-2818-07
Keeper Part Number	
Keeper	K5-2811-07
Keeper, Padlockable	K5-1736-07

Part Number

See table

Order latch and keeper separately



R2 Draw Latch

Concealed · Tab Mount

- High tensile load
- Adjustable pull-up
- Suited for thin panels

Material and Finish

Steel, zinc plated

Performance Details

Average ultimate tensile load:
6200 N (1400 lbf)

Average ultimate shear load:
8900 N (2000 lbf)

Installation Notes

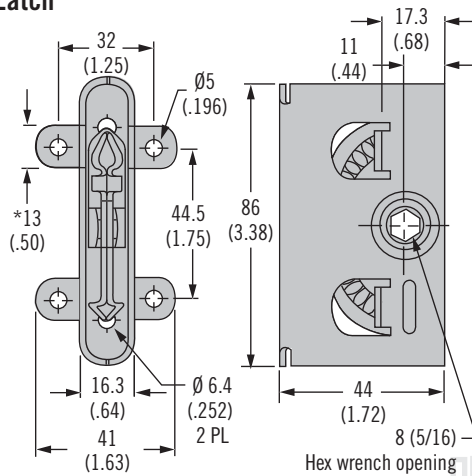
Install assembly with M5 (No. 10) screws (not supplied)

Accessories

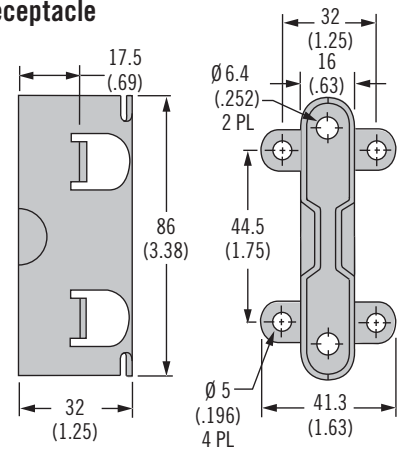
Actuation tool

Part number: 29-0059-02

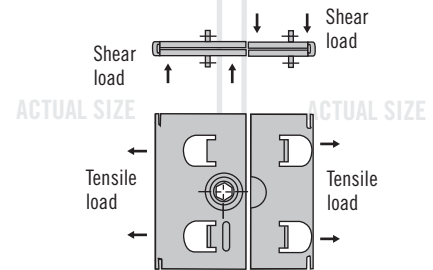
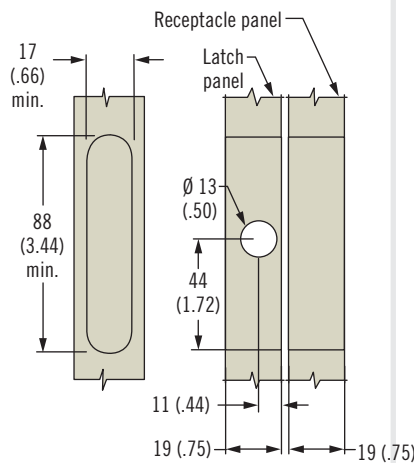
Latch



Receptacle

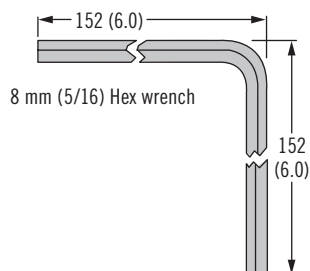


* Typical on latch and receptacle



Accessories

Actuation Tool



Part Number

See table

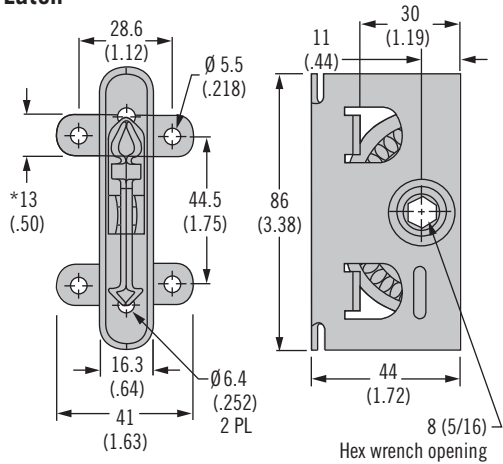
Order latch and receptacle separately

Part Number	
Latch	R2-0259-02
Receptacle	R2-0257-02

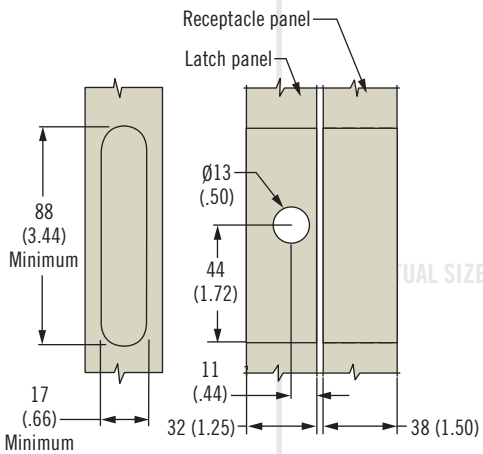
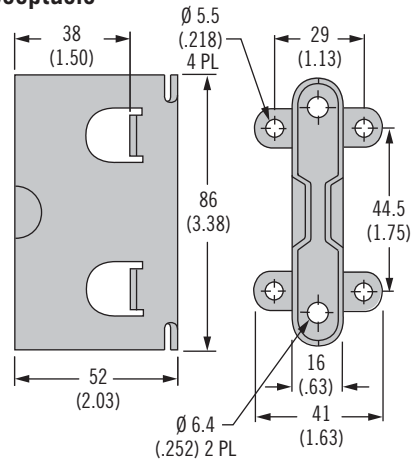
R2 Draw Latch Concealed · Tab Mount



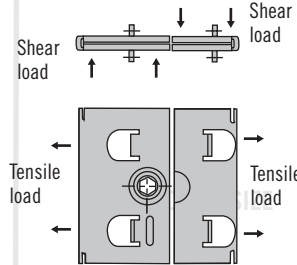
Latch



Receptacle

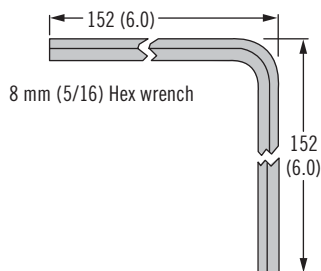


* Typical on latch and receptacle



Accessories

Actuation Tool



- High tensile load
- Adjustable pull-up
- Suited for thick panels

Material and Finish

Steel, zinc plated

Performance details

Average ultimate tensile load:

6200 N (1400 lbf)

Average ultimate shear load:

8900N (2000 lbf)

Installation Notes

Install assembly with $\varnothing 5$ (.205) rivets or M5 (No. 10) screws (not supplied)

Accessories

Actuation Tool

Part number: 29-0059-02

Part Number

See table

Order latch and

receptacle separately

Part Number	
Latch	R2-0169-02
Receptacle	R2-0160-02



R2 Draw Latch

Concealed · Mortise

- High tensile load
- Adjustable pull-up
- Suited for mortise or side mount installation

Material and Finish

Steel, zinc plated

Performance Details

Average ultimate tensile load:
6200 N (1400 lbf)

Average ultimate shear load:
8900 N (2000 lbf)

Installation Notes

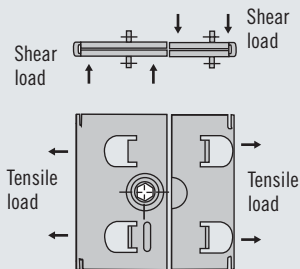
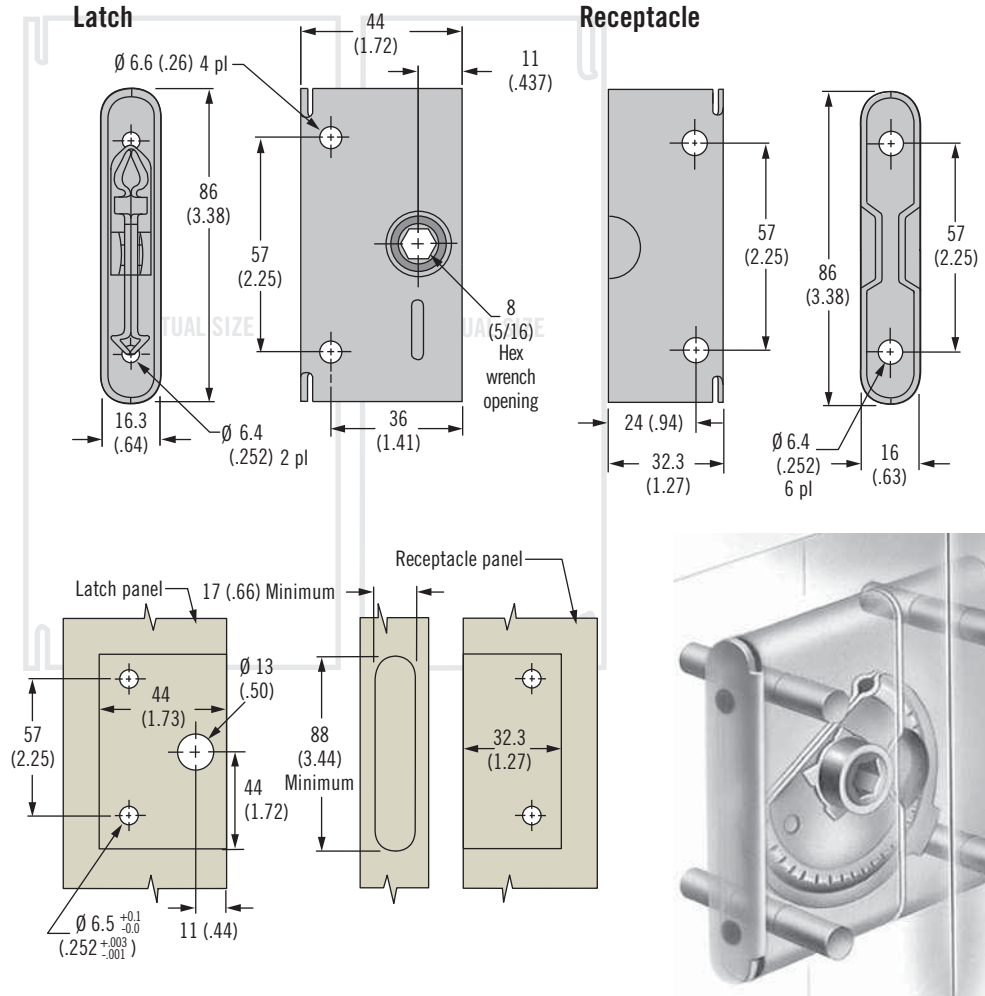
Install assembly with $\varnothing 6$ (1/4) rivets or M6 (1/4) screws (not supplied).

A 1.6 (.06) gap should be maintained between latch and receptacle.

Accessories

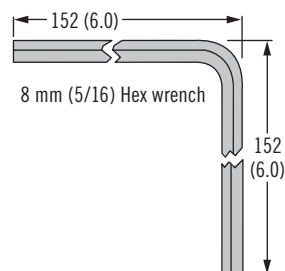
Actuation tool

Part number: 29-0059-02



Accessories

Actuation Tool



Part Number

See table

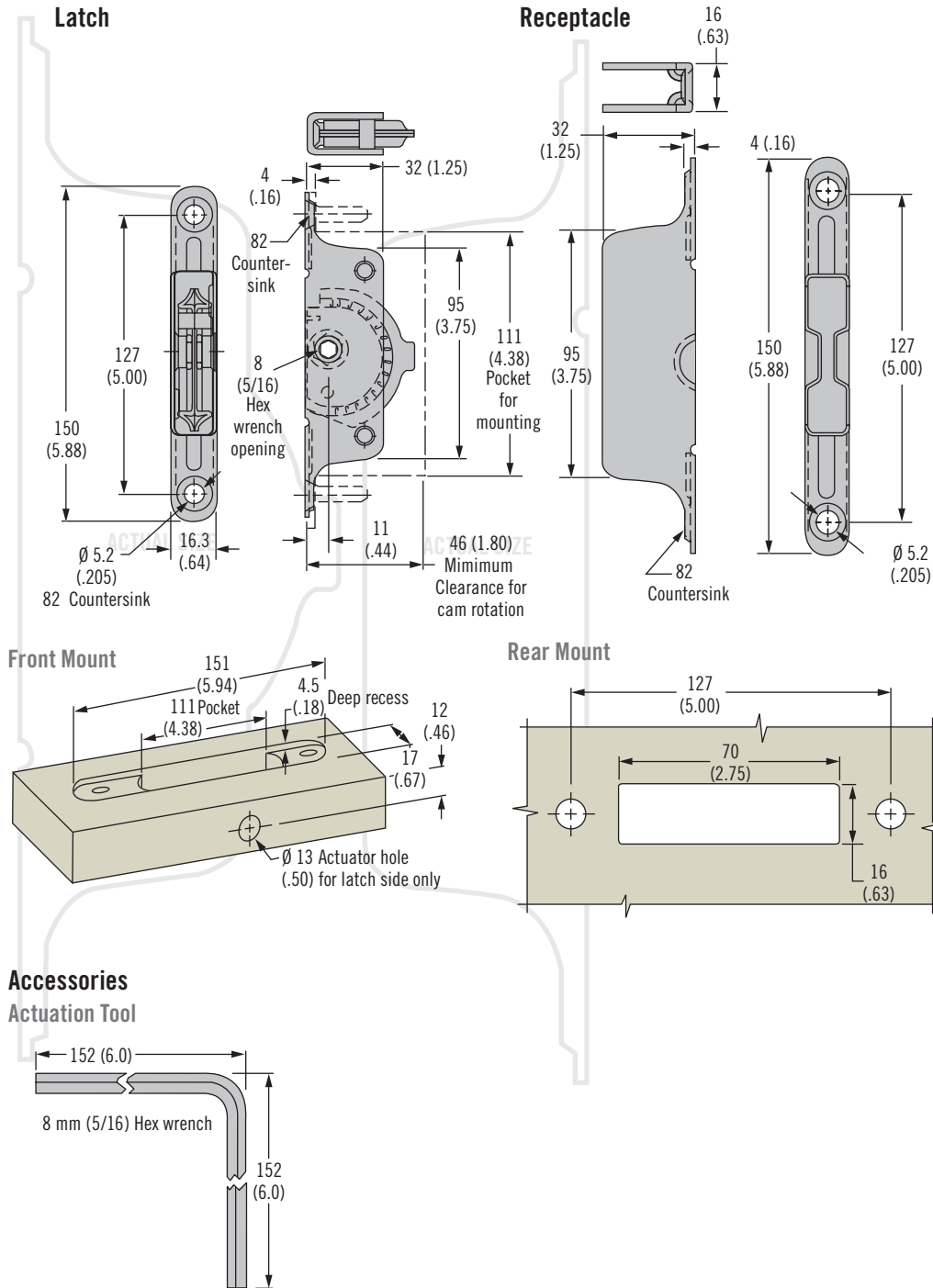
Order latch and
receptacle separately

Part Number	
Latch	R2-0055-02
Receptacle	R2-0002-02

Dimensions in millimeters (inch) unless otherwise stated

R2 Draw Latch

Concealed · Front mount



- High tensile load
- Adjustable pull-up
- Front mount installation

Material and Finish

Steel, zinc plated

Performance Details

Average ultimate tensile load:
4000 N (900 lbf)

Installation Notes:

Wood application:

Install assembly with M5 (No. 10) flat head screws (not supplied).

Note: Latch strength is dependant on mounting hardware and installation material

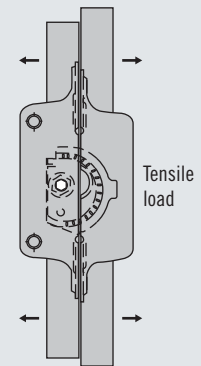
Metal application:

Install assembly with 5 (.196) flathead rivets or M5 (No. 10) screws. Note: Maximum metal panel thickness should be 2.5 (.10)

Accessories

Actuation tool

Part number: 29-0059-02



Part Number

See table

Order latch and receptacle separately

Part Number	
Latch	R2-0267-02
Receptacle	R2-0268-02



R5 Draw Latch

Concealed · Mortise Mount

- High tensile load
- Consistent pull-up
- Concealed installation

Material and Finish

Steel, zinc plated

Performance Details

Average ultimate tensile load:
11,100 N (2500 lbf)

Average ultimate shear load:
76,920 N (17292 lbf)

Installation Notes

Install assembly with $\varnothing 6$ (1/4) rivets or M6 (1/4) screws (not supplied)

Accessories

Actuation tool

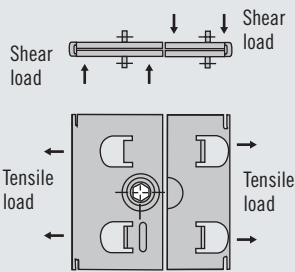
Part number: 29-0059-02

Notes

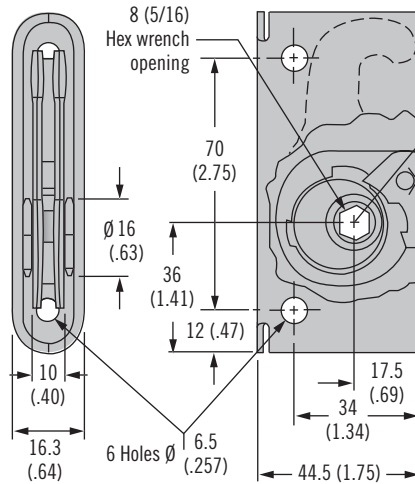
Operating force

To open: 4 N·m (35 in·lbf)

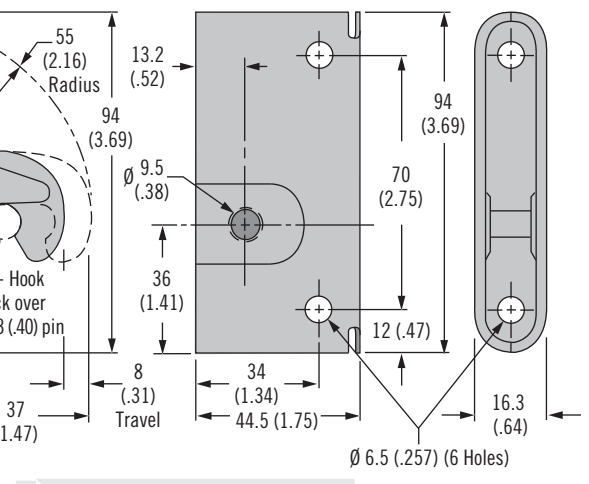
To close: 4 N·m (35 in·lbf)



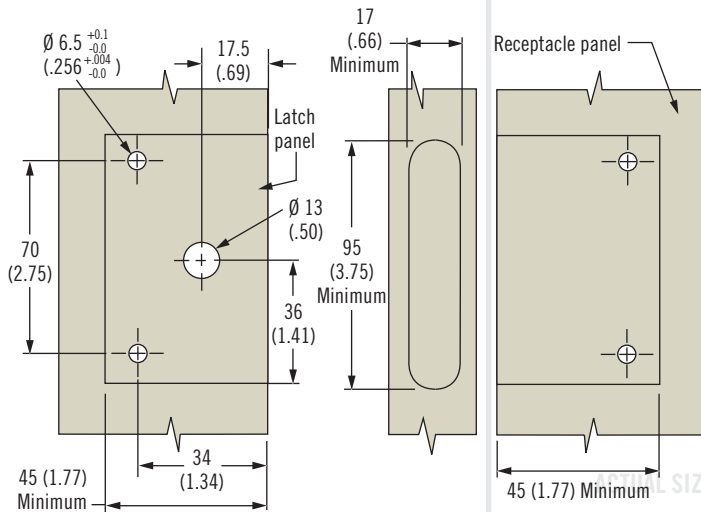
Latch



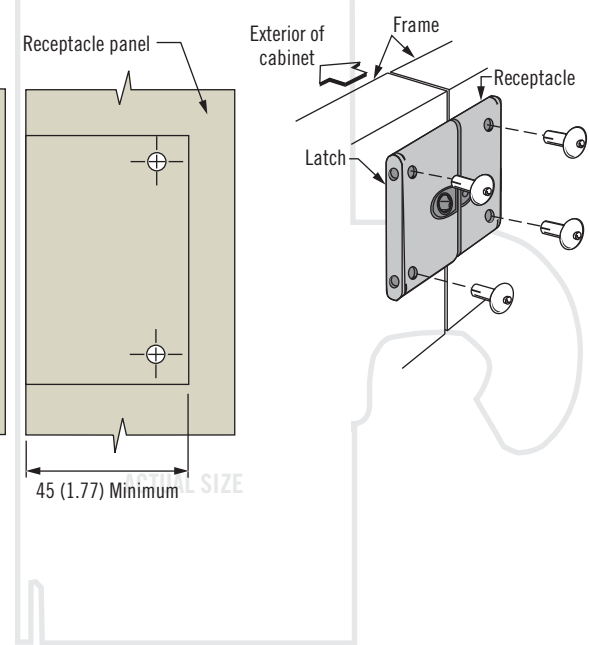
Receptacle



Recessed Pocket

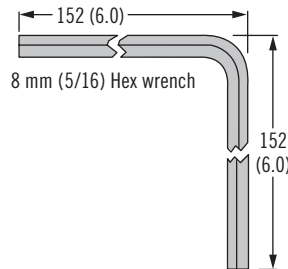


Side Mount



Accessories

Actuation Tool



Part Number

See table

Order latch and receptacle separately

Part Number	
Latch	Receptacle
R5-0074-07	R5-0079-07

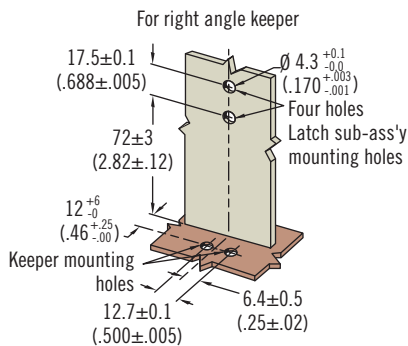
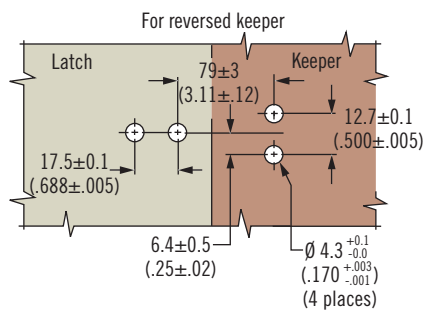
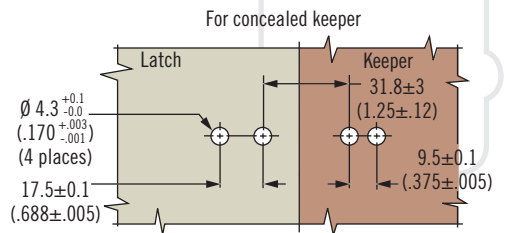
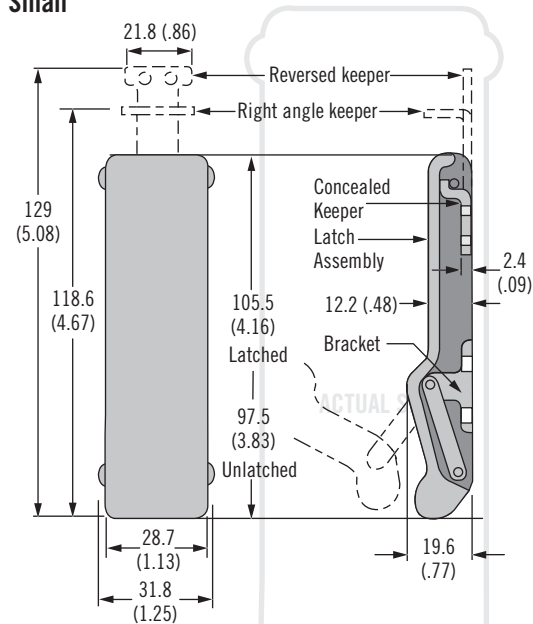
Dimensions in millimeters (inch) unless otherwise stated

C7 Draw Latch

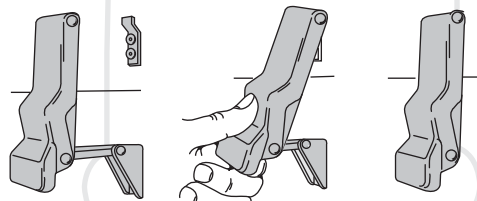
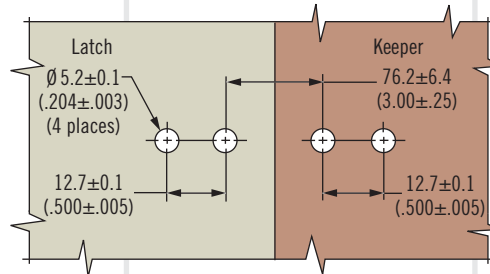
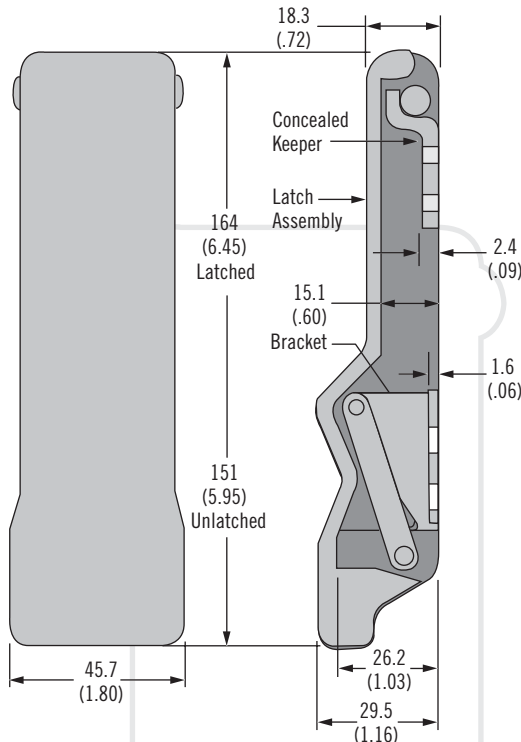
Flexible · Over-center



Small



Large



Size	Keeper Style	Assembly Part Number
Small	Concealed	C7-10
	Reverse Keeper	C7-11
	Right Angle Keeper	C7-12
Large	Concealed	C7-20

- Low profile design
- Non-corrosive materials
- Cushions impact and accommodates misalignment

Material and Finish

Latch:
Thermoplastic elastomer, black
Link and bushings:
Glass-filled nylon
Keeper and bracket: Stainless steel

Performance Details

Small:
Clamping force: 49 N (11 lbf)

Large:
Clamping force: 176 N (40 lbf)

Flammability rating: UL94-HB

Installation Notes

Small:
Install assembly with four Ø 4 (.170) rivets or M4 (No. 8) screws (not supplied)

Large:
Install assembly with four Ø5 (.204) rivets or M5 (No. 10) screws (not supplied)

Part Number

See table
Assembly complete with keeper



37 Draw Latch

Flexible · Over-center · Lever assist

- Flexible heavy-duty
- Detent feature
- Absorbs and reduces vibration

Material and Finish

EPDM rubber and glass-filled nylon
black with stainless steel pins

Performance Details

Clamping force:

Heavy-duty: 350 N (79 lbf)

Small: 110 N (25 lbf)

Large: 190 N (43 lbf)

Operating temperature range:
-40°C (-40°F) to 80°C (175°F)

Flammability rating: UL94-HB

Installation Notes

Heavy-duty:

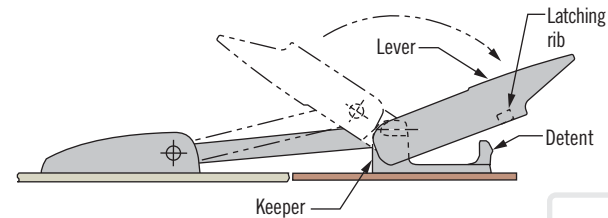
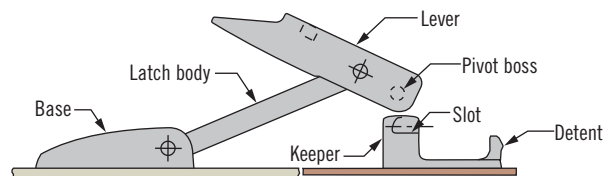
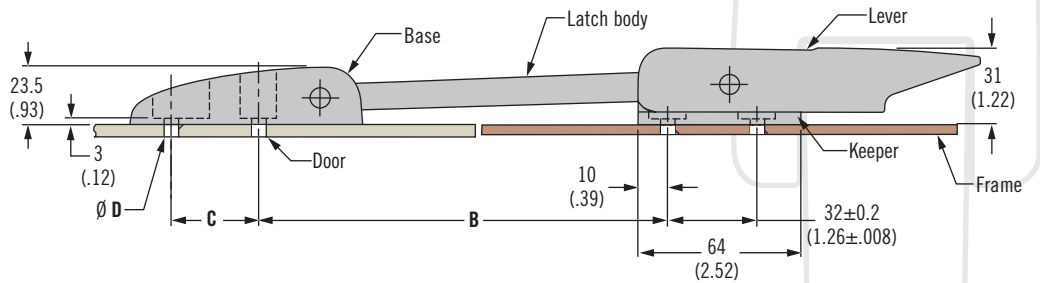
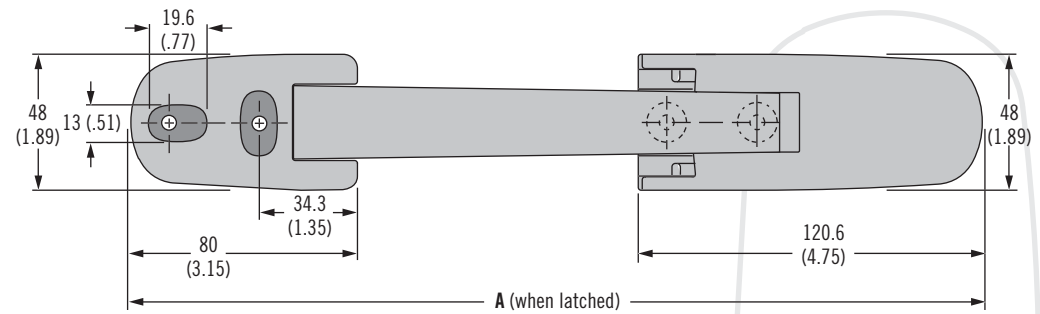
Install assembly with $\varnothing 6$ (.250)
rivets or M6 (1/4) screws (not
supplied)

Small and Large:

Install assembly with $\varnothing 5$ (3/16)
rivets or M5 (No 10) screws (not
supplied)

Notes

5 (.20) Maximum non co-planar
offset



A
ACTUAL SIZE

Part Number

See table

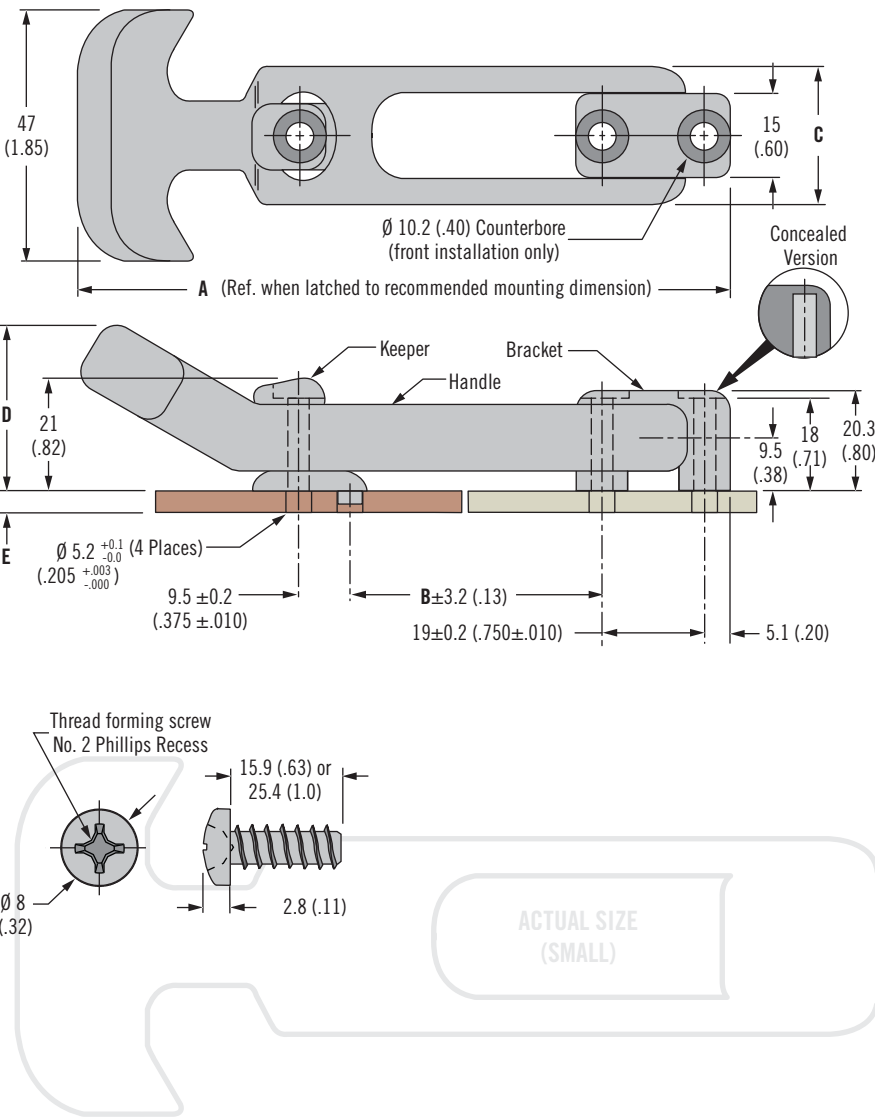
Assembly complete with keeper

Part Number	Dimensions			
	A	B	C ±0.2 (.008)	Ø D ±0.1 (.004)
37-30-294-60	254 (10)	97±3 (3.82±.12)	25.4 (1.00)	5.5 (.217)
37-30-297-60	379 (15)	222±6 (8.74±.24)		
Heavy-Duty				
37-40-295-60	300 (12)	144±4 (5.67±.16)	32 (1.25)	6.6 (.260)

Dimensions in millimeters (inch) unless otherwise stated

F7 Draw Latch

Flexible · Pull type



- Flexible one piece molded latch
- UV resistant
- Absorbs and reduces vibration

Material and Finish

Thermoplastic elastomer and glass-filled nylon, black
Screw: Stainless steel, passivated

Performance Details

Clamping force
Small: 58 N (13 lbf)
Medium: 84 N (19 lbf)
Large: 98 N (22 lbf)
Flammability rating: UL94-HB

Installation Notes

Concealed:
Install assembly with thread forming screws (order separately).
Maximum tightening torque 2.0 N·m (18 in·lbf)
Front installation:
Install assembly with M5 (No. 10) screw or $\varnothing 5$ (3/16) rivet (not supplied)

Part Number				Installation Method	Dimensions				
Size	Latch	Keeper	Screws (3 per bag)		E	A	B	C	D
Small	F7-530	F7-537	~	Front	~	112 (4.81)	41 (1.6)	25.4 (1.00)	31 (1.23)
	F7-540	F7-547	F7-548-3	Concealed (thread forming)	up to 8.0 (.32)				
			F7-558-3	Concealed (thread forming)	8.1 - 17.5 (.32 - .69)				
Medium	F7-630	F7-537	~	Front	~	167 (6.6)	72 (2.83)	32 (1.25)	29 (1.13)
	F7-640	F7-547	F7-548-3	Concealed (thread forming)	up to 8.0 (.32)				
			F7-558-3	Concealed (thread forming)	8.1 - 17.5 (.32 - .69)				
Large	F7-730	F7-537	~	Front	~	221 (8.7)	117 (4.6)	32 (1.25)	29 (1.13)
	F7-740	F7-547	F7-548-3	Concealed (thread forming)	up to 8.0 (.32)				
			F7-558-3	Concealed (thread forming)	8.1 - 17.5 (.32 - .69)				

Part Number

See table
Order latch, keeper and screws (if required) separately



37 Draw Latch

Flexible · Pull type · Tab handle

- Flexible one piece molded latch

Material and Finish

Small:

EPDM rubber and stainless steel

Medium:

EPDM rubber and steel, zinc plated

Performance Details

Small:

Average clamping force:

20.9 N (4.7 lbf)

Medium:

Average clamping force:

26.2 N (5.9 lbf)

Operating temperature range:

-20°C (0°F) to 95°C (200°F)

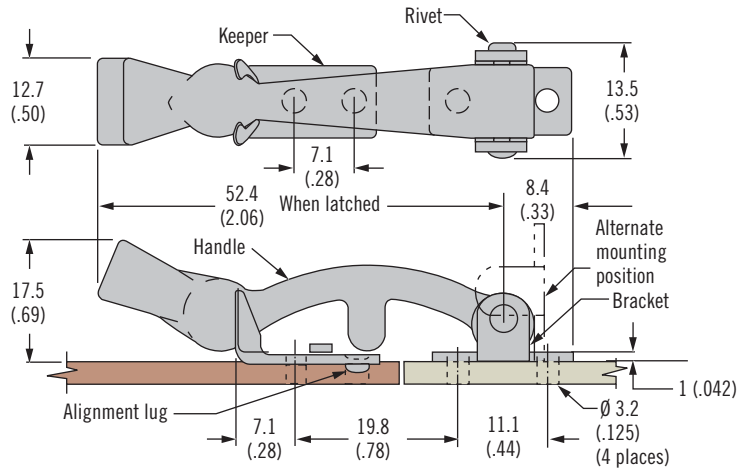
Installation Notes

Install assembly with four $\varnothing 3$ (.125)

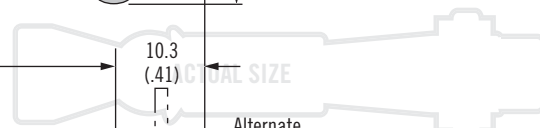
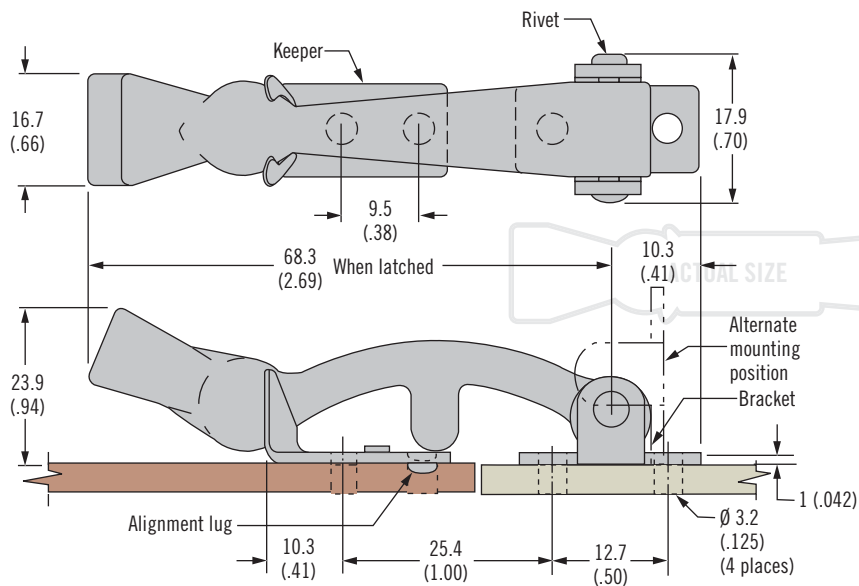
rivets or M3 (No. 4) screws

(not supplied)

Small



Medium



Part Number

See table

Assembly complete with keeper

Part Number		
Series	Steel	Stainless Steel
Small	~	37-10-051-20
Medium	37-10-061-10	~

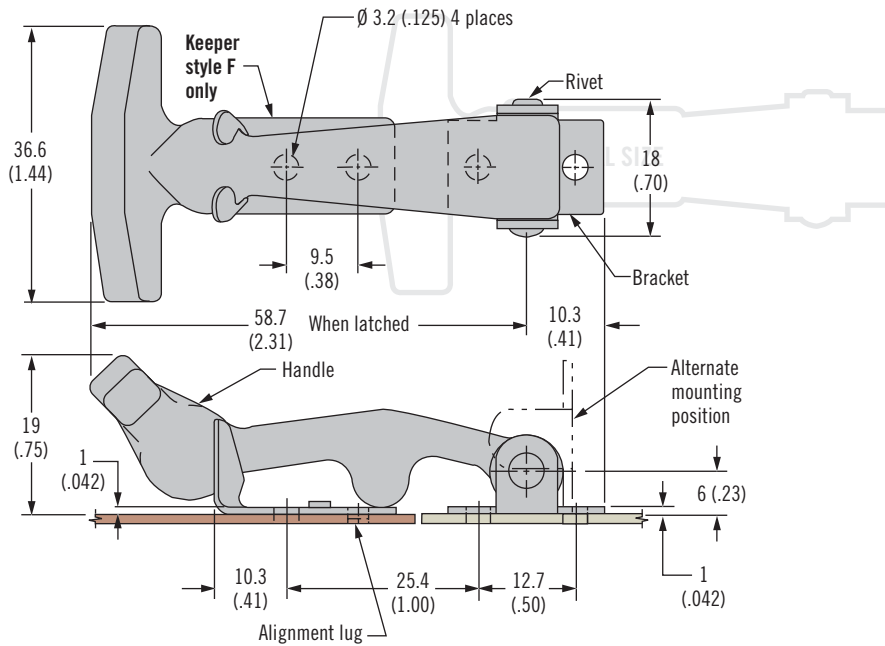
Dimensions in millimeters (inch) unless otherwise stated

37 Draw Latch

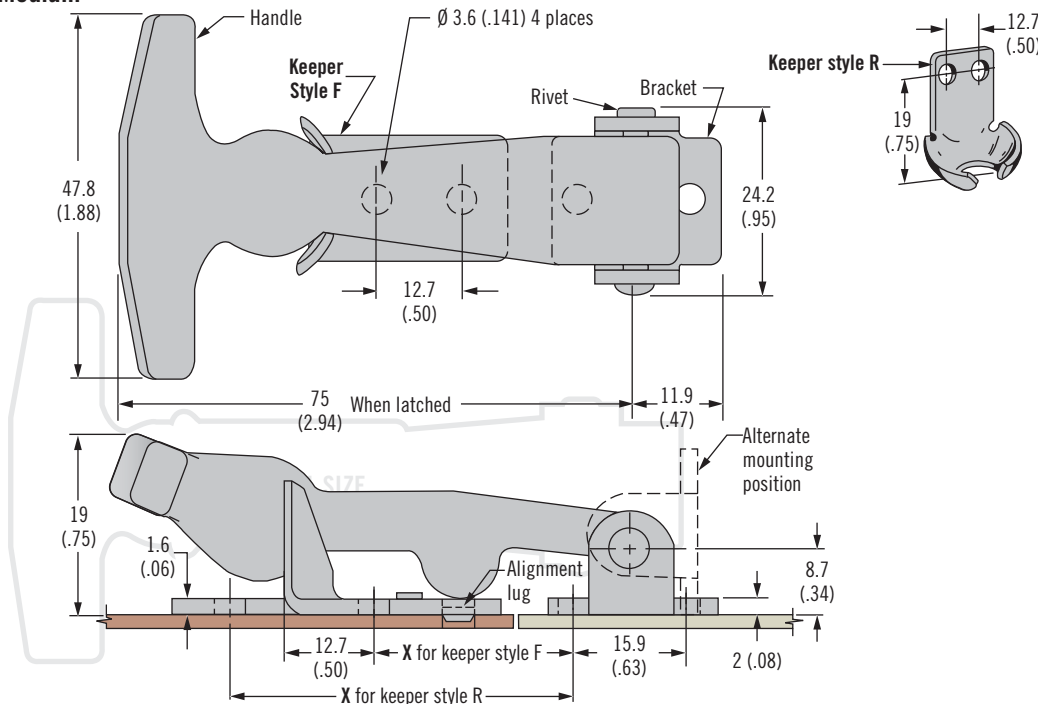
Flexible · Pull type · T-handle



Small



Medium



Small Size Part Number	
Steel	Stainless Steel
37-10-065-10	37-10-065-20

Medium Size Part Number				
Keeper Style	X	Latch Shipped Assembled		Latch Shipped Unassembled
		Steel	Stainless Steel	Steel
F	31.8 (1.25)	37-10-071-10	37-10-071-20	37-10-072-10
R	56.4 (2.22)	37-20-071-10	37-20-071-20	37-20-072-10

- Flexible one piece molded latch

Material and Finish

EPDM rubber and stainless steel or steel, zinc plated

Performance Details:

Average clamping force:

Small: 26 N (6 lbf)

Medium: 39 N (8.7 lbf)

Operating temperature range:

-20°C (0°F) to 95°C (200°F)

Installation Notes

Small:

Install assembly with four Ø 3 (.125) rivets or M3 (No. 4) screws (not supplied)

Medium:

Install assembly with four Ø 3.6 (.141) flat head rivets or M3.5 (No. 5) screws (not supplied)



37 Draw Latch

Flexible · Pull type · T-handle

- Flexible one piece molded latch

Material and Finish

EPDM rubber and stainless steel

Performance Details

Average clamping force:

49 N (11 lbf)

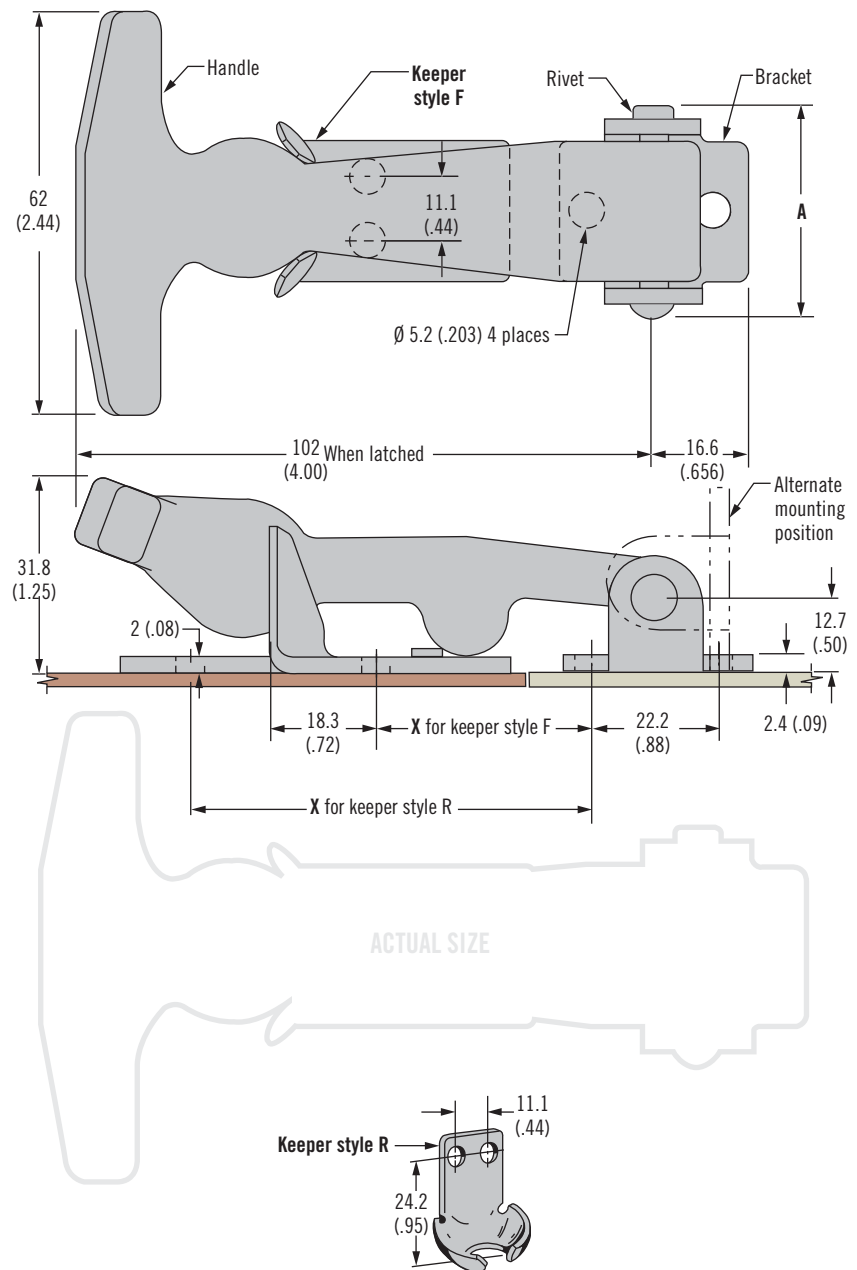
Operating temperature range:

-20°C (0°F) to 95°C (200°F)

Installation Notes

Install assembly with four $\varnothing 5$ (.188) rivets or M5 (No. 10) screws (not supplied)

Large



Part Number

See table

Assembly complete with keeper

Part Number						
Keeper Style	X	Latch shipped assembled			Latch shipped unassembled	
		A	Steel	Stainless Steel	A	Steel
F	38.1 (1.50)	31.8 (1.25)	37-10-086-10	37-10-086-20	34 (1.34)	37-10-087-10
R	73 (2.88)		37-20-086-10	37-20-086-20		37-20-087-10

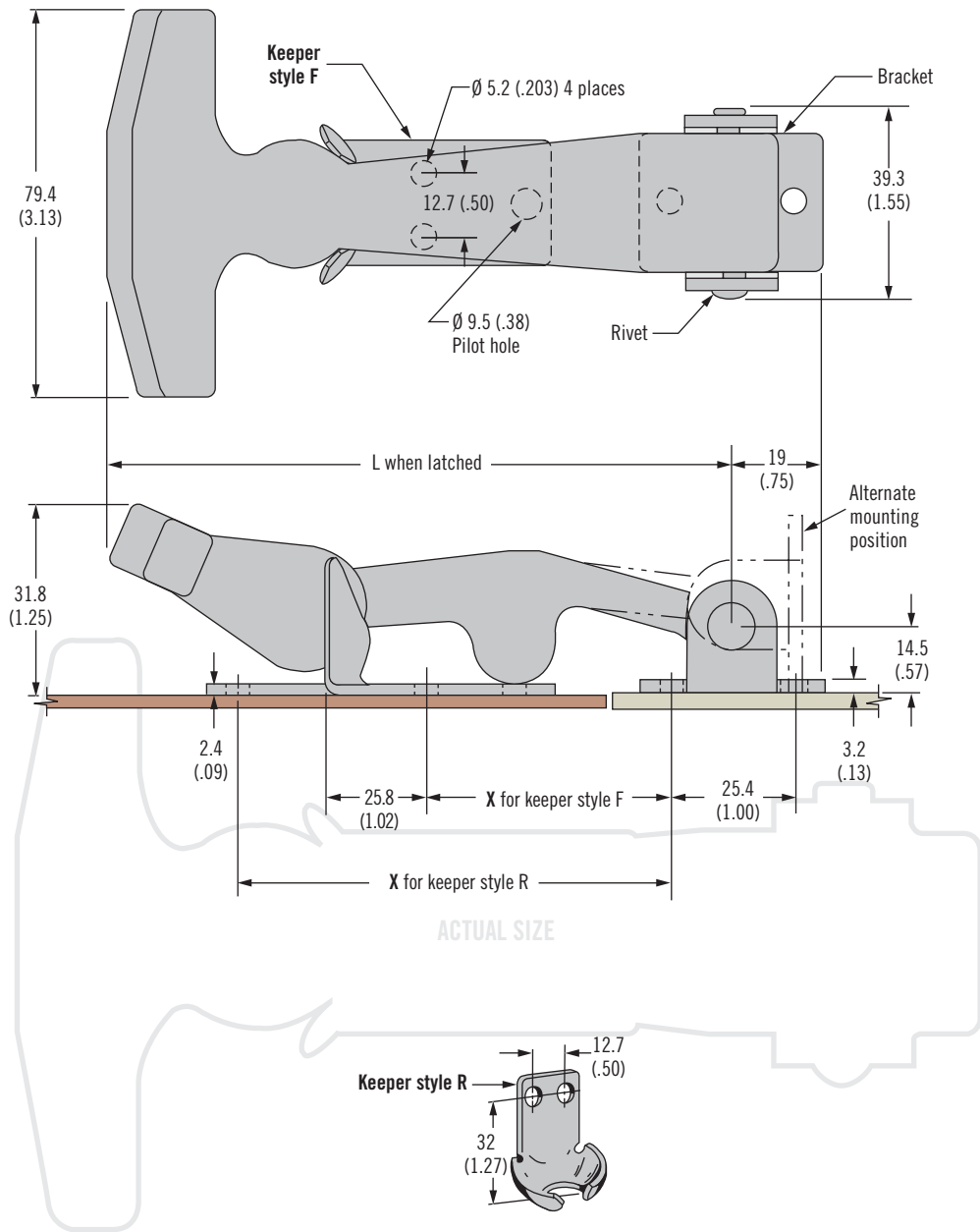
Dimensions in millimeters (inch) unless otherwise stated

37 Draw Latch

Flexible · Pull type · T-handle



Extra Large



- Flexible one piece molded latch

Material and Finish

EPDM rubber and stainless steel or steel, zinc plated

Performance Details

Average clamping force: 84 N (19 lbf)

Operating temperature range:

-20°C (0°F) to 95°C (200°F)

Installation Notes

Install assembly with four Ø 5 (.188) rivets or M5 (No. 10) screws (not supplied)

Part Number						
Series	Keeper Style	L	X	Latch Shipped Assembled		Latch Shipped Unassembled
				Steel	Stainless Steel	Steel
100	F	130.2 (5.13)	50.8 (2.00)	37-10-101-10	37-10-101-20	37-10-102-10
	R		90.5 (3.56)	37-20-101-10	37-20-101-20	37-20-102-10
130	F	247.7 (9.75)	165.1 (6.50)	37-10-131-10	37-10-131-20	~
	R		204.8 (8.06)	37-20-131-10	37-20-131-20	~

Part Number

See table

Assembly complete with keeper



Hinges

Need to tilt or swivel a flat panel display to eliminate glare? Adjust a headrest for comfort? Position a keyboard angle for optimal ergonomics? Southco's range of hinges and positioning mechanisms go well beyond a simple hinge. Our extensive range of solutions for managing door and panel motion can bring new functionality and performance to any application.

Need to attach or remove a door without tools, hold it open or closed? Southco has a hinge solution for you. How strong a hinge do you need? With materials ranging from light-weight plastics to heavy-duty cast stainless steel, and a wide range of sizes and installation styles, Southco has a hinge sized to your application needs. Flush door, offset door, wood panel, or metal panel? We have a hinge style to fit most common door and frame configurations.

Don't see what you need? All of Southco's hinge solutions can be customized to suit the specific needs of individual applications.

Southco's broad line of external hinges provides an easy-to-install solution.

- ➔ External mounting maximizes available space inside the enclosure
- ➔ Wide range of mounting options to suit most door and frame configurations

External Hinges



E6



C6



G6



N6



96



EH

SOUTHCO[®] embedded hinges can be designed-in to become an integral part of any application.

- ➔ Shapes and sizes designed specifically to allow easy packaging within the envelope of the application
- ➔ Mold-in or conceal with snap-on covers
- ➔ Seamlessly integrate position control features into any application

Embedded Hinges



G7



ST



ST

SOUTHCO[®] concealed hinges are mounted inside the application, making the hinges invisible when the door is closed.

- ➔ Allow the application's industrial design goals to shine through
- ➔ Combine hidden mounting with simple installation

Concealed Hinges



ST



F6



F6



R6



Hinges

Selection guide

Use this selection guide to choose the right hinge for your application



Stainless Steel



External



Embedded



Concealed



Torque







Detent



Removable

HINGE SERIES		MATERIAL				
		Aluminum	Zinc	Steel	Stainless Steel	Plastic
EXTERNAL PAGES 326-363	 E6 Constant Torque	✓	✓			
	 ST 8 / 11		✓			
	 ST 4 / 7 / 10 / 12	✓	✓			
	 ST 8P / 11P	✓				
	 E6 Adjustable Torque					✓
	 C6 & G6					✓
	 G7					✓
	 96		✓	✓	✓	✓
	 EH		✓			✓
	 N6				✓	
	 KH		✓			✓
	CONCEALED PAGES 364-371	 F6			✓	✓
 R6				✓	✓	

Dimensions in millimeters (inch) unless otherwise stated

OPERATION				
Constant Torque 	Adjustable Torque 	Detent 	Free Operating	Removable 
✓			✓	
✓				
✓				
✓				
	✓		✓	
		✓	✓	
		✓		
			✓	✓
			✓	
			✓	
			✓	✓
			✓	✓
		✓	✓	



Hinges

Overview



External



Concealed



Embedded

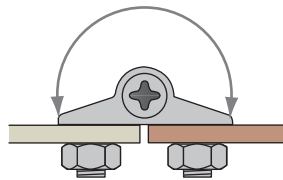
Versatility and simplicity in action

Hinging requirements vary significantly for different construction methods and aesthetic goals. Use the guide below to find the right hinge for your application.

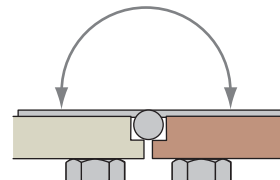
Application Styles

External Hinges

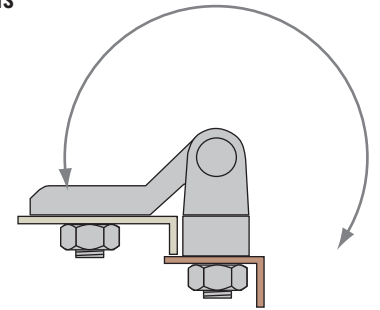
- A variety of styles and materials to complement all applications
- Maximize interior space within the application



Surface Mount



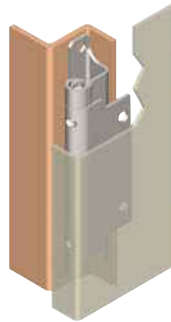
Flush Mount



Offset Mount

Concealed Hinges

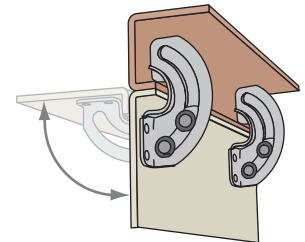
- Hidden to let you control the aesthetics
- Eliminate visible attack points for vandal resistance



C-Frame
Concealed Pivot



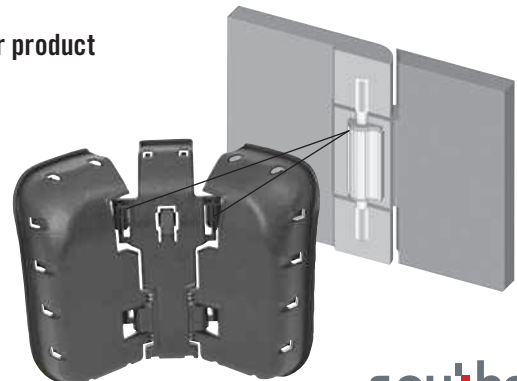
End Mount
Concealed Pivot



Virtual
Pivot

Embedded Hinges

- An integral part of the solution
- Add positioning features to enhance your product



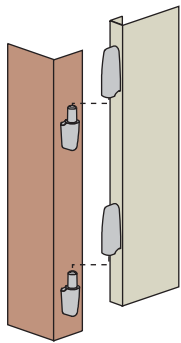
Dimensions in millimeters (inch) unless otherwise stated

Product Features

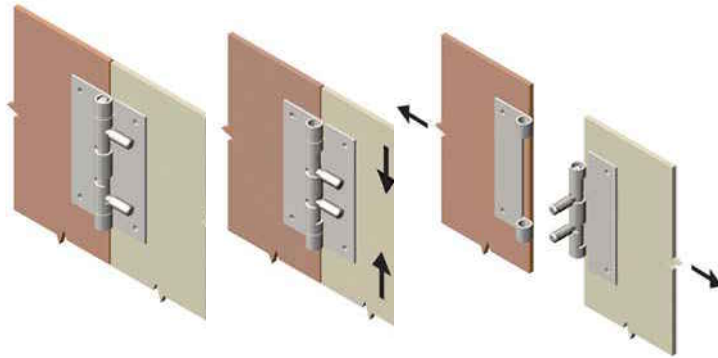
Door Removal

- ➔ Removable hinges allow doors to be easily removed without tools
- ➔ Hinges with door removal feature assist the assembly, service and installation of doors

Southco offers two types of door removal hinges:



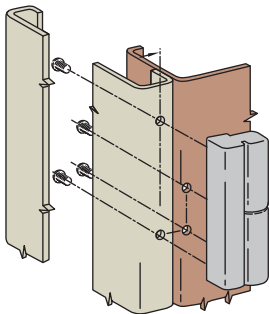
Lift-Off



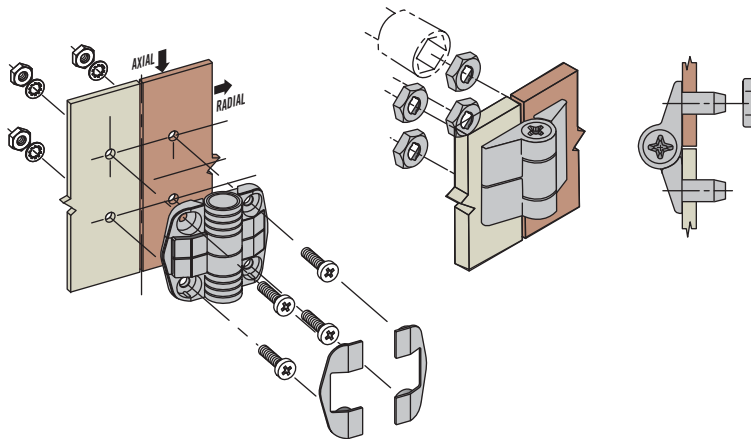
Removable / Retracting Pin

Installation Method

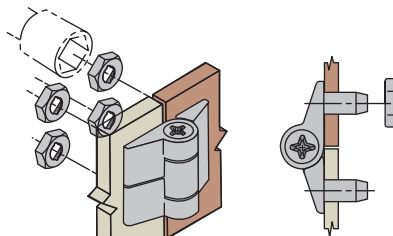
- ➔ **SOUTHCO**® hinges offer a range of installation methods to suit the application construction



Tapped Hole / Rear
Mount Hardware



Concealed
Hardware



With Integrated
Mounting Studs



Door Removal



Hinges

Overview

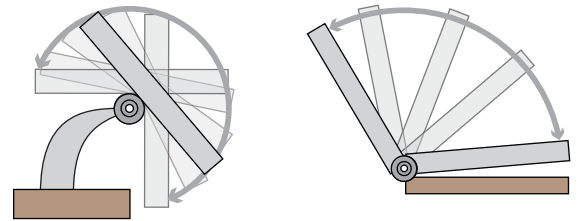
Positioning Technology

Southco's wide range of solutions for controlling motion can be used to enhance functionality in almost any application. The range of solutions can be as simple as the integration of constant torque systems into a standard hinge, or as sophisticated as a fully customized system for positioning or deployment. Backed by Southco's reputation for engineered reliability, most positioning technology solutions have life-long performance with no requirement for maintenance or adjustment.

SOUTHCO® position control hinges are available in various styles:

Torque Hinges

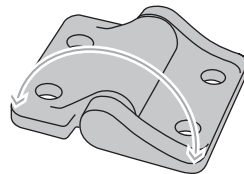
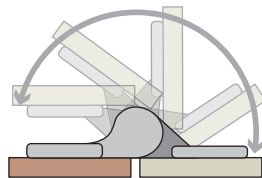
- Allow for infinitely variable positioning
- Holds securely at all positions



Torque

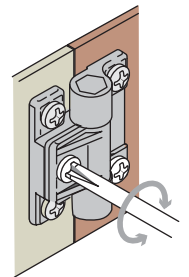
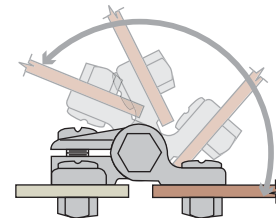
Constant Torque

- Pre-set at precise torque values
- Maximum reliability, with no need for adjustment



Adjustable Torque

- Allow end user customization



Detent

Detent / Bi-Stable Hinges

- Hold or seek a pre-defined position
- Can be used to hold door shut without a latch



Counterbalance & Stored Energy Hinges

- Enable heavy panels to operate with ease
- Allow panels to "pop open" when a latch is released

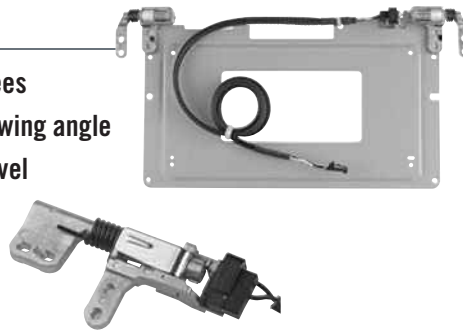


Customized solutions

When the requirements of your application go beyond our standard product line, Southco's global engineering team is available to create a customized solution to meet your needs.

Overhead infotainment deployment system

- Stored energy allows for self-opening to 20 degrees
- Constant torque provides infinitely adjustable viewing angle
- Detent click provides a signal to prevent over-travel
- Integrated display power switching



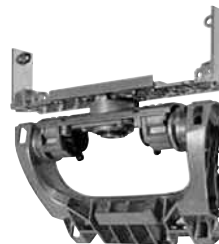
Pop-up display screen

- Stored energy drives screen deployment
- Deploys vertically with controlled speed
- Constant torque allows for infinite positioning



Tilt and swivel devices

- Safety feature activates display only when rear facing
- Constant torque provides multi-axis positioning
- Lock out device ensures correct folding sequence



Integrated headrest assembly

- Integrated constant torque allows for consistent wing positioning
- High cycles allow for lifetime usage
- Complete comfort headrest frame



Display mounts

- Integrated counterbalance allows for fingertip tilt, swivel and pan adjustment
- Structural design provides mechanical support and integrated cable management
- Adapted to suit challenges from home interiors to harsh service environments





E6 Hinge

Position control · Constant torque

- Holds in every position
- No adjustment required
- Long cycle life

Material and Finish

Large: Zinc alloy, black paint
Medium: Aluminum alloy, black paint

Performance Details

Cycle performance: 20,000 cycles within $\pm 20\%$ of static torque specification

Radial load:

Large:

Maximum static load: 200 N (45 lbf)

Average ultimate load:

11000 N (2470 lbf)

Medium:

Maximum static load: 155 N (35 lbf)

Average ultimate load:

3000 N (675 lbf)

Axial load:

Large:

Maximum static load: 200 N (45 lbf)

Average ultimate load:

2800 N (630 lbf)

Medium:

Maximum static load: 155 N (35 lbf)

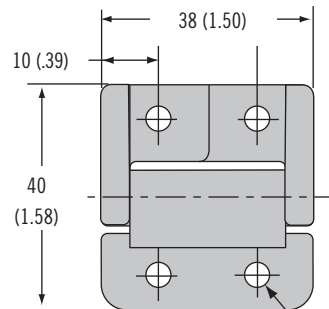
Average ultimate load:

1600 N (360 lbf)

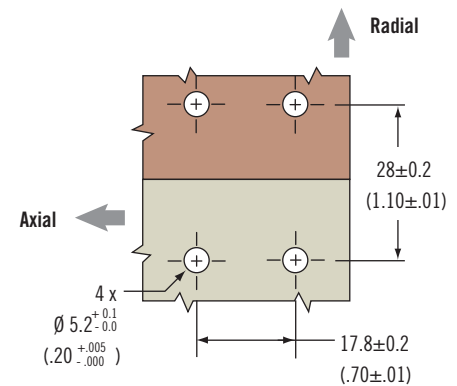
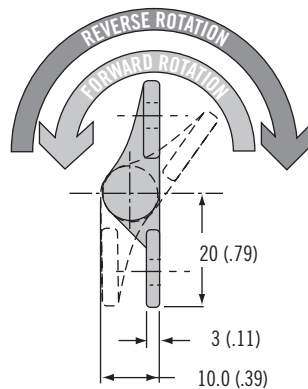
Part Number

See table

Medium



$\varnothing 4.5 (.18) \times 4$



Symmetric

Part Number	Symmetric Torque N·m (in·lbf)
E6-10-200-50	Free operating
E6-10-208-50	0.9 (8)
E6-10-212-50	1.4 (12)
E6-10-216-50	1.8 (16)
E6-10-220-50	2.3 (20)

Asymmetric

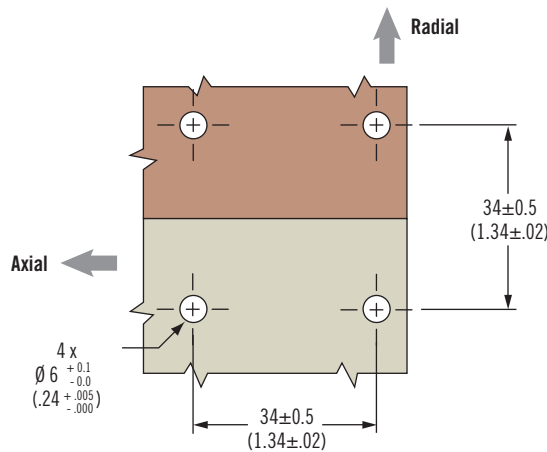
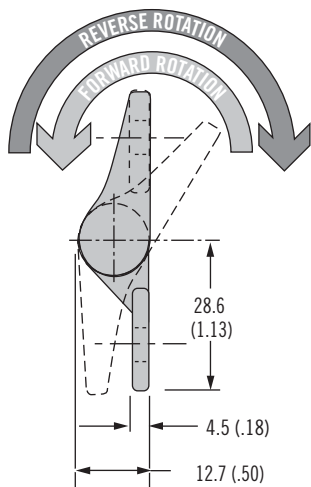
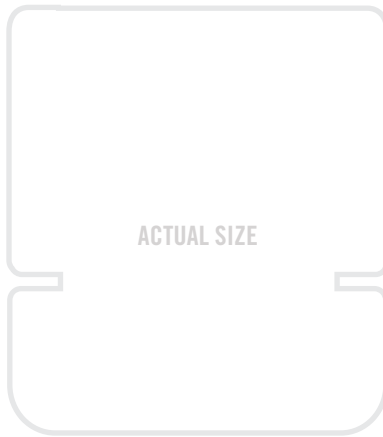
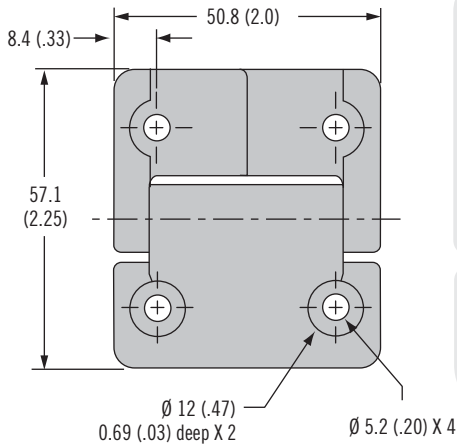
Part Number	Forward Torque N·m (in·lbf)	Reverse torque N·m (in·lbf)
E6-10-212F-50	1.4 (12)	0.8 (7.2)
E6-10-216F-50	1.8 (16)	1.1 (9.6)
E6-10-220F-50	2.3 (20)	1.4 (12)
E6-10-224F-50	2.7 (24)	1.6 (14.4)
E6-10-212R-50	0.8 (7.2)	1.4 (12)
E6-10-216R-50	1.1 (9.6)	1.8 (16)
E6-10-220R-50	1.4 (12)	2.3 (20)
E6-10-224R-50	1.6 (14.4)	2.7 (24)

E6 Hinge

Position control · Constant torque



Large



Symmetric

Part Number	Symmetric Torque N·m (in·lbf)
E6-10-400-50	Free operating
E6-10-416-50	1.8 (16)
E6-10-420-50	2.3 (20)
E6-10-430-50	3.4 (30)

Asymmetric

Part Number	Forward Torque N·m (in·lbf)	Reverse Torque N·m (in·lbf)
E6-10-420F-50	2.3 (20)	1.4 (12)
E6-10-430F-50	3.4 (30)	2.0 (18)
E6-10-440F-50	4.5 (40)	2.7 (24)
E6-10-420R-50	1.4 (12)	2.3 (20)
E6-10-430R-50	2.0 (18)	3.4 (30)
E6-10-440R-50	2.7 (24)	4.5 (40)

- Holds in every position
- No adjustment required
- Long cycle life

Material and Finish

Large: Zinc alloy, black paint
 Medium: Aluminum alloy, black paint

Performance Details

Cycle performance: 20,000 cycles within $\pm 20\%$ of static torque specification

Radial load:

Large:

Maximum static load: 200 N (45 lbf)

Average ultimate load:

11000 N (2470 lbf)

Medium:

Maximum static load: 155 N (35 lbf)

Average ultimate load:

3000 N (675 lbf)

Axial load:

Large:

Maximum static load: 200 N (45 lbf)

Average ultimate load:

2800 N (630 lbf)

Medium:

Maximum static load: 155 N (35 lbf)

Average ultimate load:

1600 N (360 lbf)

Part Number

See table



E6 Hinge

Position control · Constant torque

- Holds in every position
- No adjustment required
- Long cycle life

Material and Finish

Aluminum alloy, black powder coated

Performance Details

Cycle performance: 20,000 cycles within $\pm 20\%$ of static torque specification

Radial load:

Max. static load: 2,000 N (450 lbf)

Average ultimate load:

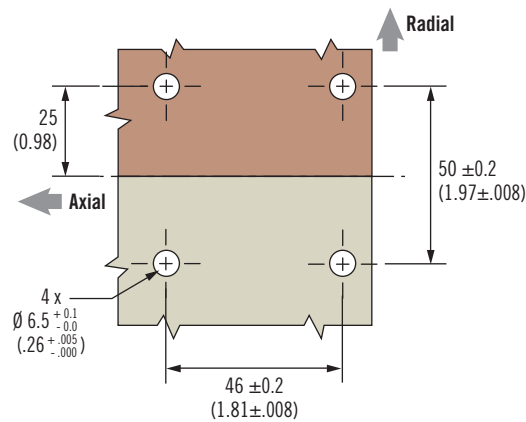
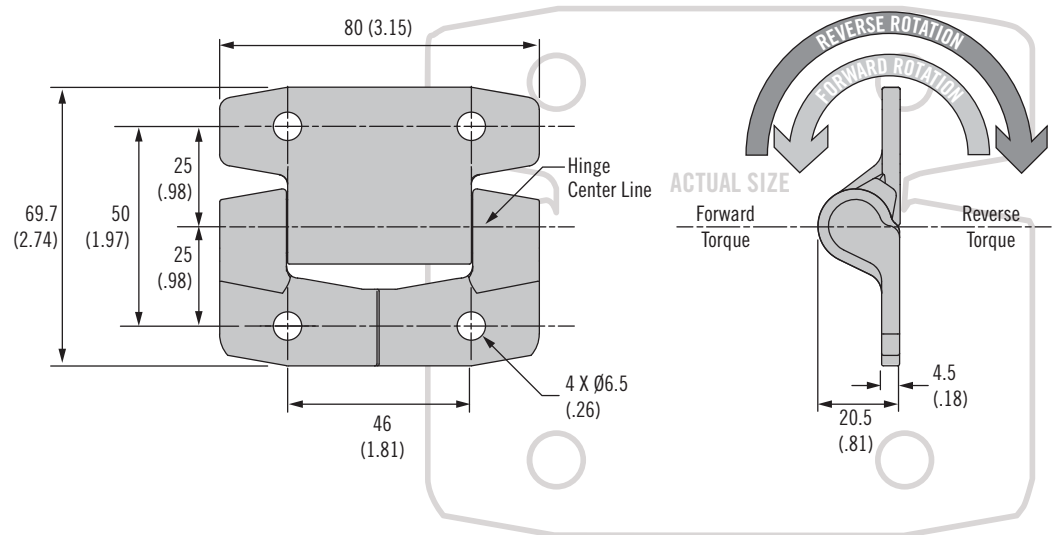
12,800 N (2,875 lbf)

Axial load:

Max. static load: 500 N (110 lbf)

Average ultimate load:

10,800 N (2,425 lbf)



Part Number

See table

Asymmetric

Part Number	Forward Torque N·m (in·lbf)	Reverse Torque N·m (in·lbf)
E6-10-620F-50	2.3 (20.0)	1.7 (14.9)
E6-10-635F-50	3.9 (35.0)	3.0 (26.7)
E6-10-650F-50	5.7 (50.0)	4.0 (35.7)
E6-10-665F-50	7.3 (65.0)	5.4 (47.5)
E6-10-680F-50	9.0 (80.0)	6.7 (59.4)
E6-10-695F-50	10.7 (95.0)	7.8 (68.9)
E6-10-6110F-50	12.4 (110.0)	9.0 (79.8)
E6-10-620R-50	1.7 (14.9)	2.3 (20.0)
E6-10-635R-50	3.0 (26.7)	3.9 (35.0)
E6-10-650R-50	4.0 (35.7)	5.7 (50.0)
E6-10-665R-50	5.4 (47.5)	7.3 (65.0)
E6-10-680R-50	6.7 (59.4)	9.0 (80.0)
E6-10-695R-50	7.8 (68.9)	10.7 (95.0)
E6-10-6110R-50	9.0 (79.8)	12.4 (110.0)

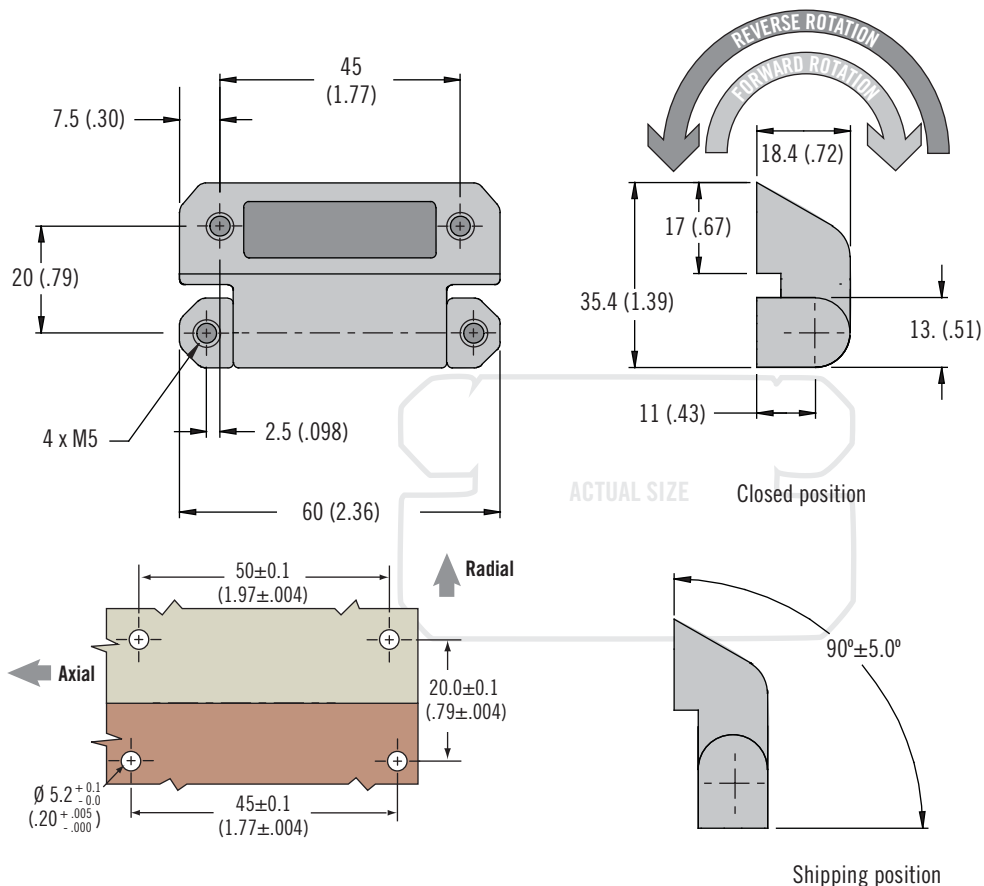
Symmetric

Part Number	Symmetric Torque N·m (in·lbf)
E6-10-620S-50	2.3 (20.0)
E6-10-635S-50	3.9 (35.0)
E6-10-650S-50	5.7 (50.0)
E6-10-665S-50	7.3 (65.0)
E6-10-680S-50	9.0 (80.0)

Dimensions in millimeters (inch) unless otherwise stated

E6 Hinge

Position control · Constant torque



- Holds in every position
- No adjustment required
- Long cycle life

Material and Finish

Zinc alloy body with hardened steel internal components

Performance Details

20,000 cycles within ±20% of static torque specification

Installation Notes

Screws not supplied

Calculate screw length using the following formula:

Door thickness + 6 (.236)

Symmetric

Part Number		Symmetric Torque N·m (in·lbf)
Black	Satin Chrome	
E6-60-400-50	E6-60-400-20	Free operating
E6-60-412S-50	E6-60-412S-20	1.36 N·m (12 in·lbf)
E6-60-420S-50	E6-60-420S-20	2.26 N·m (20 in·lbf)
E6-60-428S-50	E6-60-428S-20	3.16 N·m (28 in·lbf)
E6-60-436S-50	E6-60-436S-20	4.07 N·m (36 in·lbf)

Asymmetric

Part Number		Forward Torque N·m (in·lbf)	Reverse Torque N·m (in·lbf)
Black	Satin Chrome		
E6-60-420F-50	E6-60-420F-20	2.3 (20)	1.4 (12)
E6-60-428F-50	E6-60-428F-20	3.2 (28)	1.9 (16.8)
E6-60-436F-50	E6-60-436F-20	4.1 (36)	2.4 (21.6)
E6-60-444F-50	E6-60-444F-20	5 (44)	3 (26.4)
E6-60-420R-50	E6-60-420R-20	1.4 (12)	2.3 (20)
E6-60-428R-50	E6-60-428R-20	1.9 (16.8)	3.2 (28)
E6-60-436R-50	E6-60-436R-20	2.4 (21.6)	4.1 (36)
E6-60-444R-50	E6-60-444R-20	3 (26.4)	5 (44)

Part Number

See table



ST-8A Hinge

Position control · Constant torque

- Holds in every position
- No adjustment required
- Long cycle life

Material and Finish

Zinc alloy, black paint

Performance Details

Cycle performance
20,000 cycles within ±20% of static torque specification

Installation Notes

Thread stud install with M3 nuts (not supplied)

Thru hole install with M3 (No. 4) screws (not supplied)

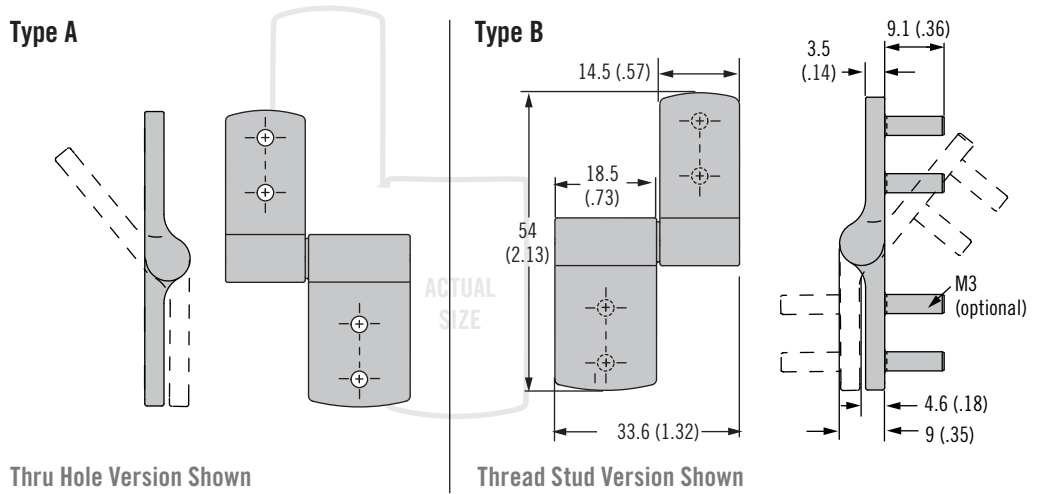
To ensure proper function, assembly must include a minimum of one Type A and one Type B hinge

Part Number

See table

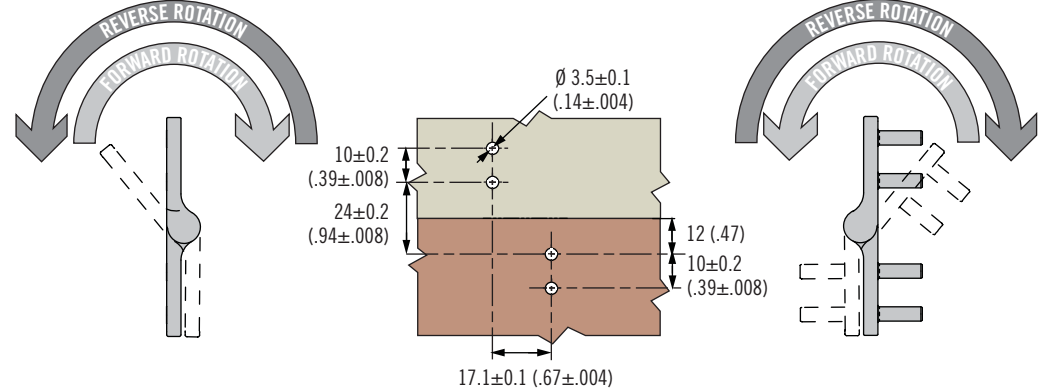
Type A

Type B



Thru Hole Version Shown

Thread Stud Version Shown

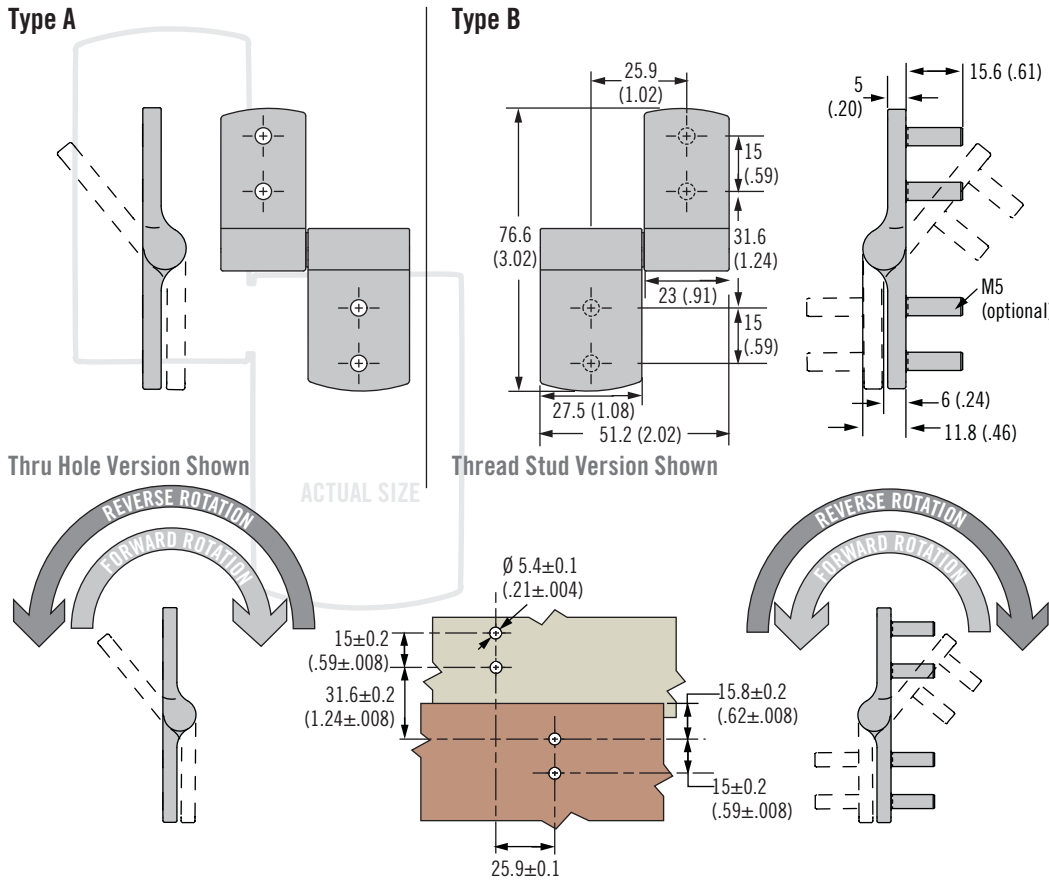


Symmetric Torque Version				
Part Number				Static Torque (forward and reverse) N·m (in·lbf)
M3 Thread Stud		Thru Hole		
Type A	Type B	Type A	Type B	
ST-8A1-40SA-50	ST-8A1-40SB-50	ST-8A-40SA-50	ST-8A-40SB-50	0.45 (4)
ST-8A1-60SA-50	ST-8A1-60SB-50	ST-8A-60SA-50	ST-8A-60SB-50	0.68 (6)
ST-8A1-80SA-50	ST-8A1-80SB-50	ST-8A-80SA-50	ST-8A-80SB-50	0.9 (8)

Asymmetric Torque Version					
Part Number				Forward Torque N·m (in·lbf)	Reverse Torque N·m (in·lbf)
M3 Thread Stud		Thru Hole			
Type A	Type B	Type A	Type B		
ST-8A1-40FA-50	ST-8A1-40FB-50	ST-8A-40FA-50	ST-8A-40FB-50	0.45 (4)	0.27 (2.4)
ST-8A1-60FA-50	ST-8A1-60FB-50	ST-8A-60FA-50	ST-8A-60FB-50	0.68 (6)	0.41 (3.6)
ST-8A1-80FA-50	ST-8A1-80FB-50	ST-8A-80FA-50	ST-8A-80FB-50	0.90 (8)	0.54 (4.8)
ST-8A1-100FA-50	ST-8A1-100FB-50	ST-8A-100FA-50	ST-8A-100FB-50	1.13 (10)	0.68 (6)
ST-8A1-40RA-50	ST-8A1-40RB-50	ST-8A-40RA-50	ST-8A-40RB-50	0.27 (2.4)	0.45 (4)
ST-8A1-60RA-50	ST-8A1-60RB-50	ST-8A-60RA-50	ST-8A-60RB-50	0.41 (3.6)	0.68 (6)
ST-8A1-80RA-50	ST-8A1-80RB-50	ST-8A-80RA-50	ST-8A-80RB-50	0.54 (4.8)	0.9 (8)
ST-8A1-100RA-50	ST-8A1-100RB-50	ST-8A-100RA-50	ST-8A-100RB-50	0.68 (6)	1.13 (10)

ST-11A Hinge

Position control · Constant torque



- Holds in every position
- No adjustment required
- Long cycle life

Material and Finish

Zinc alloy, black paint

Performance Details

Cycle performance
20,000 cycles within ±20% of static torque specification

Installation Notes

Thread stud install with M5 nuts (not supplied)

Thru hole install with M5 (No. 10) screws (not supplied)

To ensure proper function, assembly must include a minimum of one Type A and one Type B hinge

Part Number

See table

Symmetric Torque Version				
Part Number				Static Torque (forward and reverse) N·m (in·lbf)
M5 Thread Stud		Thru Hole		
Type A	Type B	Type A	Type B	
ST-11A1-140SA-50	ST-11A1-140SB-50	ST-11A-140SA-50	ST-11A-140SB-50	1.58 (14)
ST-11A1-200SA-50	ST-11A1-200SB-50	ST-11A-200SA-50	ST-11A-200SB-50	2.26 (20)
ST-11A1-260SA-50	ST-11A1-260SB-50	ST-11A-260SA-50	ST-11A-260SB-50	2.94 (26)

Asymmetric Torque Version					
Part Number				Forward Torque N·m (in·lbf)	Reverse Torque N·m (in·lbf)
M5 Thread Stud		Thru Hole			
Type A	Type B	Type A	Type B		
ST-11A1-140FA-50	ST-11A1-140FB-50	ST-11A-140FA-50	ST-11A-140FB-50	1.58 (14)	0.95 (8.4)
ST-11A1-200FA-50	ST-11A1-200FB-50	ST-11A-200FA-50	ST-11A-200FB-50	2.26 (20)	1.36 (12)
ST-11A1-260FA-50	ST-11A1-260FB-50	ST-11A-260FA-50	ST-11A-260FB-50	2.94 (26)	1.76 (15.6)
ST-11A1-320FA-50	ST-11A1-320FB-50	ST-11A-320FA-50	ST-11A-320FB-50	3.62 (32)	2.17 (19.2)
ST-11A1-140RA-50	ST-11A1-140RB-50	ST-11A-140RA-50	ST-11A-140RB-50	0.95 (8.4)	1.58 (14)
ST-11A1-200RA-50	ST-11A1-200RB-50	ST-11A-200RA-50	ST-11A-200RB-50	1.36 (12)	2.26 (20)
ST-11A1-260RA-50	ST-11A1-260RB-50	ST-11A-260RA-50	ST-11A-260RB-50	1.76 (15.6)	2.94 (26)
ST-11A1-320RA-50	ST-11A1-320RB-50	ST-11A-320RA-50	ST-11A-320RB-50	2.17 (19.2)	3.62 (32)



ST-7A Hinge

Position control · Constant torque

- Smooth, zero backlash operation
- Space efficient design provides high torque in minimum space
- Constant torque, never needs adjusting

Material and Finish

Zinc alloy and steel, natural

Performance Details

Radial load:

Maximum static load: 400 N (90 lbf)

Axial load:

Maximum static load: 300 N (67 lbf)

Cycle performance:

20,000 cycles within $\pm 20\%$ of static torque specification

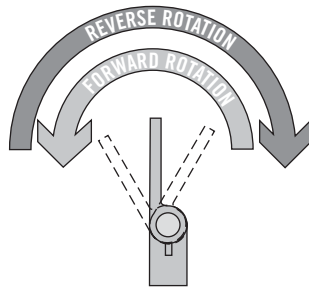
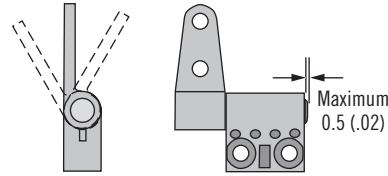
Installation Notes

1. Install hinge using No. 4 socket head cap screw.
2. For proper function, assembly must include (1) type A and (1) type B hinge.

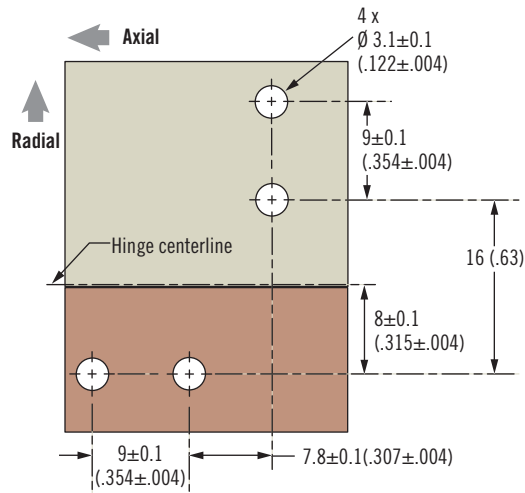
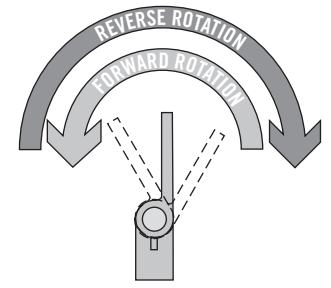
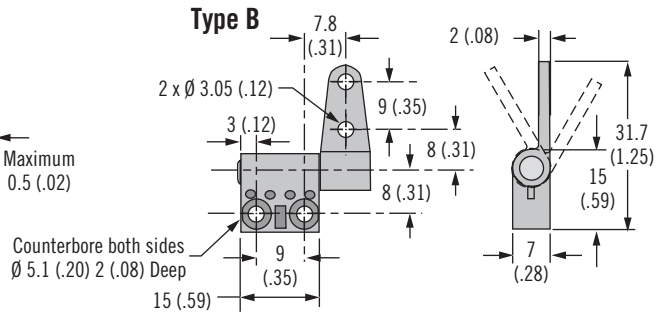
Part Number

See table

Type A



Type B



Symmetric Torque Versions		
Part Number		Static Torque (Forward and Reverse) N·m (in·lbf)
Type A	Type B	
ST-7A-30SA-33	ST-7A-30SB-33	0.34 (3)
ST-7A-40SA-33	ST-7A-40SB-33	0.45 (4)
ST-7A-50SA-33	ST-7A-50SB-33	0.56 (5)

Asymmetric Torque Versions			
Part Number		Static Torque N·m (in·lbf)	
Type A	Type B	Forward N·m (in·lbf)	Reverse N·m (in·lbf)
ST-7A-40FA-33	ST-7A-40FB-33	0.45 (4)	0.27 (2.4)
ST-7A-50FA-33	ST-7A-50FB-33	0.56 (5)	0.37 (3)
ST-7A-60FA-33	ST-7A-60FB-33	0.68 (6)	0.41 (3.6)
ST-7A-40RA-33	ST-7A-40RB-33	0.27 (2.4)	0.45 (4)
ST-7A-50RA-33	ST-7A-50RB-33	0.34 (3)	0.56 (5)
ST-7A-60RA-33	ST-7A-60RB-33	0.41 (3.6)	0.68 (6)

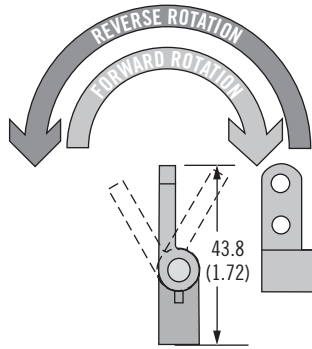
Dimensions in millimeters (inch) unless otherwise stated

ST-10A Hinge

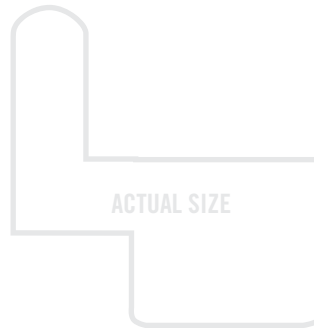
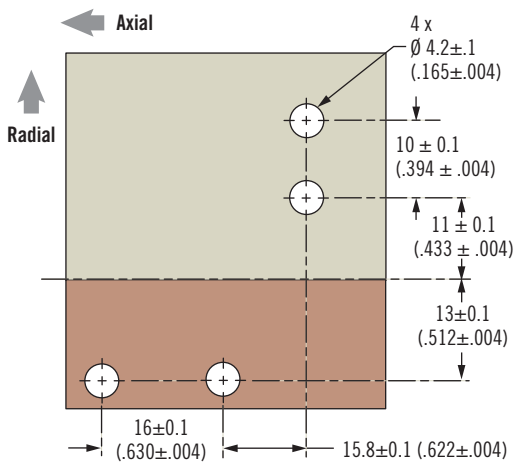
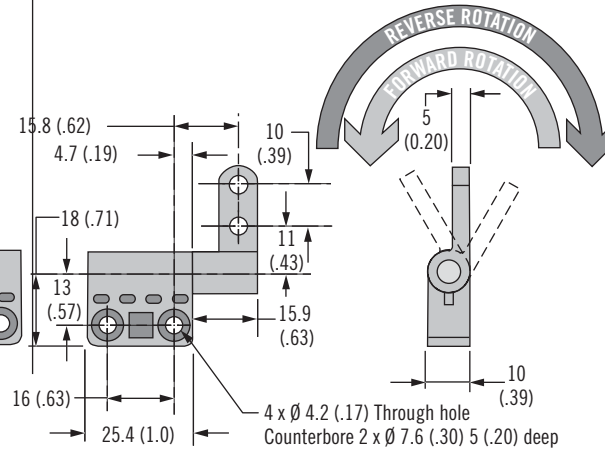
Position control · Constant torque



Type A



Type B



- Smooth, zero backlash operation
- Space efficient design provides high torque in minimum space
- Constant torque, never needs adjusting

Material and Finish

Zinc alloy and steel, natural

Performance Details

Radial load:

Maximum static load:

500 N (112 lbf)

Axial load:

Maximum static load:

1000 N (225 lbf)

Cycle performance:

20,000 cycles within ±20% of static torque specification

Installation Notes

1. Install hinge using M4 (No.8) socket head cap screw.
2. For proper function, assembly must include (1) type A and (1) type B hinge.

Part Number

See table

Symmetric Torque Versions

Part Number		Static Torque (Forward and Reverse) N·m (in·lbf)
Type A	Type B	
ST-10A-80SA-33	ST-10A-80SB-33	0.90 (8)
ST-10A-120SA-33	ST-10A-120SB-33	1.36 (12)
ST-10A-160SA-33	ST-10A-160SB-33	1.81 (16)
ST-10A-200SA-33	ST-10A-200SB-33	2.26 (20)

Asymmetric Torque Versions

Part Number		Static Torque N·m (in·lbf)	
Type A	Type B	Forward N·m (in·lbf)	Reverse N·m (in·lbf)
ST-10A-120FA-33	ST-10A-120FB-33	1.36 (12)	0.81 (7.2)
ST-10A-160FA-33	ST-10A-160FB-33	1.81 (16)	1.08 (9.6)
ST-10A-200FA-33	ST-10A-200FB-33	2.26 (20)	1.36 (12)
ST-10A-120RA-33	ST-10A-120RB-33	0.81 (7.2)	1.34 (12)
ST-10A-160RA-33	ST-10A-160RB-33	1.08 (9.6)	1.84 (16)
ST-10A-200RA-33	ST-10A-200RB-33	1.36 (12)	2.26 (20)



ST-10E Hinge

Position control · Constant torque

- Smooth, zero backlash operation
- Space efficient design provides high torque in minimum space
- Constant torque, never needs adjusting

Material and Finish

Zinc alloy and steel, natural

Performance Details

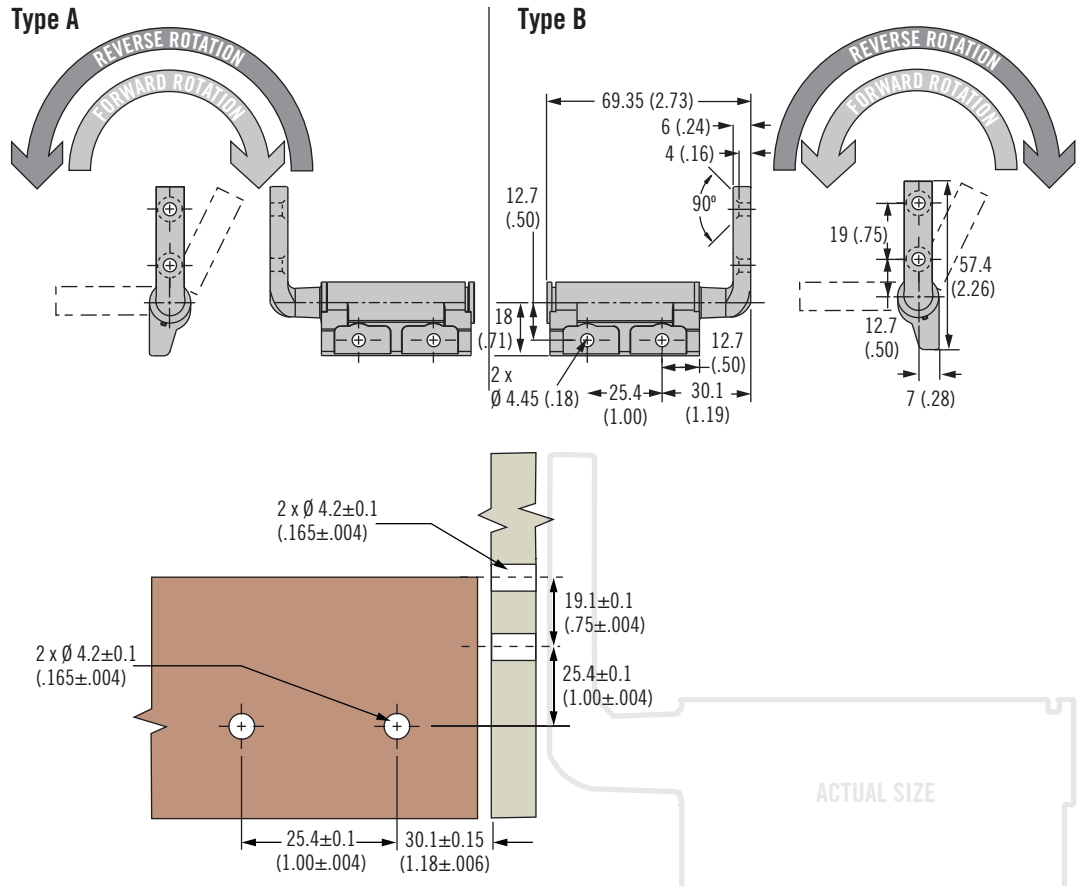
Cycle performance:
20,000 cycles within $\pm 20\%$ of static torque specification

Installation Notes

1. Install hinge using M4 (No.8) socket head cap screw.
2. For proper function, assembly must include (1) type A and (1) type B hinge.

Part Number

See table



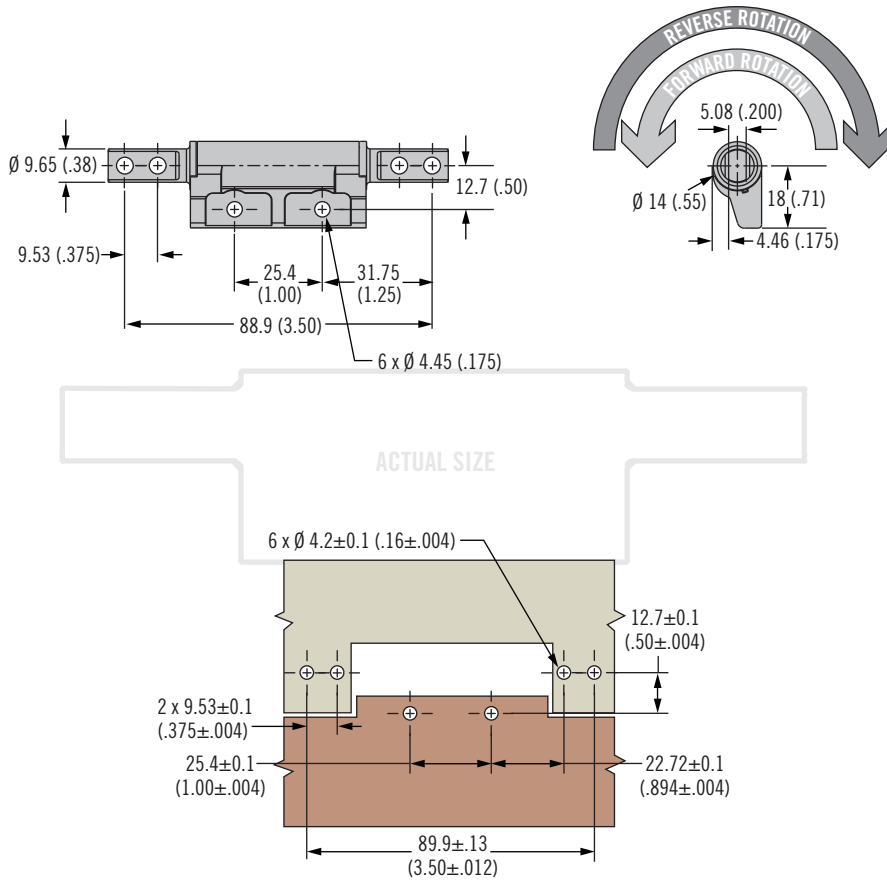
Symmetric Torque Versions		
Part Number		Static Torque (Forward and Reverse) N·m (in·lbf)
Type A	Type B	
ST-10E-120SE-33	ST-10E-120SG-33	1.35 (12)
ST-10E-200SE-33	ST-10E-200SG-33	2.26 (20)
ST-10E-280SE-33	ST-10E-280SG-33	3.16 (28)
ST-10E-360SE-33	ST-10E-360SG-33	4.06 (36)

Asymmetric Torque Versions			
Part Number		Static Torque N·m (in·lbf)	
Type A	Type B	Forward N·m (in·lbf)	Reverse N·m (in·lbf)
ST-10E-200FE-33	ST-10E-200FG-33	2.26 (20)	1.35 (12)
ST-10E-280FE-33	ST-10E-280FG-33	3.16 (28)	2.26 (20)
ST-10E-360FE-33	ST-10E-360FG-33	4.06 (36)	2.44 (21.6)
ST-10E-440FE-33	ST-10E-440FG-33	4.97 (44)	2.93 (26)
ST-10E-200RE-33	ST-10E-200RG-33	1.35 (12)	2.26 (20)
ST-10E-280RE-33	ST-10E-280RG-33	2.26 (20)	3.16 (28)
ST-10E-360RE-33	ST-10E-360RG-33	2.44 (21.6)	4.06 (36)
ST-10E-440RE-33	ST-10E-440RG-33	2.93 (26)	4.97 (44)

Dimensions in millimeters (inch) unless otherwise stated

ST-10E Hinge

Position control · Constant torque



- Smooth, zero backlash operation
- Space efficient design provides high torque in minimum space
- Constant torque, never needs adjusting

Material and Finish

Zinc alloy and steel, natural

Performance Details

Cycle performance:
20,000 cycles within $\pm 20\%$ of static torque specification

Installation Notes

Install hinge using M4 (No.8) socket head cap screw

Part Number

See table

Symmetric Torque Versions	
Part Number	Static Torque (Forward and Reverse) N·m (in·lbf)
ST-10E-120SH-33	1.35 (12)
ST-10E-200SH-33	2.26 (20)
ST-10E-280SH-33	3.16 (28)
ST-10E-360SH-33	4.06 (36)

Asymmetric Torque Versions		
Part Number	Static Torque N·m (in·lbf)	
	Forward N·m (in·lbf)	Reverse N·m (in·lbf)
ST-10E-200FH-33	2.26 (20)	1.35 (12)
ST-10E-280FH-33	3.16 (28)	1.89 (16.8)
ST-10E-360FH-33	4.06 (36)	2.44 (21.6)
ST-10E-440FH-33	4.97 (44)	2.93 (26)
ST-10E-200RH-33	1.35 (12)	2.26 (20)
ST-10E-280RH-33	1.89 (16.8)	3.16 (28)
ST-10E-360RH-33	2.44 (21.6)	4.06 (36)
ST-10E-440RH-33	2.93 (26)	4.97 (44)



ST-10E Hinge

Position control · Constant torque

- Smooth, zero backlash operation
- Space efficient design provides high torque in minimum space
- Constant torque, never needs adjusting

Material and Finish

Zinc alloy and steel, natural

Performance Details

Cycle performance:
20,000 cycles within $\pm 20\%$ of static torque specification

Installation Notes

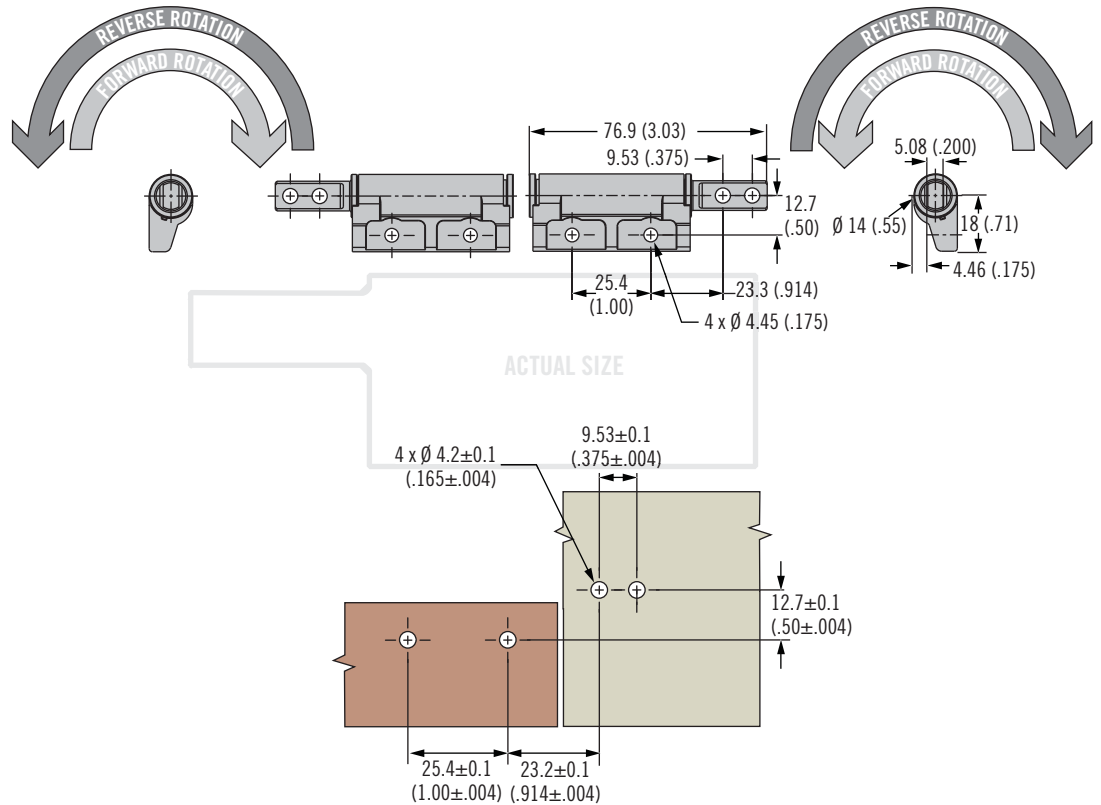
1. Install hinge using M4 (No. 8 socket head cap screw.
2. For proper function, assembly must include (1) type A and (1) type B hinge.

Part Number

See table

Type A

Type B



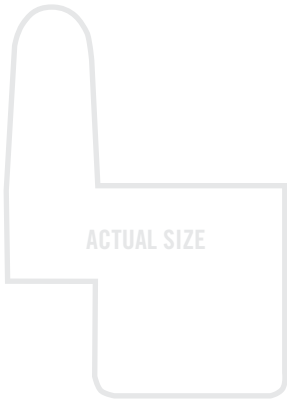
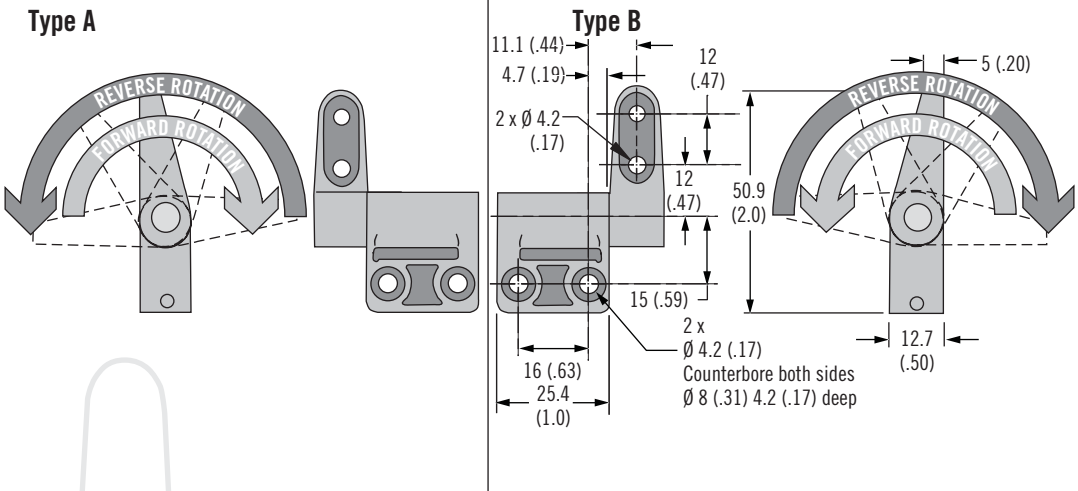
Symmetric Torque Versions		
Part Number		Static Torque (Forward and Reverse) N·m (in·lbf)
Type A	Type B	
ST-10E-120SJ-33	ST-10E-120SK-33	1.35 (12)
ST-10E-200SJ-33	ST-10E-200SK-33	2.26 (20)
ST-10E-280SJ-33	ST-10E-280SK-33	3.16 (28)
ST-10E-360SJ-33	ST-10E-360SK-33	4.06 (36)

Asymmetric Torque Versions			
Part Number		Static Torque N·m (in·lbf)	
Type A	Type B	Forward N·m (in·lbf)	Reverse N·m (in·lbf)
ST-10E-200FJ-33	ST-10E-200FK-33	2.26 (20)	1.35 (12)
ST-10E-280FJ-33	ST-10E-280FK-33	3.16 (28)	1.89 (16.8)
ST-10E-360FJ-33	ST-10E-360FK-33	4.06 (36)	2.44 (21.6)
ST-10E-440FJ-33	ST-10E-440FK-33	4.97 (44)	2.93 (26)
ST-10E-200RJ-33	ST-10E-200RK-33	1.35 (12)	2.26 (20)
ST-10E-280RJ-33	ST-10E-280RK-33	1.89 (16.8)	3.16 (28)
ST-10E-360RJ-33	ST-10E-360RK-33	2.44 (21.6)	4.06 (36)
ST-10E-440RJ-33	ST-10E-440RK-33	2.93 (26)	4.97 (44)

Dimensions in millimeters (inch) unless otherwise stated

ST-12A Hinge

Position control · Constant torque



- Smooth, zero backlash operation
- Space efficient design provides high torque in minimum space
- Constant torque, never needs adjusting

Material and Finish

Zinc alloy and steel, natural

Performance Details

Radial load:
Maximum static load:
1000 N (225 lbf)

Axial load:
Maximum static load:
1200 N (270 lbf)

Cycle performance:
20,000 cycles within ±20% of static torque specification

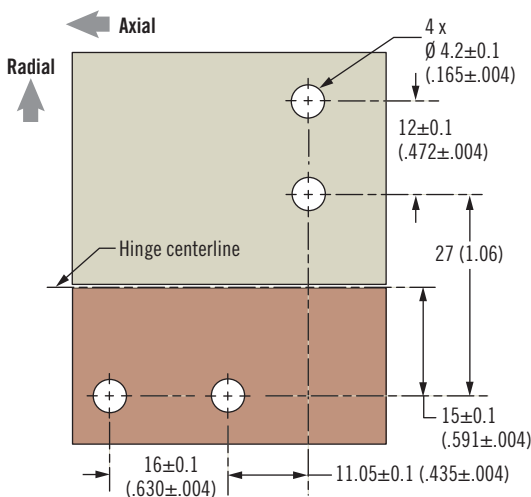
Installation Notes

1. Install hinge using M4 (No. 8) socket head cap screw.
2. For proper function, assembly must include (1) type A and (1) type B hinge.

Part Number

See table

Symmetric Torque Versions		
Part Number		Static Torque (Forward and Reverse) N·m (in·lbf)
Type A	Type B	
ST-12A-120SA-33	ST-12A-120SB-33	1.4 (12)
ST-12A-200SA-33	ST-12A-200SB-33	2.3 (20)
ST-12A-280SA-33	ST-12A-280SB-33	3.2 (28)
ST-12A-360SA-33	ST-12A-360SB-33	4.1 (36)



Asymmetric Torque Versions			
Part Number		Static Torque N·m (in·lbf)	
Type A	Type B	Forward N·m (in·lbf)	Reverse N·m (in·lbf)
ST-12A-200FA-33	ST-12A-200FB-33	2.3 (20)	1.5 (13.6)
ST-12A-280FA-33	ST-12A-280FB-33	3.2 (28)	2.2 (19.1)
ST-12A-360FA-33	ST-12A-360FB-33	4.1 (36)	2.8 (24.6)
ST-12A-440FA-33	ST-12A-440FB-33	5 (44)	3.4 (30)
ST-12A-200RA-33	ST-12A-200RB-33	1.5 (13.6)	2.3 (20)
ST-12A-280RA-33	ST-12A-280RB-33	2.2 (19.1)	3.2 (28)
ST-12A-360RA-33	ST-12A-360RB-33	2.8 (24.6)	4.1 (36)
ST-12A-440RA-33	ST-12A-440RB-33	3.4 (30)	5 (44)



ST-12C Hinge

Position control · Constant torque · Counterbalanced

- Counterbalance spring allows easy opening
- Space efficient design provides high torque in minimum space
- Constant torque, never needs adjusting

Material and Finish

Zinc alloy and steel, natural

Performance Details

Radial load:

Maximum static load:

1000 N (225 lbf)

Axial load:

Maximum static load:

1200 N (270 lbf)

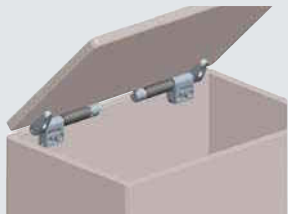
Cycle performance:

20,000 cycles within ±20% of static torque specification

Installation Notes

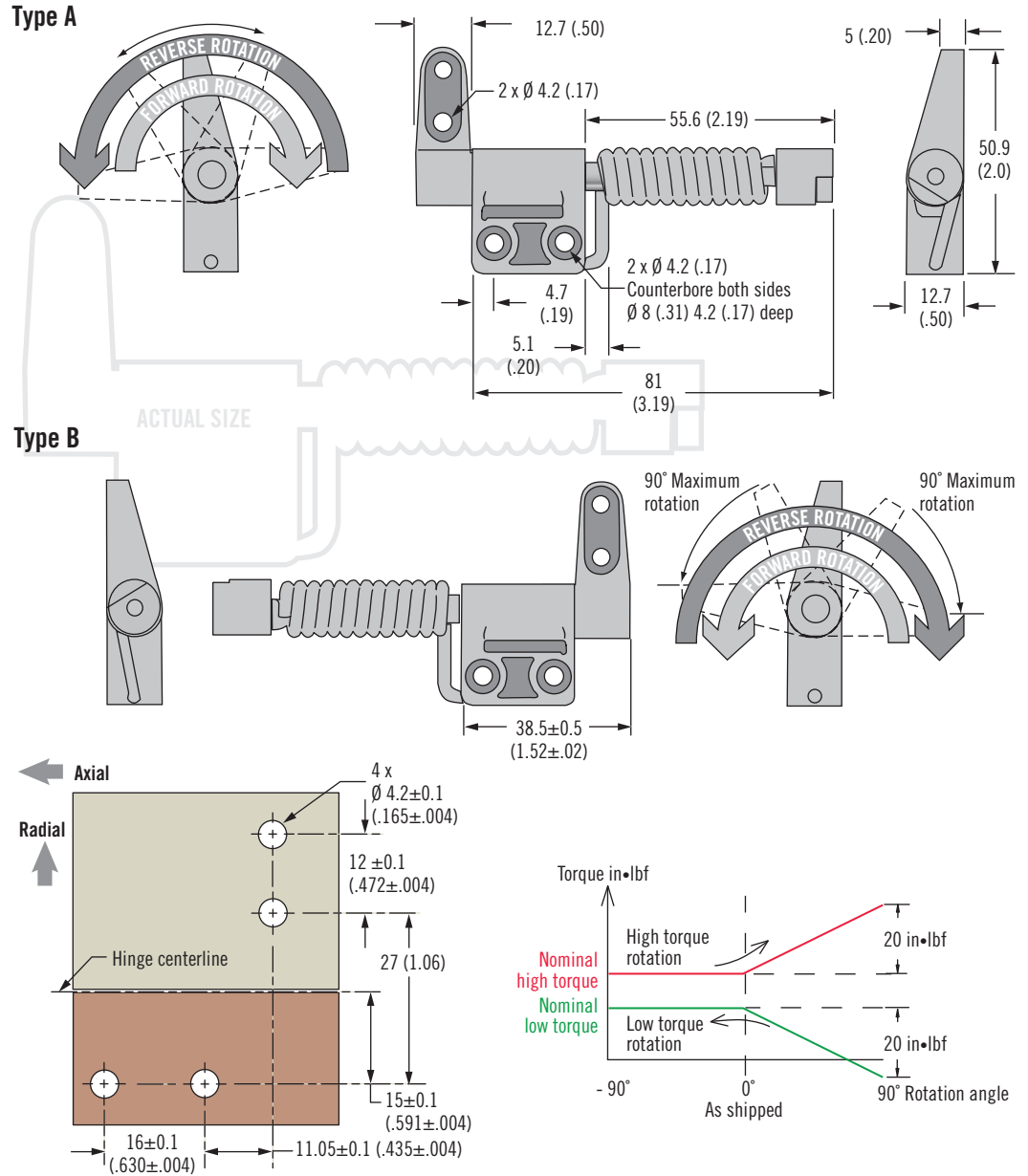
1. Install hinge using M4 (No. 8) socket head cap screw.
2. For proper function, assembly must include (1) type A and (1) type B hinge.
3. Application must limit rotation ±90° from shipping position.

Application



Part Number

See table



Part Number		Static Torque N·m (in·lbf)	
Type A	Type B	Forward N·m (in·lbf)	Reverse N·m (in·lbf)
ST-12C-200FA1-33	ST-12C-200FB1-33	2.3 (20)	1.5 (13.6)
ST-12C-280FA1-33	ST-12C-280FB1-33	3.2 (28)	2.2 (19.1)
ST-12C-360FA1-33	ST-12C-360FB1-33	4.1 (36)	2.8 (24.6)
ST-12C-440FA1-33	ST-12C-440FB1-33	5 (44)	3.4 (30)
ST-12C-200RA1-33	ST-12C-200RB1-33	1.5 (13.6)	2.3 (20)
ST-12C-280RA1-33	ST-12C-280RB1-33	2.2 (19.1)	3.2 (28)
ST-12C-360RA1-33	ST-12C-360RB1-33	2.8 (24.6)	4.1 (36)
ST-12C-440RA1-33	ST-12C-440RB1-33	3.4 (30)	5 (44)

ST-4A Hinge

Position control · Constant torque



- Smooth consistent operation
- Extremely compact, fits the smallest applications
- Never requires adjustment

Material and Finish

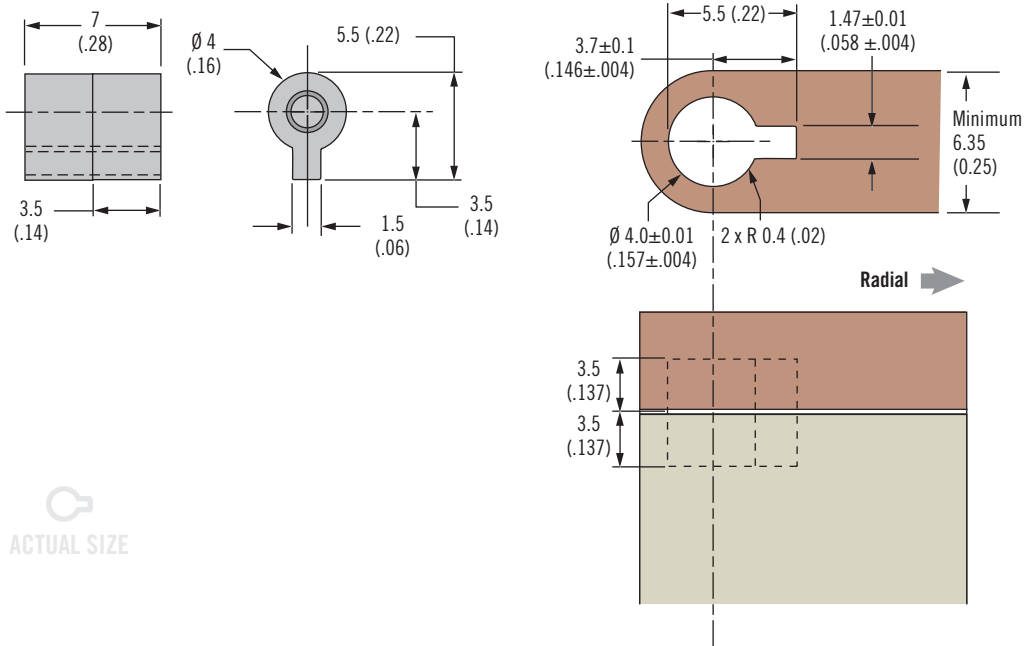
Aluminum, zinc alloy and steel, natural

Performance Details

Radial load:
 Maximum static load: 200 N (45 lbf)
 Cycle performance:
 20,000 cycles within 0.023 N·m (.2 in·lbf) of static torque specification

Part Number

See table



 ACTUAL SIZE



Part Number	Static Torque
ST-4A-3S-33	0.034 N·m (.3 in·lbf)



ST-8P Hinge

Position control · Constant torque

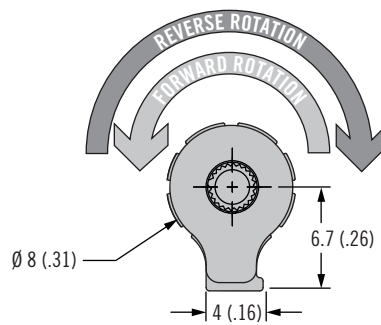
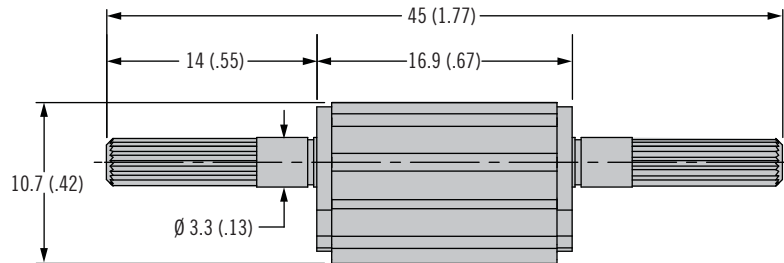
- Designed for overmolding
- Brings constant torque performance to a wide range of applications
- Space efficient design provides high torque in minimum space
- Never requires adjustment

Material and Finish

Aluminum, plastic and hardened steel

Performance Details

Cycle performance:
20,000 cycles within $\pm 20\%$ of static torque specification



Part Number

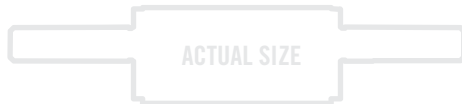
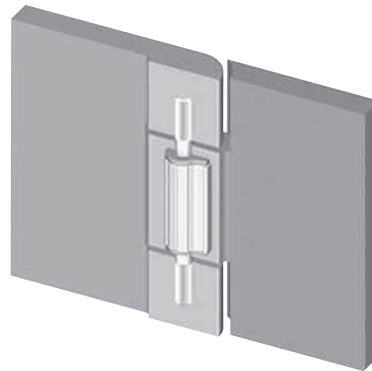
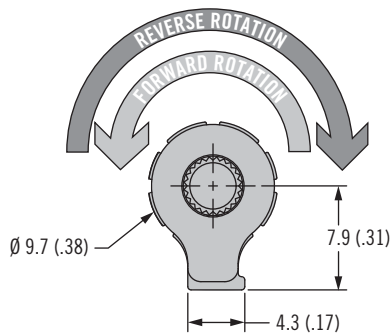
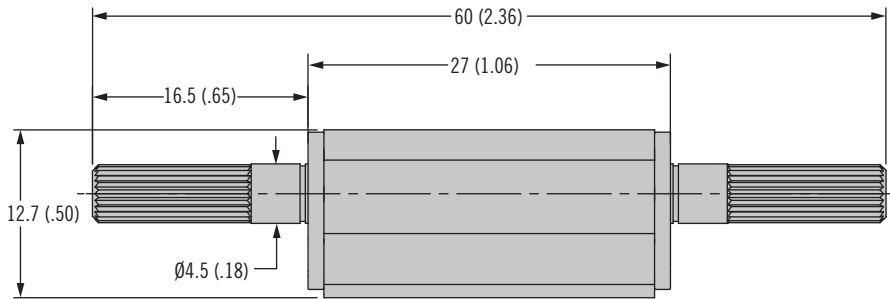
See table

Symmetric Torque Versions	
Part Number	Static Torque (Forward and Reverse) N·m (in·lbf)
ST-8P-40SA-50	0.45 (4)
ST-8P-60SA-50	0.68 (6)
ST-8P-80SA-50	0.9 (8)

Asymmetric Torque Versions		
Part Number	Static Torque N·m (in·lbf)	
	Forward N·m (in·lbf)	Reverse N·m (in·lbf)
ST-8P-40FA-50	0.45 (4.0)	0.27 (2.4)
ST-8P-60FA-50	0.68 (6.0)	0.41 (3.6)
ST-8P-80FA-50	0.90 (8.0)	0.54 (4.8)
ST-8P-100FA-50	1.13 (10.0)	0.68 (6)
ST-8P-40RA-50	0.27 (2.4)	0.45 (4)
ST-8P-60RA-50	0.41 (3.6)	0.68 (6)
ST-8P-80RA-50	0.54 (4.8)	0.9 (8)
ST-8P-100RA-50	0.68 (6.0)	1.13 (10)

ST-11P Hinge

Position control · Constant torque



- Designed for overmolding
- Brings constant torque performance to a wide range of applications
- Space efficient design provides high torque in minimum space
- Never requires adjustment

Material and Finish

Aluminum, plastic and hardened steel

Performance Details

Cycle performance:
20,000 cycles within $\pm 20\%$ of static torque specification

Part Number

See table

Symmetric Torque Versions	
Part Number	Static Torque (Forward and Reverse) N·m (in·lbf)
ST-11P-140SA-50	1.58 (14)
ST-11P-200SA-50	2.26 (20)
ST-11P-260SA-50	2.9 (26)

Asymmetric Torque Versions		
Part Number	Static Torque N·m (in·lbf)	
	Forward N·m (in·lbf)	Reverse N·m (in·lbf)
ST-11P-140FA-50	1.58 (14)	0.95 (8.4)
ST-11P-200FA-50	2.26 (20)	1.36 (12)
ST-11P-260FA-50	2.94 (26)	1.76 (15.6)
ST-11P-320FA-50	3.62 (32)	2.17 (19.2)
ST-11P-140RA-50	0.95 (8.4)	1.58 (14)
ST-11P-200RA-50	1.36 (12)	2.26 (20)
ST-11P-260RA-50	1.76 (15.6)	2.94 (26)
ST-11P-320RA-50	2.17 (19.2)	3.62 (32)



E6 Hinge

Position control · Adjustable torque

- Hold doors open, in position
- User-adjusted holding torque

Material and Finish

Leaves: Acetal

Pin: Polycarbonate

Adjustment screw & nut:

Stainless steel

Performance Details

Radial load:

Large: 3110 N (700 lbf)

Medium: 1780 N (400 lbf)

Axial load:

Large: 2000 N (450 lbf)

Medium: 890 N (200 lbf)

Maximum prevailing torque of hinge:

Large: 4 N·m (35 in·lbf)

Medium: 0.8 N·m (7 in·lbf)

Operating temperature range:

-5°C (20°F) to 65°C (150°F)

Installation Notes

Mount with:

Large: M6 (1/4-20)

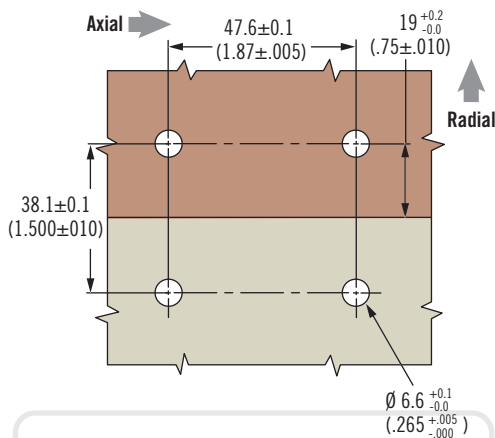
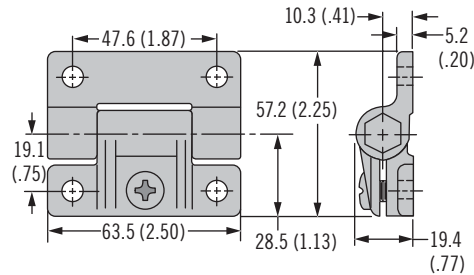
Medium: M4 (8-32)

(screws not supplied)

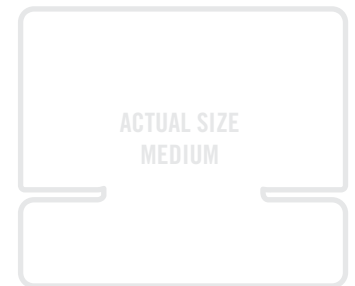
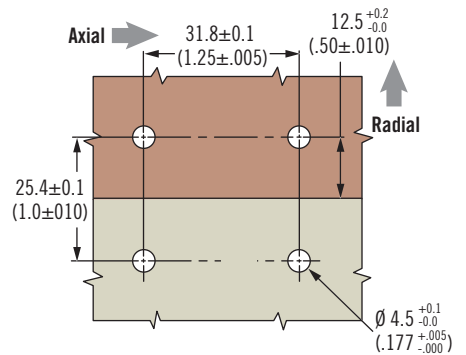
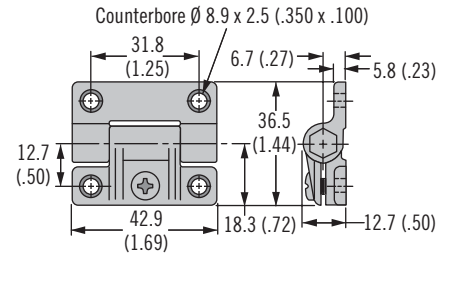
Part Number

See table

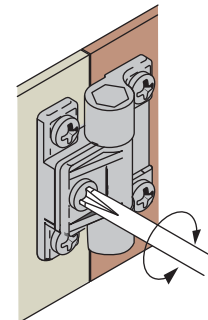
Large



Medium



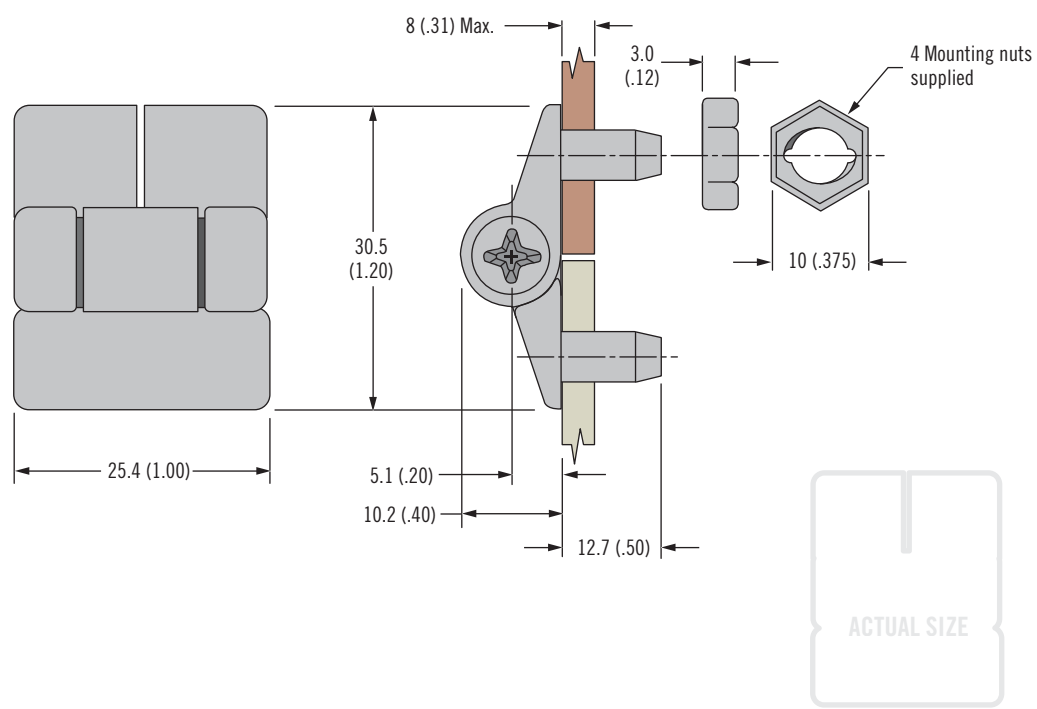
Torque Adjustment



Part Number		
Color	Large	Medium
Black	E6-10-501-20	E6-10-301-20
White	E6-10-501-10	E6-10-301-10

E6 Hinge

Position control · Adjustable torque



- Hold doors open, in position
- User-adjusted holding torque

Material and Finish

Acetal, nylon
 Mounting hardware:
 Steel, zinc plated

Performance Details

Radial load:
 Average ultimate load:
 1150 N (260 lbf)

Axial load:
 Average ultimate load:
 950 N (214 lbf)

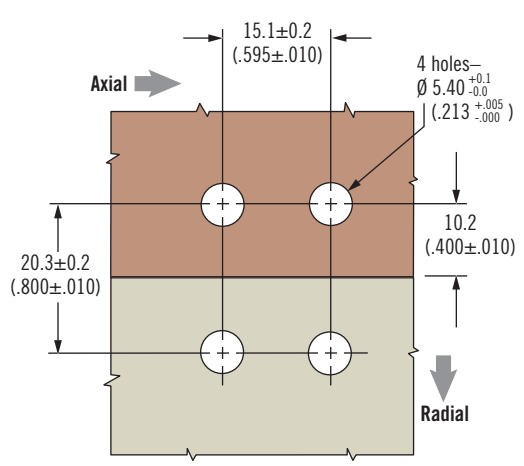
Maximum prevailing torque of hinge:
 0.25 N·m (2.2 in·lbf)

Operating temperature range:
 -5°C (-20°F) to 65°C (150°F)

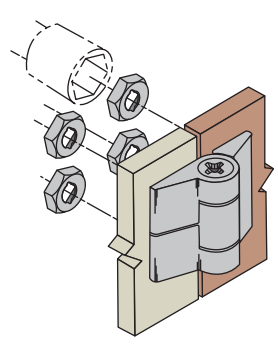
Notes

Packaging: One hinge and four mounting nuts per bag

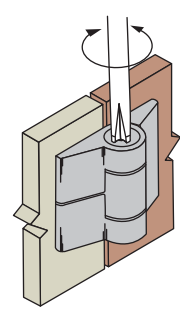
1. Prepare door and frame



2. Mount



3. Adjust torque



Color	Part Number
Black	E6-10-101-20
White	E6-10-101-30

Part Number

See table



G6 Hinge

Position control · Detent

- Holds doors open without secondary mechanical support
- Detent holds door at 120° and 170°
- Can be opened to 180°

Material and Finish

Acetal and nylon, black

Performance Details

Radial load:

Maximum static load: 130 N (30 lbf)

Average ultimate load:

970 N (220 lbf)

Axial load:

Maximum static load: 130 N (30 lbf)

Average ultimate load:

1450 N (325 lbf)

Cycle life: 10,000 cycles

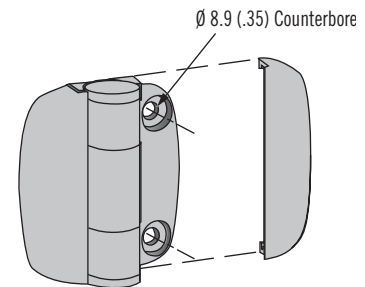
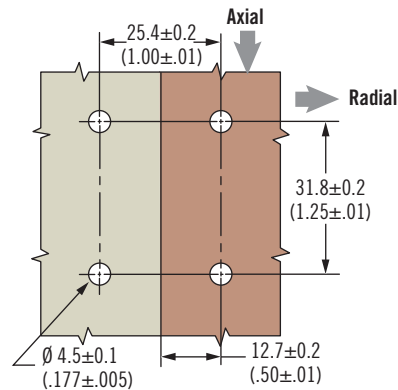
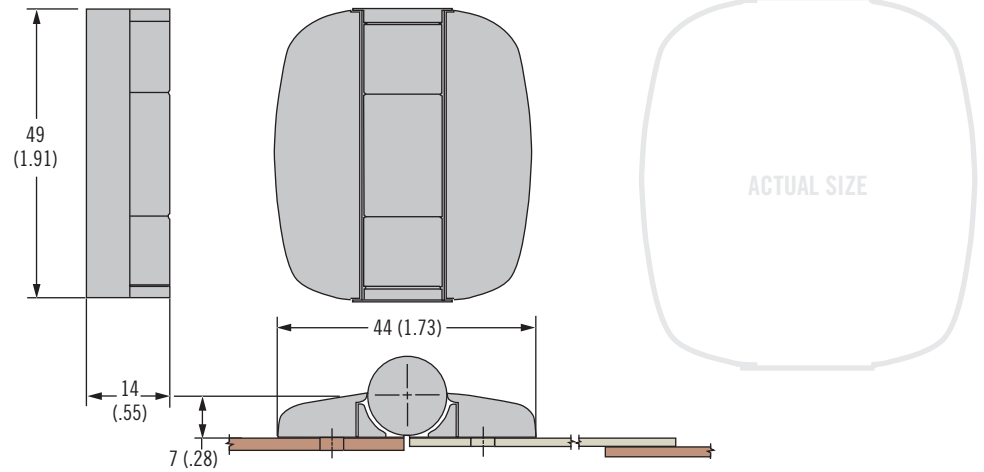
Operating temperature range:

-20 °C (0° F) to 80° C (180° F)

Installation Notes

Screws not supplied

Hinge designed to accommodate M4 (No. 8) size Pan Head mounting hardware.



Part Number

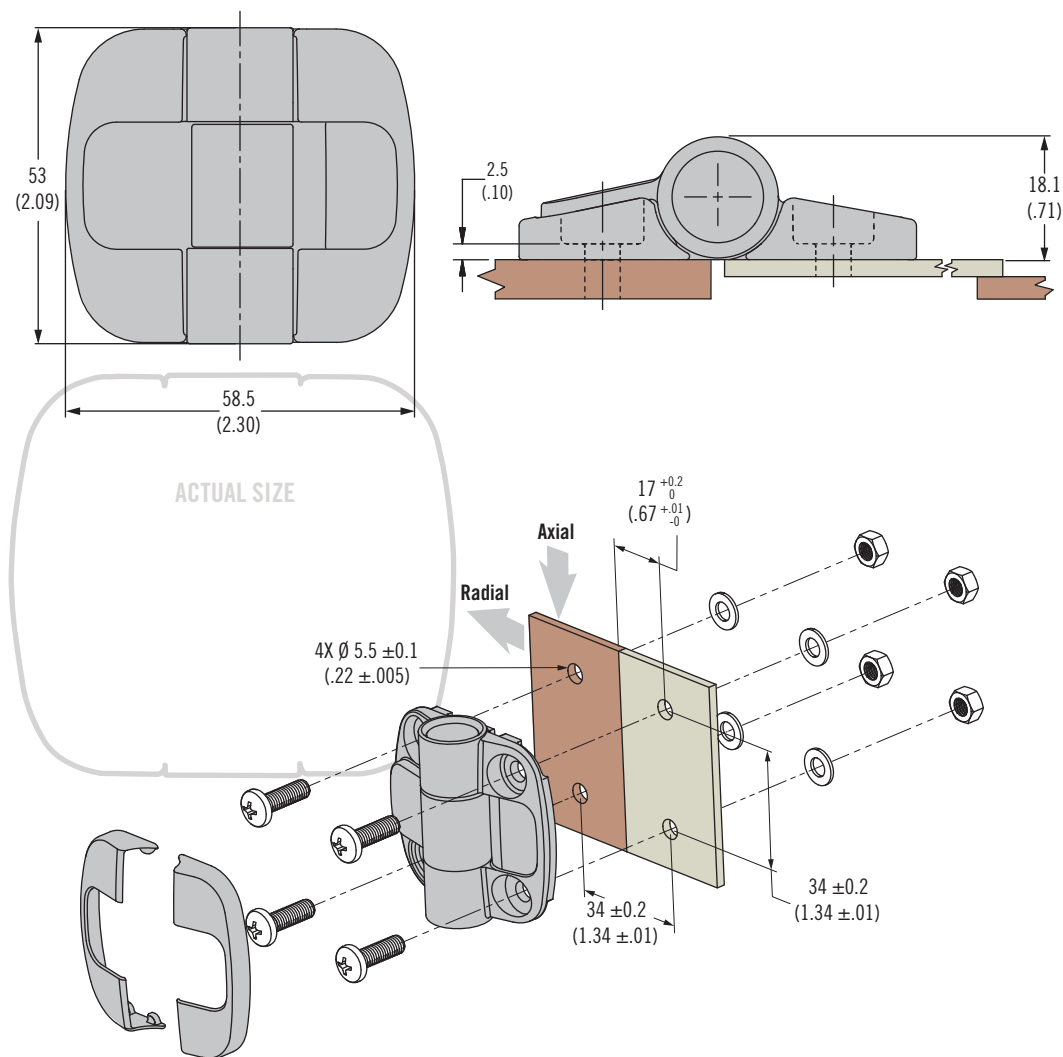
See table

Part Number	Detent Angle	Positioning Torque
G6-0-1	<p>Free swinging (no detents)</p>	~
G6-5-1	<p>170° 120°</p>	1.1 N·m (10 in·lbf)

Dimensions in millimeters (inch) unless otherwise stated

C6 Hinge

Position control · Detent



- Holds doors open without secondary mechanical support
- Detents holds door at 80°, 115° or 150°
- All versions can be further opened to 180°

Material and Finish

Acetal, black
Internal components:
Stainless steel

Performance Details

Radial load:
Maximum static load:
450 N (100 lbf)
Average ultimate load:
2600 N (575 lbf)

Axial load:
Maximum static load:
450 N (100 lbf)
Average ultimate load:
1800 N (400 lbf)

Cycle life: Up to 20,000





Operating temperature range:
-40°C (-40°F) to 80°C (180°F)

Installation Notes

Mounting hardware not supplied.
Designed to accommodate M5 (No. 10) mounting hardware with a maximum head diameter of 10.1 (.40) and a maximum head height of 3 (.12).

Part Number

See table

Type	Positioning Torque N•m (in•lbf)	Part Number
 No Detents	Free operating	C6-220
 80 Degree	0.7 (6)	C6-221
	1.1 (10)	C6-222
	1.7 (15)	C6-223
 115 Degree	0.7 (6)	C6-224
	1.1 (10)	C6-225
	1.7 (15)	C6-226
 150 Degree	0.7 (6)	C6-227
	1.1 (10)	C6-228
	1.7 (15)	C6-229



G7 Hinge

Bi-stable

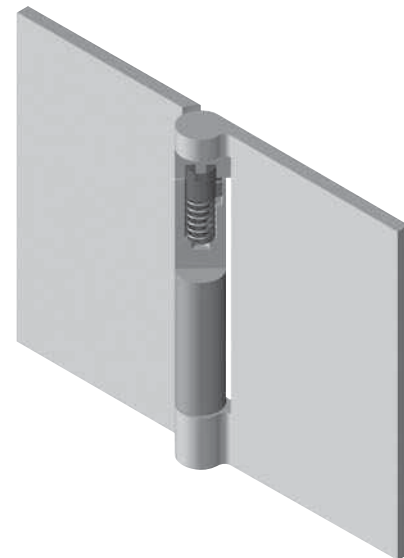
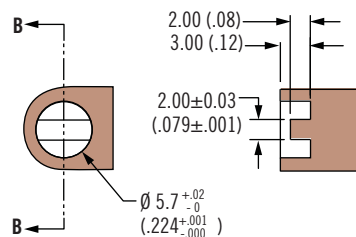
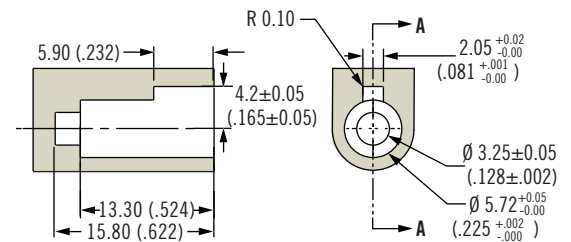
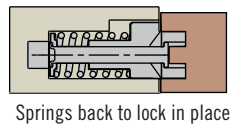
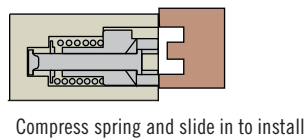
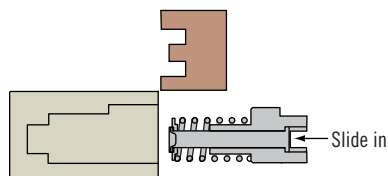
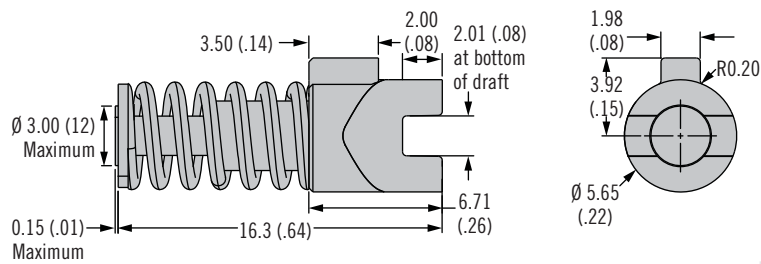
- Automatically drives to one of two preferred positions
- Invisible when installed

Material and Finish

Acetal black, steel, zinc plated

Performance Details

Cycle performance: 20,000 cycles within $\pm 20\%$ of normal torque specification



Part Number

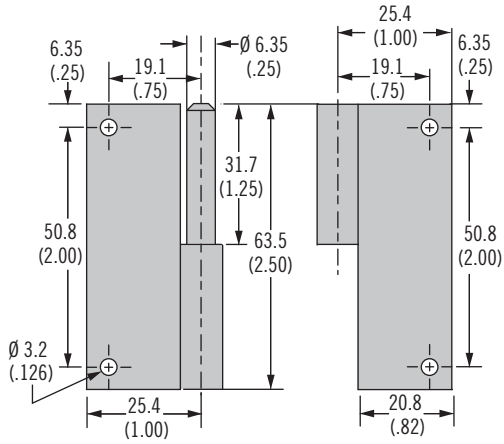
See table

Part Number	Maximum Torque N·m (in·lbf)
G7-6A-3P-1	0.035 (.3)

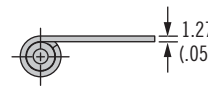
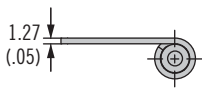
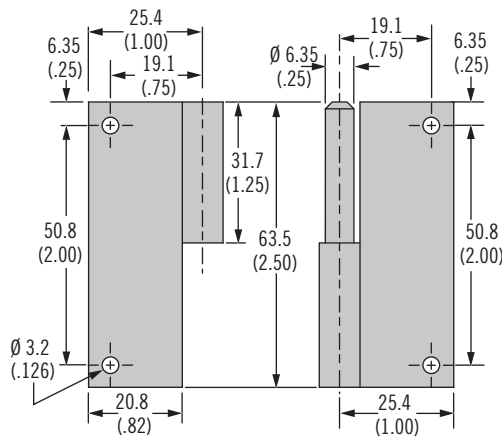
96 Hinge Lift-off



Type A



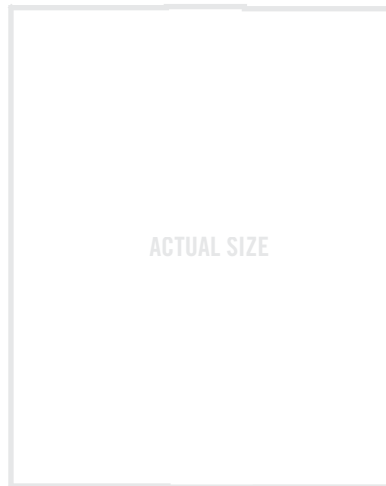
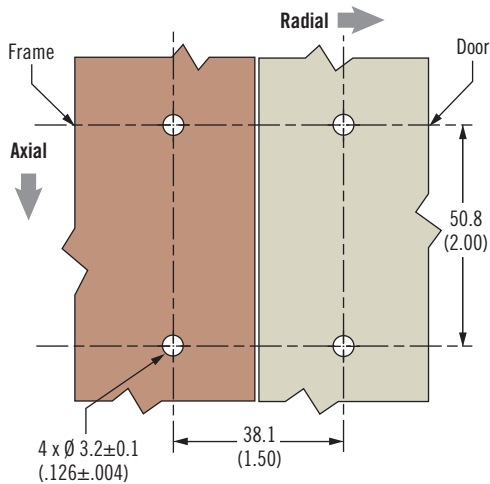
Type B



- Allows for quick, easy door removal
- All metal construction

Material and Finish

Steel, zinc plated or stainless steel



Type "A" application shown

Material	Part Number	
	Type A	Type B
Steel	96-04-N1WL	96-04-N1WR
Stainless Steel	96-04-S1WL	96-04-S1WR

Part Number

See table



96 Hinge

Lift-off · In-line · Zinc

- Allows for quick, easy door removal
- Door can also be permanently installed

Material and Finish

Zinc alloy, black powder coated

Performance Details

	Radial Load	Axial Load
Maximum static load	1300 N (300 lbf)	2200 N (500 lbf)
Average ultimate load	3300 N (750 lbf)	9300 N (2100 lbf)

Installation Notes

Screws not supplied.

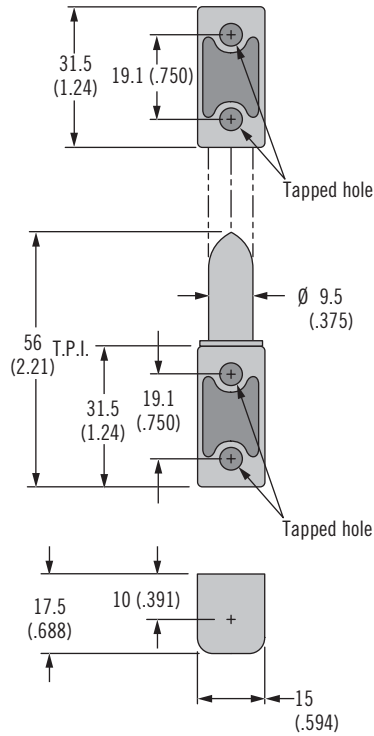
Maximum tightening torque of screw: 8.5 N·m (75 in·lbf)

Calculate screw length using the following formula:

Door thickness + 5 (.200)

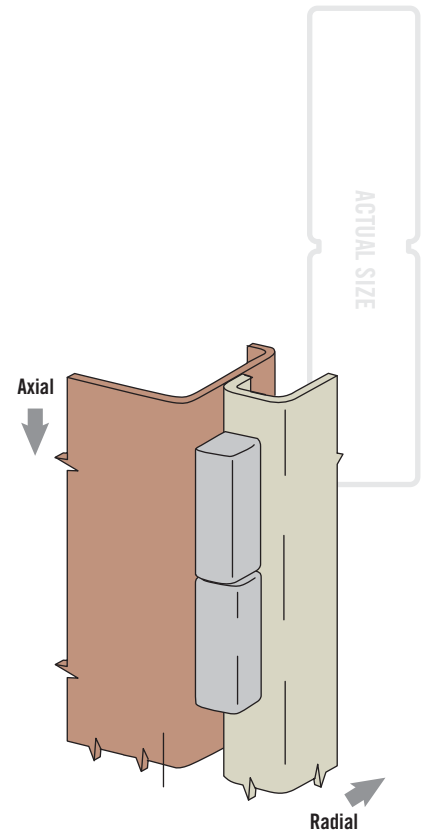
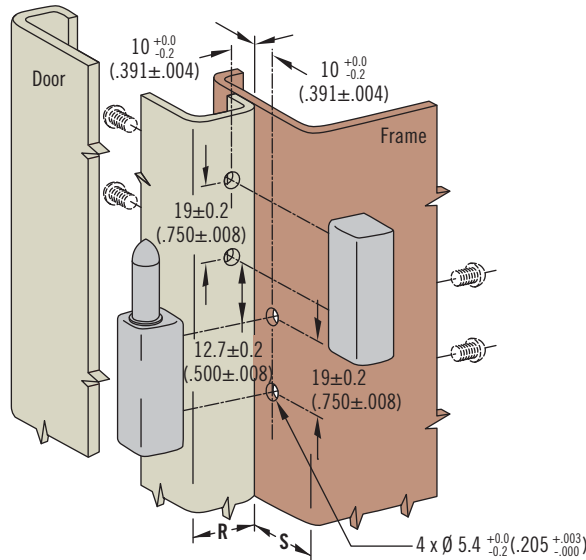
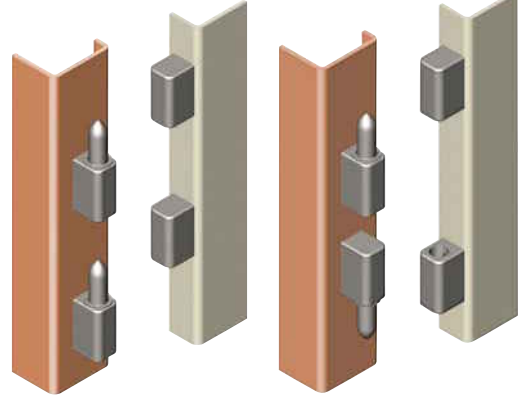
In-line mount preparation:

To allow for 180° rotation R or S must be < 25.4 (1.00).



For Lift-Off Mounting

For Non Lift-Off Mounting



Part Number

See Table

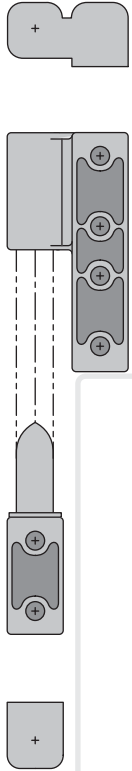
Tapped Hole	Part Number
Imperial 10-32	96-10-500-50
Metric M5 x 0.8	96-50-500-50

96 Hinge

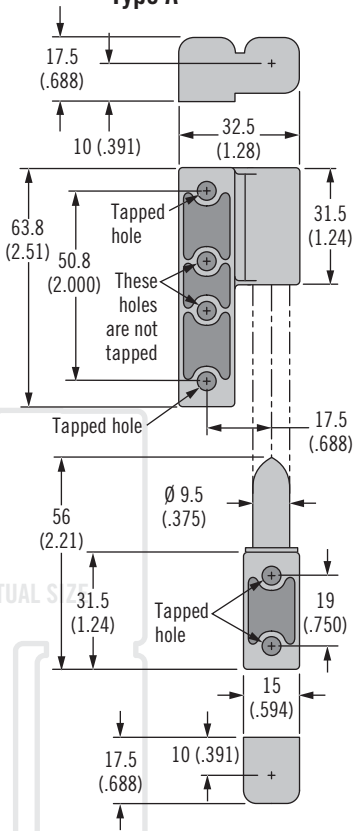
Lift-off · Offset · Zinc



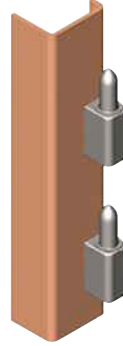
Type B



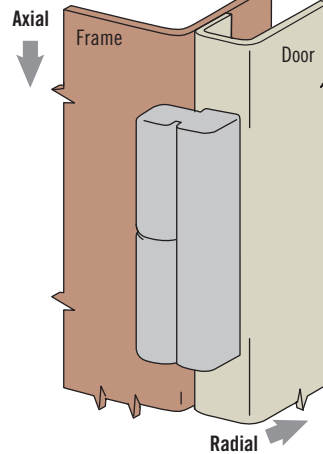
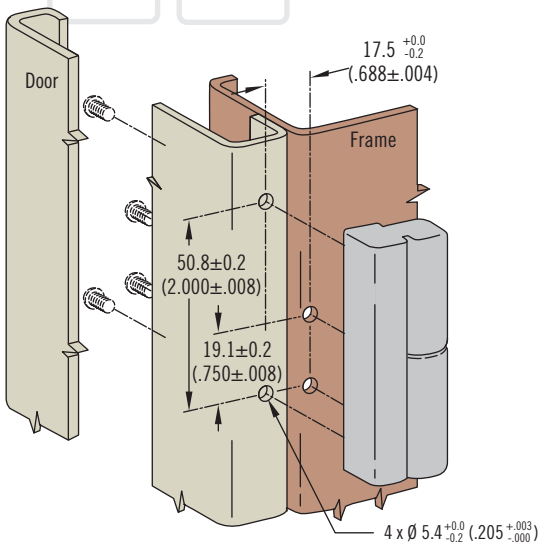
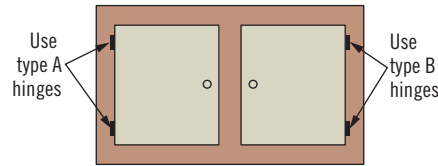
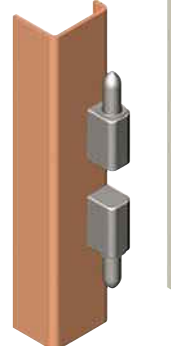
Type A



For Lift-Off Mounting



For Non Lift-Off Mounting



- Allows for quick, easy door removal
- Door can also be permanently installed

Material and Finish

Zinc alloy, black powder coated

Performance Details

	Radial Load	Axial Load
Maximum static load	1300 N (300 lbf)	2200 N (500 lbf)
Average ultimate load	3300 N (750 lbf)	9300 N (2100 lbf)

Installation Notes

Screws not supplied.

Maximum tightening torque of screw: 8.5 N·m (75 in·lbf)

Calculate screw length using the following formula:

Door thickness + 10 (.400)

Tapped Hole	Part Number	
	Type A	Type B
Imperial 10-32	96-10-510-50	96-10-520-50
Metric M5 x 0.8	96-50-510-50	96-50-520-50

Part Number

See table



96 Hinge

Lift-off · In-line · Zinc and stainless steel

- Allows for quick, easy door removal
- Door can also be permanently installed

Material and Finish

Zinc alloy, chrome plated, powder coated or stainless steel

Performance Details

Radial load

Maximum static load:

Zinc alloy: 1300 N (300 lbf)

Stainless steel: 3000 N (670 lbf)

Axial Load

Maximum static load:

Zinc alloy: 2200 N (500 lbf)

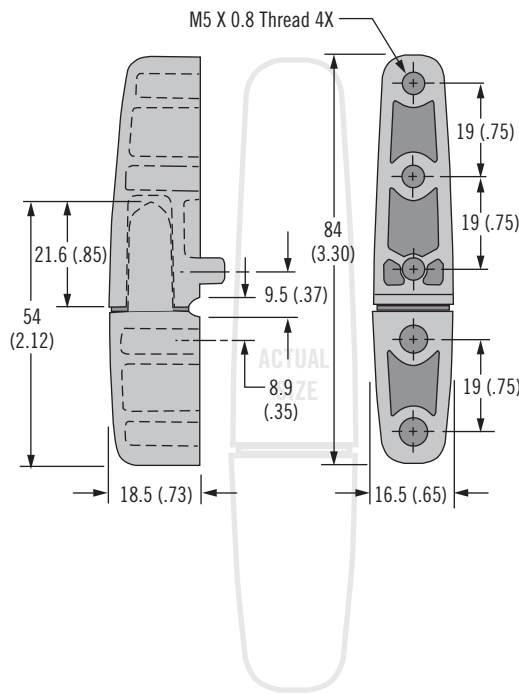
Stainless steel: 5000 N (1120 lbf)

Installation Notes

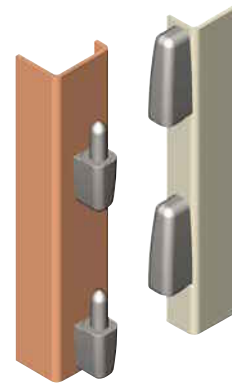
Screws not supplied.

Attach hinge with four M5 x 0.8

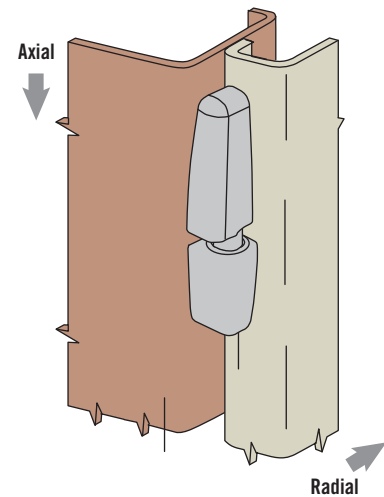
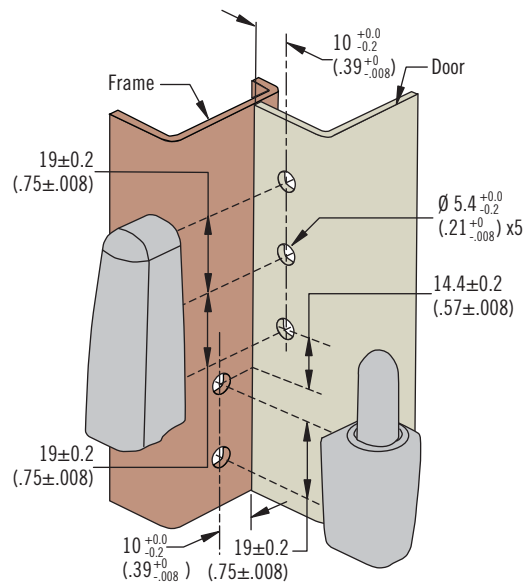
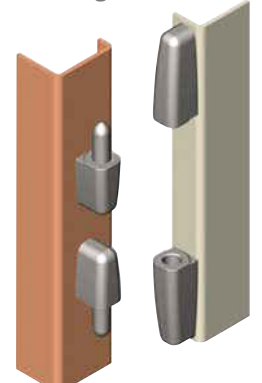
Maximum screw length = door (or frame) thickness + 10 (.400)



For Lift-Off Mounting



For Non Lift-Off Mounting



Part Number

See table

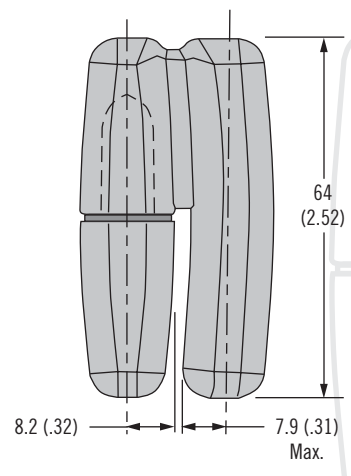
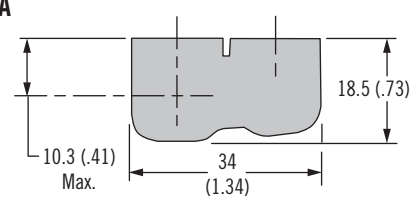
Material & Finish	Part Number
Zinc alloy, bright chrome	96-MA-80-10
Zinc alloy, black powder coated	96-MA-80-50
Zinc alloy, satin chrome	96-MA-80-20
Stainless steel, polished	96-MA-80-24



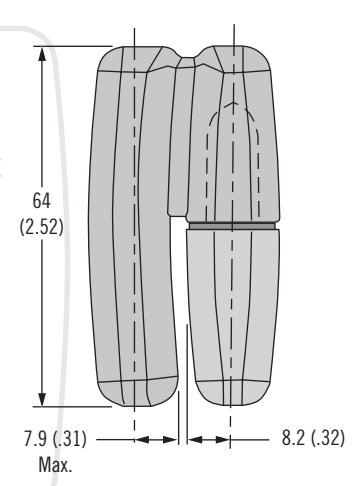
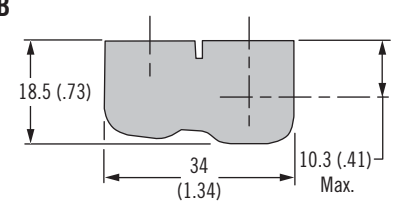
96 Hinge

Lift-off · Offset · Zinc and stainless steel

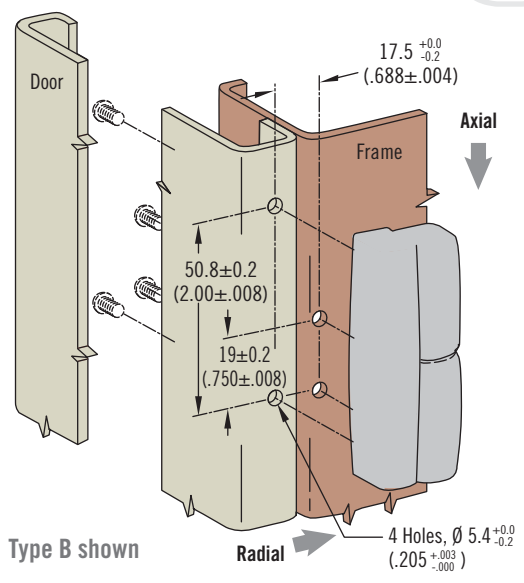
Type A



Type B



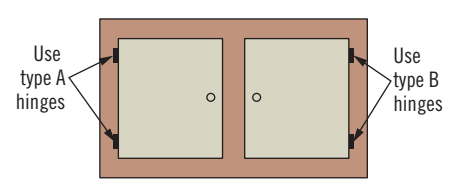
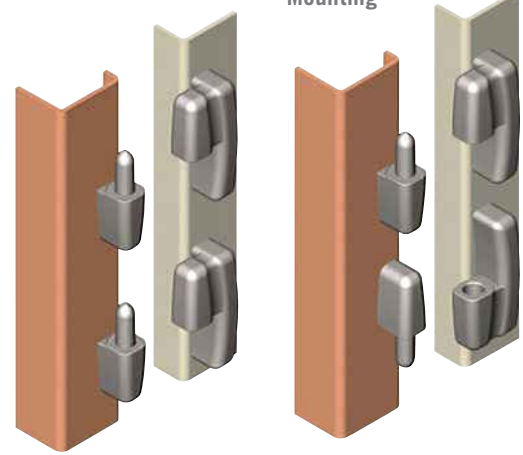
ACTUAL SIZE



Type B shown

For Lift-Off Mounting

For Non Lift-Off Mounting



- Allows for quick, easy door removal
- Door can also be permanently installed

Material and Finish

Zinc alloy, chrome plated, powder coated or stainless steel

Performance Details

Radial load
 Maximum static load:
 Zinc alloy: 1300 N (300 lbf)
 Stainless steel: 3000 N (670 lbf)

Axial Load
 Maximum static load:
 Zinc alloy: 2200 N (500 lbf)
 Stainless steel: 5000 N (1120 lbf)

Installation Notes

Screws not supplied.
 Attach hinge with four M5 x 0.8
 Maximum screw length = door (or frame) thickness + 10 (.400)

Material & Finish	Part Number	
	Type A	Type B
Zinc alloy, bright chrome	96-MA-8A-10	96-MA-8B-10
Zinc alloy, black powder coated	96-MA-8A-50	96-MA-8B-50
Zinc alloy, satin chrome	96-MA-8A-20	96-MA-8B-20
Stainless steel, polished	96-MA-8A-24	96-MA-8B-24

Part Number

See table



96 Hinge

Lift-off · In-line · Offset · Plastic

- Allows for quick, easy door removal
- Corrosion-resistant materials
- Door can also be permanently installed

Material and Finish

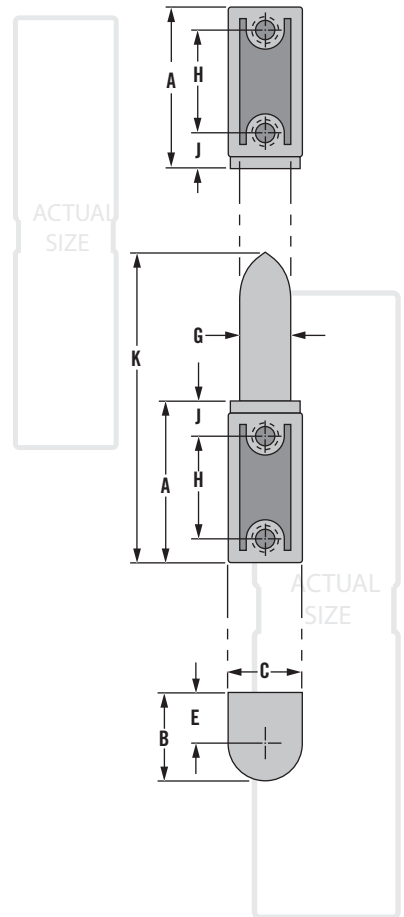
Glass-filled nylon, black

Performance Details

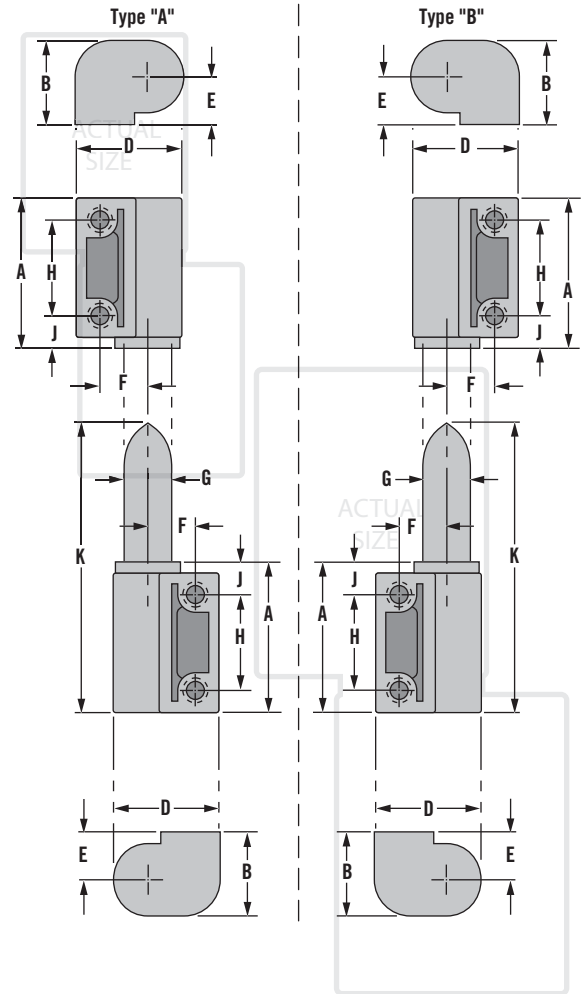
300 Series	Radial Load	Axial Load
Maximum static load	670 N (150 lbf)	1560 N (350 lbf)
Average ultimate load	1100 N (250 lbf)	2500 N (550 lbf)

400 Series	Radial Load	Axial Load
Maximum static load	1000 N (225 lbf)	2000 N (450 lbf)
Average ultimate load	1900 N (425 lbf)	4900 N (1100 lbf)

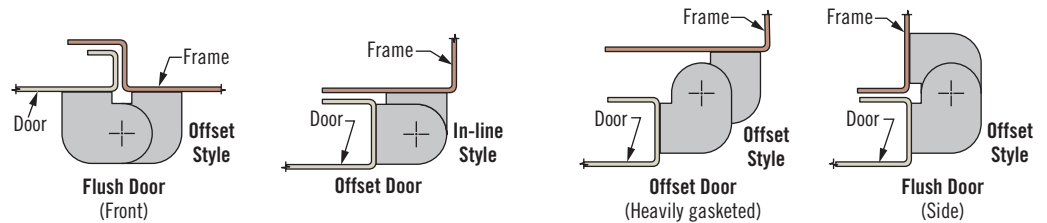
In-Line Knuckle Style



Offset Knuckle Style



Mounting variations



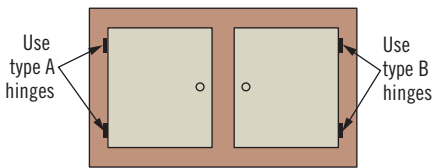
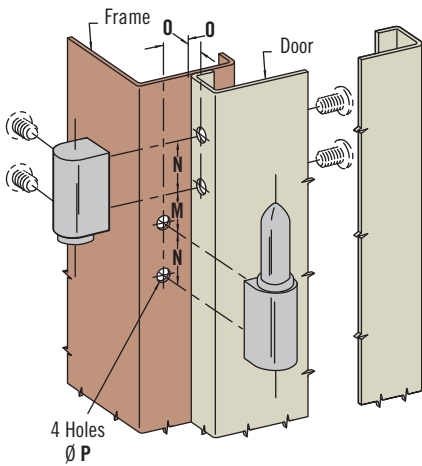
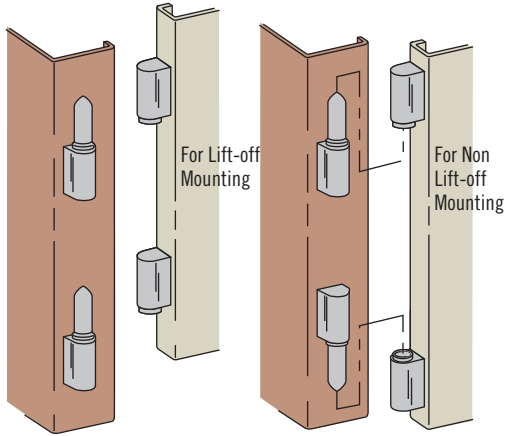
Part Number

See table

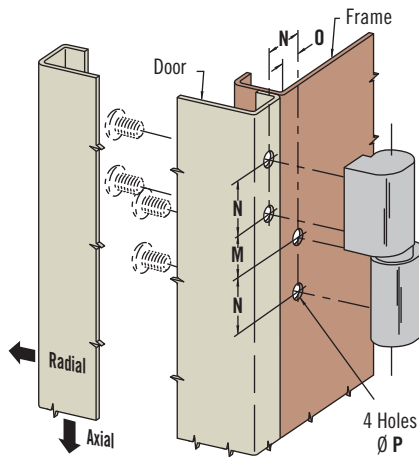
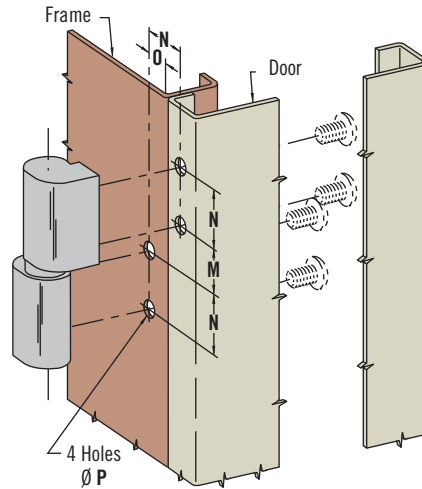
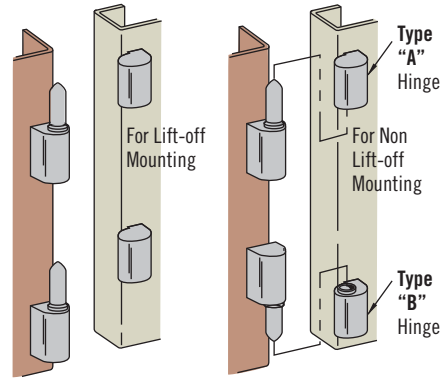
Series	Tapped Hole	Dimensions								Part Number		
		A	B	C	D	E, F & G	H	J	K	In-Line Knuckle Style	Offset Knuckle Style	
		Type "A"	Type "B"									
300	M5	31	16.7	14.3	21.5	9.5	19	7	58	96-50-300-11	96-50-310-11	96-50-320-11
	10-24	(1.22)	(.66)	(.56)	(.84)	(.38)	(.75)	(.28)	(2.28)		96-10-300-11	96-10-310-11
400	M6	41.3	22.2	19	28.5	12.7	25.5	9.5	78	96-50-400-11	96-50-410-11	96-50-420-11
	1/4-20	(1.63)	(.88)	(.75)	(1.13)	(.50)	(1.00)	(.38)	(3.06)		96-10-400-11	96-10-410-11

Dimensions in millimeters (inch) unless otherwise stated

In-Line Knuckle Style



Offset Knuckle Style



Installation Notes

Screws not supplied
Maximum tightening torque of screw: 2.8 N·m (25 in·lbf)

Calculate screw length using the following formula:
Door thickness + adjustment value

Series	Adjustment Value	
	In-Line	Offset
300	4.8 (.19)	6.5 (.25) Min. to 9.5 (.38) Max.
400	6.4 (.25)	9.5 (.38) Min. to 12.7 (.50) Max.

Series	Installation Dimensions			
	M	N	O	P
300	14.3 ^{+0.0} _{-0.3} (.563 ± .008)	19 ^{+0.2} _{-0.1} (.750 ± .008)	9.5 ^{+0.3} _{-0.1} (.375 ± .005)	5.4 ^{+0.1} _{-0.0} (.205 ^{+0.003} _{-0.000})
400	19.0 ^{+0.0} _{-0.3} (.750 ± .008)	25.5 ^{+0.1} _{-0.2} (1.000 ± .008)	12.7 ^{+0.2} _{-0.1} (.500 ± .005)	6.7 ^{+0.1} _{-0.0} (.264 ^{+0.003} _{-0.000})



96 Hinge

Lift-off · In-line · Plastic

- Allows for quick, easy door removal
- Door can also be permanently installed

Material and Finish

Black: Glass-filled nylon
 Chrome: PC/ABS blend, chrome

Performance Details

Black	Radial Load	Axial Load
Maximum static load	700 N (155 lbf)	1200 N (270 lbf)
Average Ultimate load	1000 N (224 lbf)	3500 N (785 lbf)

Chrome	Radial load	Axial load
Maximum static load	350 N (79 lbf)	900 N (202 lbf)
Average ultimate load	600 N (135 lbf)	2200 N (495 lbf)

Installation Notes

Recommended tightening torque for mounting screws:
 1.6 N·m (14 in·lbf)

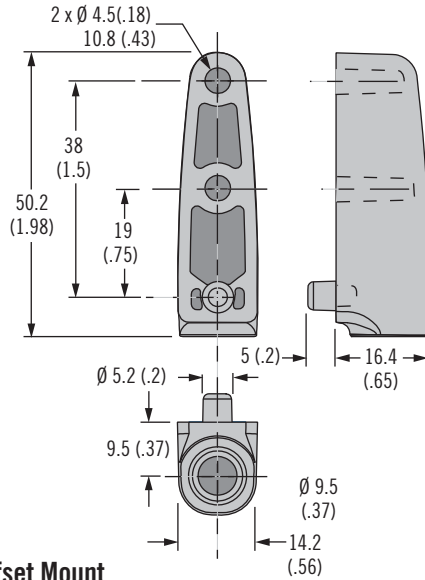
Offset mount preparation:
 To allow for 180° rotation A or B must be 8.5±1 (.33±.04)

Part Number

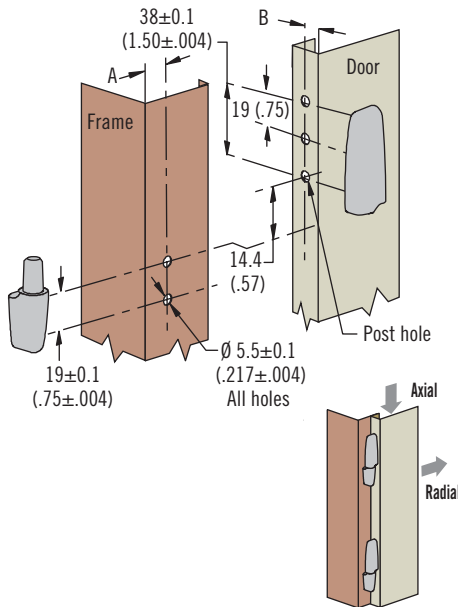
See table

Order pin, receiver and screws separately

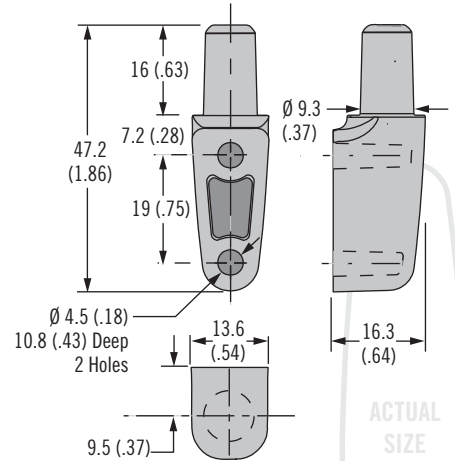
Receiver



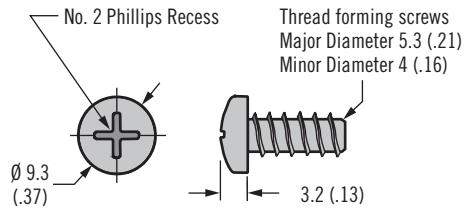
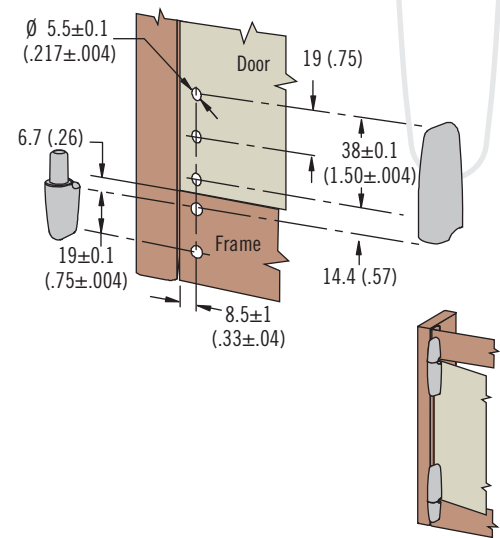
Offset Mount



Pin



Flush Mount



Door Thickness	Part Number
	Screws (4 per bag)
1 - 4 (.04 - .16)	96-79-1
4 - 7 (.16 - .28)	96-79-2
7 - 10 (.28 - .39)	96-79-3
10 - 13 (.39 - .51)	96-79-4

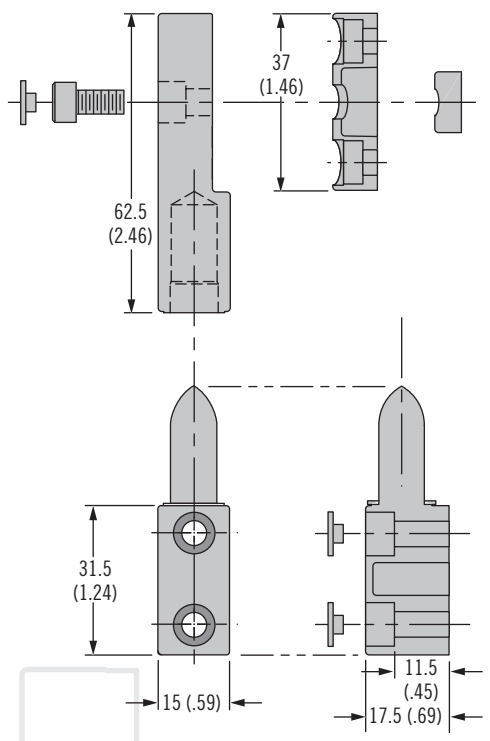
Finish	Part Number	
	Pin	Receiver
Black	96-710	96-720
Chrome	96-711	96-721



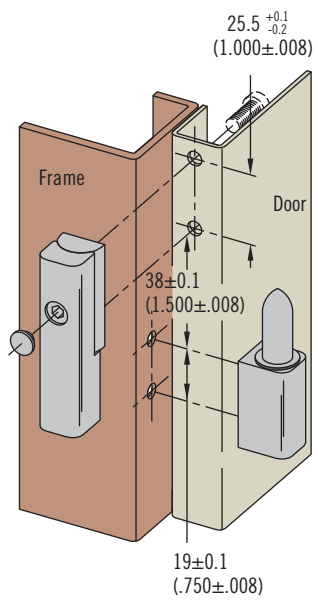
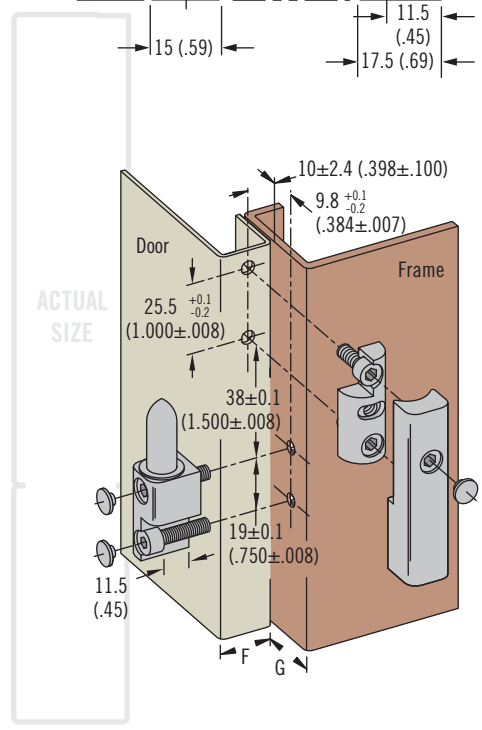
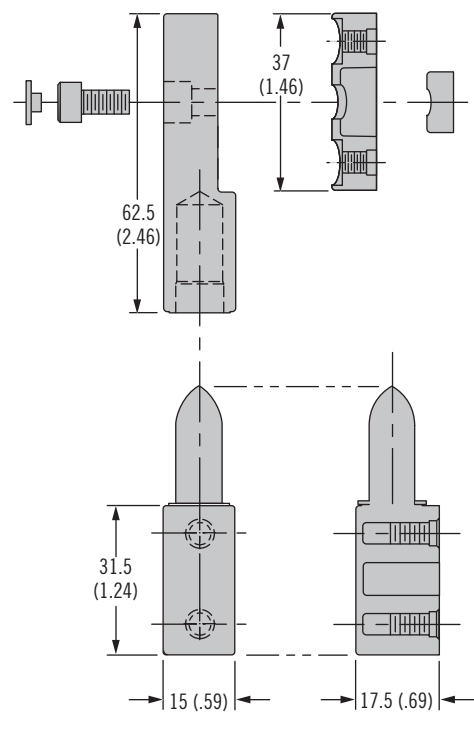
96 Hinge

Lift-off · Adjustable compression · In-line · Zinc

Front Mount



Concealed Mount



- Adjusts to ensure gasket compression
- Allows for quick, easy door removal

Material and Finish

Zinc alloy, black powder coated

Installation Notes

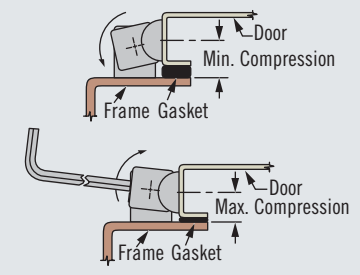
Screws not supplied.
Maximum screw length equals door or frame thickness plus 7.5 (.30)

Performance Details

	Radial Load	Axial Load
Maximum static load	1000 N (255 lbf)	2220 N (500 lbf)
Average ultimate load	1550 N (350 lbf)	14,000 N (3200 lbf)

Notes

Hinges provide 5 (.20) of total adjustment
Either F Dimension or G dimension must be less than 19.8 (.78) for the door to open a full 180°



Install Style	Tapped Hole	Part Number
Front mount	Thru hole	96-10-572
Concealed mount	10-32 Imperial	96-10-570
	M5 x 0.8 Metric	96-50-570

Part Number

See table



96 Hinge

Lift-off · In-line · Zinc

- Allows for quick, easy door removal
- Concealed installation

Material and Finish

Zinc alloy, black powder coated

Performance Details

	Radial Load	Axial Load
Maximum static load	1100 N (250 lbf)	1250 N (280 lbf)
Average ultimate load	2400 N (530 lbf)	2600 N (580 lbf)

Installation Notes

Screws not supplied.

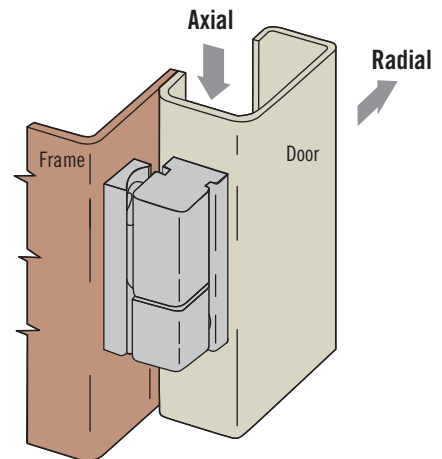
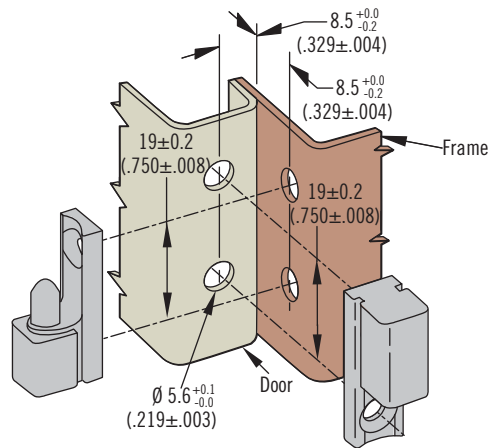
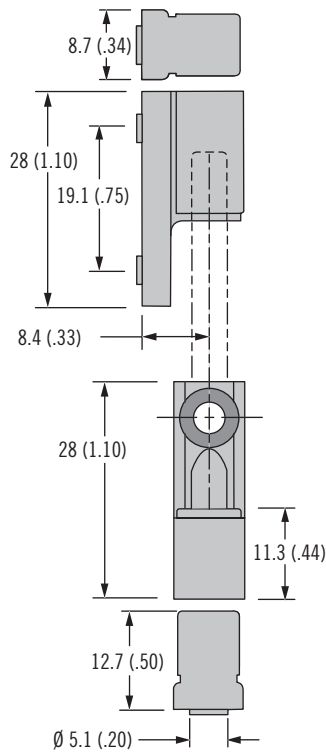
Recommended tightening torque for mounting screws:

1.1 N·m (10 in·lbf)

Calculate screw length using the following formula:

Door / frame thickness + 5 (.20)

In-Line



Part Number

See table

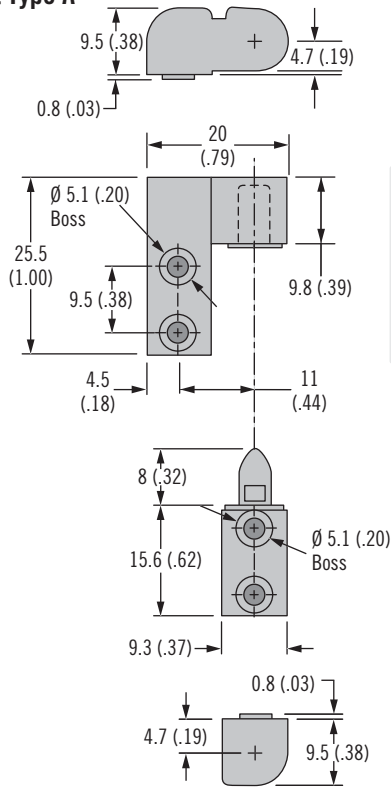
Tapped Hole	Part Number
Imperial 6-32	96-110
Metric M4 x 0.7	96-140

96 Hinge

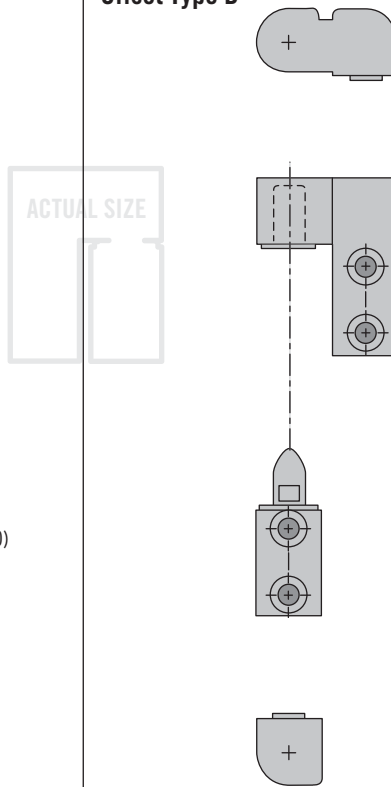
Lift-off · Offset · Zinc



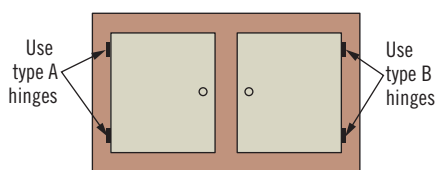
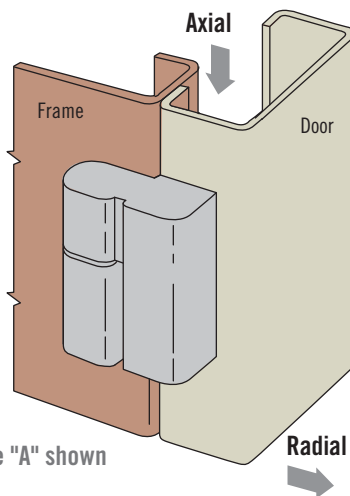
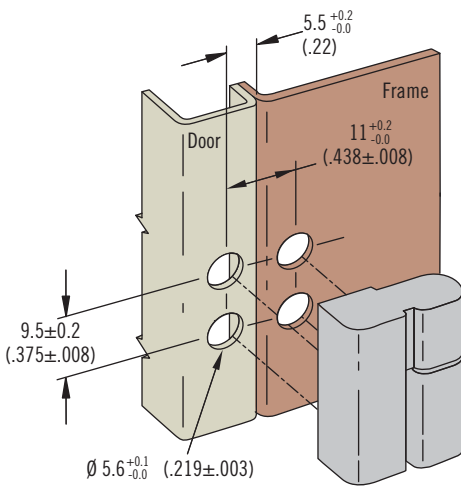
Offset Type A



Offset Type B



ACTUAL SIZE



- Allows for quick, easy door removal
- Door can also be permanently installed

Material and Finish

Zinc alloy, black powder coated

Performance Details

	Radial Load	Axial Load
Maximum static load	1100 N (250 lbf)	1250 N (280 lbf)
Average ultimate load	3300 N (750 lbf)	2600 N (580 lbf)

Installation Notes

Screws not supplied.
 Recommended tightening torque for mounting screws:
 1.1 N·m (10 in·lbf)
 Calculate screw length using the following formula:
 Door / frame thickness +5 (.20)

Tapped Hole	Part Number	
	Type A	Type B
Imperial 6-32	96-111	96-112
Metric M4 x 0.7	96-141	96-142

Part Number

See table



EH Hinge

Surface mount

- Multiple size and mounting options
- Concealed mounting hardware

Material and Finish

Leaf: Zinc alloy black powder coated, chrome plated or nylon black

Pin: Stainless steel

Thread studs: Steel, zinc plated

Performance Details

Size	Radial Load	Axial Load
40 Zinc	1330 N (298 lbf)	2220N (500 lbf)
50 Zinc	2140 N (481 lbf)	3560 N (800 lbf)
50 Nylon	890 N (200 lbf)	1230N (276 lbf)

Installation Notes

Countersunk version:

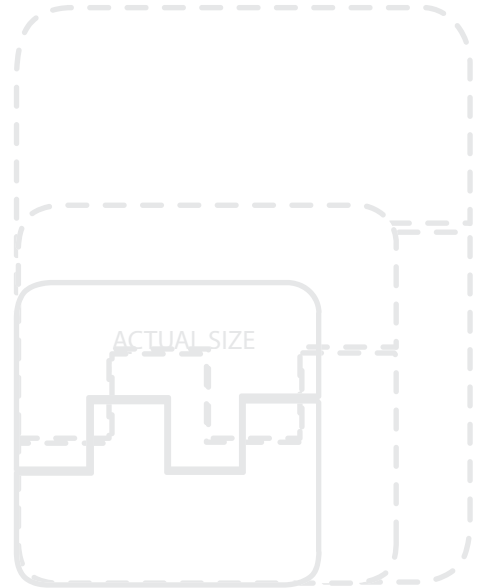
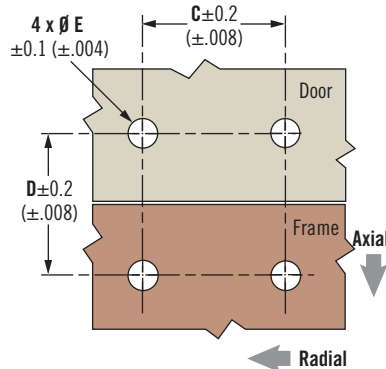
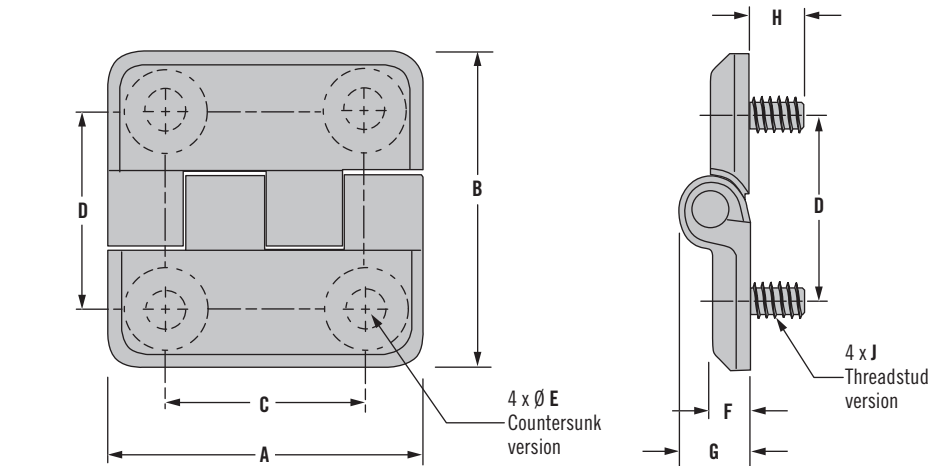
40 Size M5 (No. 10) CSK screw

50/60 Size M6 (No. 1/4 - 20) CSK screw (not supplied)

Threadstud version:

40 Size M5 nuts (not supplied)

50/60 Size M6 nuts (not supplied)



Part Number

See table

A	B	Thread Stud Part Number			C	D	$\varnothing E$	F	G	H	Thread stud J
		Zinc chrome	Zinc black	Nylon black							
40 (1.57)		EH-5A-4G4-38	EH-5A-4G4-50	~	25 (.984)	5.4 (.213)	5 (.20)	9 (.35)	8.5 (.35)	M5	
50 (1.97)		EH-6A-5G5-38	EH-6A-5G5-50	EH-6A-5G5-20	30 (1.181)	6.4 (.252)	6 (.24)	11 (.43)	8 (.31)	M6	

A	B	Countersunk Thru-Hole Part Number			C	D	$\varnothing E$	F	G
		Zinc chrome	Zinc black	Nylon black					
40 (1.57)		EH-5A-4V4-38	EH-5A-4V4-50	~	25 (.984)	5.4 (.213)	5 (.20)	9 (.35)	
50 (1.97)		EH-6A-5V5-38	EH-6A-5V5-50	EH-6A-5V5-20	30 (1.181)	6.4 (.252)	6 (.24)	11 (.43)	
60 (2.36)	76 (2.99)	EH-7A-6V8-38	EH-7A-6V8-50	~	36 (1.42)		56 (2.20)	8 (.31)	15 (.59)

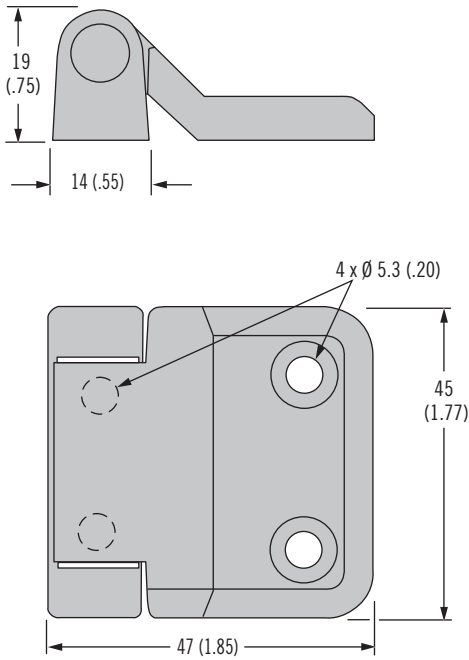
Dimensions in millimeters (inch) unless otherwise stated

EH Hinge

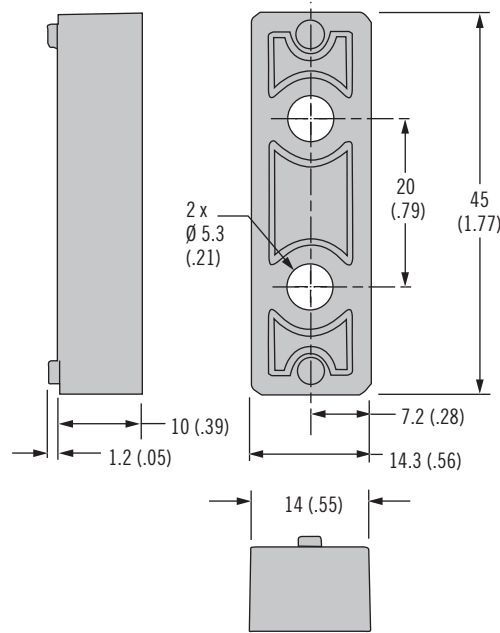
Surface mount · Offset



Hinge



Spacer



- Allows 180 degree opening
- Offset pivot maximizes cabinet access
- Ideal for closely spaced enclosures

Material and Finish

Zinc alloy, black powder coated or bright chrome plated
Pin: Stainless steel

Product Strength Guidelines

Radial load:

Maximum static load:
2670 N (600 lbf)

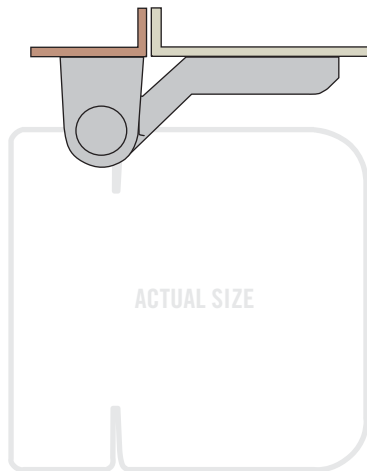
Axial load:

Maximum static load:
2670 N (600 lbf)

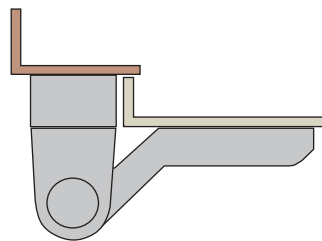
Installation Notes

Screws not supplied.
Attach hinge with M5 (No. 10) CSK

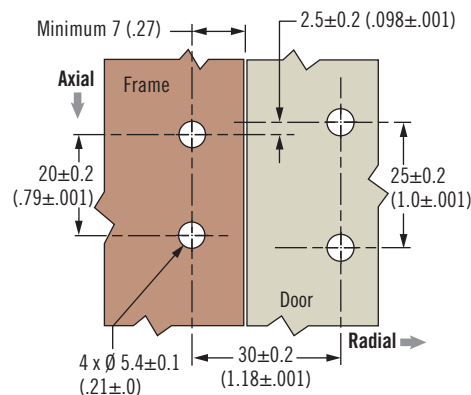
Standard Flush Mount



Offset Mount with Spacer



Finish	Part Number	
	Hinge	Spacer
Chrome	EH-6C-5V4-38	EH-6C-B-38
Black	EH-6C-5V4-50	EH-6C-B-50



Part Number

See table



N6 Hinge

Surface mount · 304 or 316 Stainless Steel

- Stamped hinge construction
- High gloss finish option
- Covered hinge option

Material and Finish

Stainless Steel, passivated or high gloss

Performance Details

Radial load:

Max. static load: 534 N (120 lbf)

Axial load:

Max. static load: 534 N (120 lbf)

Installation Notes

Screws not supplied

Install hinge with M4 (8-32) CSK

For optional covers:

Order covers separately.

Clean hinge leaf surface to remove dirt, oil or grease.

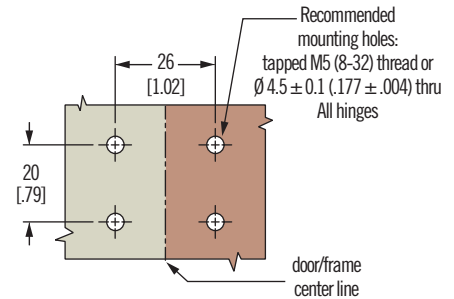
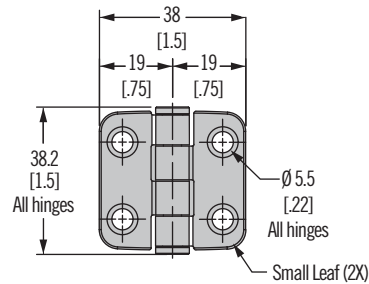
Remove backing from pre-applied adhesive. Place cover over leaf.

Press firmly to activate adhesive.

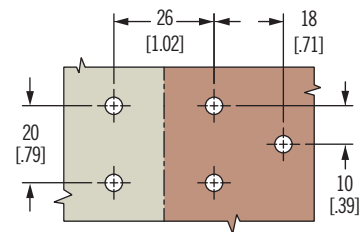
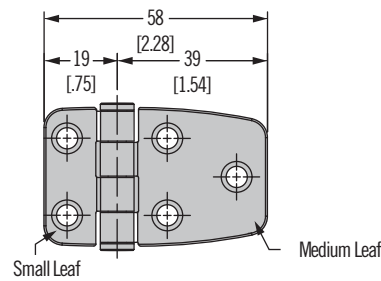
Part Number

Order hinge and optional covers separately

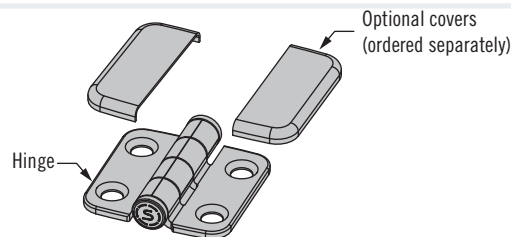
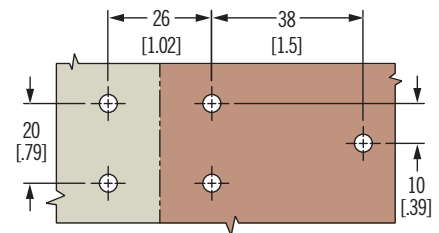
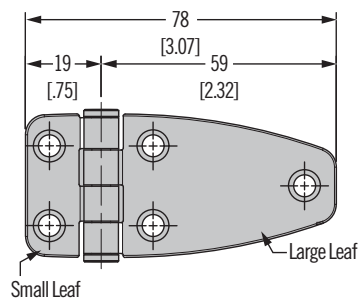
Style 1 (Part Number see table)



Style 2 (Part Number see table)



Style 3 (Part Number see table)



Style	Part Number				
	304 Stainless Steel, Passivated	316 Stainless Steel, High Gloss			
	Hinge	Hinge	Small Leaf Cover	Medium Leaf Cover	Large Leaf Cover
1	N6-4E-422-20	N6-4E-422-24	N6-C-42-24 (2 each)	—	—
2	N6-4E-424-20	N6-4E-424-24	N6-C-42-24	N6-C-44-24	—
3	N6-4E-426-20	N6-4E-426-24	N6-C-42-24	—	N6-C-46-24
4	N6-4E-444-20	N6-4E-444-24	—	N6-C-44-24 (2 each)	—
5	N6-4E-446-20	N6-4E-446-24	—	N6-C-44-24	N6-C-46-24
6	N6-4E-466-20	N6-4E-466-24	—	—	N6-C-46-24 (2 each)

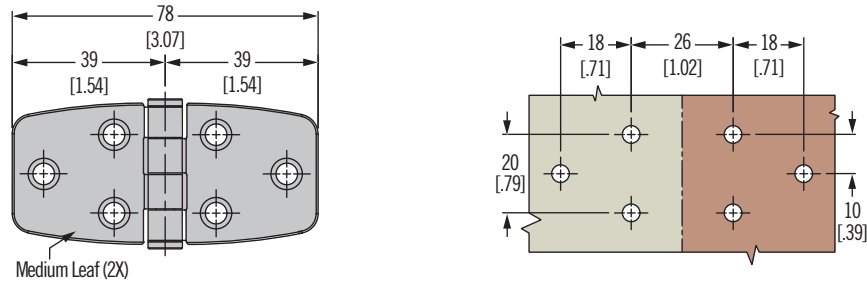
Dimensions in millimeters (inch) unless otherwise stated

N6 Hinge

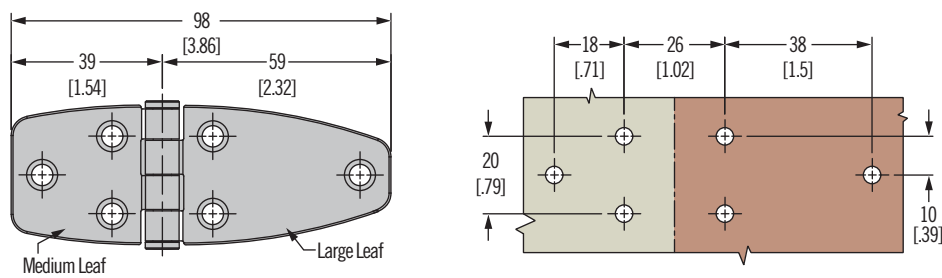
Surface mount · 304 or 316 Stainless Steel



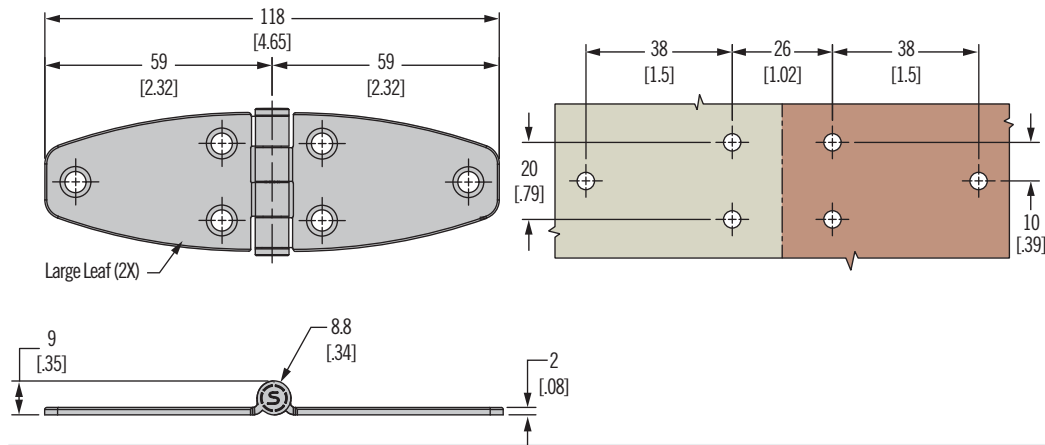
Style 4 (Part Number see table)



Style 5 (Part Number see table)

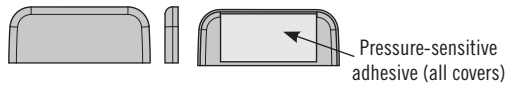


Style 6 (Part Number see table)

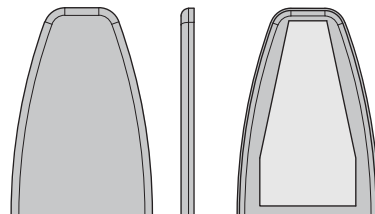


Optional covers ordered separately

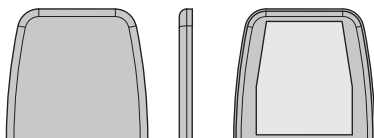
For use with small leaf: part number N6-C-42-24



For use with large leaf: part number N6-C-46-24



For use with medium leaf: part number N6-C-44-24





KH Hinge

Corner mount

- Fits flush while allowing full 180° rotation
- Dual mounting screws provide added security
- Allows door removal for service and access

Material and Finish

Leaf: Zinc alloy, black powder coated or chrome plated
Pin: Steel, zinc plated

Performance Details

Zinc

Radial load:

Maximum static load:
3000 N (670 lbf)

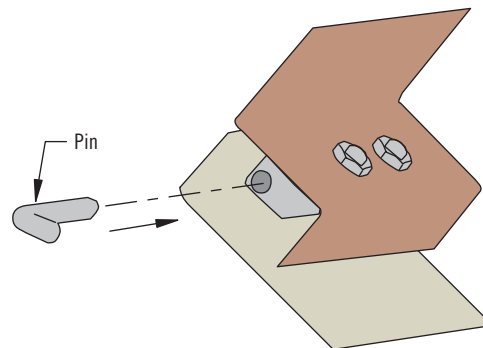
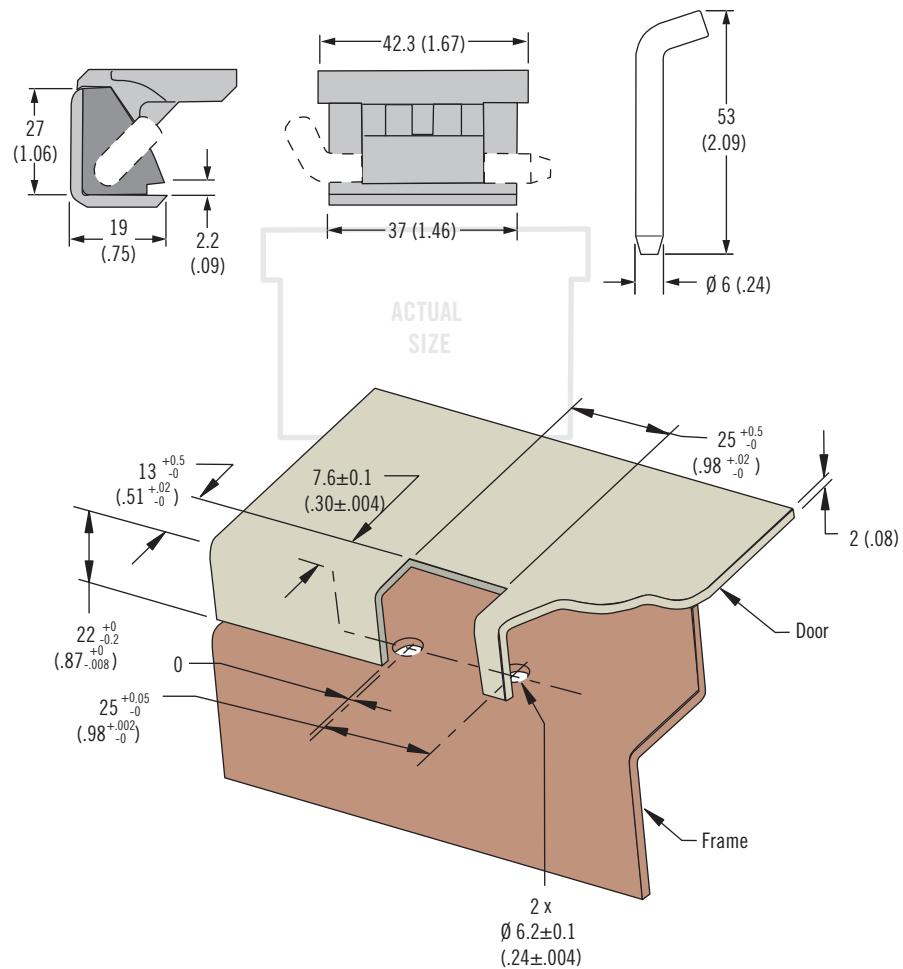
Axial load:

Maximum static load:
3000 N (670 lbf)

Installation Notes

Attach hinge with M6 screws and nuts (not supplied)

Maximum tightening torque of screw: 5 N·m (45 in·lbf)



Part Number

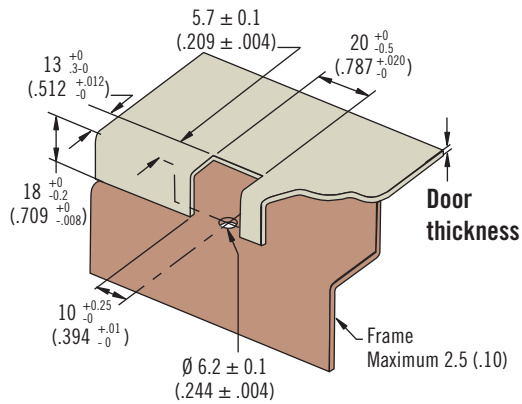
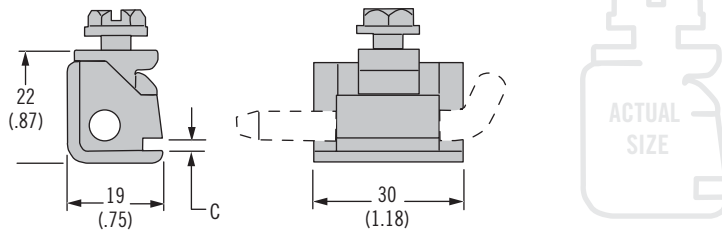
See table

Order hinge and hinge pin separately

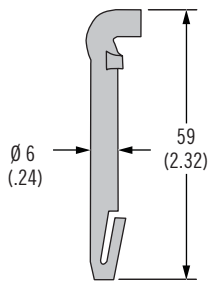
Part Number	
Bright Chrome	Black Powder Coated
KH-62-V1-38	KH-62-V1-50

Part Number
Steel Hinge Pin
KH-G

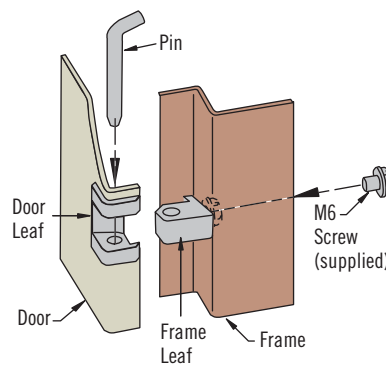
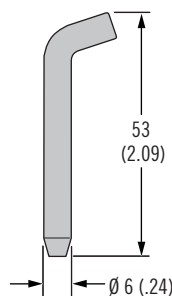
KH Hinge Corner mount



Plastic



Steel



- Fits flush while allowing full 180° rotation
- Installs quickly with only one mounting screw
- Allows door removal for service and access



Material and Finish

Leaf: Zinc alloy, black powder coated or chrome plated
Pin: Steel, zinc plated, plastic

Performance Details

Zinc

Radial load:

Maximum static load:
1200 N (270 lbf)

Axial load:

Maximum static load:
1200 N (270 lbf)

Installation Notes

Screw supplied

Attach hinge with M6 x 10

Maximum screw length equals
frame thickness plus 7.5 (.30)

Maximum tightening torque of
screw: 5 N•m (45 in•lbf)

D Door Thickness	Part Number	
	Bright Chrome	Black Powder Coated
1 - 1.2 (.04 - .05)	KH-41-T1-38	KH-41-T1-50
1.5 - 2 (.06 - .08)	KH-42-T1-38	KH-42-T1-50

Part Number	
Plastic Hinge Pin	Steel Hinge Pin
KH-P	KH-G

Part Number

See table

Order hinge and hinge pin
separately



F6 Hinge

Removable style · Concealed

- Hinge and hardware are concealed
- Allows for quick easy door removal
- Three styles

Material and Finish

Steel, zinc plated, or stainless steel

Performance Details

Steel

Radial load:

Maximum static load: 300 N (65 lbf)

Axial load:

Maximum static load:

500 N (112 lbf)

Stainless Steel

Radial load:

Maximum static load: 300 N (65 lbf)

Axial load:

Maximum static load:

800 N (180 lbf)

Installation Notes

1. Select frame and door leaf separately for bulk packaging.
2. Select assembly for individual packaging (consists of 1 frame leaf and door leaf per bag)

Screws not supplied.

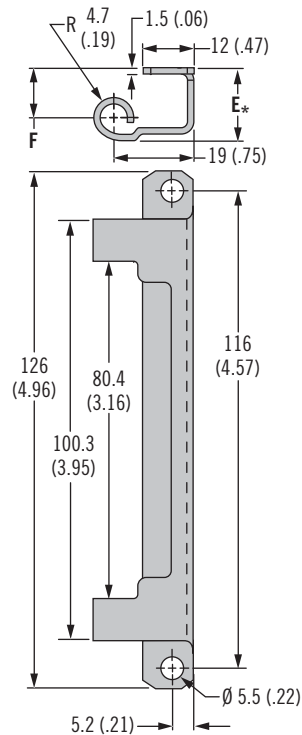
Use M5 (No. 10) hardware

Machine screws are recommended for mounting frame leaf

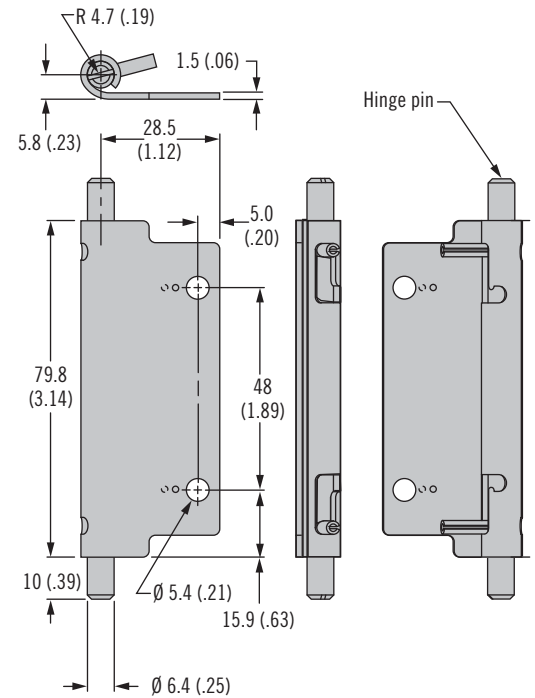
Part Number

See table

Frame Leaf



Door Leaf



Frame Leaf Part Number

Series	E	F	Steel	Stainless Steel
1	17 (.67)	11.8 (.47)	F6-901	F6-901-1
2	20 (.79)	14.8 (.58)	F6-902	F6-902-1
3	23.4 (.92)	18.2 (.72)	F6-903	F6-903-1

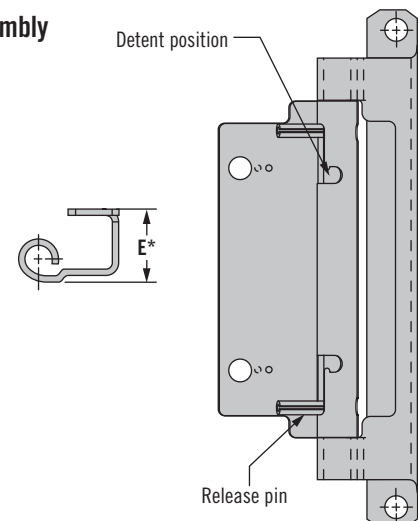
Door Leaf Part Number

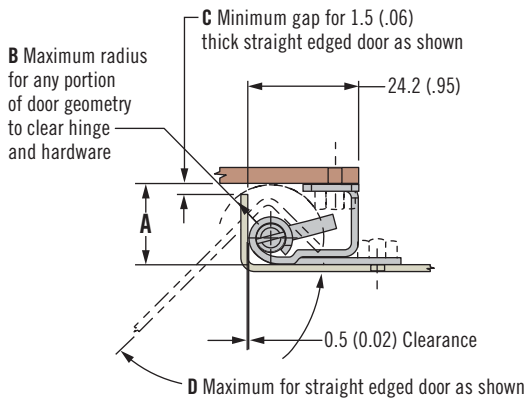
Door Leaf	Steel	Stainless Steel
	F6-940	F6-940-1

Part Number Assembled

Assembly			Steel	Stainless Steel
Series	E	F		
1	17 (.67)	11.8 (.47)	F6-1	F6-1-1
2	20 (.79)	14.8 (.58)	F6-2	F6-2-1
3	23.4 (.92)	18.2 (.72)	F6-3	F6-3-1

Assembly





Hinges may be fastened to door and frame by:

- M5 (No. 10) hardware. Machine screws are recommended for mounting frame leaf.
- *Hex jam nuts. Verify clearance with door edge. Depending on jam nut orientation, full rotation may be obstructed.
- Welding.

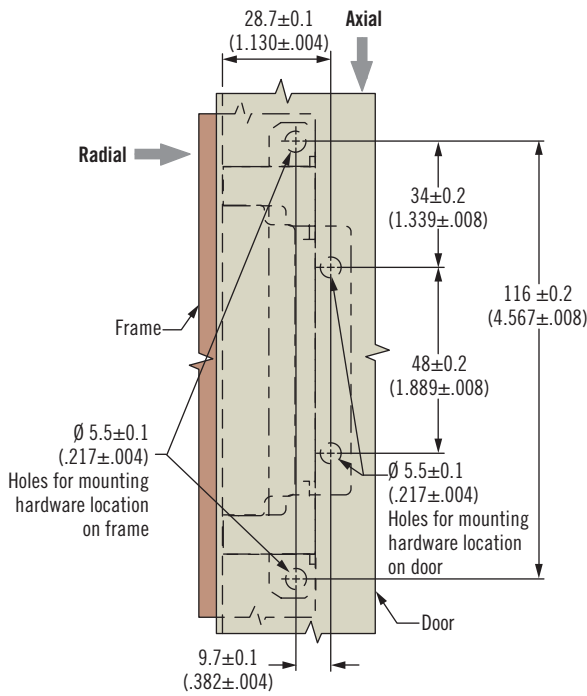
Notes

Mounting:

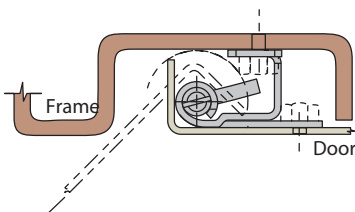
* Select the frame leaf with a value of **E** best suited to the configuration of your door. The dimension **E** + 0.6 (.02) = the distance from the outside surface of your frame to the inside surface of your door.



Series	Panel Preparations Dimensions			
	A	B	C	D
1	17.6 (.69)	10.9 (.43)	3.2 (.13)	132°
2	20.6 (.81)	12.7 (.50)	3.9 (.15)	125°
3	24 (.95)	15.3 (.60)	4.4 (.17)	118°



Additional Mounting Options





F6 Hinge

Removable style · Concealed · Heavy-duty

- High strength and durability
- Allows door removal without using tools
- Retractable pin version resists vibration and prevents pin loss

Material and Finish

Steel, zinc plated or stainless steel, natural

Performance Details

Steel

Radial load:

Maximum static load:

1000 N (225 lbf)

Average ultimate load:

2100 N (472 lbf)

Axial load:

Maximum static load:

2900 N (650 lbf)

Average ultimate load:

4900 N (1100 lbf)

Stainless Steel

Radial load:

Maximum static load:

1300 N (292 lbf)

Average ultimate load:

2800 N (629 lbf)

Axial load:

Maximum static load:

3600 N (809 lbf)

Average ultimate load:

6000 N (1350 lbf)

Operating temperature range:

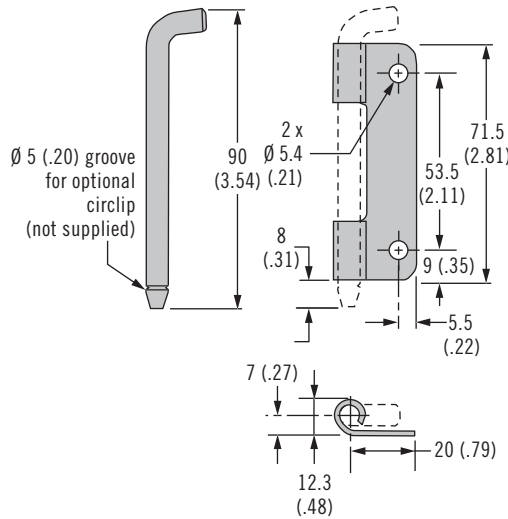
-40° C (-40° F) to 85° C (185° F)

Part Number

See table

Door Leaf

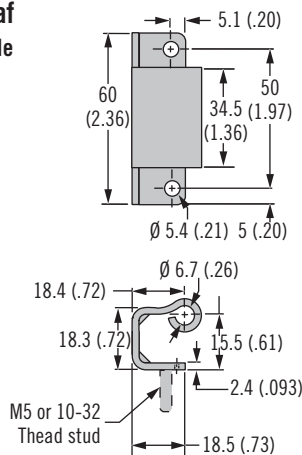
Removable Pin Style



Part Number		
Styles	Material	
	Steel	Stainless steel
Removable pin	F6-946	F6-946-5
Retractable pin type A	~	F6-941-5
Retractable pin type B	~	F6-942-5

Frame Leaf

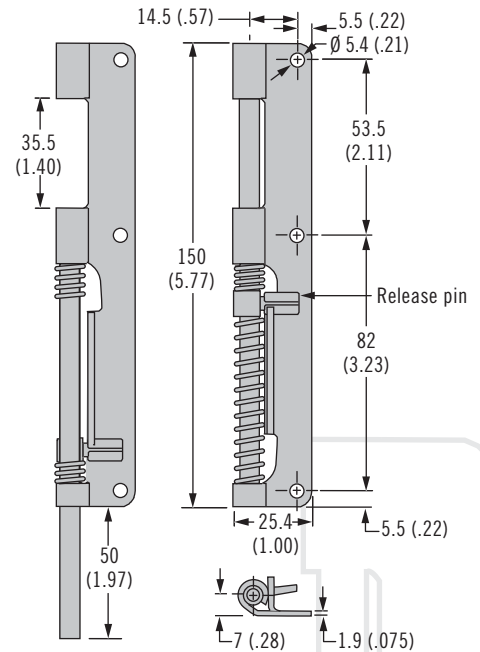
Formed Style



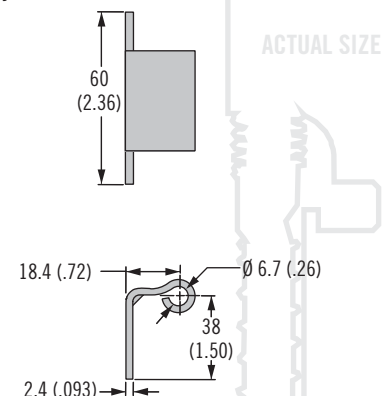
Part Number			
Style	Installation	Material	
		Steel	Stainless steel
Formed	Thru hole	F6-905	F6-905-5
Formed	M5 thread stud	F6-908	F6-908-5
Formed	10-32 thread stud	F6-907	F6-907-5
Flat	Weld	F6-904	F6-904-5

Retractable Pin Style

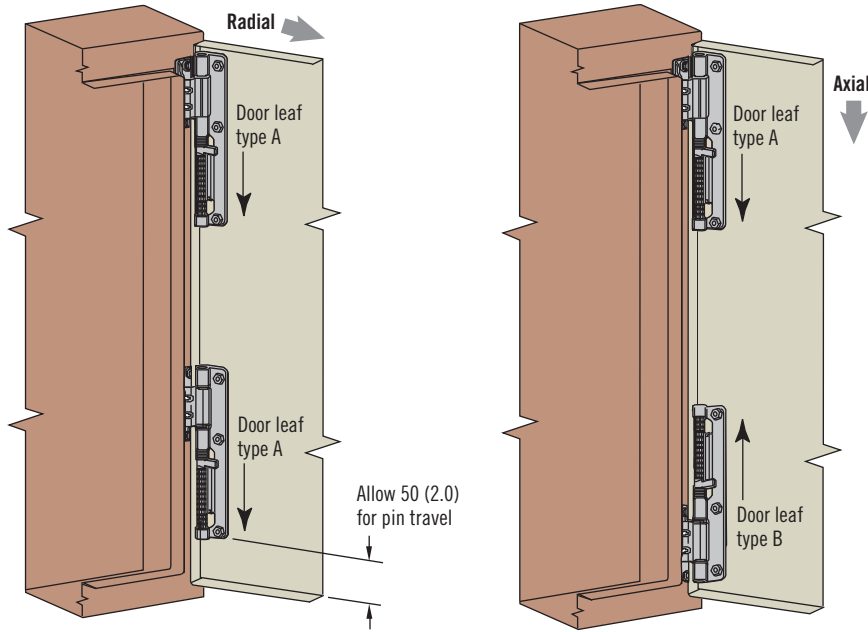
Type A shown, Type B mirror image



Flat Style

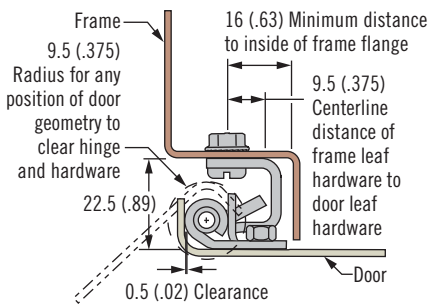


Formed Frame Leaf

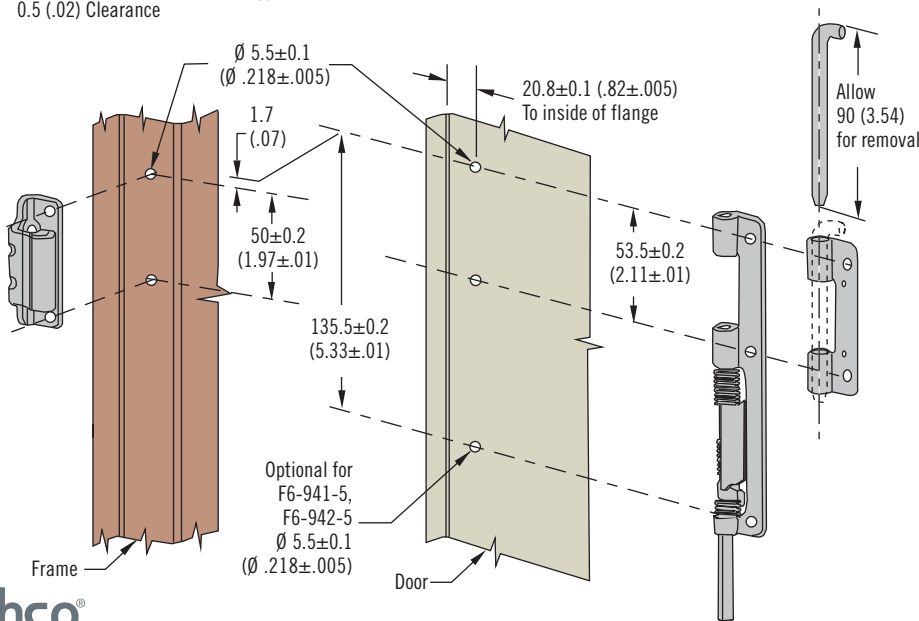
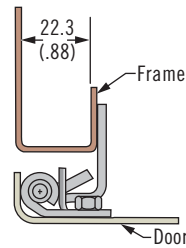


Installation

Typical door and frame installation using formed frame leaf



Typical door and frame installation using flat frame leaf



Installation Notes

Order separately 1 door leaf and 1 frame leaf for a complete assembly
 Screws not supplied.
 Hinge Leaves may be fastened to the door and the frame by: M5 (No. 10) hardware (machine screws are recommended) or by welding.



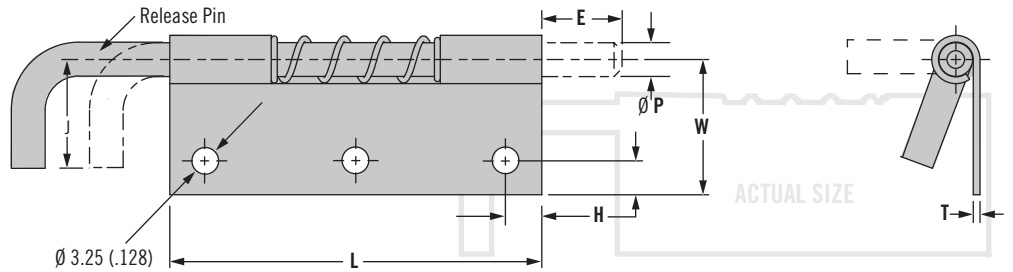


F6 Hinge

Door removal

Material and Finish

Steel, zinc plated or stainless steel



S Size	L	E	H	J	P	T	W
3 - 4	22.2 (.88)	4 (.16)	4.0 (.16)	10 (.39)	3.0 (.12)	0.8 (.03)	13 (.50)
7 - 8	34.9 (1.38)	6.4 (.25)	4.8 (.19)	13 (.50)	4.0 (.15)	1.0 (.04)	19 (.75)
11 - 12	50.8 (2.00)	9.5 (.38)	6.4 (.25)	16 (.63)	4.5 (.18)	1.3 (.05)	22 (.87)
15 - 16	69.9 (2.75)	12.7 (.50)	6.4 (.25)	19 (.75)	6.4 (.25)	1.5 (.06)	25.5 (1.00)

Part Number Selection

M Material and Finish
N Steel, zinc plated
S Stainless steel

S Size
3 22 (0.87) Left Hand
4 22 (0.87) Right Hand
7 35 (1.38) Left Hand
8 35 (1.38) Right Hand
11 51 (2.00) Left Hand
12 51 (2.00) Right Hand
15 70 (2.75) Left Hand
16 70 (2.75) Right Hand

F6 - 23 - M S AW

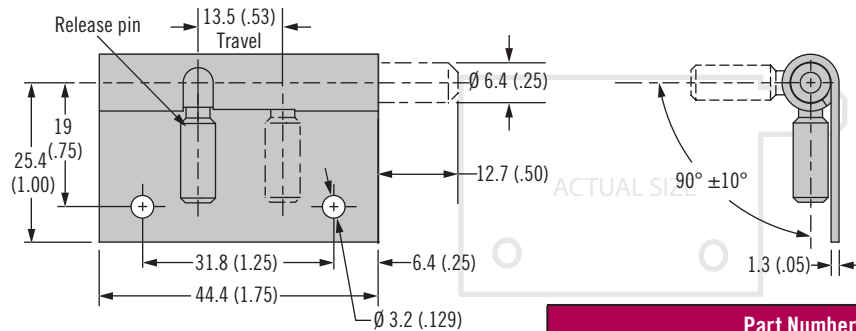


Material and Finish

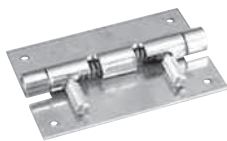
Steel, zinc plated or stainless steel

Part Number

See table



Part Number		
Handling	Steel	Stainless Steel
Right (shown)	F6-20-N1A50WR	F6-20-S1A50WR
Left	F6-20-N1A50WL	F6-20-S1A50WL



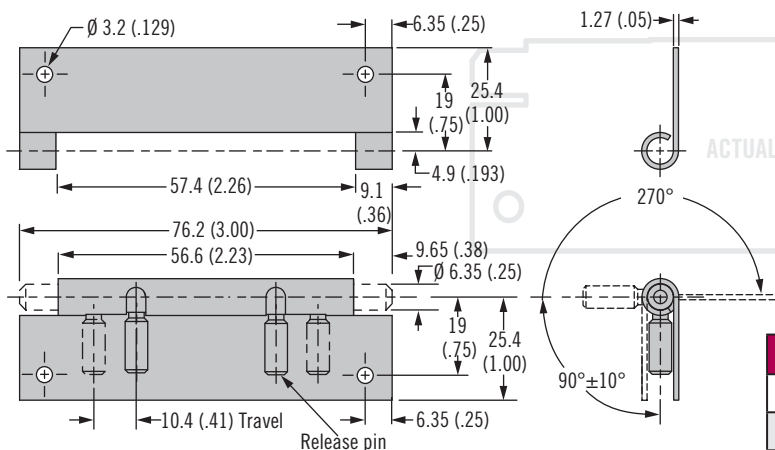
Locking feature for simple removal

Material and Finish

Steel, zinc plated or stainless steel

Part Number

See table

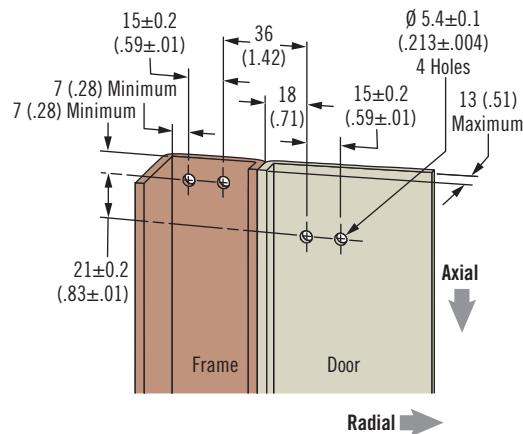
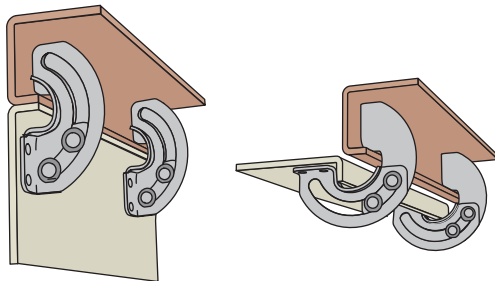
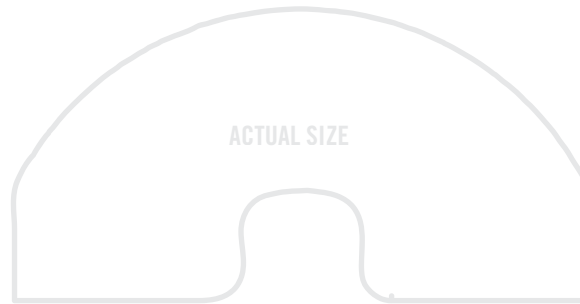
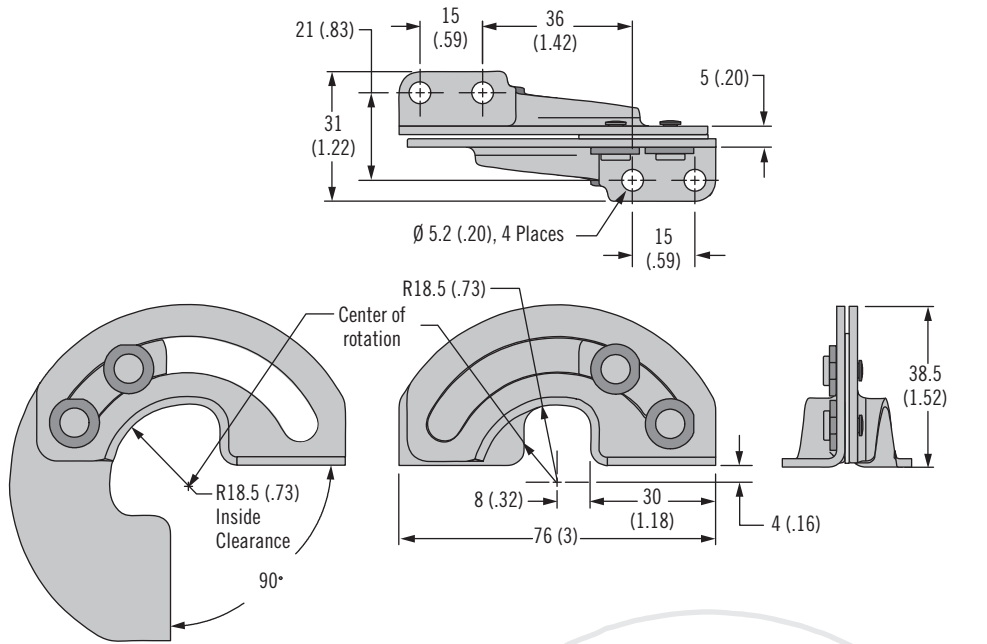


Material	Part Number
Steel	F6-22-N1-3W1
Stainless steel	F6-22-S1-3W1

Dimensions in millimeters (inch) unless otherwise stated

R6 Hinge

Concealed · 90° Opening



- Invisible when door is closed

Material and Finish

Steel, zinc plated, or stainless steel

Performance Details

Zinc Plated Steel

Radial load:

Maximum static load:

625 N (140 lbf)

Average ultimate load:

2235 N (502 lbf)

Axial load:

Maximum static load: 205 N (46 lbf)

Average ultimate load:

420 N (94 lbf)

Stainless Steel

Radial load:

Maximum static load:

525 N (118 lbf)

Average ultimate load:

3035 N (682 lbf)

Axial load:

Maximum static load: 185 N (42 lbf)

Average ultimate load:

475 N (107 lbf)

Maximum holding torque:

18.2 N·m (161 in·lbf)

Operating temperature range:

-40° C (-40° F) to 85° C (185° F)

Installation Notes

Panel thickness exceeding

4 (.16) will require a 45° chamfer on both door and frame.

Screws not supplied.

Install using M5 (No. 10)

Part Number

See table

Part Number	
Steel	R6-21-11
Stainless steel	R6-21-23



R6 Hinge

Concealed · 180° Opening

- Invisible when door is closed
- Door-stay for horizontal door & lid applications
- Corrosion-resistant materials available

Material and Finish

Steel, zinc plated, or stainless steel

Performance Details

Zinc Plated Steel

Radial load:

Maximum static load:

485 N (109 lbf)

Average ultimate load:

710 N (160 lbf)

Axial load:

Maximum static load: 100 N (23 lbf)

Average ultimate load:

295 N (66 lbf)

Maximum holding torque:

11.8 N·m (104 in·lbf)

Stainless Steel

Radial load:

Maximum static load:

505 N (114 lbf)

Average ultimate load:

1085 N (244 lbf)

Axial load:

Maximum static load: 165 N (37 lbf)

Average ultimate load:

345 N (78 lbf)

Operating temperature range:

-40° C (-40° F) to 85° C (185° F)

Installation Notes

Screws not supplied.

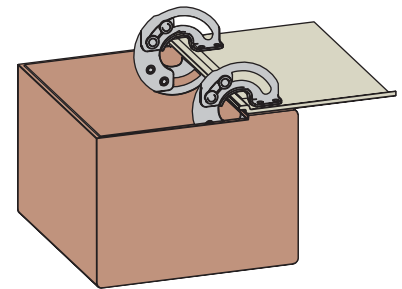
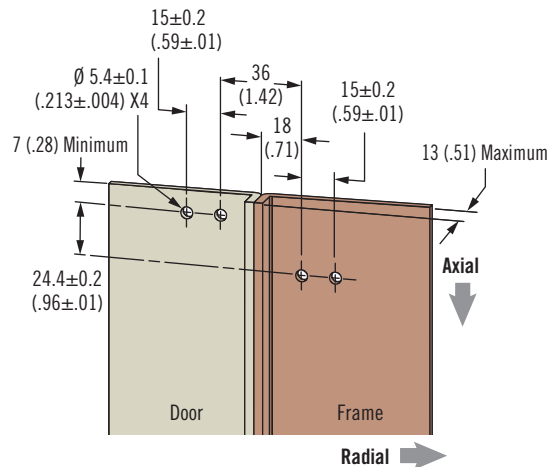
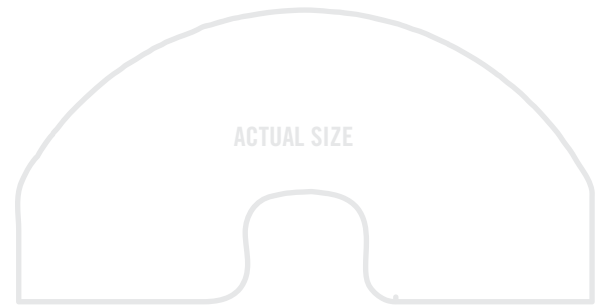
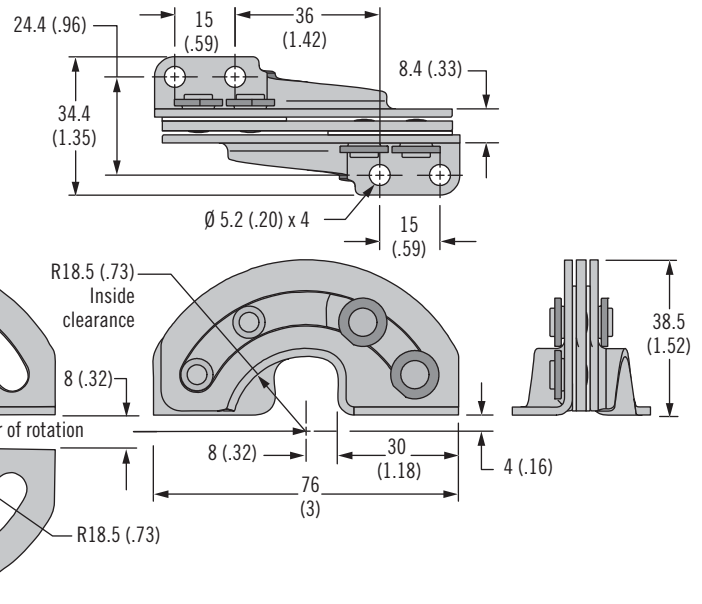
Install using M5 (No. 10) screws or by welding.

Maximum panel thickness is

4 (.16)

Part Number

See table



Part Number	
Steel	R6-20-11
Stainless steel	R6-20-23

R6 Hinge

Concealed · Hold-open style



- Invisible when door is closed
- Holds doors open without secondary mechanical support

Material and Finish

Steel, zinc plated, or stainless steel

Performance Details

*(loads applied with hinge in stay position)

Zinc Plated Steel

Radial load:

Maximum static load: 155 N (35 lbf)

Average ultimate load: 405 N (91 lbf)

Axial load:

Maximum static load: 200 N (45 lbf)

Average ultimate load: 415 N (93 lbf)

Maximum holding torque:

11.8 N·m (104 in·lbf)

Operating temperature range:

-40°C (-40°F) to 85°C (185°F)

Stainless Steel

Radial load:

Maximum static load: 280 N (63 lbf)

Average ultimate load:

570 N (128 lbf)*

Axial load:

Maximum static load: 305 N (69 lbf)

Average ultimate load:

430 N (97 lbf)

Maximum holding torque:

18.2 N·m (161 in·lbf)*

Operating temperature range:

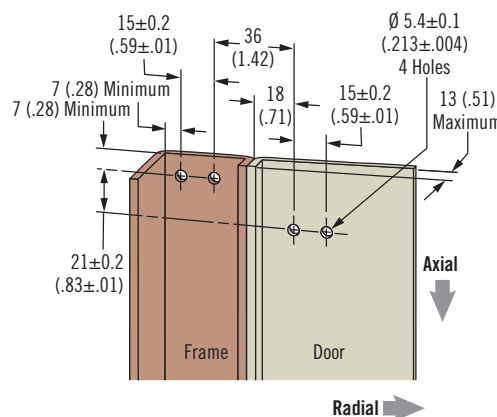
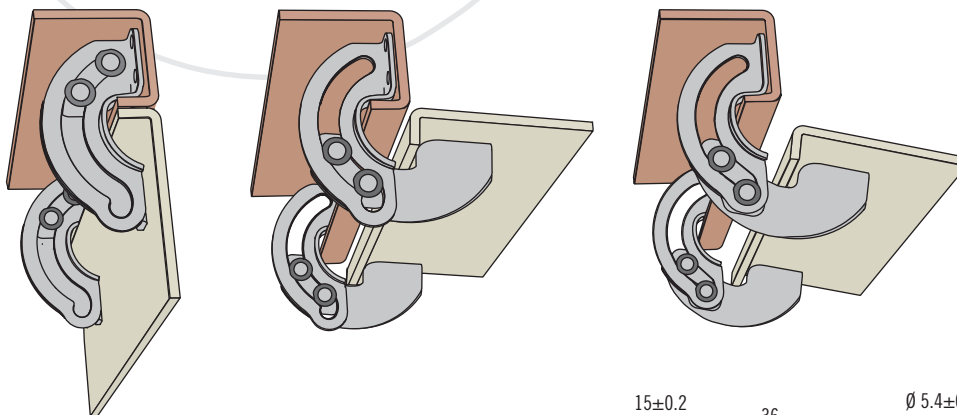
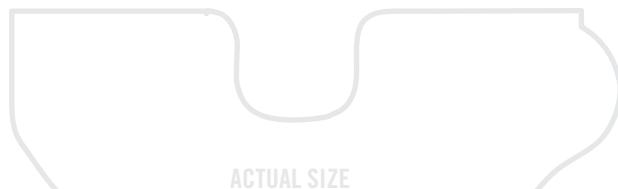
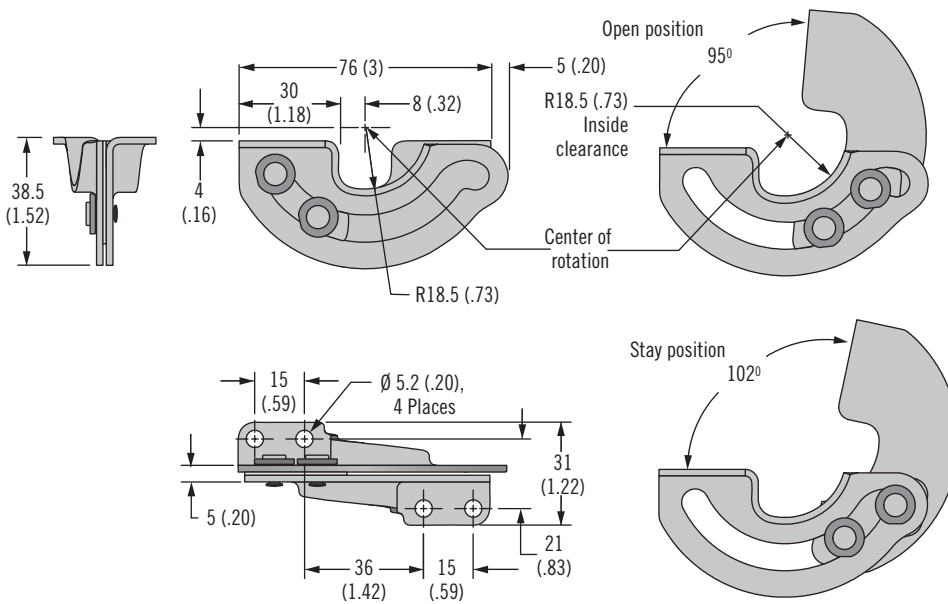
-40°C (-40°F) to 85°C (185°F)

Installation Notes

Panel thickness exceeding 4 (.16) will require a 45° chamfer on both door and frame.

Part Number

See table



Part Number	
Steel	R6-22-11
Stainless steel	R6-22-23

DZUS® QUARTER-TURN FASTENERS

DZUS® Quarter-Turn Fasteners



DZUS® Quarter-Turn Fasteners

Southco offers an extensive selection of **DZUS®** Quarter-Turn Fasteners to satisfy a broad range of requirements for quick access, high strength, and economical performance. Each product line comes with its own set of matched receptacles for accurate, secure engagement and convenient mounting in a range of applications.

The **DZUS®** advantage

- Low installation cost
- Fast, repeatable access
- Lower assembly cost
- Faster service calls
- Better ergonomics
- Improved aesthetics



82



85



D8



D1



D4



D5

PANEX Quarter-Turn Design

- ➔ Bail and wing design
- ➔ Snap-on, ergonomic bail covers
- ➔ Available in bright, black and chrome finishes



.....and more is on the way.



D7



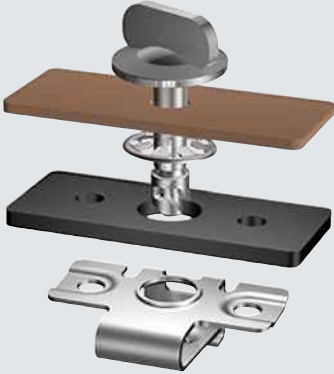
NY



DZUS® Quarter-Turn Fasteners

System selection guide

Typical assembly



82

85

D8

D1

D4

D5

D7

NY

Notes

TMT measures total material thickness (TMT) of the application. Tolerance in this measurement must be below the figure given in the selection table.



Available on request. Requires a modification request to Southco Engineering.

DZUS® Quarter-Turn Systems	TMT Tolerance	Cycle Life	Tensile Load	Vibration Resistance	Stainless Steel Available	
Determine the best quick access fastening system for your application			Guidelines: Moderate = 500-2000 High = 2000 +			
82 and 85 Lion <ul style="list-style-type: none"> High strength High cycle life Variety of styles 		0.5 (.020)	High	High	Moderate	✓
D8 PANEX Fasteners <ul style="list-style-type: none"> Grip tolerant Moderate cycle life Variety of styles 		0.9 (.035)	Moderate	Medium	Moderate	☎
D1 Dart <ul style="list-style-type: none"> Plastic design Light-weight New Wing design 		1.2 (.049)	High	Low	Moderate	N/A
D4 Standard <ul style="list-style-type: none"> High clamp force High strength Vibration resistant 		0.6 (.024)	Moderate	High	High	✓
D5 Panel Line <ul style="list-style-type: none"> Captive to outer panel Vibration resistant Visual latched indication 		0.23 (.021)	Moderate	High	High	N/A
D7 Pilot <ul style="list-style-type: none"> Push-to-close Vibration resistant Quarter-turn-to-open 		2.4 (.98)	High	Medium	Moderate	☎
D7 Arrow <ul style="list-style-type: none"> Push-to-close Quarter-turn-to-open Light-duty 		3.1 (.12)	High	Low	Moderate	N/A
NY Q-Latch <ul style="list-style-type: none"> Turn to close Snap-in installation Quarter-turn-to-open 		2.26 (.089)	High	Low	Moderate	N/A

Receptacle Type - Check Below Availability and Recommended Panel Configuration													
Determine frame type and select receptacle	Clip-On 	Self-Clinching 	Snap-In 	Front Load Clip-In 	Blind Press-In 	Ultrasonic 	Rivet-On 	Weld-On 	Side Mount 	Vibration Isolating 	Heavy Duty S-Spring 	Flaring Assembly 	Strip 
QUARTER-TURN FASTENERS	82, 85 Lion	✓	✓	✓		✓	✓	✓	✓	✓			
	D8 PANEX Fasteners	✓	✓		✓	✓	✓	✓	✓				
	D1 Dart	✓		✓				✓					
	D4 Standard	✓		✓				✓	✓			✓	
	D5 Panel Line											✓	✓
	D7 Pilot			✓									
	D7 Arrow			✓									✓
	NY Q-Latch			✓									✓
FRAME TYPE	Near Edge Installation	✓		✓	✓			✓	✓	✓	✓	✓	✓
	Sheet Metal Installation	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓
	Plastic and Composites	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Blind Holes and Tubular Frames			✓	✓	✓	✓					✓	
	Metal Casting	✓		✓	✓	✓		✓		✓	✓	✓	✓
	High Vibration	✓		✓	✓			✓	✓	✓	✓		✓



DZUS® Quarter-Turn Fasteners

Actuation styles

DZUS® Online Help

Interactive product guide

- ➔ View product animations
- ➔ View solutions
- ➔ Get detailed product information including CAD models downloaded in your native format

82

85

D8

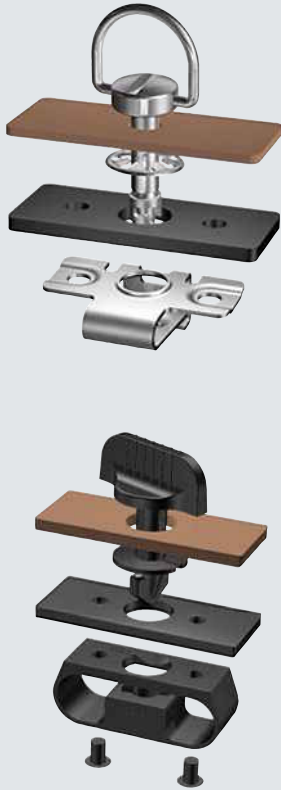
D1

D4

D5

D7

NY



Available on request. Requires a modification request to SOUTHCO® Engineering.

Select the actuation style		ACTUATION STYLES						
		Tool Actuated				Hand Actuated		
		Slotted Access	Phillips Recess	Hex Recess	Security Recess	Bail Style	Wing Style	Knob Style
QUARTER-TURN FASTENERS	82/85 Lion 	✓	✓	✓	✓	✓	✓	
	D8 PANEX Fasteners 	✓	✓	✓	✓	✓	✓	
	D1 Dart 	✓		✓			✓	✓
	D4 Standard 	✓	✓	✓		✓	✓	
	D5 Panel Line 	✓						
	D7 Pilot 		✓					
	D7 Arrow 	✓		✓			✓	✓
	NY Q-Latch 	✓					✓	

(DZUS® specification worksheet)

Use the following worksheet to specify the parts for your DZUS® quick access system (Example in blue)
 System type: **82 DZUS® Lion quarter-turn fastener**

1. Select receptacle type: **Clip-on: 82-47-113-15 page 383**

Notes: Stud selection column letter shown will be used to determine stud length in step 4. Ensure the receptacle chosen will accommodate the frame thickness.

2. Select retainer and accessories and note any adjustment values:

Accessories: **Cupped washer, black 82-46-101-41 page 385**

Retainer: **Stainless Steel, 82-32-201-20**

Adjustment values:

When using a cupped washer, add 0.5 (.020) to outer panel thickness or total material thickness (TMT).

3. Specify stud length: To determine stud length, first determine the material thickness value, TMT.

Notes: Each receptacle has a unique formula to calculate the value of TMT. Use the formulas given with the receptacle you choose. Add accessory adjustment values to TMT as appropriate.

Select the configuration that best represents the application

Application configuration: **Type 2 (page 383)**

Outer panel thickness: **2 (.078)**

Frame thickness: **2 (.078)**

Gap thickness: **0 (0)**

Accessory adjustment: **Add 0.5 (.020) to outer panel (P)**

Configuration Type 2:

Calculate TMT using the formulas given for the receptacle.

Example:

$TMT = P + F + 1.4 (.055) + 0.5 (.020)$ (for cupped washer thickness)

$TMT = 2 (.078) + 2 (.078) + 1.4 (.055) + 0.5 (.020) = 5.9 (.232)$.

4. Finish the stud part number: (page 379)

Head style: **Wing head**

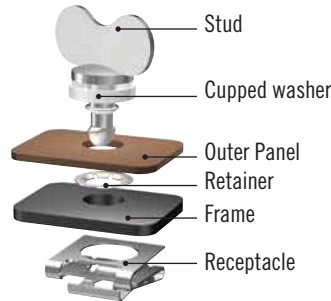
Material: **Steel, zinc plated**

Final list of materials:

- 82 -47-113-15** Receptacle: Steel clip-on
- 82 -32-201-20** Retainer: Stainless steel
- 82 -46-101-41** Accessory: Cupped washer, black
- 82 -12-240-16** Stud: Wing head, K=240, steel, zinc plated

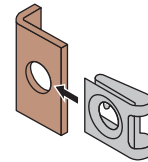
Notes: Ensure final list of materials are from the same product class and size

Choose system (page 376)



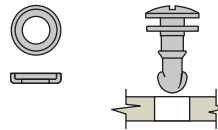
1. Select receptacle type

Clip-on receptacle 82-47-113-15

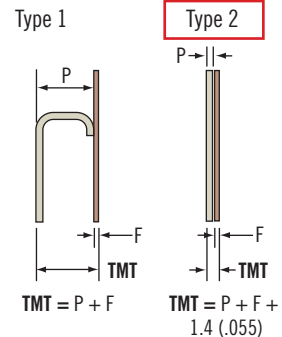


2. Select accessories

Cup washer add 0.5 (.020) to the outer panel thickness (P)
 82-46-101-41



3. Calculate TMT



Configuration 2

Stud selection column
D

Use the TMT value to find the correct stud length on the stud selector page. The correct column of TMT ranges is given on the receptacle page.

TMT Range		K
Min.	Max.	
2.3 (.090)	2.8 (.110)	100
2.8 (.110)	3.3 (.130)	120
3.3 (.130)	3.8 (.150)	140
3.8 (.150)	4.3 (.170)	160
4.3 (.170)	4.8 (.190)	180
4.8 (.190)	5.3 (.210)	200
5.3 (.210)	5.8 (.230)	220
5.8 (.230)	6.3 (.250)	240

Stud: Part Number Selection

- H** Head style
 - 11 Oval slot
 - 12 Wing head
 - 15 Bail RA
 - 16 Bail RB
 - 78 Hex recess
 - 19 Oval Phillips recess
 - T Tool head recess
- M** Material
 - 16 Steel, zinc plated
 - 20 Stainless steel

K Length
 Enter number from selection table

82 - H - K - M



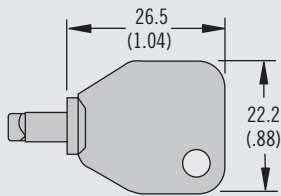
82 DZUS® Performance Quarter-Turn Fasteners Studs

Material and Finish

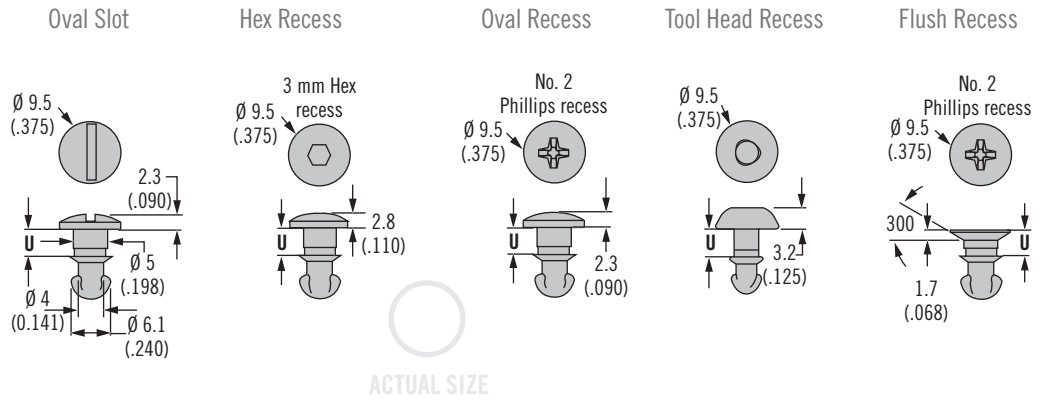
Studs: Steel, zinc plated and chromate or stainless steel
 Bail cover: ABS, black

Accessories

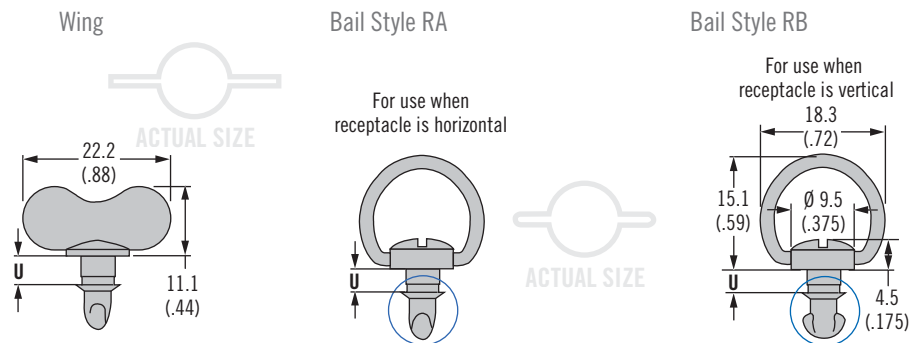
Tool head recess key:
 Part number: 29-90-214-10



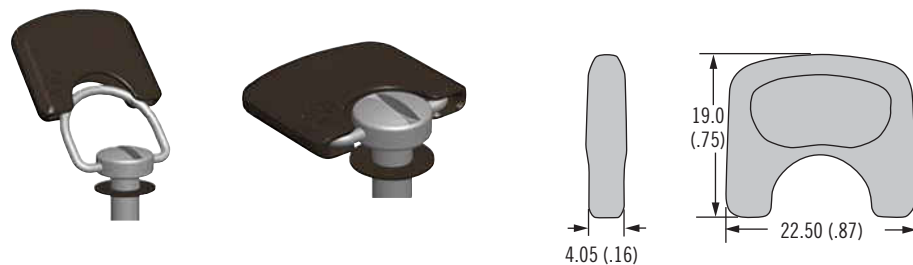
Head Styles - Tool Actuated



Head Styles - Hand Actuated



Optional Bail Cover

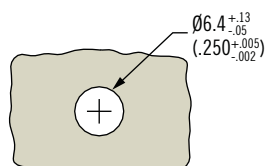


Bail Cover Part Number
82-2-B-000

Installation Notes

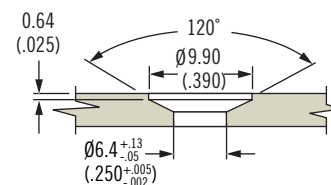
Bail cover:
 A retainer must be fitted under the stud head to fit flush with surface
 Retainer part number 82-32-301-12 (see page 385)

Stud Panel Preparation



Flush Head Styles

(when outer panel is 1.3 (.050) or greater)



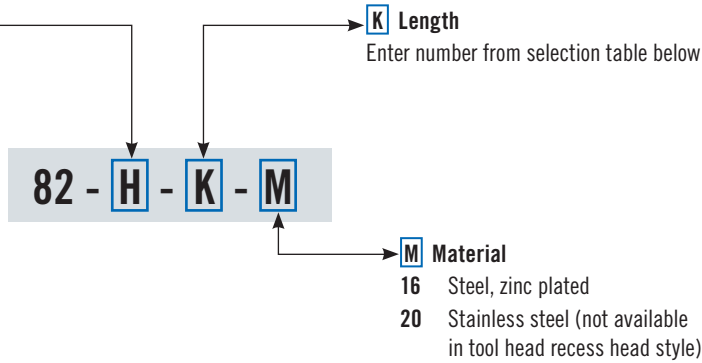
Dimensions in millimeters (inch) unless otherwise stated

82 DZUS® Lion Quarter-Turn Fasteners

Stud selection



- H** Head style
- 11 Oval slot
 - 12 Wing head
 - 15 Bail RA
 - 16 Bail RB
 - 19 Oval Phillips recess
 - 28 Flush Phillips recess
 - 78 Hex recess
 - T Tool head recess
(not available in stainless steel)



Part Number Selection

82

85

D8

D1

D4

D5

D7

NY



To select correct fastener:

1. Select receptacle

Choose a receptacle from pages 380-384

2. Select retainer and accessories

from page 385 and note any adjustment values

3. Specify stud length

Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the stud length selection table (left) using the column (A, B, C, or D) given for the receptacle selected, find **K**

4. Complete the stud part number

by specifying the head style **H**, stud length **K**, and material **M**

Example:

For rivet-on with base receptacle 82-35-302-15 use column D

For TMT value calculated as 5.2 (.206), K = 200

For slotted head style in steel material, completed part number: 82-11-200-16

A complete example can be found on page 377

Notes

Stainless steel material may require a higher minimum order quantity. Contact Southco for details.

Stud Length Table									
A		B		C		D		K	U
TMT Range For: 82-35-306-10		TMT Range For: 82-35-308-55 82-35-310-55		TMT Range For: 82-35-315-55		TMT Range For: All Other Receptacles			
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.		
0.7 (.026)	1.2 (.045)	~	~	~	~	2.3 (.090)	2.8 (.110)	100	3.2 (.127)
1.2 (.045)	1.7 (.065)	~	~	~	~	2.8 (.110)	3.3 (.130)	120	3.7 (.147)
1.7 (.065)	2.2 (.085)	~	~	~	~	3.3 (.130)	3.8 (.150)	140	4.2 (.167)
2.2 (.085)	2.7 (.105)	0 (0)	0.5 (.019)	1.3 (.050)	1.8 (.070)	3.8 (.150)	4.3 (.170)	160	4.7 (.187)
2.7 (.105)	3.2 (.125)	0.5 (.019)	1 (.039)	1.8 (.070)	2.3 (.090)	4.3 (.170)	4.8 (.190)	180	5.3 (.207)
3.2 (.125)	3.7 (.145)	1 (.039)	1.5 (.059)	2.3 (.090)	2.8 (.110)	4.8 (.190)	5.3 (.210)	200	5.8 (.227)
3.7 (.145)	4.2 (.165)	1.5 (.059)	2 (.079)	2.8 (.110)	3.3 (.130)	5.3 (.210)	5.8 (.230)	220	6.3 (.247)
4.2 (.165)	4.7 (.185)	2 (.079)	2.5 (.099)	3.3 (.130)	3.8 (.150)	5.8 (.230)	6.3 (.250)	240	6.8 (.267)
4.7 (.185)	5.2 (.205)	2.5 (.099)	3 (.119)	3.8 (.150)	4.3 (.170)	6.4 (.250)	6.9 (.270)	260	7.3 (.287)
5.2 (.205)	5.7 (.225)	3 (.119)	3.5 (.139)	4.3 (.170)	4.8 (.190)	6.9 (.270)	7.4 (.290)	280	7.8 (.307)
5.7 (.225)	6.2 (.245)	3.5 (.139)	4.1 (.159)	4.8 (.190)	5.3 (.210)	7.4 (.290)	7.9 (.310)	300	8.3 (.327)
~	~	4.1 (.159)	4.6 (.179)	5.3 (.210)	5.8 (.230)	7.9 (.310)	8.4 (.330)	320	8.8 (.347)
~	~	4.6 (.179)	5.1 (.199)	5.8 (.230)	6.3 (.250)	8.4 (.330)	8.9 (.350)	340	9.3 (.367)
~	~	5.1 (.199)	5.6 (.219)	6.3 (.250)	6.8 (.270)	8.9 (.350)	9.4 (.370)	360	9.8 (.387)
~	~	5.6 (.219)	6.1 (.239)	6.8 (.270)	7.3 (.290)	9.4 (.370)	9.9 (.390)	380	10.3 (.407)
~	~	6.1 (.239)	6.6 (.259)	7.3 (.290)	7.8 (.310)	9.9 (.390)	10.4 (.410)	400	10.8 (.427)
~	~	6.6 (.259)	7.1 (.279)	7.8 (.310)	8.3 (.330)	10.4 (.410)	10.9 (.430)	420	11.4 (.447)
~	~	7.1 (.279)	7.6 (.299)	8.3 (.330)	8.8 (.350)	10.9 (.430)	11.4 (.450)	440	11.9 (.467)
~	~	7.6 (.299)	8.1 (.319)	8.8 (.350)	9.3 (.370)	11.4 (.450)	11.9 (.470)	460	12.4 (.487)
~	~	8.1 (.319)	8.6 (.339)	9.3 (.370)	9.8 (.390)	11.9 (.470)	12.4 (.490)	480	12.9 (.507)
~	~	8.6 (.339)	9.1 (.359)	9.8 (.390)	10.3 (.410)	12.5 (.490)	12.9 (.510)	500	13.4 (.527)
~	~	9.1 (.359)	9.6 (.379)	10.3 (.410)	10.8 (.430)	13 (.510)	13.5 (.530)	520	13.9 (.547)
~	~	9.6 (.379)	10.1 (.399)	10.8 (.430)	11.3 (.450)	13.5 (.530)	14 (.550)	540	14.4 (.567)
~	~	10.1 (.399)	10.6 (.419)	11.3 (.450)	11.8 (.470)	14 (.550)	14.5 (.570)	560	14.9 (.587)
~	~	10.6 (.419)	11.1 (.439)	11.8 (.470)	12.3 (.490)	14.5 (.570)	15 (.590)	580	15.4 (.607)



82 DZUS[®] Lion Quarter-Turn Fasteners Receptacles

Material and Finish

Steel, zinc immersion coating

Installation Notes

Install with \varnothing 2.5 (3/32) rivets, spring plate must float freely after riveting

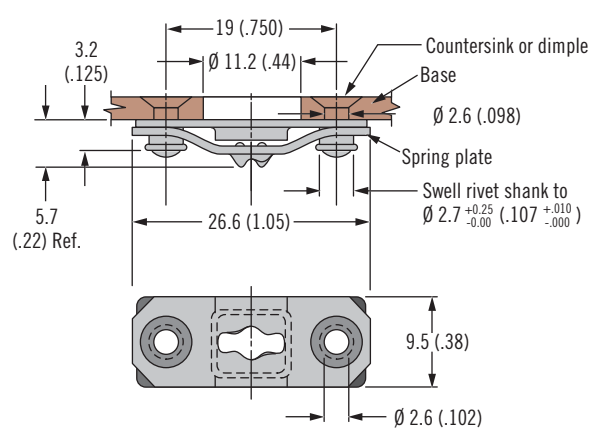
Part Number

See table

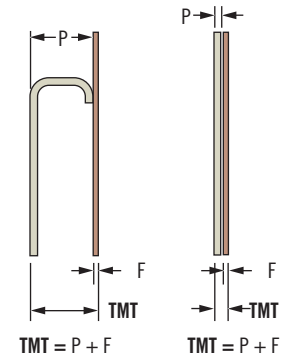
Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 379

Rivet-On With Base



ACTUAL SIZE



Part Number	Stud Selection Column
82-35-302-15	D

Material and Finish

Steel, zinc immersion coating or stainless steel

Installation Notes

Install with \varnothing 2.5 (3/32) rivets, spring plate must float freely after riveting

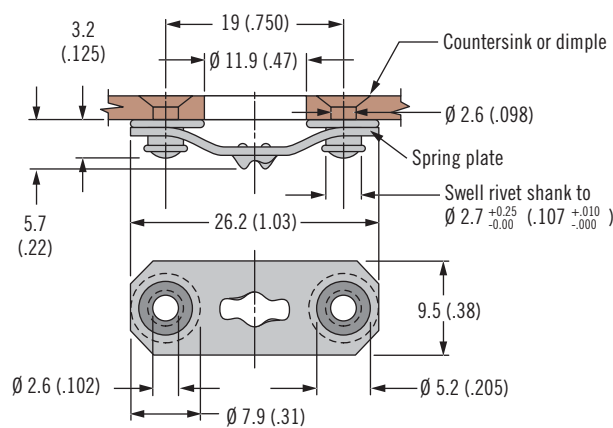
Part Number

See table

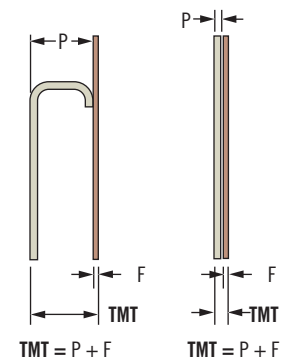
Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 379

Rivet-On Without Base



ACTUAL SIZE

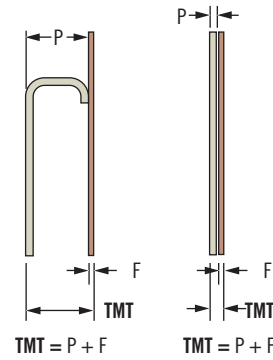
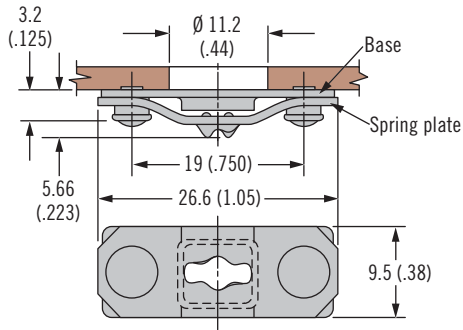


Material	Part Number	Stud Selection Column
Steel	82-35-295-15	D
Stainless steel	82-35-295-20	

82 DZUS® Lion Quarter-Turn Fasteners Receptacles



Weld-On



ACTUAL SIZE

Part Number	Stud Selection Column
82-35-303-15	D

Material and Finish

Steel, zinc immersion coating

Installation Notes

Spring plate must float freely after welding

82

85

D8

D1

D4

D5

D7

NY

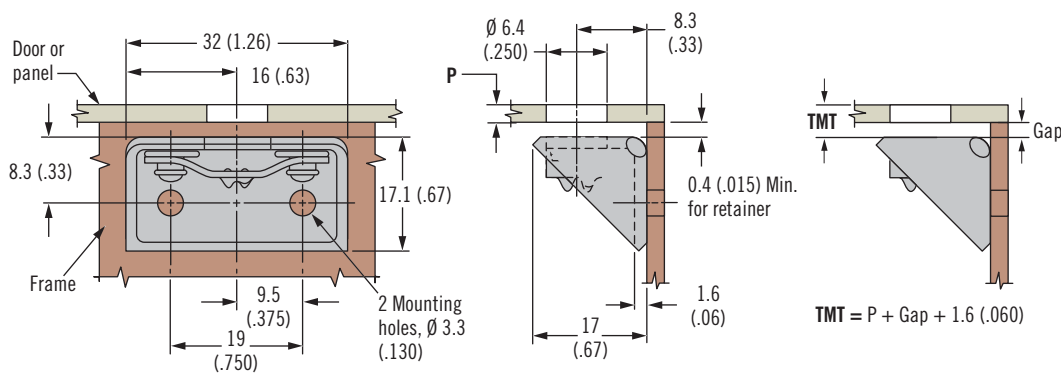
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 379

Side Mount



ACTUAL SIZE

Part Number	Stud Selection Column
82-45-101-15	D

Material and Finish

Steel, zinc immersion coating

Installation Notes

Install with Ø 2.5 (3/32) rivets

Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 379



82 DZUS® Lion Quarter-Turn Fasteners Receptacles

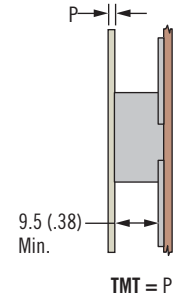
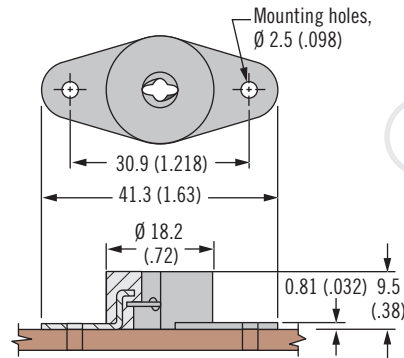
Material and Finish

Steel, zinc plated and neoprene

Installation Notes

Install with $\varnothing 2.5$ (3/32) rivets

Vibration Isolating



Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 379

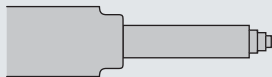
Part Number	Stud Selection Column
82-35-306-10	A

Material and Finish

Steel, zinc plated and stainless steel

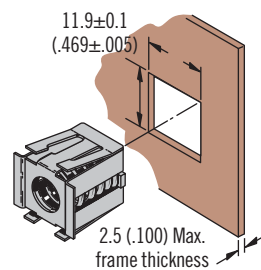
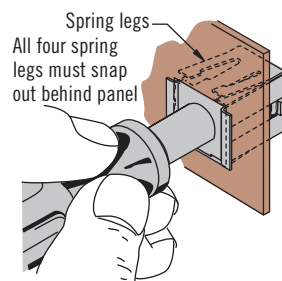
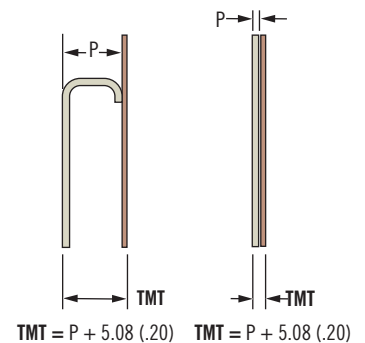
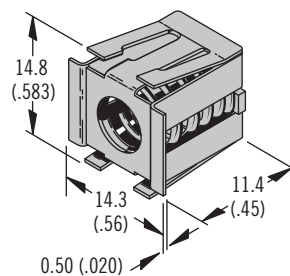
Installation Notes

Installation Tool



Part Number: 29-8125-309

Snap-In - Front Mount



Part Number

See table

Notes

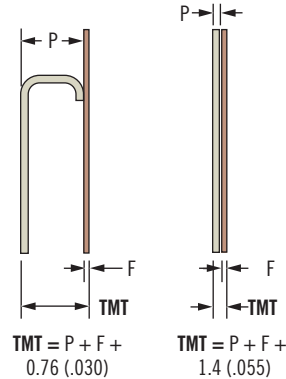
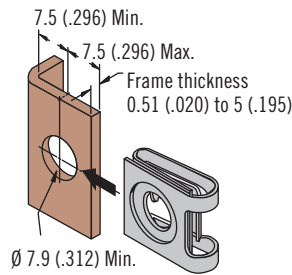
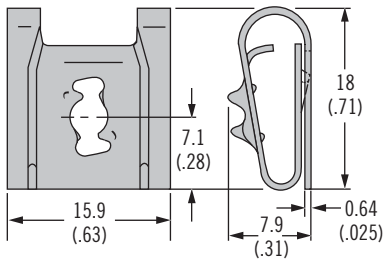
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 379

Part Number	Stud Selection Column
82-35-309-56	D

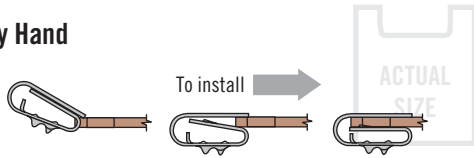
82 DZUS® Lion Quarter-Turn Fasteners Receptacles



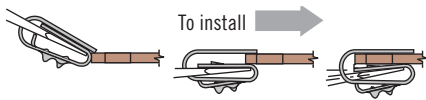
Clip-On



By Hand



With Screwdriver



Material	Part Number	Stud Selection Column
Steel	82-47-113-15	D
Stainless steel	82-47-113-20	

Material and Finish

Steel, zinc immersion coating or stainless steel

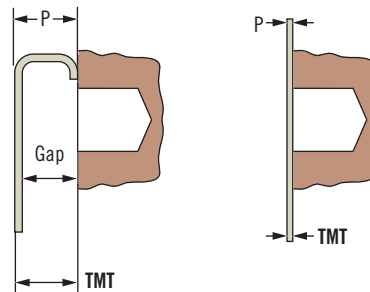
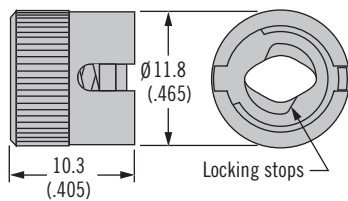
Part Number

See table

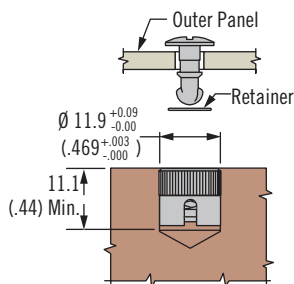
Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 379

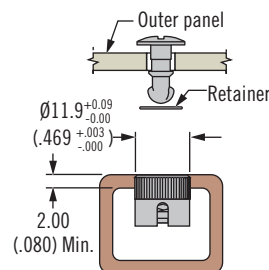
Press-In



Solid Install



Blind Install



Part Number	Stud Selection Column
82-35-308-55	B

Material and Finish

Steel, zinc plated and stainless steel

Installation Notes

Press receptacle flush to frame

Notes

Receptacle shown installed flush to the frame. To eliminate the gap between the frame and outer panel, install to a depth \geq the thickness of the selected retainer. This depth should be added to the TMT.

Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 379



82 DZUS® Lion Quarter-Turn Fasteners

Receptacles · Self-clinching

Material and Finish

Steel, zinc plated and stainless steel

82

Installation Notes

Press receptacle flush to frame

85

D8

Notes

Receptacle shown installed flush to the frame. To eliminate the gap between the frame and outer panel, install to a depth \geq the thickness of the selected retainer. This depth should be added to the TMT.

D1

D4

D5

D7

NY

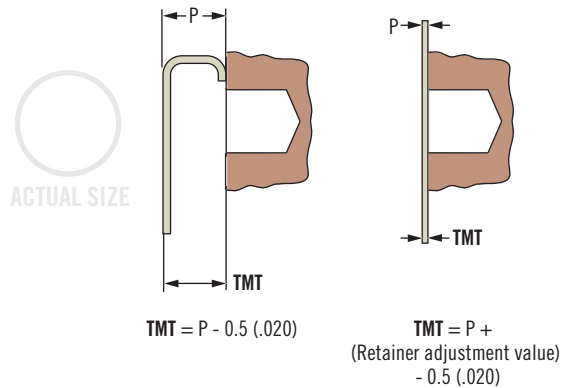
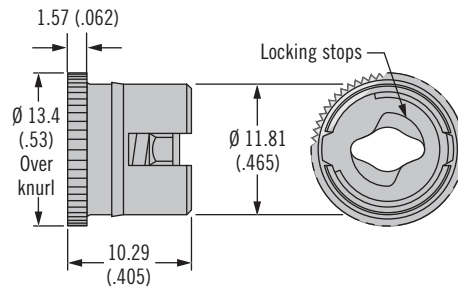
Part Number

See table

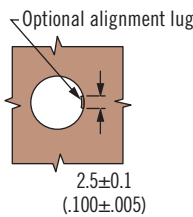
Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 379

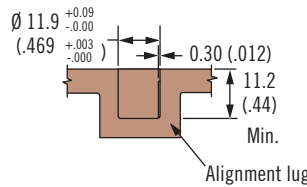
Ultrasonic For Thermoplastics



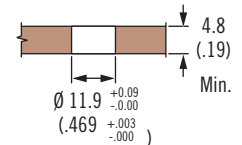
Installation



Blind Hole Installation



Thru Hole Installation



Part Number	Stud Selection Column
82-35-310-55	B

Material and Finish

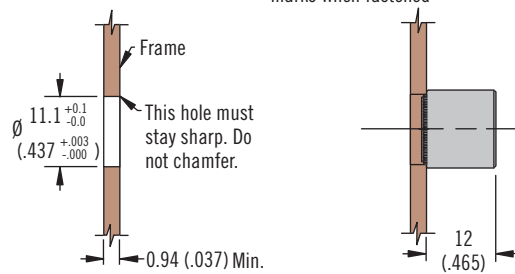
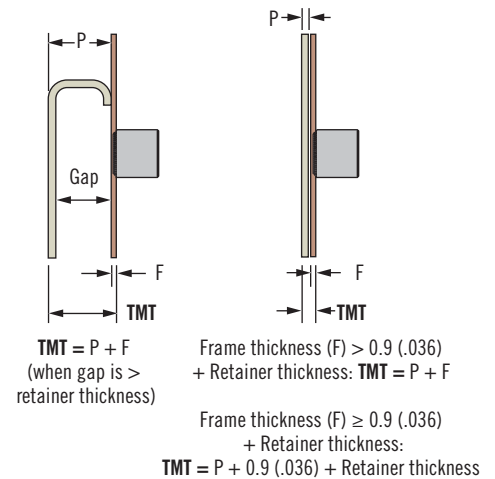
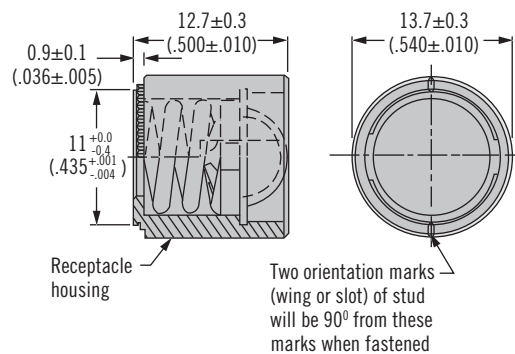
Steel, zinc plated and stainless steel

Installation Notes

For use in low carbon steels, aluminum and stainless steels in the annealed condition that are R_b85 or softer

See page 543 for installation guidelines

Shielded – Self-Clinching



Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 379

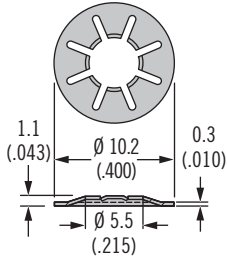
Part Number	Stud Selection Column
82-35-315-55	C

82 DZUS® Lion Quarter-Turn Fasteners

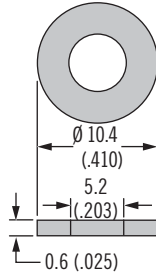
Retainers · Accessories



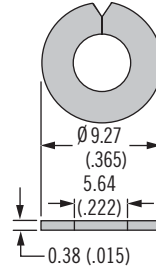
Retainer Push-On



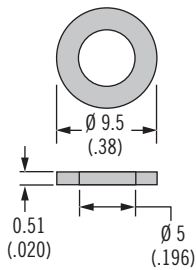
Retainer Push-On Plastic



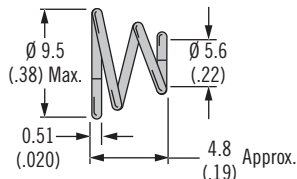
Retainer Split



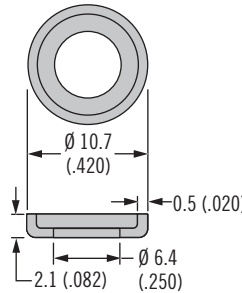
Sealing Washer



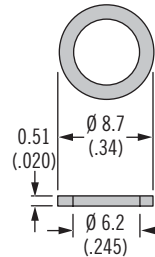
Ejector Spring



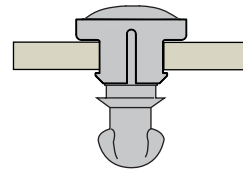
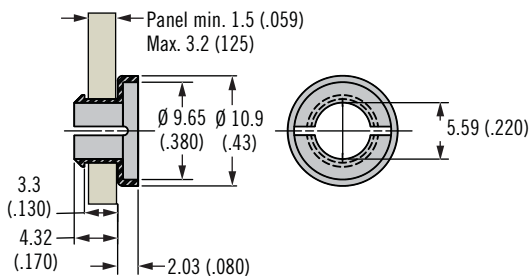
Cupped Washer



Flat Wear Washer



Snap-In Retainer

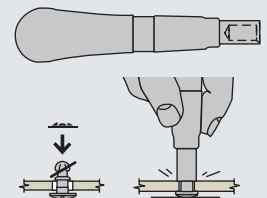


Material and Finish

See table

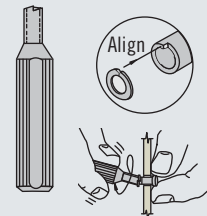
Installation Notes

For standard retainers:



Part Number: 82-0-22542-11

For split retainers:



Part Number: 82-0-7595-11

Notes

For snap-in retainer:

Min. stud **K** = 180 when using snap-in retainer (see page 379 for **K** reference).

Install stud into retainer before inserting into panel

Type	Part Number	Material	Adjustment Value
Push-on retainer	82-32-201-20	Stainless steel	Add 0.25 (.010)
Push-on plastic retainer	82-32-301-12	Nylon, black	Add 0.64 (.025)
Split retainer	82-32-101-20	Stainless steel	Add 0.38 (.015)
Sealing washer	82-43-201-38	Neoprene nitrile rubber, black	Add 0.51 (.020)
Ejector spring	43-13-1-24	Stainless steel	Add 0.51 (.020)
Cupped washer	82-46-101-39	Nylon, white	Add 0.51 (.020)
	82-46-101-41	Nylon, black	
Flat wear washer	82-46-103-39	Nylon, white	Add 0.51 (.020)
Snap-in retainer	82-32-401-41	Nylon, black	Add 0.51 (.020)

Part Number

See table

Notes

Adjustment value:

When using accessories the components increase TMT

Add the adjustment value to your outer panel thickness (P) when calculating TMT (see page 377 for example)



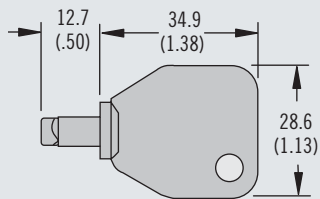
85 DZUS[®] Lion Quarter-Turn Fasteners Studs

Material and Finish

Studs: Steel, zinc plated or stainless steel
 Bail cover: ABS, black

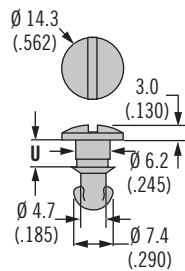
Accessories

Tool head recess key:
 Part number: 29-90-215-10

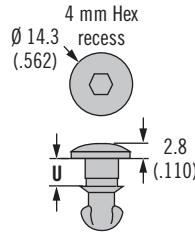


H Head Styles - Tool Actuated

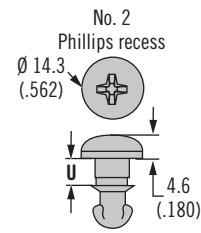
Oval Slot



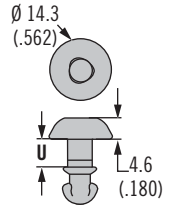
Hex Recess



Phillips Recess

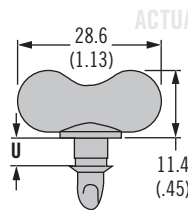


Tool Head Recess



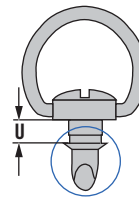
H Head Styles - Hand Actuated

Wing



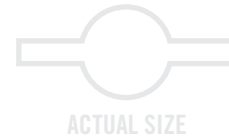
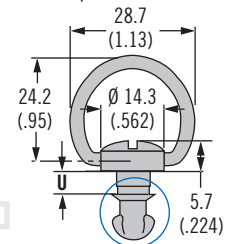
Bail Style RA

For use when receptacle is horizontal



Bail Style RB

For use when receptacle is vertical

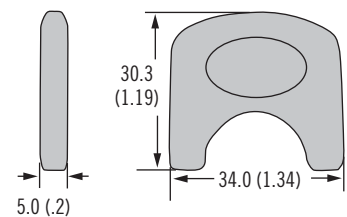


Installation Notes

Bail cover:
 A wear washer must be fitted under the stud head to fit flush with surface

Wear washer part number
 85-34-301-12 (see page 391)

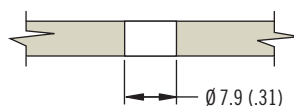
Optional Bail Cover



Bail Cover Part Number
85-5-B-000

Stud Panel Preparation

Prepare Hole



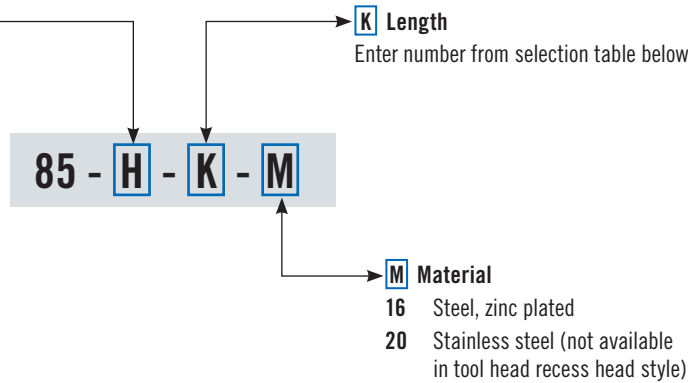
Dimensions in millimeters (inch) unless otherwise stated

85 DZUS® Lion Quarter-Turn Fasteners

Stud selection



- H** Head style
- 11 Oval slot
 - 12 Wing head
 - 15 Bail RA
 - 16 Bail RB
 - 78 Hex recess
 - P Oval Phillips recess
 - T Tool head recess (not available in stainless steel)



Stud Length Table							
A		B		C		K	U
TMT Range For: 85-35-308-55		TMT Range For: 85-35-311-55		TMT Range For: All other receptacles			
Min.	Max.	Min.	Max.	Min.	Max.		
~	~	~	~	2.3 (.090)	2.8 (.110)	100	5.2 (.205)
~	~	~	~	2.8 (.110)	3.3 (.130)	120	5.7 (.225)
~	~	~	~	3.3 (.130)	3.8 (.150)	140	6.2 (.245)
~	~	~	~	3.8 (.150)	4.3 (.170)	160	6.7 (.265)
~	~	~	~	4.3 (.170)	4.8 (.190)	180	7.2 (.285)
~	~	~	~	4.8 (.190)	5.3 (.210)	200	7.7 (.305)
~	~	~	~	5.3 (.210)	5.8 (.230)	220	8.3 (.325)
~	~	1.3 (.050)	1.8 (.070)	5.8 (.230)	6.3 (.250)	240	8.8 (.345)
0.4 (.015)	0.9 (.035)	1.8 (.070)	2.3 (.090)	6.4 (.250)	6.9 (.270)	260	9.3 (.365)
0.9 (.035)	1.4 (.055)	2.3 (.090)	2.8 (.110)	6.9 (.270)	7.4 (.290)	280	9.8 (.385)
1.4 (.055)	1.9 (.075)	2.8 (.110)	3.3 (.130)	7.4 (.290)	7.9 (.310)	300	10.3 (.405)
1.9 (.075)	2.4 (.095)	3.3 (.130)	3.8 (.150)	7.9 (.310)	8.4 (.330)	320	10.8 (.425)
2.4 (.095)	2.9 (.115)	3.8 (.150)	4.3 (.170)	8.4 (.330)	8.9 (.350)	340	11.3 (.445)
2.9 (.115)	3.4 (.135)	4.3 (.170)	4.8 (.190)	8.9 (.350)	9.4 (.370)	360	11.8 (.465)
3.4 (.135)	3.9 (.155)	4.8 (.190)	5.3 (.210)	9.4 (.370)	9.9 (.390)	380	12.3 (.485)
3.9 (.155)	4.4 (.175)	5.3 (.210)	5.8 (.230)	9.9 (.390)	10.4 (.410)	400	12.8 (.505)
4.4 (.175)	4.9 (.195)	5.8 (.230)	6.3 (.250)	10.4 (.410)	10.9 (.430)	420	13.3 (.525)
5 (.195)	5.5 (.215)	6.4 (.250)	6.9 (.270)	10.9 (.430)	11.4 (.450)	440	13.8 (.545)
5.5 (.215)	6 (.235)	6.9 (.270)	7.4 (.290)	11.4 (.450)	11.9 (.470)	460	14.4 (.565)
6 (.235)	6.5 (.255)	7.4 (.290)	7.9 (.310)	11.9 (.470)	12.4 (.490)	480	14.9 (.585)
6.5 (.255)	7 (.275)	7.9 (.310)	8.4 (.330)	12.5 (.490)	12.9 (.510)	500	15.4 (.605)
7 (.275)	7.5 (.295)	8.4 (.330)	8.9 (.350)	13 (.510)	13.5 (.530)	520	15.9 (.625)
7.5 (.295)	8 (.315)	8.9 (.350)	9.4 (.370)	13.5 (.530)	14 (.550)	540	16.4 (.645)
8 (.315)	8.5 (.335)	9.4 (.370)	9.9 (.390)	14 (.550)	14.5 (.570)	560	16.9 (.665)
8.5 (.335)	9 (.355)	9.9 (.390)	10.4 (.410)	14.5 (.570)	15 (.590)	580	17.4 (.685)

Part Number Selection

82

85

D8

D1

D4

D5

D7

NY

To select correct fastener:

1. Select receptacle

Choose a receptacle from page 388-390

2. Select retainer and accessories

from page 391 and note any adjustment values

3. Specify stud length

Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the stud length selection table (left) using the column (A, B or C) given for the receptacle selected, find **K**

4. Complete the stud part number

by specifying the head style **H**, stud length **K**, and material **M**

Example:

For rivet-on with base receptacle 85-35-295-15 use column C

For TMT value calculated as 5.2 (.206), K = 200

For slotted head style in steel material, completed part number: 85-11-200-16

A complete example can be found on page 377

Notes

Stainless steel material may require a higher minimum order quantity. Contact Southco for details.



85 DZUS[®] Lion Quarter-Turn Fasteners

Receptacles

Material and Finish

Steel, zinc immersion coating or stainless steel

82

85

D8

D1

D4

D5

D7

NY

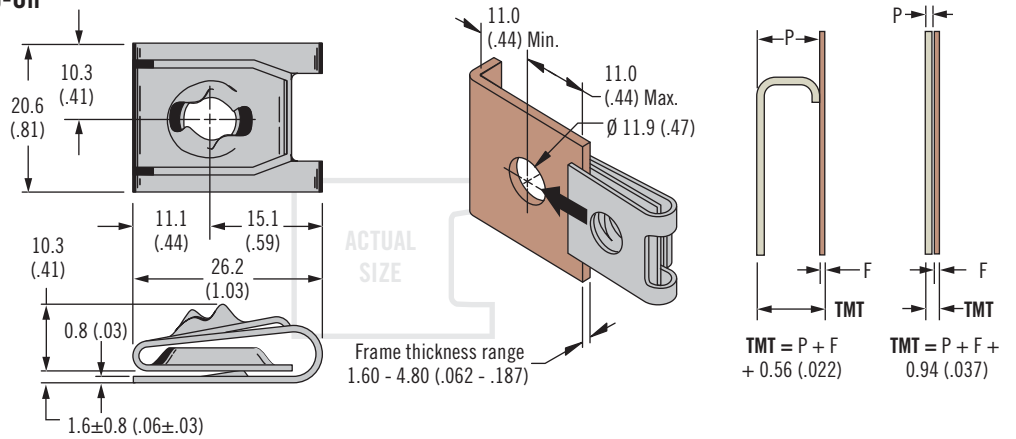
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 387

Clip-On



By Hand



With Screwdriver

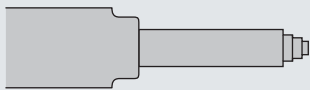


Material	Part Number	Stud Selection Column
Steel	85-47-101-15	C
Stainless steel	85-47-101-20	

Material and Finish

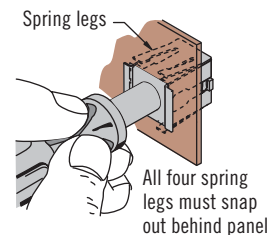
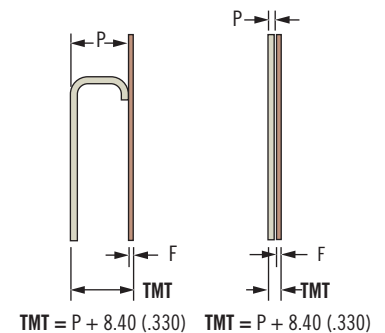
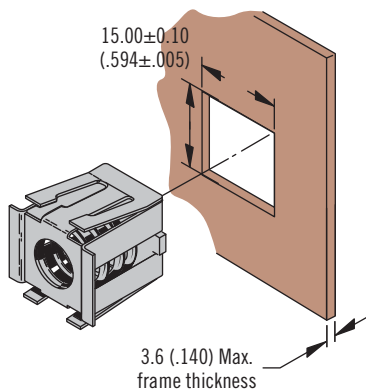
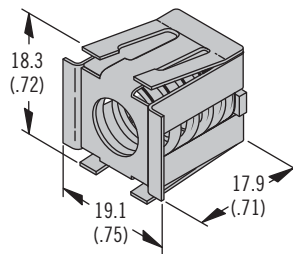
Steel, zinc plated and stainless steel

Installation Tool



Part Number: 29-8125-309

Snap-In – Front Mount



Part Number	Stud Selection Column
85-35-309-56	C

Part Number

See table

Notes

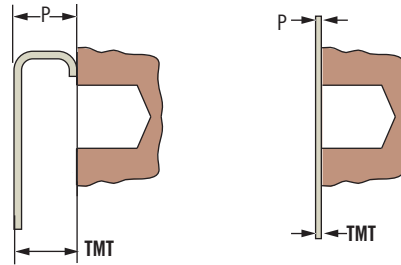
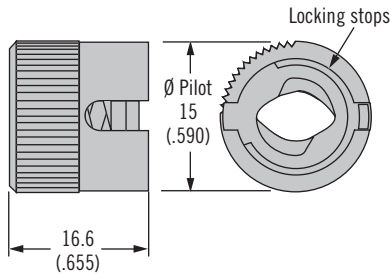
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 387

Dimensions in millimeters (inch) unless otherwise stated

85 DZUS® Lion Quarter-Turn Fasteners Receptacles



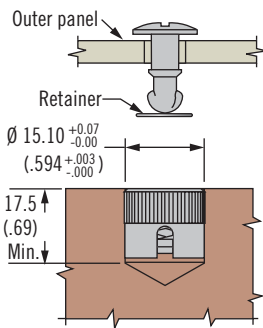
Press-In



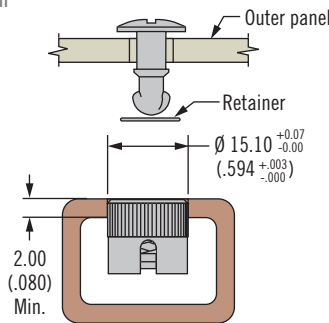
$TMT = P + \text{Gap} - 0.6 (.025)$
(when gap is > retainer thickness)

$TMT = P +$
(Retainer adjustment value)
 $- 0.6 (0.25)$

Solid Install



Blind Install



Material and Finish

Steel, zinc plated and stainless steel

Installation Notes

Press receptacle flush to frame

Notes

Receptacle shown installed flush to the frame. To eliminate the gap between the frame and outer panel, install to a depth ≥ the thickness of the selected retainer. This depth should be added to the TMT.

Part Number

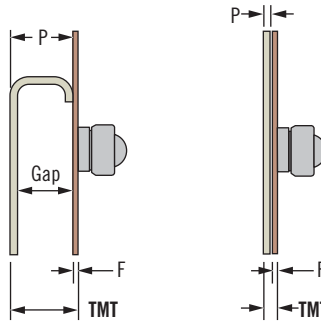
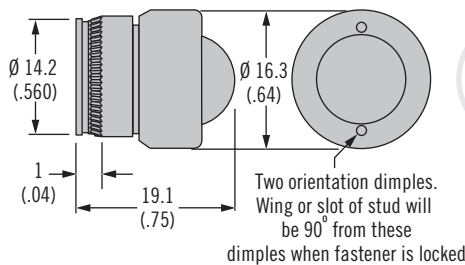
See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 387

Part Number	Stud Selection Column
85-35-308-55	A

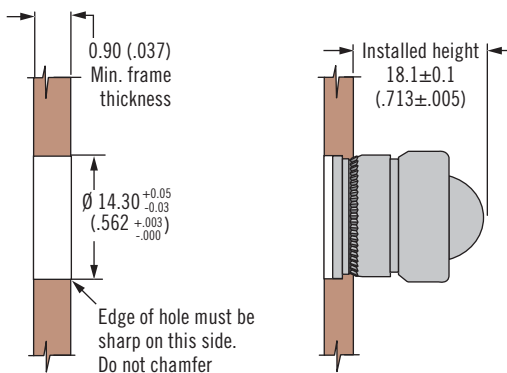
Shielded – Self-Clinching



$TMT = P + F$
(when gap is > retainer thickness)

Frame thickness (F) > 0.9 (.036)
+ Retainer thickness: $TMT = P + F$

Frame thickness (F) ≥ 0.9 (.036)
+ Retainer thickness:
 $TMT = P + 0.9 (.036) + \text{Retainer thickness}$



Material and Finish

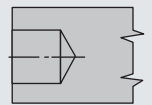
Steel, zinc plated and stainless steel

Installation Notes

For use in low carbon steels, aluminum and stainless steels in the annealed condition that are R_b 85 or softer.

See page 543 for installation guidelines

Installation Tool



Part number: 90-2825-11

Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 387

Part Number	Stud Selection Column
85-35-311-55	B



85 DZUS® Lion Quarter-Turn Fasteners Receptacles

Material and Finish

Steel, zinc immersion coating or stainless steel

Installation Notes

Install with $\varnothing 3$ (.125) rivets, spring must float freely after riveting

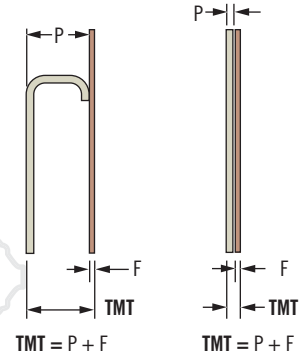
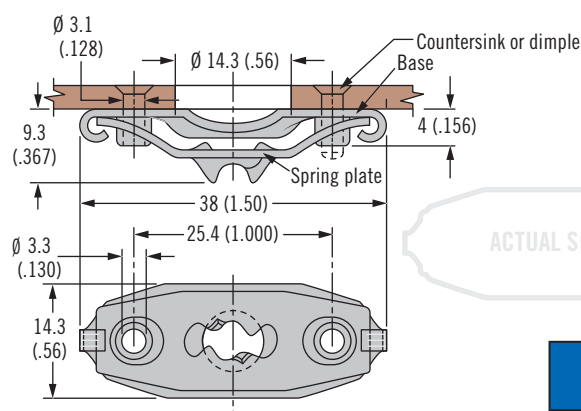
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 387

Rivet-On With Base



Material	Part Number	Stud Selection Column
Steel	85-35-295-15	C
Stainless steel	85-35-295-20	

Material and Finish

Steel, zinc immersion coating

Installation Notes

Spring must float freely after welding

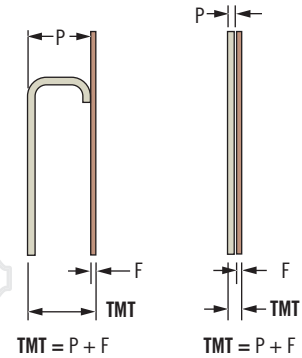
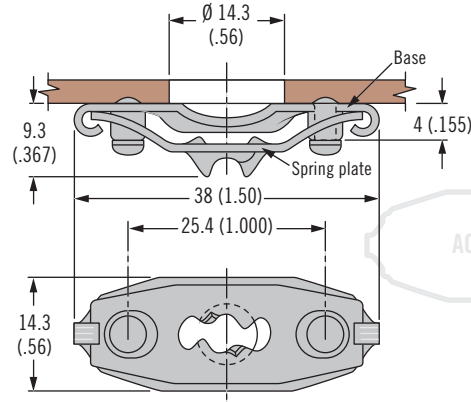
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 387

Weld-On



Part Number	Stud Selection Column
85-35-296-15	C

Material and Finish

Steel, zinc immersion coating

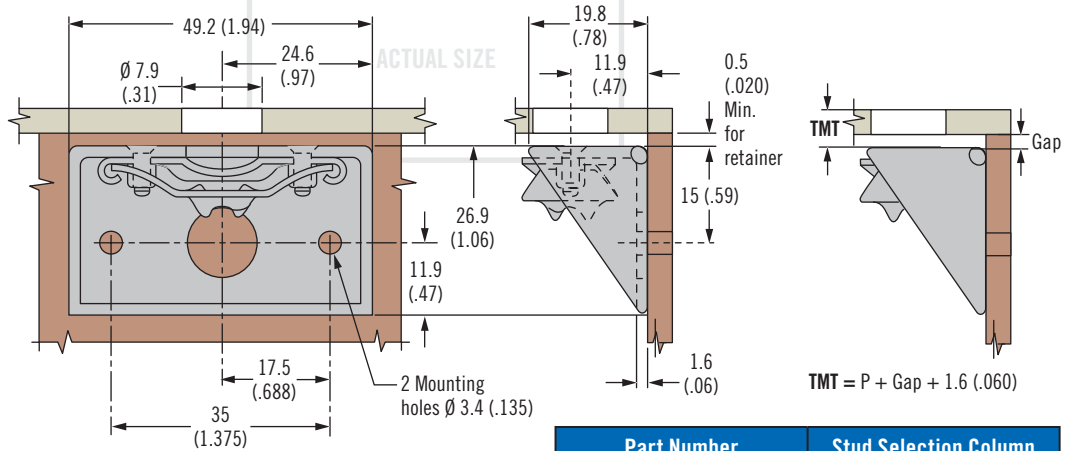
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 387

Side Mount



Part Number	Stud Selection Column
85-45-101-15	C

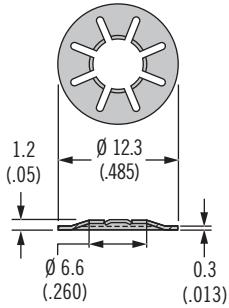
85 DZUS® Lion Quarter-Turn Fasteners

Retainers · Accessories

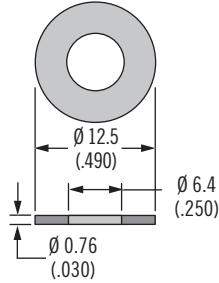


Retainers

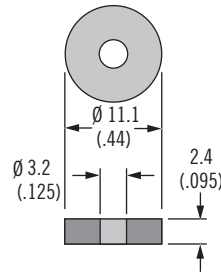
Push-On - Stainless Steel



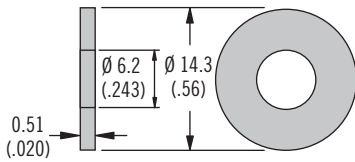
Push-On - Plastic



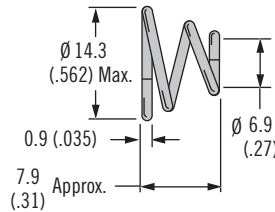
Push-On - Neoprene



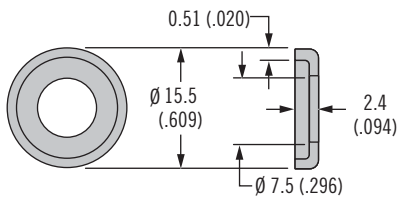
Sealing Washer



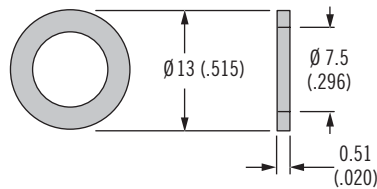
Ejector Spring



Cupped Washer



Flat Wear Washer



Material and Finish

See table

Installation Notes

For standard retainers use tool



Part number 85-0-22543-11

82

85

D8

D1

D4

D5

D7

NY



Type	Part Number	Material	Adjustment Value
Push-on - Stainless steel	85-34-201-20	Stainless steel	Add 0.33 (.013)
Push-on - Plastic	85-34-301-12	Nylon, black	Add 0.76 (.030)
Push-on - Neoprene	85-33-101-27	Neoprene, black	Add 1.22 (.048)
Sealing washer	85-43-201-38	Neoprene nitrile rubber, black	Add 0.51 (.020)
Ejector spring	14-18-150-24	Stainless steel	Add 1.00 (.039)
Cupped washer	85-46-101-39	Nylon, white	Add 0.51 (.020)
	85-46-101-41	Nylon, black	
Flat wear washer	85-46-103-39	Nylon, white	Add 0.51 (.020)

Part Number

See table

Adjustment value:

When using accessories the components add thickness

Add the adjustment value to your outer panel thickness (P) when calculating TMT (see page 377 for example)



D8 DZUS® PANEX Quarter-Turn Fasteners

Studs · Size 4

Material and Finish

Studs: Steel, zinc plated plus chromate or chrome plated
Bail cover: ABS, black

82

85

D8

D1

D4

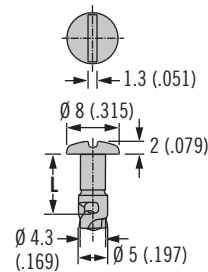
D5

D7

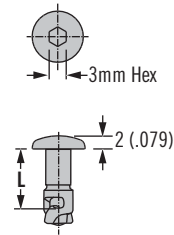
NY

H Head Styles - Tool Actuated

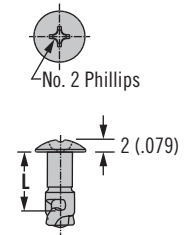
Oval Slot



Hex Recess



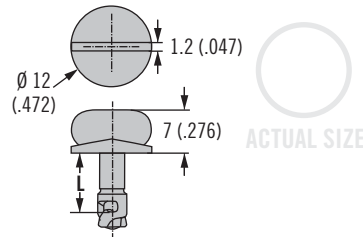
Phillips Recess



ACTUAL SIZE

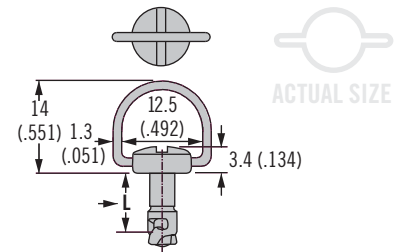
H Head Styles - Hand Actuated

Wing



ACTUAL SIZE

Bail



ACTUAL SIZE

Installation Notes

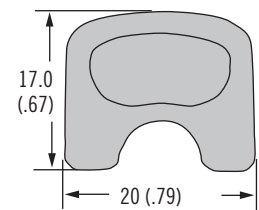
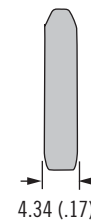
Bail cover:

A Retainer must be fitted under the stud head to fit flush with surface

Retainer part number

D8-324-100-040 (see page 397)

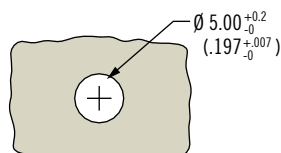
Optional Bail Cover



Bail Cover Part Number

D8-4-B-000

Stud Panel Preparation



Dimensions in millimeters (inch) unless otherwise stated

DZUS®

southco®
CONNECT · CREATE · INNOVATE

D8 DZUS® PANEX Quarter-Turn Fasteners

Stud selection · Size 4



Part Number Selection

H Head style

- 1 Slot recess
- 2 Hex recess
- 3 Wing
- 4 Bail
- 7 Phillips recess

K Length

Enter number from selection table below

D8 - 314 - H K - F

F Finish

- 170 Chrome plated
- 190 Zinc plated
- 191 Zinc plated, black

Stud Length Table

A		B		C		D		E		K	L ±.15 ±(.006)
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.		
TMT Range For: D8-334-400-121 D8-334-500-121		TMT Range For: D8-334-300-121 D8-334-310-121		TMT Range For: D8-334-200-190		TMT Range For: D8-334-100-300		TMT Range For: D8-334-110-190		08	8 (.315)
1.0 (.04)	1.9 (.07)	1.5 (.06)	2.4 (.09)	~	~	~	~	~	~	09	9 (.354)
2.0 (.08)	2.9 (.11)	2.5 (.10)	3.4 (.13)	~	~	~	~	~	~	10	10 (.394)
3.0 (.12)	3.9 (.15)	3.5 (.14)	4.4 (.17)	~	~	0.7 (.03)	1.6 (.06)	1.7 (.07)	2.6 (.10)	11	11 (.433)
4.0 (.16)	4.9 (.19)	4.5 (.18)	5.4 (.21)	~	~	1.7 (.07)	2.6 (.10)	2.7 (.11)	3.6 (.14)	12	12 (.472)
5.0 (.20)	5.9 (.23)	5.5 (.22)	6.4 (.25)	1.5 (.06)	2.4 (.09)	2.7 (.11)	3.6 (.14)	3.7 (.15)	4.6 (.18)	13	13 (.512)
6.0 (.24)	6.9 (.27)	6.5 (.26)	7.4 (.29)	2.5 (.10)	3.4 (.13)	3.7 (.15)	4.6 (.18)	4.7 (.19)	5.6 (.22)	14	14 (.551)
7.0 (.28)	7.9 (.31)	7.5 (.30)	8.4 (.33)	3.5 (.14)	4.4 (.17)	4.7 (.19)	5.6 (.22)	5.7 (.22)	6.6 (.26)	15	15 (.591)
8.0 (.31)	8.9 (.35)	8.5 (.33)	9.4 (.37)	4.5 (.18)	5.4 (.21)	5.7 (.22)	6.6 (.26)	6.7 (.26)	7.6 (.30)	16	16 (.630)
9.0 (.35)	9.9 (.39)	9.5 (.37)	10.4 (.41)	5.5 (.22)	6.4 (.25)	6.7 (.26)	7.6 (.30)	7.7 (.30)	8.6 (.34)	17	17 (.669)
10.0 (.39)	10.9 (.43)	10.5 (.41)	11.4 (.45)	6.5 (.26)	7.4 (.29)	7.7 (.30)	8.6 (.34)	8.7 (.34)	9.6 (.38)	18	18 (.709)
11.0 (.43)	11.9 (.47)	11.5 (.45)	12.4 (.49)	7.5 (.30)	8.4 (.33)	8.7 (.34)	9.6 (.38)	9.7 (.38)	10.6 (.42)	19	19 (.748)
12.0 (.47)	12.9 (.51)	12.5 (.49)	13.4 (.53)	8.5 (.33)	9.4 (.37)	9.7 (.38)	10.6 (.42)	10.7 (.42)	11.6 (.46)	20	20 (.787)
13.0 (.51)	13.9 (.55)	13.5 (.53)	14.4 (.57)	9.5 (.37)	10.4 (.41)	10.7 (.42)	11.6 (.46)	11.7 (.46)	12.6 (.50)	21	21 (.827)
14.0 (.55)	14.9 (.59)	14.5 (.57)	15.4 (.61)	10.5 (.41)	11.4 (.45)	11.7 (.46)	12.6 (.50)	12.7 (.50)	13.6 (.54)	22	22 (.866)
15.0 (.59)	15.9 (.63)	15.5 (.61)	16.4 (.65)	11.5 (.45)	12.4 (.49)	12.7 (.50)	13.6 (.54)	13.7 (.54)	14.6 (.57)	23	23 (.906)
16.0 (.63)	16.9 (.67)	16.5 (.65)	17.4 (.69)	12.5 (.49)	13.4 (.53)	13.7 (.54)	14.6 (.57)	14.7 (.58)	15.6 (.61)	24	24 (.945)
17.0 (.67)	17.9 (.70)	17.5 (.69)	18.4 (.72)	13.5 (.53)	14.4 (.57)	14.7 (.58)	15.6 (.61)	15.7 (.62)	16.6 (.65)	25	25 (.984)
18.0 (.71)	18.9 (.74)	18.5 (.73)	19.4 (.76)	14.5 (.57)	15.4 (.61)	15.7 (.62)	16.6 (.65)	16.7 (.66)	17.6 (.69)	26	26 (1.02)
19.0 (.75)	19.9 (.78)	19.5 (.77)	20.4 (.80)	15.5 (.61)	16.4 (.65)	16.7 (.66)	17.6 (.69)	17.7 (.70)	18.6 (.73)	27	27 (1.06)
20.0 (.79)	20.9 (.82)	20.5 (.81)	21.4 (.84)	16.5 (.65)	17.4 (.69)	17.7 (.70)	18.6 (.73)	18.7 (.74)	19.6 (.77)	28	28 (1.10)
21.0 (.83)	21.9 (.86)	21.5 (.85)	22.4 (.88)	17.5 (.69)	18.4 (.72)	18.7 (.74)	19.6 (.77)	19.7 (.78)	20.6 (.81)	29	29 (1.14)
22.0 (.87)	22.9 (.90)	22.5 (.89)	23.4 (.92)	18.5 (.73)	19.4 (.76)	19.7 (.78)	20.6 (.81)	20.7 (.81)	21.6 (.85)	30	30 (1.18)
23.0 (.91)	23.9 (.94)	23.5 (.93)	24.4 (.96)	19.5 (.77)	20.4 (.80)	20.7 (.81)	21.6 (.85)	21.7 (.85)	22.6 (.89)		

To select correct fastener:

1. Select receptacle

Choose a receptacle from pages 394-396

2. Select retainer and accessories

from page 397 and note any adjustment values

3. Specify stud length

Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the length selection table (left) using the column (A, B, C, D or E) given for the receptacle selected.

4. Complete the stud part number

by specifying the head style **H**, stud length **K**, and material **M**

Example:

For rivet-on

D8-334-400-121 use column A
For TMT value calculated as 5.2 (.206), K = 12

For slotted head style in steel, zinc plated material, completed part number: D8-314-112-190

A complete example can be found on page 377.

- 82
- 85
- D8**
- D1
- D4
- D5
- D7
- NY



D8 DZUS® PANEX Quarter-Turn Fasteners

Receptacles · Size 4

Material and Finish

Steel, zinc immersion coating

Installation Notes

Install with $\varnothing 3$ (.125) rivets

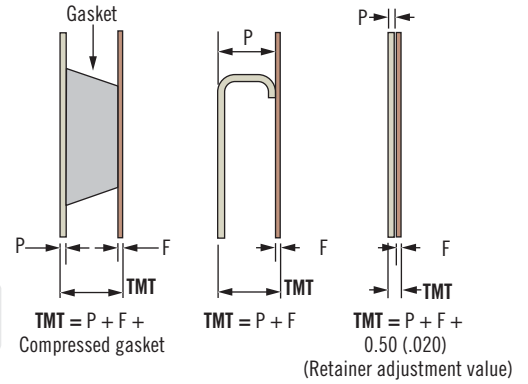
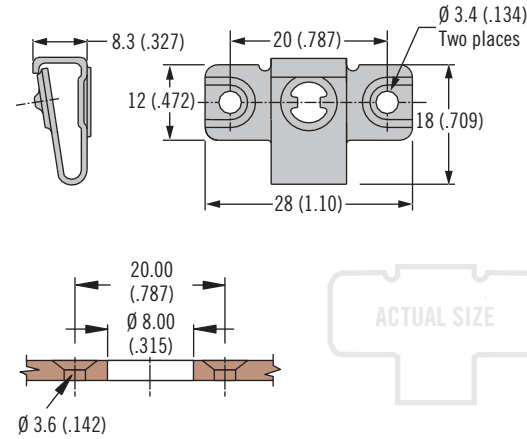
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 393

Rivet-On



Part Number	Stud Selection Column
D8-334-400-121	A

Material and Finish

Steel, zinc immersion coating

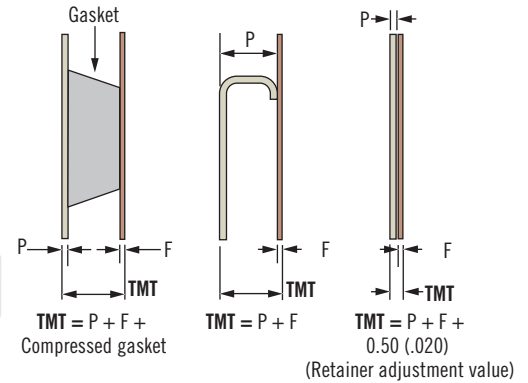
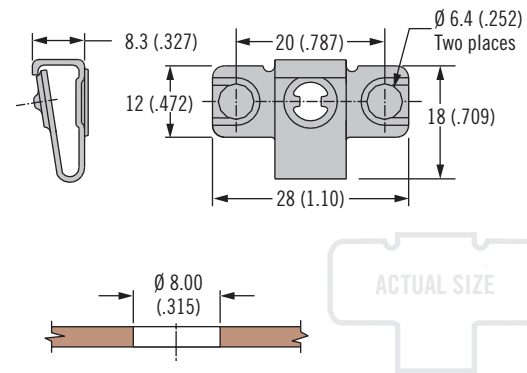
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 393

Weld-On



Part Number	Stud Selection Column
D8-334-500-121	A

Material and Finish

Steel, zinc immersion coating

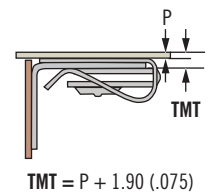
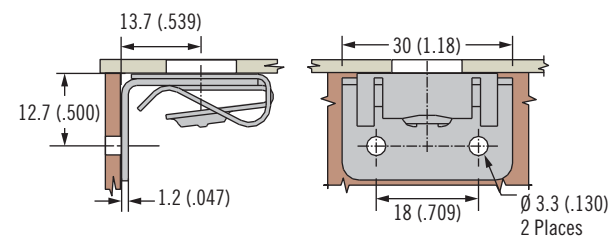
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 393

Side Mount



Part Number	Stud Selection Column
D8-334-310-121	B

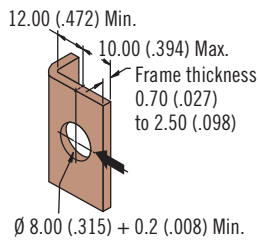
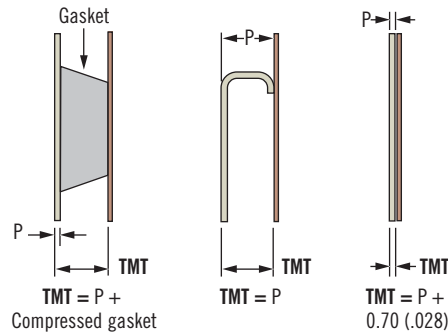
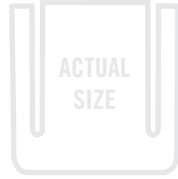
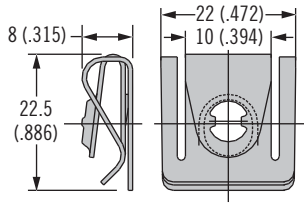
D8 DZUS® PANEX Quarter-Turn Fasteners

Receptacles · Size 4



395

Clip-On



Material and Finish

Steel, zinc immersion coating

82

85

D8

D1

D4

D5

D7

NY

Part Number

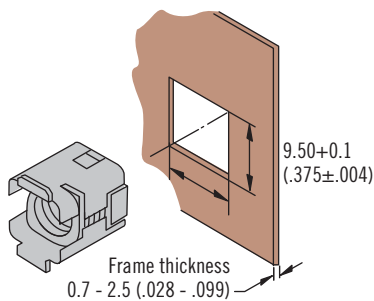
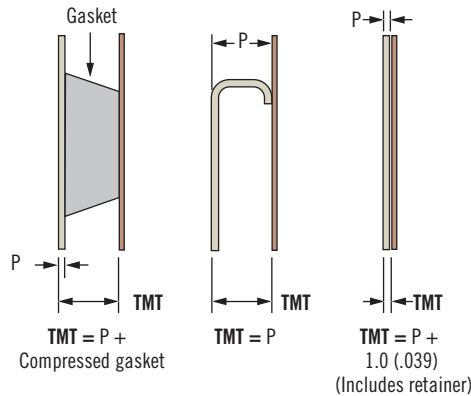
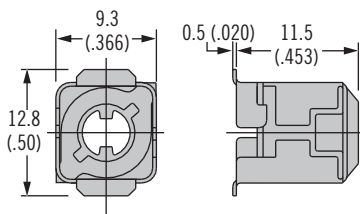
See table

Notes

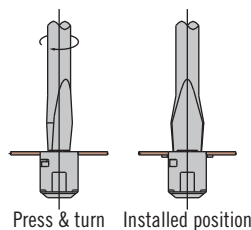
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 393

Part Number	Stud Selection Column
D8-334-300-121	B

Front Mount



Installation



Material and Finish

Steel, zinc plated and stainless steel

Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 393

Part Number	Stud Selection Column
D8-334-200-190	C



D8 DZUS® PANEX Quarter-Turn Fasteners

Receptacles · Size 4

Material and Finish

Brass and steel, zinc plated and stainless steel

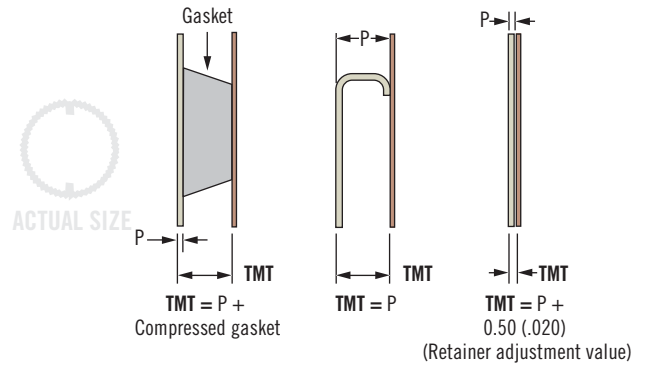
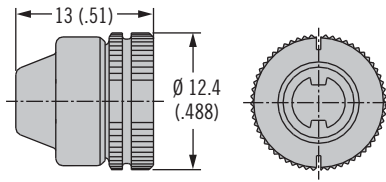
Installation Notes

Press receptacle flush to frame

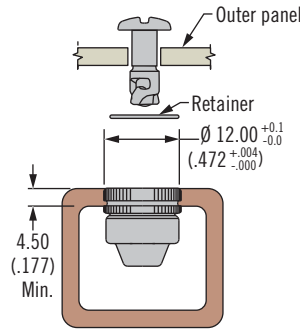
Notes

Receptacle shown installed flush to the frame. To eliminate the gap between the frame and outer panel, install to a depth \geq the thickness of the selected retainer. This depth should be added to the TMT.

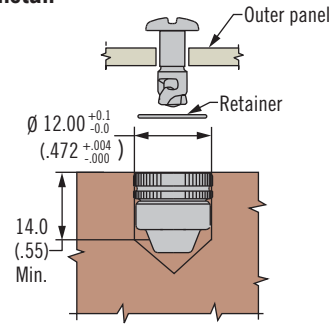
Press-In - Front Mount



Solid Install



Blind Install



Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 393

Part Number	Stud Selection Column
D8-334-100-300	D

Material and Finish

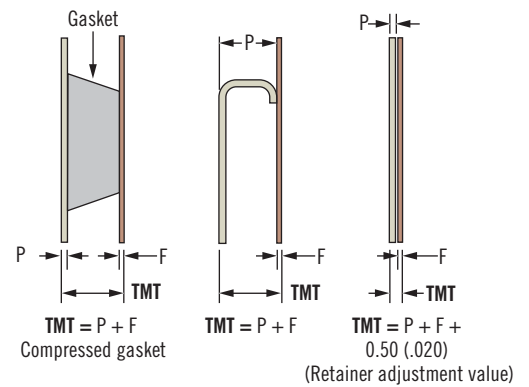
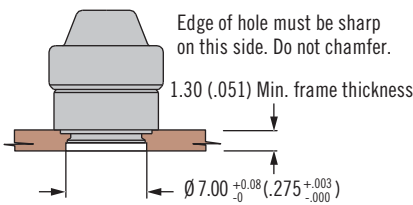
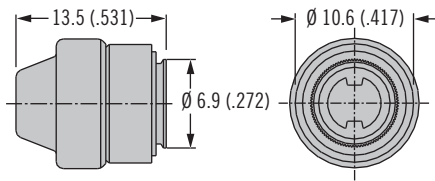
Steel, zinc plated and stainless steel

Notes

For use in low carbon steels, aluminum and stainless steels in the annealed condition that are RB85 or softer

See page 543 for installation guidelines

Press-In - Self-Clinching



Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 393

Part Number	Stud Selection Column
D8-334-110-190	E

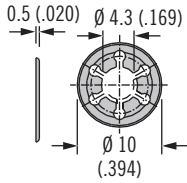
D8 DZUS® PANEX Quarter-Turn Fasteners

Retainers · Accessories · Size 4

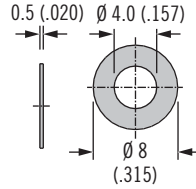


397

Retainer Push-On



Retainer Push-On Plastic



Type	Part Number	Material	Adjustment Value
Push-on plastic	D8-324-100-040	High density polyethylene, black	Included in TMT calculation
Push-on	D8-324-101-200	Stainless steel	

Material and Finish

See table

Part Number

See table

82

85

D8

D1

D4

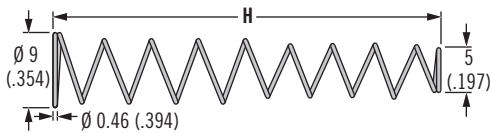
D5

D7

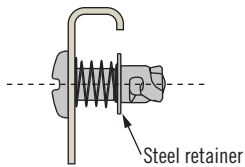
NY



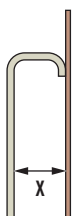
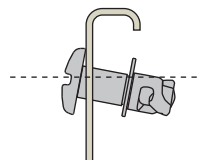
Retainer Spring (Must be secured with steel retainer)



With Retaining Spring



Without Retaining Spring



Part Number	H	X Min.	X Max.
D8-324-200-200	48 (1.89)	14 (.551)	44 (1.73)
D8-324-201-200	20 (.787)	5 (.197)	16 (.630)



D8 DZUS® PANEX Quarter-Turn Fasteners

Studs · Size 6

Material and Finish

Studs: Steel, zinc plated and chromate or chrome plated or stainless steel

Key: Steel with zinc plate and chromate

Bail cover: ABS, black

Accessories

Tamper resistant stud key:

Part number: D8-316-007-969



82

85

D8

D1

D4

D5

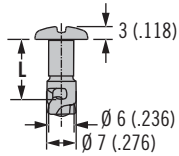
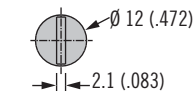
D7

NY

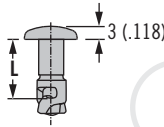
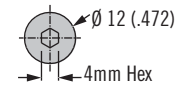


H Head Styles - Tool Actuated

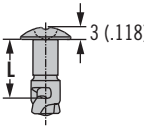
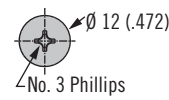
Oval Slot



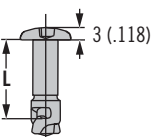
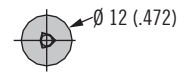
Hex Recess



Phillips Recess

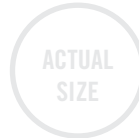
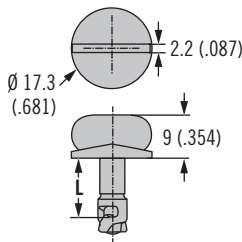


Tamper Resistant

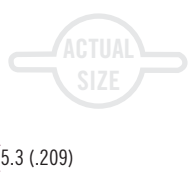
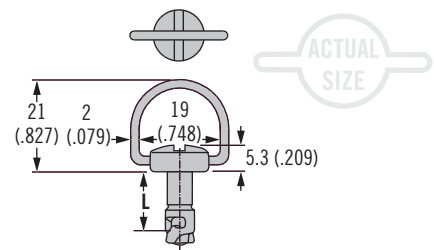


H Head Styles - Hand Actuated

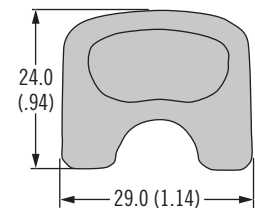
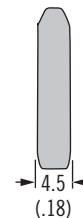
Wing



Bail



Optional Bail Cover



Installation Notes

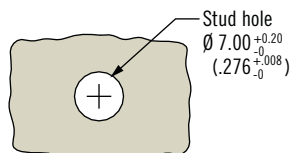
Bail cover: A Retainer must be fitted under the stud head to fit flush with surface

Retainer part number D8-326-100-040 (see page 403)

Bail Cover Part Number

D8-6-B-000

Stud Panel Preparation



D8 DZUS® PANEX Quarter-Turn Fasteners

Stud selection · Size 6



Part Number Selection

H Head style

- 1 Slot recess
- 2 Hex recess
- 3 Wing
- 4 Bail (standard stud only)
- 6 Tamper resistant
- 7 Phillips recess

F Finish

- 170 Chrome plated
- 190 Zinc plated
- 191 Zinc plated, black
- 200 Stainless Steel (Slot recess, Hex recess, Phillips recess)

D8 - 316 - **H** **K** - **F**

K Length

Enter number from selection table below

Stud Length Table											
A		B		C		D		E		K	L ±.15 ±(.006)
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.		
TMT Range For: D8-336-400-121 D8-336-500-121		TMT Range For: D8-336-300-121 D8-336-310-121 D8-336-330-121		TMT Range For: D8-336-200-190		TMT Range For: D8-336-100-300		TMT Range For: D8-336-110-190			
~	~	1.5 (.06)	2.4 (.09)	~	~	~	~	~	~	09	9 (.354)
2.5 (.10)	3.4 (.13)	2.5 (.10)	3.4 (.13)	~	~	~	~	~	~	10	10 (.394)
3.5 (.14)	4.4 (.17)	3.5 (.14)	4.4 (.17)	~	~	~	~	~	~	11	11 (.433)
4.5 (.18)	5.4 (.21)	4.5 (.18)	5.4 (.21)	~	~	0.7 (.03)	1.6 (.06)	1.7 (.07)	2.6 (.10)	12	12 (.472)
5.5 (.22)	6.4 (.25)	5.5 (.22)	6.4 (.25)	~	~	1.7 (.07)	2.6 (.10)	2.7 (.11)	3.6 (.14)	13	13 (.512)
6.5 (.26)	7.4 (.29)	6.5 (.26)	7.4 (.29)	~	~	2.7 (.11)	3.6 (.14)	3.7 (.15)	4.6 (.18)	14	14 (.551)
7.5 (.30)	8.4 (.33)	7.5 (.30)	8.4 (.33)	~	~	3.7 (.15)	4.6 (.18)	4.7 (.19)	5.6 (.22)	15	15 (.591)
8.5 (.33)	9.4 (.37)	8.5 (.33)	9.4 (.37)	0.8 (.03)	1.7 (.07)	4.7 (.19)	5.6 (.22)	5.7 (.22)	6.6 (.26)	16	16 (.630)
9.5 (.37)	10.4 (.41)	9.5 (.37)	10.4 (.41)	1.8 (.07)	2.7 (.11)	5.7 (.22)	6.6 (.26)	6.7 (.26)	7.6 (.30)	17	17 (.669)
10.5 (.41)	11.4 (.45)	10.5 (.41)	11.4 (.45)	2.8 (.11)	3.7 (.15)	6.7 (.26)	7.6 (.30)	7.7 (.30)	8.6 (.34)	18	18 (.709)
11.5 (.45)	12.4 (.49)	11.5 (.45)	12.4 (.49)	3.8 (.15)	4.7 (.19)	7.7 (.30)	8.6 (.34)	8.7 (.34)	9.6 (.38)	19	19 (.748)
12.5 (.49)	13.4 (.53)	12.5 (.49)	13.4 (.53)	4.8 (.19)	5.7 (.22)	8.7 (.34)	9.6 (.38)	9.7 (.38)	10.6 (.42)	20	20 (.787)
13.5 (.53)	14.4 (.57)	13.5 (.53)	14.4 (.57)	5.8 (.23)	6.7 (.26)	9.7 (.38)	10.6 (.42)	10.7 (.42)	11.6 (.46)	21	21 (.827)
14.5 (.57)	15.4 (.61)	14.5 (.57)	15.4 (.61)	6.8 (.27)	7.7 (.30)	10.7 (.42)	11.6 (.46)	11.7 (.46)	12.6 (.50)	22	22 (.866)
15.5 (.61)	16.4 (.65)	15.5 (.61)	16.4 (.65)	7.8 (.31)	8.7 (.34)	11.7 (.46)	12.6 (.50)	12.7 (.50)	13.6 (.54)	23	23 (.906)
16.5 (.65)	17.4 (.69)	16.5 (.65)	17.4 (.69)	8.8 (.35)	9.7 (.38)	12.7 (.50)	13.6 (.54)	13.7 (.54)	14.6 (.57)	24	24 (.945)
17.5 (.69)	18.4 (.72)	17.5 (.69)	18.4 (.72)	9.8 (.39)	10.7 (.42)	13.7 (.54)	14.6 (.57)	14.7 (.58)	15.6 (.61)	25	25 (.984)
18.5 (.73)	19.4 (.76)	18.5 (.73)	19.4 (.76)	10.8 (.43)	11.7 (.46)	14.7 (.58)	15.6 (.61)	15.7 (.62)	16.6 (.65)	26	26 (1.02)
19.5 (.77)	20.4 (.80)	19.5 (.77)	20.4 (.80)	11.8 (.46)	12.7 (.50)	15.7 (.62)	16.6 (.65)	16.7 (.66)	17.6 (.69)	27	27 (1.06)
20.5 (.81)	21.4 (.84)	20.5 (.81)	21.4 (.84)	12.8 (.50)	13.7 (.54)	16.7 (.66)	17.6 (.69)	17.7 (.70)	18.6 (.73)	28	28 (1.10)
21.5 (.85)	22.4 (.88)	21.5 (.85)	22.4 (.88)	13.8 (.54)	14.7 (.58)	17.7 (.70)	18.6 (.73)	18.7 (.74)	19.6 (.77)	29	29 (1.14)
22.5 (.89)	23.4 (.92)	22.5 (.89)	23.4 (.92)	14.8 (.58)	15.7 (.62)	18.7 (.74)	19.6 (.77)	19.7 (.78)	20.6 (.81)	30	30 (1.18)

To select correct fastener:

1. Select receptacle

Choose a receptacle from pages 400-402

2. Select retainer and accessories

from page 403 and note any adjustment values

3. Specify stud length

Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the stud length selection table (left) using the column (A, B, C, D or E) given for the receptacle selected.

4. Complete the stud part number

by specifying the head style **H**, stud length **K**, and material **M**

Example:

For rivet-on

D8-336-400-121 use column A
For TMT value calculated as 5.2 (.206), K = 12

For slotted head style in steel material, completed part number: D8-316-112-190

A complete example can be found on page 377.





D8 DZUS® PANEX Quarter-Turn Fasteners

Receptacles · Size 6

Material and Finish

Steel, zinc immersion coating or stainless steel

Installation Notes

Install with $\varnothing 3$ (.125) rivets

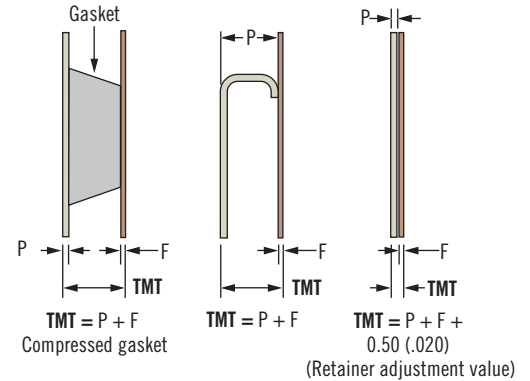
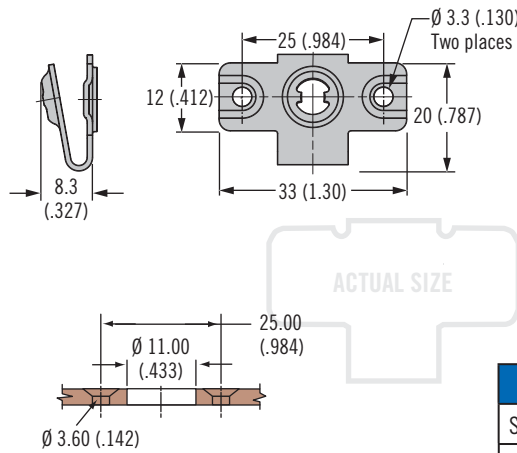
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 399

Rivet-On



Part Number		Stud Selection Column
Steel	D8-336-400-121	A
Stainless steel	D8-336-400-200	

Material and Finish

Steel, zinc immersion coating

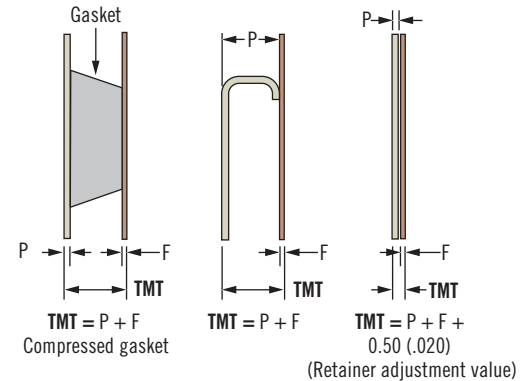
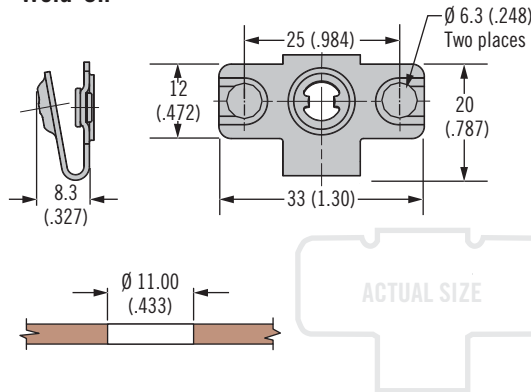
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 399

Weld-On



Part Number	Stud Selection Column
D8-336-500-121	A

Material and Finish

Steel, zinc immersion coating

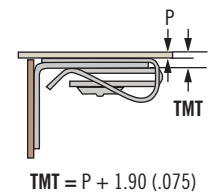
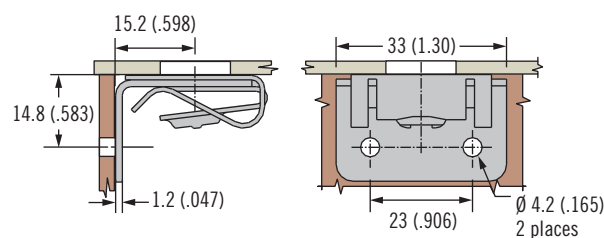
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 399

Side Mount



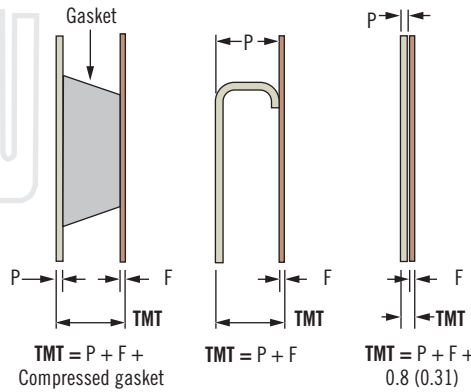
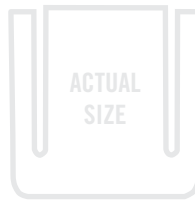
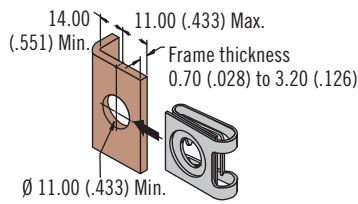
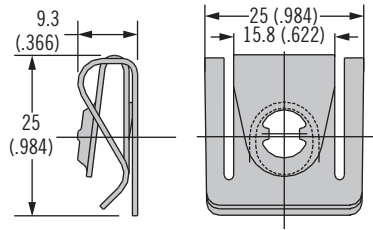
Part Number	Stud Selection Column
D8-336-310-121	B

D8 DZUS® PANEX Quarter-Turn Fasteners

Receptacles · Size 6



Clip-On



Part Number	Stud Selection Column
D8-336-300-121	B

Material and Finish

Steel, zinc immersion coating

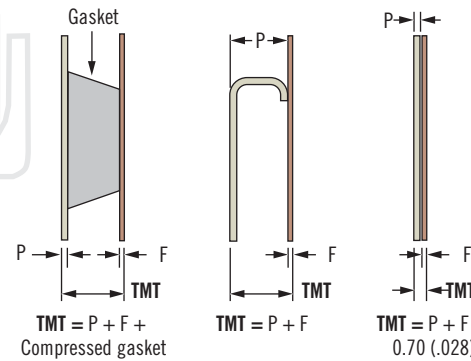
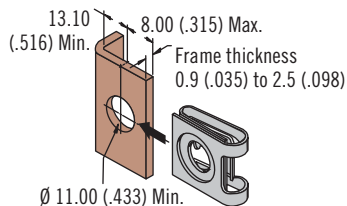
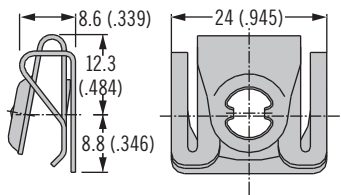
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 399

Clip-On - Mini



Part Number	Stud Selection Column
Steel D8-336-330-121	B
Stainless steel D8-336-330-200	

Material and Finish

Steel, zinc immersion coating or stainless steel

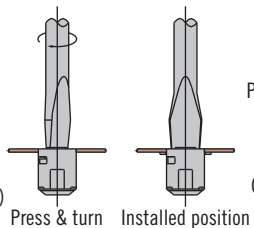
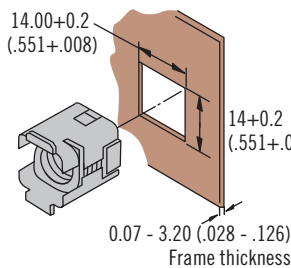
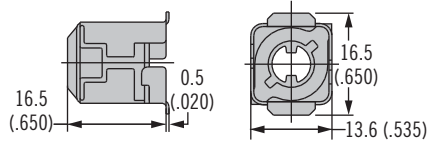
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 399

Front Mount



Part Number	Stud Selection Column
D8-336-200-190	C

Material and Finish

Steel, zinc plated and stainless steel

Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 399



D8 DZUS® PANEX Quarter-Turn Fasteners

Receptacles · Size 6

Material and Finish

Brass and steel, zinc plated and stainless steel

Installation Notes

Press receptacle flush to frame

Notes

Receptacle shown installed flush to the frame. To eliminate the gap between the frame and outer panel, install to a depth \geq the thickness of the selected retainer. This depth should be added to the TMT.

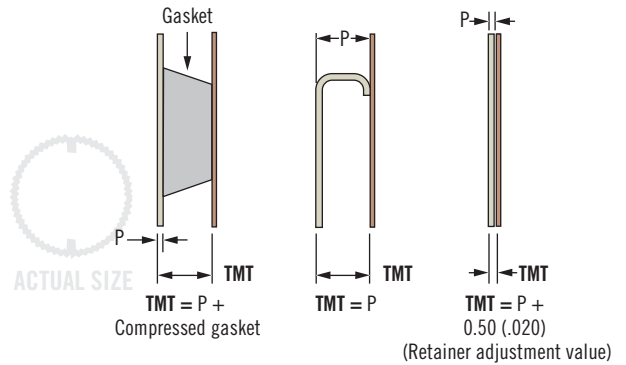
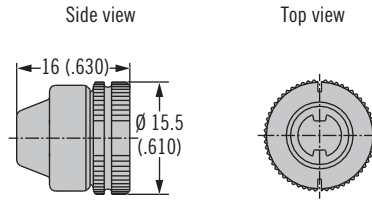
Part Number

See table

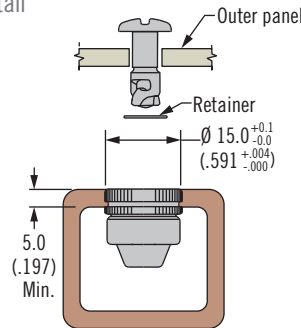
Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 399

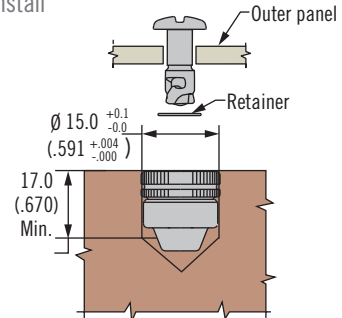
Press-In - Front Mount



Solid Install



Blind Install



Part Number	Stud Selection Column
D8-336-100-300	D

Material and Finish

Steel, zinc plated and stainless steel

Installation Notes

See page 543 for installation guidelines

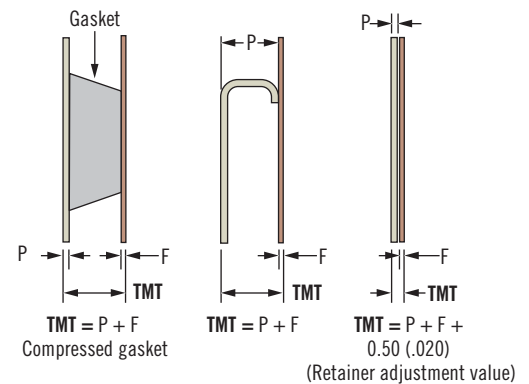
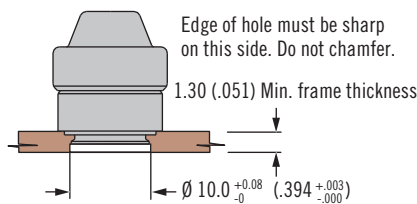
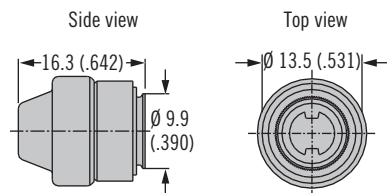
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 399

Press-In - Self-Clinching



Part Number	Stud Selection Column
D8-336-110-190	E

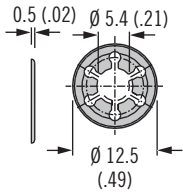
D8 DZUS® PANEX Quarter-Turn Fasteners

Retainers and Accessories · Size 6

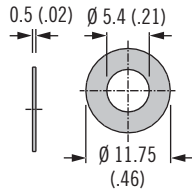


403

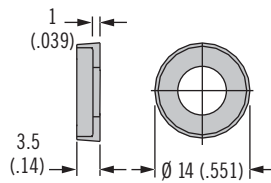
Retainer Push-On, Stainless Steel



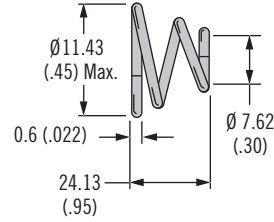
Retainer Push-On, Plastic



Cupped Washer

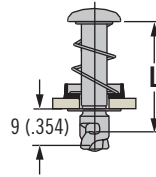


Ejector Spring



Ejector Spring and Cup Assembly

(Must be secured with stainless steel retainer)



Material and Finish

See table

Accessories

When using the ejecting version add 2 (.079) to your TMT

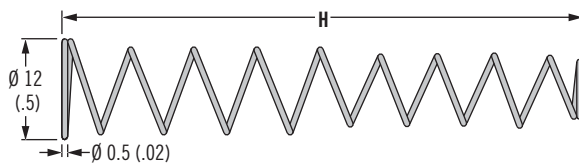
Notes

Cupped washer only available for tool recess head styles (slot, Phillips, hex, tamper resistant)

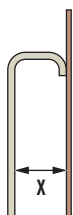
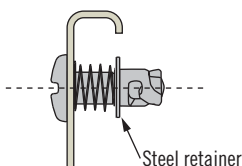
Assembly consists of spring, cup and stud ordered separately, shipped bulk

Type	Part Number	Material	Adjustment Value
Push-on plastic	D8-326-100-040	High density polyethylene, black	Included in TMT calculation
Push-on	D8-326-101-200	Stainless steel	
Cupped washer	D8-376-001-049	Thermoplastic, black	Add 1.00 (.039)
Ejector spring	D4-EHF5-3-950QA	Stainless steel	Add 1.00 (.039)

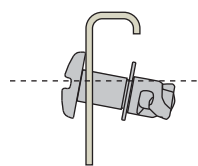
Retainer Spring (Must be secured with steel retainer)



With Retaining Spring



Without Retaining Spring



Part Number	H	X Min.	X Max.
D8-326-200-200	48 (1.89)	19 (.75)	44 (1.73)
D8-326-201-200	25 (.98)	5 (.197)	21 (.83)

82

85

D8

D1

D4

D5

D7

NY



Part Number

See table



D8 DZUS® PANEX Quarter-Turn Fasteners

Studs · Size 9

Material and Finish

Studs: Steel, zinc plated and chromate or chrome plated

82

85

D8

D1

D4

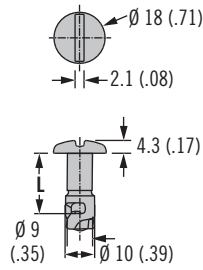
D5

D7

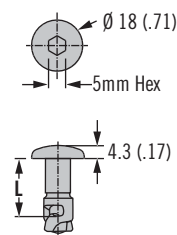
NY

H Head Styles - Tool Actuated

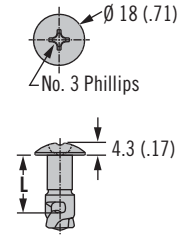
Oval Slot



Hex Recess

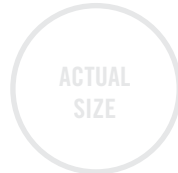
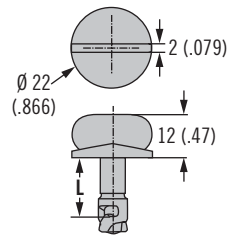


Phillips Recess

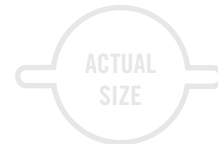
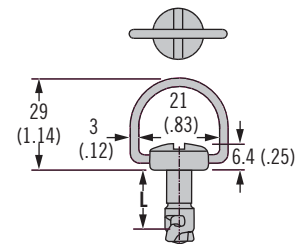


H Head Styles - Hand Actuated

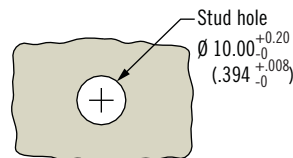
Wing



Bail

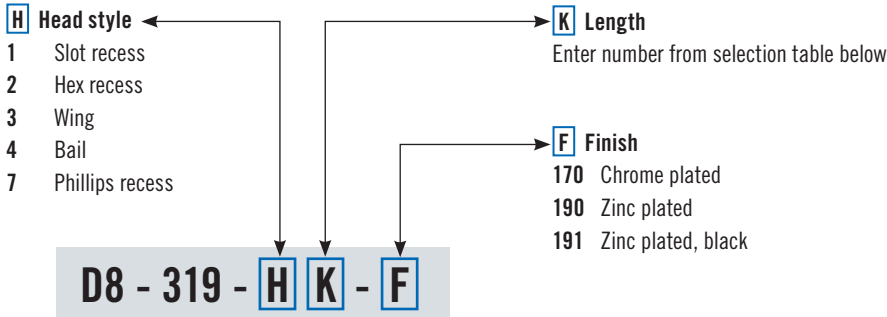


Stud Panel Preparation



D8 DZUS® PANEX Quarter-Turn Fasteners

Stud selection · Size 9



Part Number Selection

82

85

D8

D1

D4

D5

D7

NY



To select correct fastener:

1. Select receptacle

Choose a receptacle from pages 406-408

2. Select retainer and accessories

from page 409 and note any adjustment values

3. Specify stud length

Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the stud length selection table (left) using the column (A, or B) given for the receptacle selected.

4. Complete the stud part number

by specifying the head style **H**, stud length **K**, and material **M**

Example:

For rivet-on

D8-339-400-121 use column A
For TMT value calculated as 5.2 (.206), K = 13

For slotted head style in steel, zinc plated material, completed part number: D8-319-113-190

A complete example can be found on page 377.

Notes

Stainless steel material may require a higher minimum order quantity. Contact Southco for details.

Stud Length Table					
A		B		K	L ±.15 (.006)
TMT Range For: D8-339-400-121 D8-339-500-121 D8-339-300-121 D8-339-301-121 D8-339-305-121		TMT Range For: D8-339-200-190			
Min.	Max.	Min.	Max.		
3.0 (.12)	3.9 (.15)	~	~	11	11 (.433)
4.0 (.16)	4.9 (.19)	~	~	12	12 (.472)
5.0 (.20)	5.9 (.23)	~	~	13	13 (.512)
6.0 (.24)	6.9 (.27)	~	~	14	14 (.551)
7.0 (.28)	7.9 (.31)	~	~	15	15 (.591)
8.0 (.31)	8.9 (.35)	~	~	16	16 (.630)
9.0 (.35)	9.9 (.39)	~	~	17	17 (.669)
10.0 (.39)	10.9 (.43)	~	~	18	18 (.709)
11.0 (.43)	11.9 (.47)	~	~	19	19 (.748)
12.0 (.47)	12.9 (.51)	~	~	20	20 (.787)
13.0 (.51)	13.9 (.55)	~	~	21	21 (.827)
14.0 (.55)	14.9 (.59)	2.5 (.10)	3.4 (.13)	22	22 (.866)
15.0 (.59)	15.9 (.63)	3.5 (.14)	4.4 (.17)	23	23 (.906)
16.0 (.63)	16.9 (.67)	4.5 (.18)	5.4 (.21)	24	24 (.945)
17.0 (.67)	17.9 (.70)	5.5 (.22)	6.4 (.25)	25	25 (.984)
18.0 (.71)	18.9 (.74)	6.5 (.26)	7.4 (.29)	26	26 (1.02)
19.0 (.75)	19.9 (.78)	7.5 (.30)	8.4 (.33)	27	27 (1.06)
20.0 (.79)	20.9 (.82)	8.5 (.33)	9.4 (.37)	28	28 (1.10)
21.0 (.83)	21.9 (.86)	9.5 (.37)	10.4 (.41)	29	29 (1.14)
22.0 (.87)	22.9 (.90)	10.5 (.41)	11.4 (.45)	30	30 (1.18)



D8 DZUS® PANEX Quarter-Turn Fasteners

Receptacles · Size 9

Material and Finish

Steel, zinc immersion coating

Installation Notes

Install with $\varnothing 3$ (.125) rivets

82

85

D8

D1

D4

D5

D7

NY

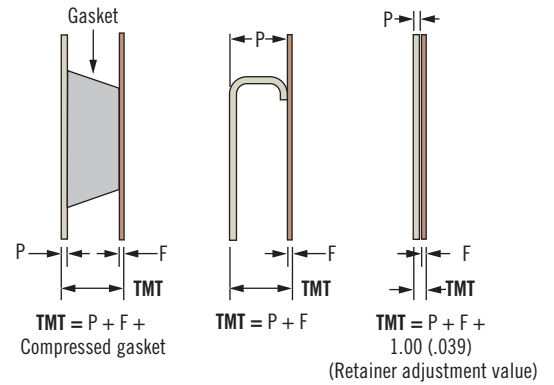
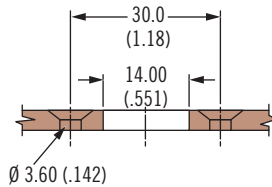
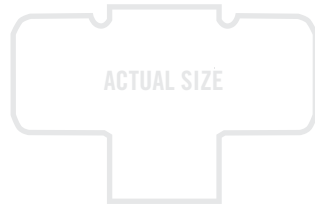
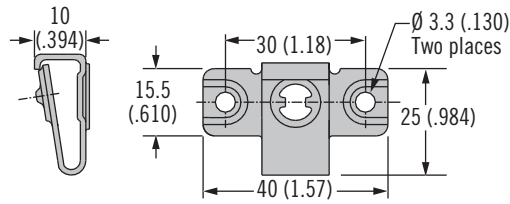
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 405

Rivet-On

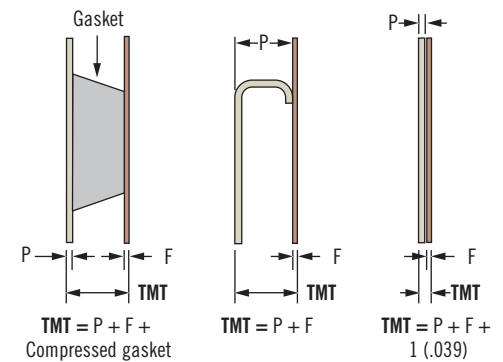
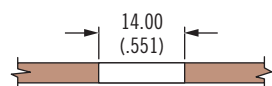
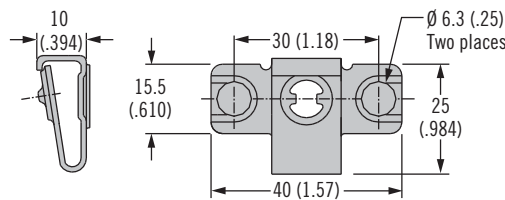


Part Number	Stud Selection Column
D8-339-400-121	A

Material and Finish

Steel, zinc immersion coating

Weld-On



Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 405

Part Number	Stud Selection Column
D8-339-500-121	A

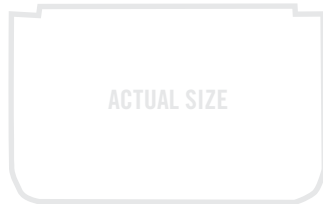
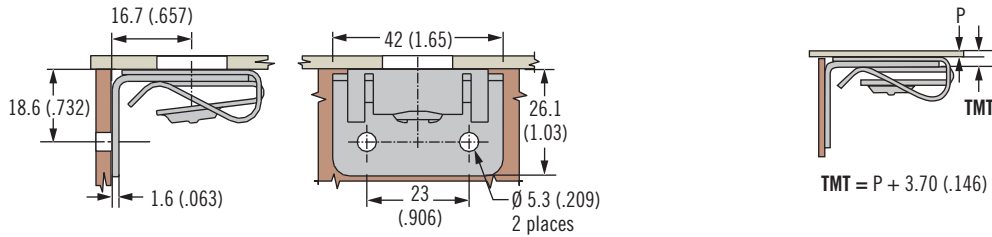
D8 DZUS® PANEX Quarter-Turn Fasteners

Receptacles · Size 9



407

Side Mount



Material and Finish

Steel, zinc immersion coating

82

85

D8

D1

D4

D5

D7

NY

Part Number

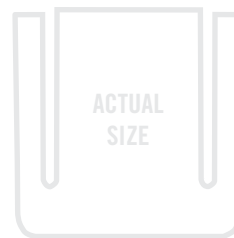
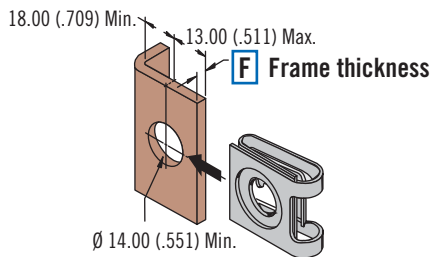
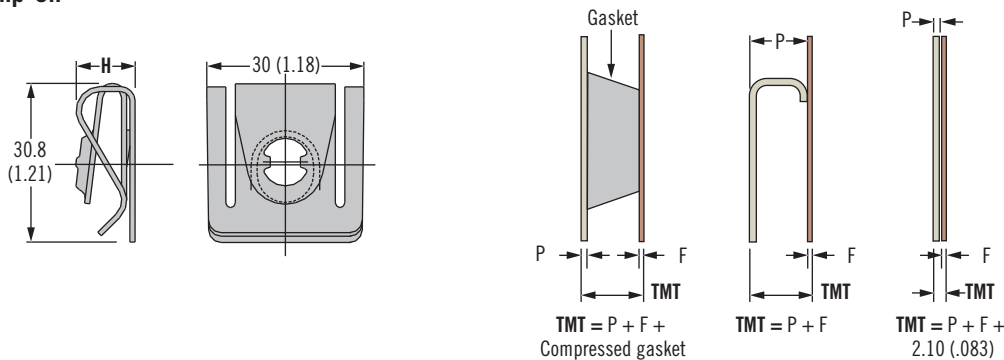
See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 405

Part Number	Stud Selection Column
D8-339-305-121	A

Clip-On



Material and Finish

Steel, zinc immersion coating

Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 405

F Frame Thickness Range	Part Number	H	Stud Selection Column
0.7 - 3.2 (.028 - .126)	D8-339-300-121	10.7 (.421)	A
3.2 - 5.5 (.126 - .217)	D8-339-301-121	11.3 (.445)	



D8 DZUS® PANEX Quarter-Turn Fasteners

Receptacles · Size 9

Material and Finish

Steel, zinc plated

82

85

D8

D1

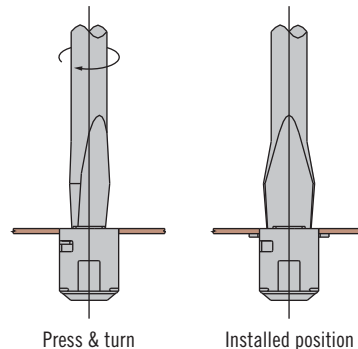
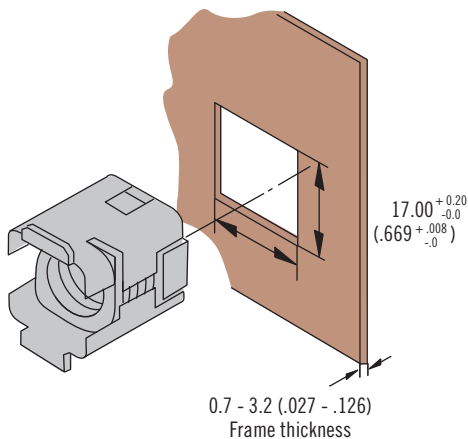
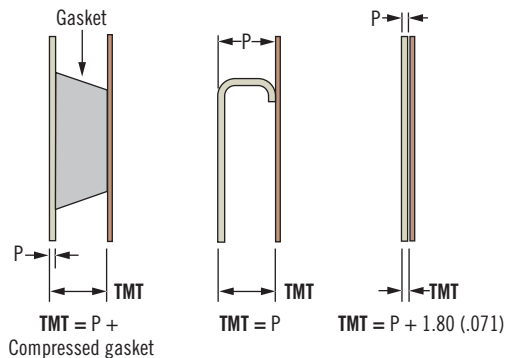
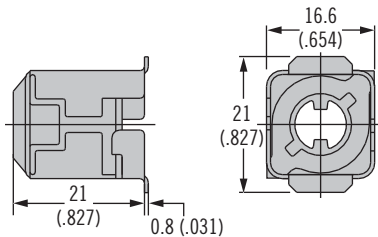
D4

D5

D7

NY

Front Mount



Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 405

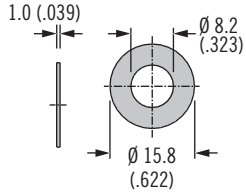
Type	Part Number	Stud Selection Column
Front mount	D8-339-200-190	B

D8 DZUS® PANEX Quarter-Turn Fasteners

Retainers and accessories · Size 9

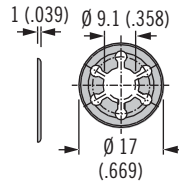


Retainer Push-On, Plastic



ACTUAL SIZE

Retainer Push-On, Steel



Type	Part Number	Material	Adjustment Value
Push-on Plastic	D8-329-101-040	Nylon 6/6 Black	Included in TMT calculation
Push-on	D8-329-101-200	Stainless steel	

Material and Finish

See table

82

85

D8

D1

D4

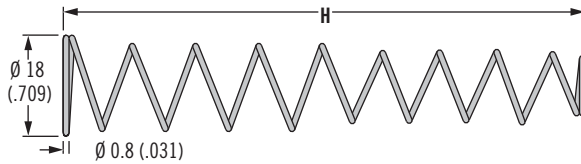
D5

D7

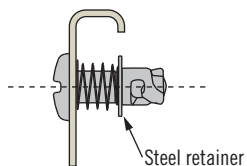
NY



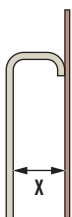
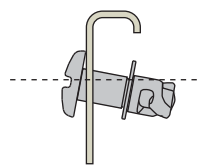
Retainer Spring (Must be secured with steel retainer)



With Retaining Spring



Without Retaining Spring



Part Number	H	X Min.	X Max.
D8-329-200-200	48 (1.89)	7 (.276)	43 (1.69)



D1 DZUS® Dart Quarter-Turn Fasteners

Studs, Glass-filled nylon

Material and Finish

Glass-filled nylon, black

Adjustment formula

Add 2.3 (.090) to panel thickness and recalculate your TMT when using self-ejecting stud assembly

To select correct fastener:

1. Select receptacle

Choose a receptacle from pages 411-413

2. Select retainer and accessories

from page 413 and note any adjustment values

3. Specify stud length

Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the stud length selection table (right) using the column (A, B, C, or D) given for the receptacle selected.

4. Complete the stud part number

by specifying the head style **H**, stud length **K**, and material **M**

Example: For rivet-on

D1-004-001-010 use column **A**
For TMT value calculated as 5.2 (.206), K = 55

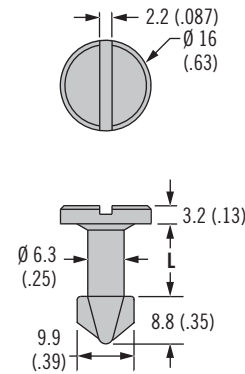
For slotted head style, completed part number: D1-004-055-030

A complete example can be found on page 377.

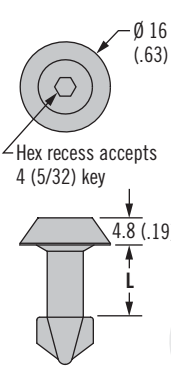
Part Number Selection

H Head Styles - Tool Actuated

Slot Recess

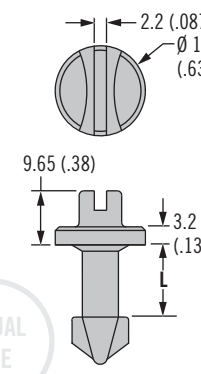


Hex Recess

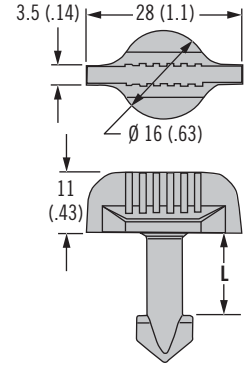


H Head Styles - Hand Actuated

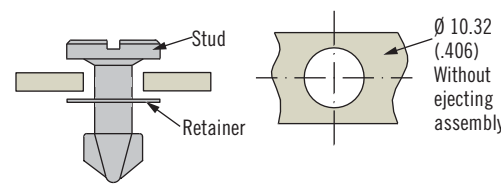
Slotted Recess Knob



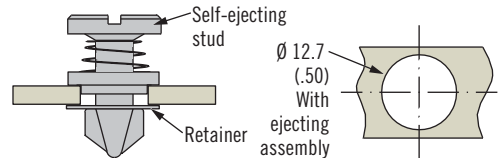
Wing



Standard Stud Assembly



Self-Ejecting Stud Assembly



Stud Length Table									
A		B		C		D		K	L
TMT Range For: D1-004-001-010		TMT Range For: D1-004-00(F)-010		TMT Range For: D1-004-92(F)-010		TMT Range For: D1-004-91(F)-010 D1-004-01(F)-010			
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.		
2.54 (.100)	3.80 (.149)	~	~	4.32 (.170)	5.58 (.219)	4.13 (.163)	5.39 (.212)	045	11.4 (.45)
3.81 (.150)	5.07 (.199)	3.81 (.150)	5.07 (.199)	5.59 (.220)	6.85 (.269)	5.40 (.213)	6.66 (.262)	050	12.7 (.50)
5.08 (.200)	6.34 (.249)	5.08 (.200)	6.34 (.249)	6.86 (.270)	8.12 (.319)	6.67 (.263)	7.93 (.312)	055	14.0 (.55)
6.35 (.250)	7.61 (.299)	6.35 (.250)	7.61 (.299)	8.13 (.320)	9.39 (.369)	7.94 (.313)	9.20 (.362)	060	15.2 (.60)
7.62 (.300)	8.88 (.349)	7.62 (.300)	8.88 (.349)	9.40 (.370)	10.66 (.419)	9.21 (.363)	10.47 (.412)	065	16.5 (.65)
8.89 (.350)	10.15 (.399)	8.89 (.350)	10.15 (.399)	10.67 (.420)	11.93 (.469)	10.48 (.413)	11.74 (.462)	070	17.8 (.70)
10.16 (.400)	11.42 (.449)	10.16 (.400)	11.42 (.449)	11.94 (.470)	13.20 (.519)	11.75 (.463)	13.01 (.512)	075	19.1 (.75)
11.43 (.450)	12.69 (.499)	11.43 (.450)	12.69 (.499)	13.21 (.520)	14.47 (.569)	13.02 (.513)	14.28 (.562)	080	20.3 (.80)
12.70 (.500)	13.96 (.549)	12.70 (.500)	13.96 (.549)	14.48 (.570)	15.74 (.619)	14.29 (.563)	15.55 (.612)	085	21.6 (.85)
13.97 (.550)	15.23 (.599)	13.97 (.550)	15.23 (.599)	15.75 (.620)	17.01 (.669)	15.56 (.613)	16.82 (.662)	090	22.9 (.90)
15.24 (.600)	16.50 (.649)	15.24 (.600)	16.50 (.649)	17.02 (.670)	18.28 (.719)	16.83 (.663)	18.09 (.712)	095	24.1 (.95)
16.51 (.650)	17.77 (.699)	16.51 (.650)	17.77 (.699)	18.29 (.720)	19.55 (.769)	18.10 (.713)	19.36 (.762)	100	25.4 (1.0)

H Head style ← **SE** Self-ejecting
004 Slot recess **SE** Self-ejecting assembly
125 Wing Omit for standard stud only
166 Hex recess
444 Slot recess knob

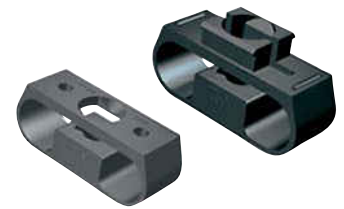
D1 - H - K - 030 SE

← **K** Length Enter number from selection table above

Dimensions in millimeters (inch) unless otherwise stated

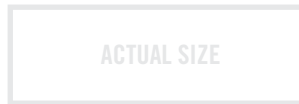
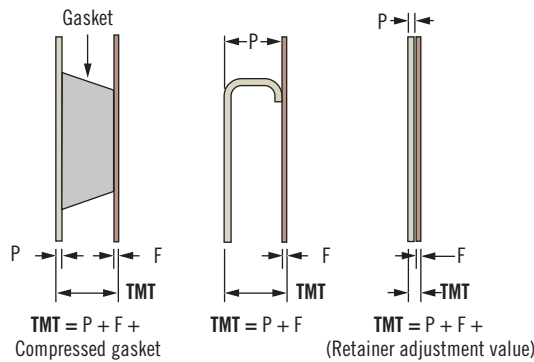
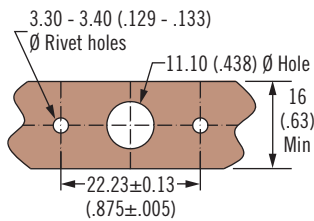
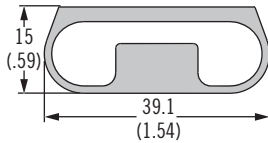
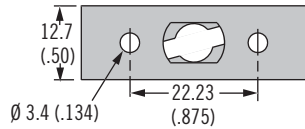
D1 DZUS® Dart Quarter-Turn Fasteners

Receptacles, Acetal



411

Rivet-On



Part Number	Stud Selection Column
D1-004-001-010	A

Material and Finish

Acetal, black

Notes

After selecting receptacle use stud selection letter **A** and follow instruction on page 410

82

85

D8

D1

D4

D5

D7

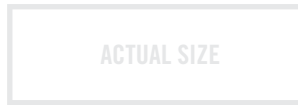
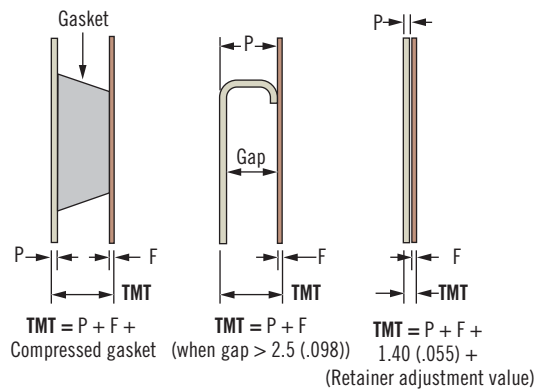
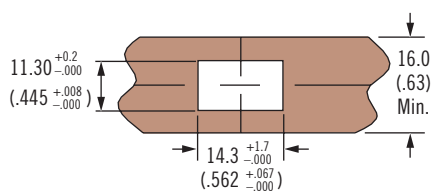
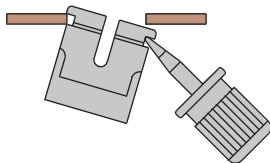
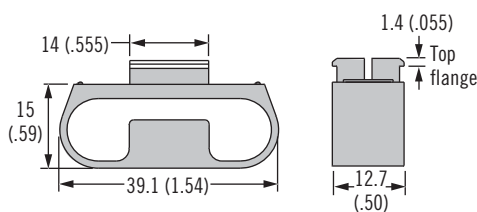
NY



Part Number

See table

Snap-In Back Load



F Frame Thickness		Part Number	Stud Selection Column
Min.	Max.		
.90 (.035)	1.27 (.050)	D1-004-002-010	B
1.63 (.064)	2.00 (.080)	D1-004-003-010	
2.30 (.090)	2.64 (.104)	D1-004-004-010	
3.00 (.119)	3.40 (.135)	D1-004-005-010	
3.65 (.144)	4.00 (.158)	D1-004-006-010	

Material and Finish

Acetal black

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 410

Part Number

See table



D1 DZUS® Dart Quarter-Turn Fasteners

Receptacles, Acetal

Material and Finish

Acetal, black

82

85

D8

D1

D4

D5

D7

NY

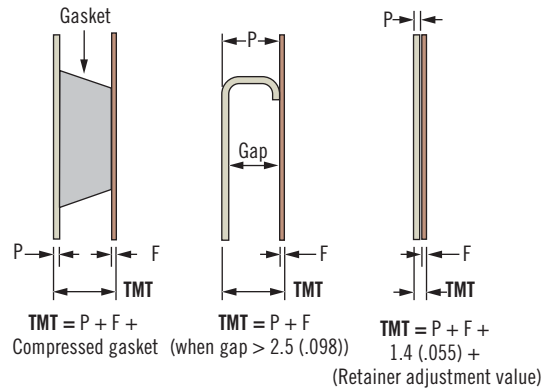
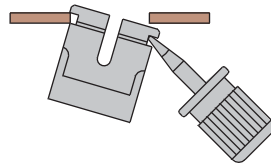
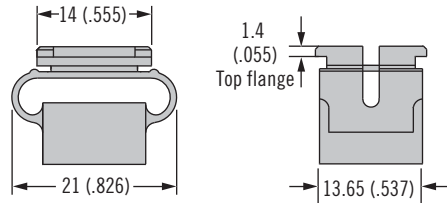
Part Number

See table

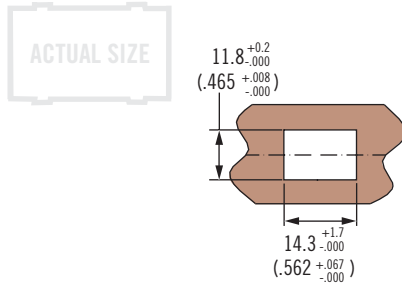
Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 410

Mini Snap-In - Back Load



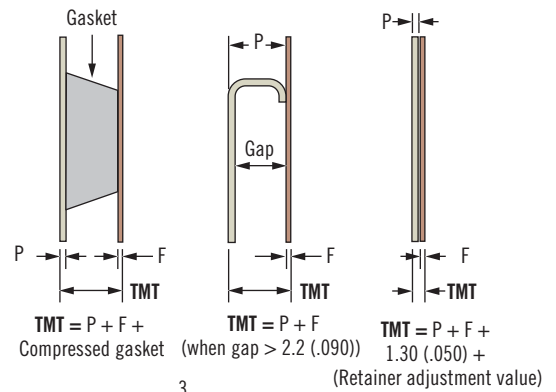
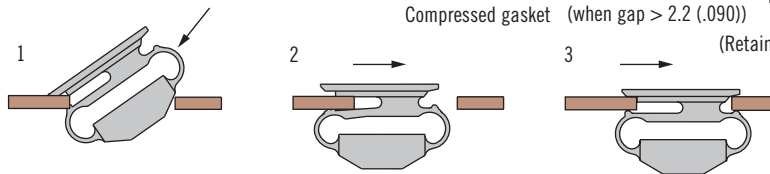
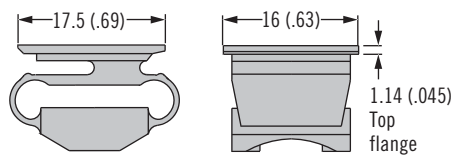
F Frame Thickness		Part Number	Stud Selection Column
Min.	Max.		
0.81 (.032)	1.27 (.050)	D1-004-012-010	D
1.29 (.051)	2.54 (.100)	D1-004-013-010	



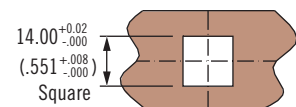
Material and Finish

Acetal, black

Mini Snap-In - Front Load



F Frame Thickness		Part Number	Stud Selection Column
Min.	Max.		
0.90 (.035)	1.25 (.049)	D1-004-911-010	D
1.30 (.051)	1.75 (.069)	D1-004-912-010	
1.80 (.071)	2.25 (.089)	D1-004-913-010	
2.30 (.091)	2.75 (.109)	D1-004-914-010	
2.80 (.111)	3.25 (.129)	D1-004-915-010	



Part Number

See table

Notes

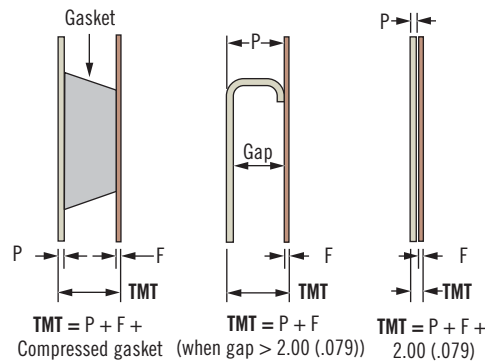
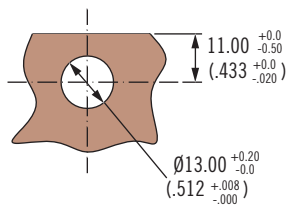
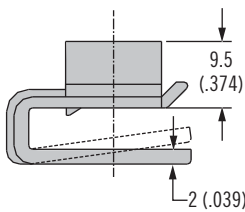
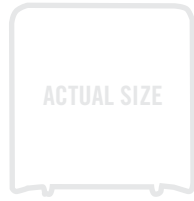
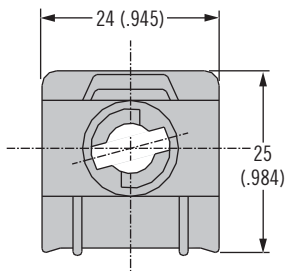
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 410

D1 DZUS® Dart Quarter-Turn Fasteners

Receptacles · Retainers · Accessories



Clip-On



F Frame Thickness		Part Number	Stud Selection Column
Min.	Max.		
0.70 (.027)	2.30 (.090)	D1-004-921-010	C
2.30 (.090)	3.90 (.153)	D1-004-922-010	
3.9 (.153)	5.5 (.217)	D1-004-923-010	

Material and Finish

Acetal, black

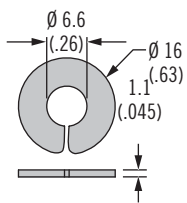
Part Number

See table

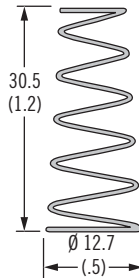
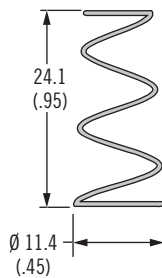
Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 410

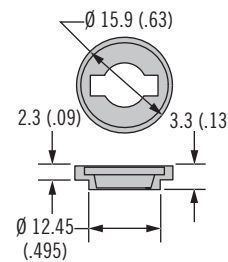
Retainer Split



Self-Ejecting Springs



Self-Ejecting Cup



Material and Finish

See table

Part Number

See table

Notes

Adjustment value:

When using accessories the components increase TMT
Add the adjustment value to your outer panel thickness (P) when calculating TMT (see page 377 for example)

Type	K Range	Part Number	Material	Adjustment Value
Retainer split	All	D1-004-000-010	Acetal, black	Add 1.1 (.045)
Self-ejecting springs	045 to 070	D1-X1135-2S	Stainless steel	Add 2.3 (.090)
Self-ejecting springs	075 to 100	D1-X1137-2S	Stainless steel	
Self-ejecting cup	All	D1-X1129	Acetal, black	



D4 DZUS® Standard Line Quarter-Turn Fasteners

Stud selection · Size 3

Material and Finish

Studs:

Steel, zinc plated or stainless steel

82

85

D8

D1

D4

D5

D7

NY

To select correct fastener:

1. Select receptacle

Choose a receptacle from page 415

2. Select retainer and accessories

from page 416 and note any adjustment values

3. Specify stud length

Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the stud length selection table (right) using the column (A or B) given for the receptacle selected.

4. Complete the stud part number

by specifying the head style **H**, stud length **K**, and material **M**

Example: For rivet-on D4-S3-175 use column A
For TMT value calculated as 5.2 (.206), K = 35

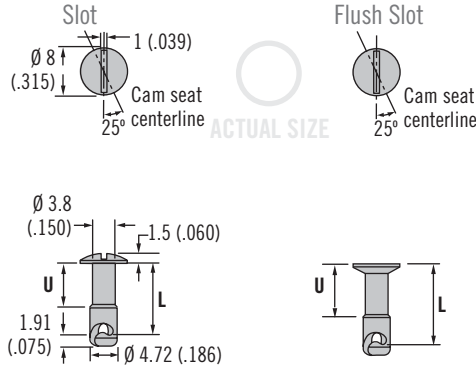
For slotted head style in steel material, completed part number: D4-AJ3-35

A complete example can be found on page 377.

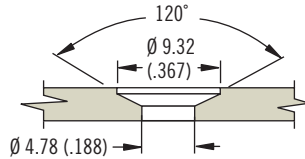
Notes

Stainless steel material may require a higher minimum order quantity. Contact Southco for details.

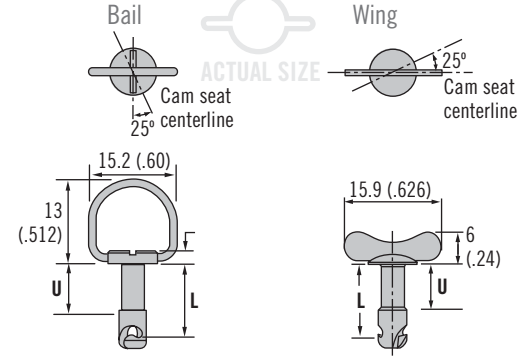
H Head Styles - Tool Actuated



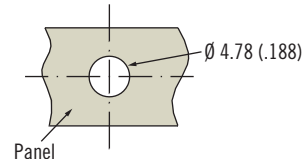
Flush



H Head Styles - Hand Actuated



Standard



- H** Head style
- AJ Slot
- AJW Wing head
- BJR Bail
- FJ Flush slot

K Length
Enter number from selection table below

M Material
SS Stainless steel
Omit for steel, zinc plated

D4 - H 3 - K M

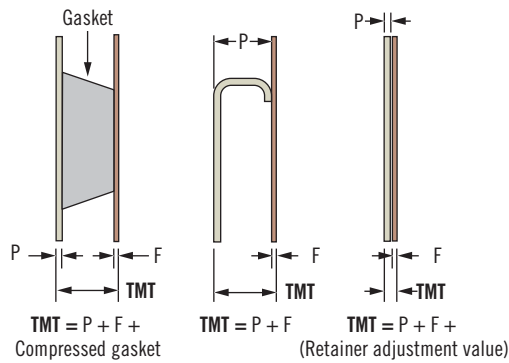
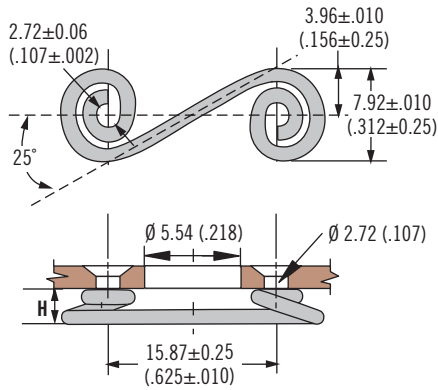
Stud Length Table										
A				B				K	U	L
TMT Range For: Rivet-On Receptacle D4-S3-175		TMT Range For: Rivet-On Receptacle D4-S3-150		TMT Range For: Weld-On Receptacle D4-X735-205		TMT Range For: Weld-On Receptacle D4-X735-180				
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.			
2.41 (.095)	3.02 (.119)	3.05 (.12)	3.66 (.144)	1.65 (.065)	2.26 (.089)	2.29 (.09)	2.9 (.114)	25	1.91 (.075)	6.35 (.250)
3.68 (.145)	4.29 (.169)	4.32 (.17)	4.93 (.194)	2.92 (.115)	3.53 (.139)	3.56 (.14)	4.17 (.164)	30	2.54 (.100)	7.62 (.300)
4.95 (.195)	5.56 (.219)	5.59 (.22)	6.2 (.244)	4.19 (.165)	4.8 (.189)	4.83 (.19)	5.44 (.214)	35	3.81 (.150)	8.89 (.350)
6.22 (.245)	6.83 (.269)	6.86 (.27)	7.47 (.294)	5.46 (.215)	6.07 (.239)	6.1 (.24)	6.71 (.264)	40	5.08 (.200)	10.16 (.400)
7.49 (.295)	8.1 (.319)	8.13 (.32)	8.74 (.344)	6.73 (.265)	7.34 (.289)	7.37 (.29)	7.98 (.314)	45	5.77 (.225)	11.43 (.450)
8.76 (.345)	9.37 (.369)	9.4 (.37)	10.01 (.394)	8.00 (.315)	8.61 (.339)	8.64 (.34)	9.25 (.364)	50	6.35 (.250)	12.70 (.500)
10.03 (.395)	10.64 (.419)	10.67 (.42)	11.28 (.444)	9.27 (.365)	9.88 (.389)	9.91 (.39)	10.52 (.414)	55	6.99 (.275)	13.97 (.550)
11.3 (.445)	11.91 (.469)	11.94 (.47)	12.55 (.494)	10.54 (.415)	11.15 (.439)	11.18 (.44)	11.79 (.464)	60	7.62 (.300)	15.24 (.600)
12.57 (.495)	13.18 (.519)	13.21 (.52)	13.82 (.544)	11.81 (.465)	12.42 (.489)	12.45 (.49)	13.06 (.514)	65	8.89 (.350)	16.51 (.650)
13.84 (.545)	14.45 (.569)	14.48 (.57)	15.09 (.594)	13.08 (.515)	13.69 (.539)	13.72 (.54)	14.33 (.564)	70		17.78 (.700)
15.11 (.595)	15.72 (.619)	15.75 (.62)	16.36 (.644)	14.35 (.565)	14.96 (.589)	14.99 (.59)	15.6 (.614)	75	9.5 (.375)	19.05 (.750)
16.38 (.645)	16.99 (.669)	17.02 (.67)	17.63 (.694)	15.62 (.615)	16.23 (.639)	16.26 (.64)	16.87 (.664)	80	10.16 (.400)	20.32 (.800)

D4 DZUS® Standard Line Quarter-Turn Fasteners

Receptacles · Size 3



Rivet-On



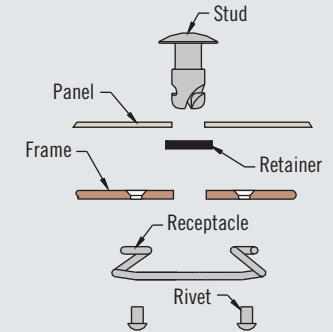
Part Number		H±0.25(.010)	Stud Selection Column
Steel	Stainless Steel		
D4-S3-150	D4-S3-150SS	3.81 (.150)	A
D4-S3-175	D4-S3-175SS	4.45 (.175)	

Material and Finish

Steel, zinc plated or stainless steel

Notes

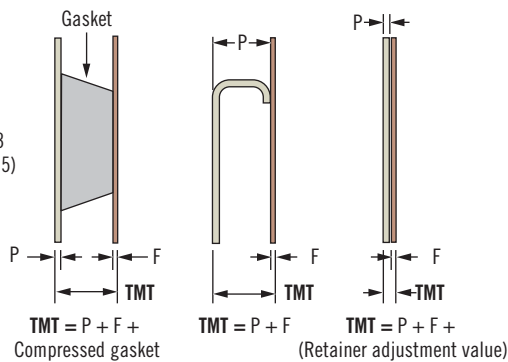
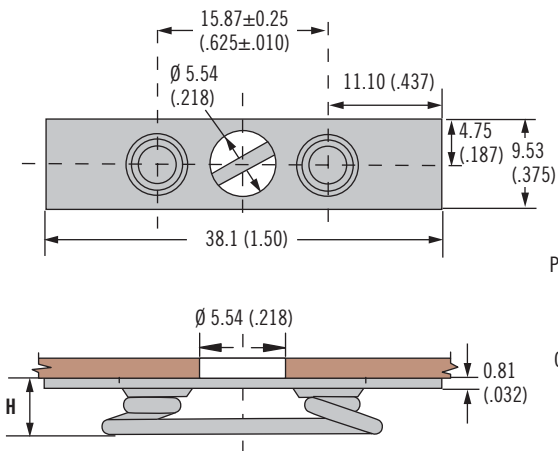
After selecting receptacle use stud selection letter **A** and follow instruction on page 414



Part Number

See table

Weld-On



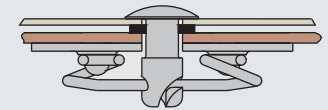
Part Number	H	Stud Selection Column
D4-X735-180	4.57 (.180)	B
D4-X735-205	5.21 (.205)	

Material and Finish

Steel, zinc plated

Notes

After selecting receptacle use stud selection letter **B** and follow instruction on page 414



Part Number

See table



D4 DZUS® Standard Line Quarter-Turn Fasteners

Retainers · Size 3, 4, 5 and 6

Material and Finish

Retaining ring: Steel, zinc plated

Retaining spring: Stainless steel

Retainer GH: Aluminum, natural

Retainer GP, natural: HD Polythene

Retainer GP, black: Polypropylene

Installation Notes

1. Place the retainer on the mandrel as shown
2. Align ring or spring ends so that they will miss the stud cam
3. Place mandrel in end of stud cam
4. Place tool over mandrel
5. Push retainer until it is sealed in stud undercut

Notes

Tooling:

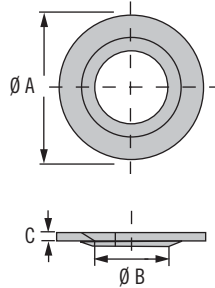
29 - TFRS hand tool: Spreads the inside diameter of retainers over stud shanks and then pushes them into stud undercuts.

29 - TB1A block: Nests stud heads during installation. (Any flat block may be used for BJR bail head studs).

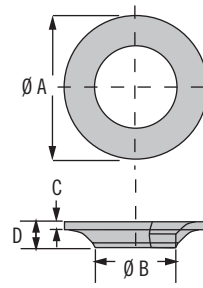
Part Number

See table

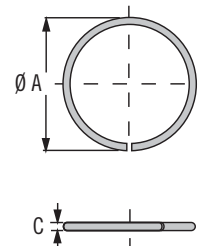
Retainer GP



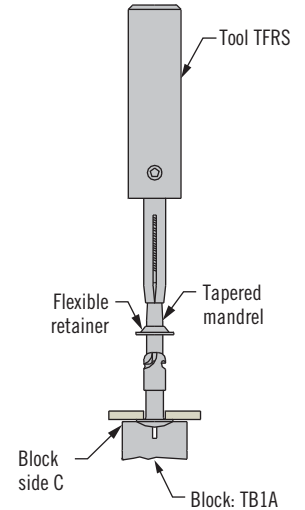
Retainer GH



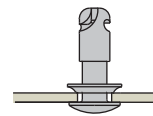
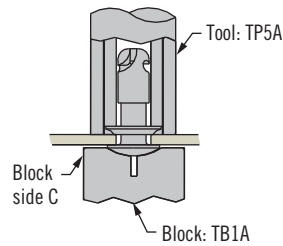
Retaining Ring



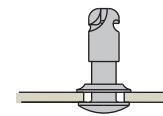
Install Retainer GP, Retaining Ring and SX



Install Retainer GH

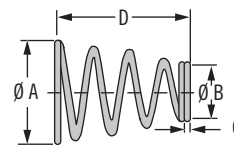


Standard Hole
Small diameter faces panel



Oversized Hole
Large diameter faces panel

Retaining Spring



Size	Type	Part Number	Ø A	Ø B	C	D	Adjustment Value	Installation Tool Part Number
3	Retainer GP, natural	D4-GP3	7.9 (.311)	4.06 (.160)	0.5 (.020)	N/A	Add 0.51 (.020)	29-TFRS3 and 29-TB1A3
	Retainer GP, black	D4-GP3B						
	Retainer GH	D4-GH3	4.8 (.188)	0.38 (.015)	1.3 (.051)	Add 0.38 (.015)		
	Retaining ring	D4-RR3	5.3 (.209)	N/A	0.56 (.022)	N/A	Add 0.56 (.022)	
	Retaining spring	D4-SX520	7.9 (.311)	3.8 (.149)	0.46 (.018)	17.5 (.689)	Add 0.91 (.036)	29-TFRS3 and 29-TB1A3
4	Retainer GP, natural	D4-GP4	11.1 (.437)	5.4 (.21)	0.7 (.028)	N/A	Add 0.7 (.028)	29-TFRS4 and 29-TB1A4
	Retainer GP, black	D4-GP4B						
	Retainer GH	D4-GH4	6.35 (.250)	0.64 (.025)	2.1 (.083)	Add 0.64 (.025)		
	Retaining ring	D4-RR4	7.1 (.280)	N/A	0.71 (.028)	N/A	Add 0.74 (.029)	
	Retaining spring	D4-SX523	11.1 (.437)	5.1 (.200)	0.64 (.025)	17.5 (.689)	Add 1.28 (.050)	29-TFRS4 and 29-TB1A4
5	Retainer GP, natural	D4-GP5	14.3 (.562)	6.5 (.256)	0.83 (.033)	N/A	Add 0.86 (.034)	29-TFRS5 and 29-TB1A5
	Retainer GP, black	D4-GP5B						
	Retainer GH	D4-GH5	7.9 (.311)	0.88 (.035)	2.7 (.106)	Add 0.78 (.031)		
	Retaining ring	D4-RR5	8.92 (.351)	N/A	0.91 (.036)	N/A	Add 0.91 (.035)	
	Retaining spring	D4-SX510	14.3 (.562)	6.5 (.256)	0.82 (.032)	19 (.748)	Add 1.64 (.064)	29-TFRS5 and 29-TB1A5
6	Retainer GH	D4-GH6	15.9 (.625)	9.5 (.374)	0.88 (.035)	2.9 (.114)	Add .88 (.035)	29-TP5A6 and 29-TB1A6
	Retaining ring	D4-RR6	10.78 (.424)	N/A	1.14 (.045)	N/A	Add 1.14 (.045)	29-TFRS6 and 29-TB1A6
	Retaining spring	D4-SX518	15.9 (.625)	8 (.315)	0.88 (.035)	19 (.748)	Add 1.76 (.070)	

Dimensions in millimeters (inch) unless otherwise stated

DZUS®

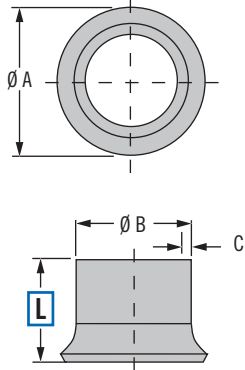
southco®
CONNECT · CREATE · INNOVATE

D4 DZUS® Standard Line Quarter-Turn Fasteners

Retainers · Size 3, 4, 5 and 6



Retainer GA

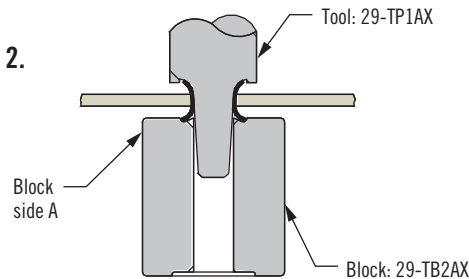


Installation Retainer GA

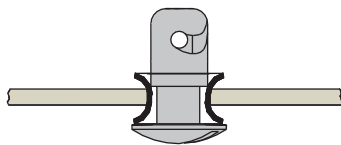
1.



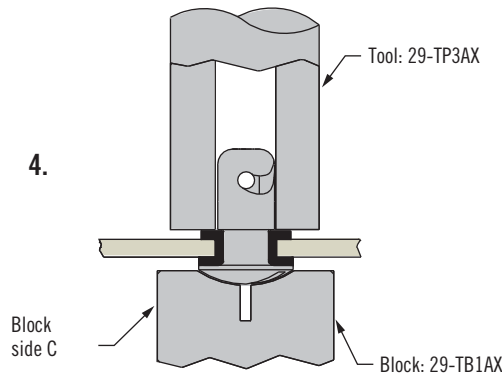
2.



3.



4.



Material and Finish

Retainer GA: Aluminum, natural

Installation Notes

1. Insert retainer in panel hole
2. Set retainer
3. Insert stud
4. Flatten retainer

82

85

D8

D1

D4

D5

D7

NY



Size	Panel Thickness	L	Part Number	Ø A	Ø B	C	Adjustment Formula	Installation Tool Part Number
3	0.38 - 0.64 (.015 - .025)	4.45 (.175)	D4-GA3-175	Ø 7.9 (.311)	5.6 (.220)	0.38 (.015)	Add 0.38 (.015)	29-TP1A3, 29-TP3A3, 29-TB1A3 and 29-TB2A3 (all required)
	0.66 - 1.27 (.026 - .050)	5.08 (.200)	D4-GA3-200					
	1.29 - 2.38 (.051 - .094)	6.35 (.250)	D4-GA3-250					
4	0.38 - 0.64 (.015 - .025)	4.45 (.175)	D4-GA4-175	10.3 (.405)	7.9 (.311)	1.28 (.050)	Add 1.28 (.050)	29-TP1A4, 29-TP3A4 and 29-TB1A4 (all required)
	0.66 - 1.27 (.026 - .050)	5.08 (.200)	D4-GA4-200					
	1.29 - 2.38 (.051 - .094)	6.35 (.250)	D4-GA4-250					
5	0.38 - 0.64 (.015 - .025)	4.45 (.175)	D4-GA5-175	12.7 (.500)	9.5 (.374)	1.42 (.056)	Add 1.42 (.056)	29-TP1A5, 29-TP3A5, 29-TB1A5 and 29-TB2A5 (all required)
	0.66 - 1.27 (.026 - .050)	5.08 (.200)	D4-GA5-200					
	1.29 - 2.38 (.051 - .094)	6.35 (.250)	D4-GA5-250					
6	0.38 - 0.64 (.015 - .025)	4.45 (.175)	D4-GA6-175	15.1 (.594)	11.1 (.437)	1.42 (.056)	Add 1.42 (.056)	29-TP1A6, 29-TP3A6, 29-TB1A6 and 29-TB2A6 (all required)
	0.66 - 1.27 (.026 - .050)	5.08 (.200)	D4-GA6-200					
	1.29 - 2.38 (.051 - .094)	6.35 (.250)	D4-GA6-250					

Part Number

See table



D4 DZUS® Standard Line Quarter-Turn Fasteners

Stud selection · Size 4

Material and Finish

Studs:
Steel, zinc plated or stainless steel

82

85

D8

D1

D4

D5

D7

NY

To select correct fastener:

1. Select receptacle

Choose a receptacle from pages 420-421

2. Select retainer and accessories

from pages 416-417 and note any adjustment values

3. Specify stud length

Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the stud length selection table (right) using the column (A, B, C, or D) given for the receptacle selected.

4. Complete the stud part number

by specifying the head style **H**, stud length **K**, and material **M**

Example:

For rivet-on

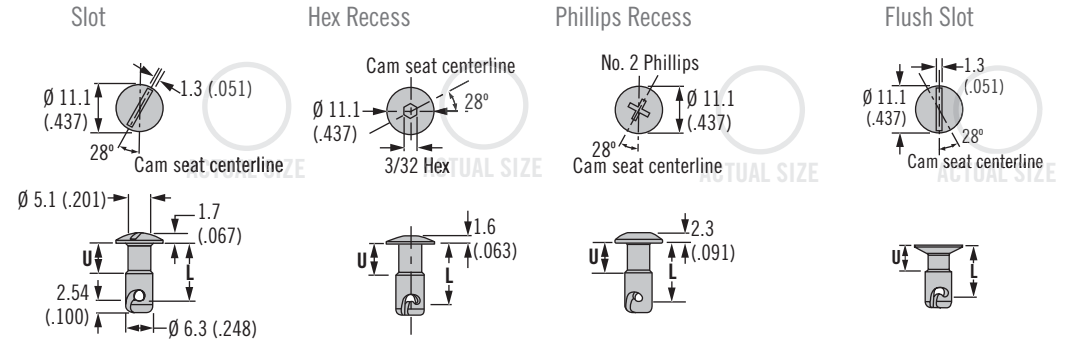
D4-S4-225 use column A

For TMT value calculated as 5.2 (.206), K = 40

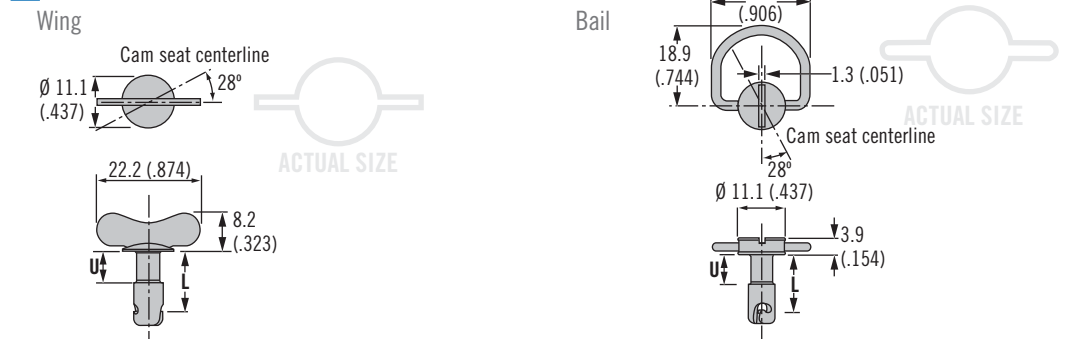
For slotted head style in steel material, completed part number: D4-AJ4-40

A complete example can be found on page 377

H Head Styles - Tool Actuated

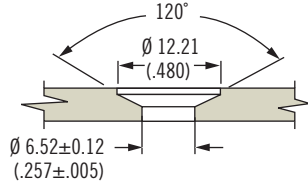


H Head Styles - Hand Actuated

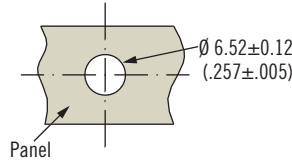


Stud Length Table										
A		B				K	U	L		
TMT Range For: Rivet-On Receptacle D4-S4-225	TMT Range For: Rivet-On Receptacle D4-S4-200	TMT Range For: Weld-On Receptacle D4-X485-300	TMT Range For: Weld-On Receptacle D4-X485-275							
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.			
1.27 (.050)	1.88 (.074)	1.91 (.075)	2.51 (.099)	~	~	~	~	25	1.91 (.075)	6.35 (.250)
2.54 (.100)	3.15 (.124)	3.18 (.125)	3.78 (.149)	0.64 (.025)	1.24 (.049)	1.27 (.050)	1.88 (.074)	30	2.54 (.100)	7.62 (.300)
3.81 (.150)	4.42 (.174)	4.45 (.175)	5.05 (.199)	1.91 (.075)	2.51 (.099)	2.54 (.100)	3.15 (.124)	35	3.81 (.150)	8.89 (.350)
5.08 (.200)	5.69 (.224)	5.72 (.225)	6.32 (.249)	3.18 (.125)	3.78 (.149)	3.81 (.150)	4.42 (.174)	40	5.08 (.200)	10.16 (.400)
6.35 (.250)	6.96 (.274)	6.99 (.275)	7.59 (.299)	4.45 (.175)	5.05 (.199)	5.08 (.200)	5.69 (.224)	45	5.72 (.225)	11.43 (.450)
7.62 (.300)	8.23 (.324)	8.26 (.325)	8.86 (.349)	5.72 (.225)	6.32 (.249)	6.35 (.250)	6.96 (.274)	50	6.35 (.250)	12.70 (.500)
8.89 (.350)	9.50 (.374)	9.53 (.375)	10.13 (.399)	6.99 (.275)	7.59 (.299)	7.62 (.300)	8.23 (.324)	55	6.99 (.275)	13.97 (.550)
10.16 (.400)	10.77 (.424)	10.80 (.425)	11.40 (.449)	8.26 (.325)	8.86 (.349)	8.89 (.350)	9.50 (.374)	60	7.62 (.300)	15.24 (.600)
11.43 (.450)	12.04 (.474)	12.07 (.475)	12.67 (.499)	9.53 (.375)	10.13 (.399)	10.16 (.400)	10.77 (.424)	65	8.89 (.350)	16.51 (.650)
12.70 (.500)	13.31 (.524)	13.34 (.525)	13.94 (.549)	10.80 (.425)	11.40 (.449)	11.43 (.450)	12.04 (.474)	70		17.78 (.700)
13.97 (.550)	14.58 (.574)	14.61 (.575)	15.21 (.599)	12.07 (.475)	12.67 (.499)	12.70 (.500)	13.31 (.524)	75	10.16 (.400)	19.05 (.750)
15.24 (.600)	15.85 (.624)	15.88 (.625)	16.48 (.649)	13.34 (.525)	13.94 (.549)	13.97 (.550)	14.58 (.574)	80		20.32 (.800)
16.51 (.650)	17.12 (.674)	17.15 (.675)	17.75 (.699)	14.61 (.575)	15.21 (.599)	15.24 (.600)	15.85 (.624)	85	12.70 (.500)	21.59 (.850)
17.78 (.700)	18.39 (.724)	18.42 (.725)	19.02 (.749)	15.88 (.625)	16.48 (.649)	16.51 (.650)	17.12 (.674)	90	15.24 (.600)	22.86 (.900)
19.05 (.750)	19.66 (.774)	19.69 (.775)	20.29 (.799)	17.15 (.675)	17.75 (.699)	17.78 (.700)	18.39 (.724)	95		24.13 (.950)
20.32 (.800)	20.93 (.824)	20.96 (.825)	21.56 (.849)	18.42 (.725)	19.02 (.749)	19.05 (.750)	19.66 (.774)	100		25.40 (1.00)

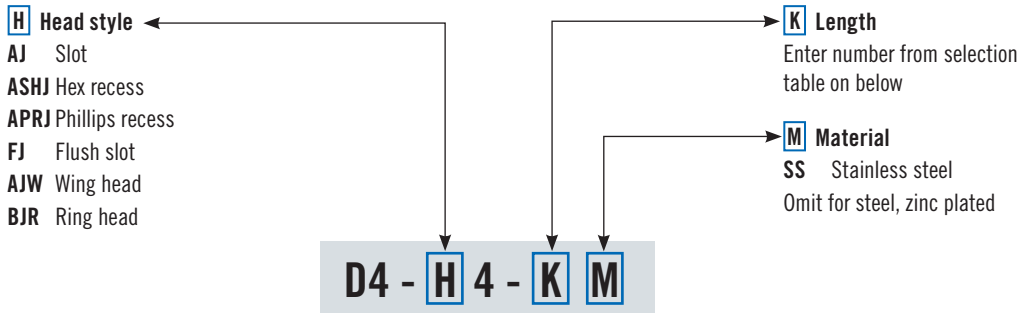
Flush



Standard

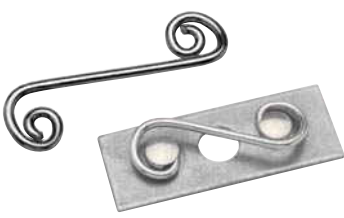


Part Number Selection



Stud Length Table						
C				K	U	L
TMT Range For: Clip-On Receptacle D4-SL4-305		TMT Range For: Clip-On Receptacle D4-SL4-280				
Min.	Max.	Min.	Max.			
~	~	~	~	25	1.91 (.075)	6.35 (.250)
~	~	1.17 (.046)	1.78 (.070)	30	2.54 (.100)	7.62 (.300)
1.80 (.071)	2.41 (.095)	2.44 (.096)	3.05 (.120)	35	3.81 (.150)	8.89 (.350)
3.07 (.121)	3.68 (.145)	3.71 (.146)	4.32 (.170)	40	5.08 (.200)	10.16 (.400)
4.34 (.171)	4.95 (.195)	4.98 (.196)	5.59 (.220)	45	5.72 (.225)	11.43 (.450)
5.61 (.221)	6.22 (.245)	6.25 (.246)	6.86 (.270)	50	6.35 (.250)	12.70 (.500)
6.88 (.271)	7.49 (.295)	7.52 (.296)	8.13 (.320)	55	6.99 (.275)	13.97 (.550)
8.15 (.321)	8.76 (.345)	8.79 (.346)	9.40 (.370)	60	7.62 (.300)	15.24 (.600)
9.42 (.371)	10.03 (.395)	10.06 (.396)	10.67 (.420)	65	8.89 (.350)	16.51 (.650)
10.69 (.421)	11.30 (.445)	11.33 (.446)	11.94 (.470)	70		17.78 (.700)
11.96 (.471)	12.57 (.495)	12.60 (.496)	13.21 (.520)	75	10.16 (.400)	19.05 (.750)
13.23 (.521)	13.84 (.545)	13.87 (.546)	14.48 (.570)	80		20.32 (.800)
14.50 (.571)	15.11 (.595)	15.14 (.596)	15.75 (.620)	85	12.7 (.500)	21.59 (.850)
15.77 (.621)	16.38 (.645)	16.41 (.646)	17.02 (.670)	90	15.24 (.600)	22.86 (.900)
17.04 (.671)	17.65 (.695)	17.68 (.696)	18.29 (.720)	95		24.13 (.950)
18.31 (.721)	18.92 (.745)	18.95 (.746)	19.56 (.770)	100		25.40 (1.00)

Stud Length Table					
D			K	U	L
TMT Range For: Snap-In - Rear Mount Receptacle D4-SQC4-F					
Min.	Max.	D4-GP4B			
0.48 (.019)	1.09 (.043)	None	45	5.72 (.225)	11.43 (.450)
1.12 (.044)	1.73 (.068)	One	50	6.35 (.250)	12.70 (.500)
1.75 (.069)	2.36 (.093)	None	50		
2.39 (.094)	3.00 (.118)	One	55	6.99 (.275)	13.97 (.550)
3.02 (.119)	3.63 (.143)	None	55		
3.66 (.144)	4.27 (.168)	One	60	7.62 (.300)	15.24 (.600)
4.29 (.169)	4.90 (.193)	None	60		
4.93 (.194)	5.54 (.218)	One	65	8.89 (.350)	16.51 (.650)
5.56 (.219)	6.17 (.243)	None	65		
6.20 (.244)	6.81 (.268)	One	70		
6.83 (.269)	7.44 (.293)	None	70	10.16 (.400)	17.78 (.700)
7.47 (.294)	8.08 (.318)	One	75		
8.10 (.319)	8.71 (.343)	None	75	19.05 (.750)	19.05 (.750)
8.74 (.344)	9.35 (.368)	One	80		
9.37 (.369)	9.98 (.393)	None	80	20.32 (.800)	20.32 (.800)



D4 DZUS® Standard Line Quarter-Turn Fasteners

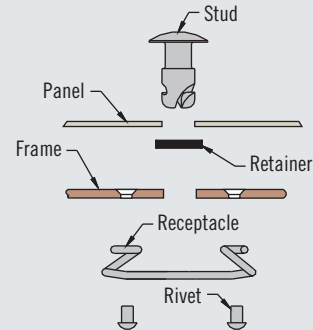
Receptacles · Size 4

Material and Finish

Steel, zinc plated or stainless steel

Notes

After selecting receptacle use stud selection letter **A** and follow instruction on page 418

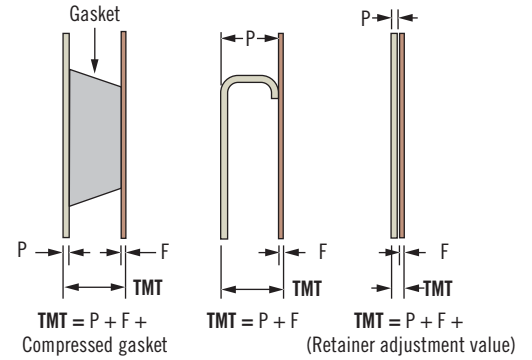
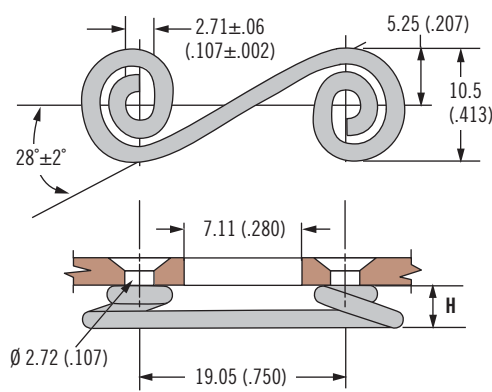


Part Number

See table

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 418-419

Rivet-On



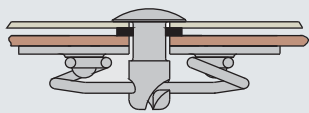
Part Number		H	Stud Selection Column
Steel	Stainless Steel		
D4-S4-200	D4-S4-200SS	5.08 (.200)	A
D4-S4-225	D4-S4-225SS	5.72 (.225)	

Material and Finish

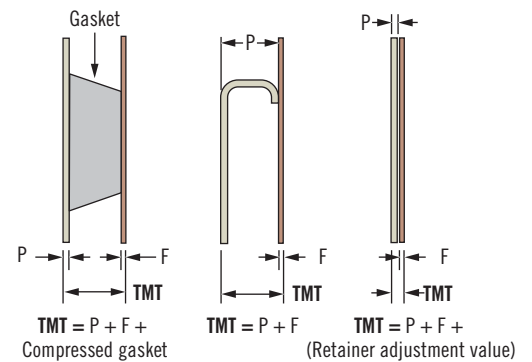
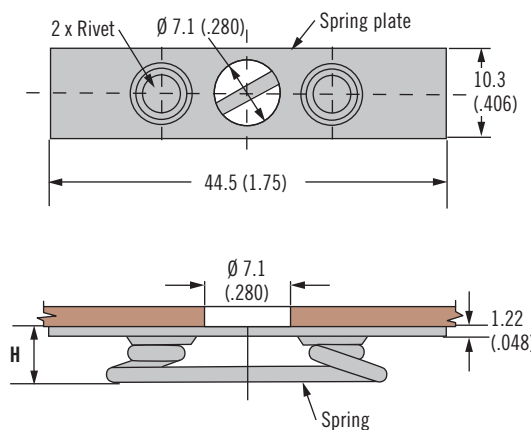
Steel, zinc plated or stainless steel

Notes

After selecting receptacle use stud selection letter **B** and follow instruction on page 418



Weld-On



Part Number		H	Stud Selection Column
Steel	Stainless Steel		
D4-X485-275	D4-X485-275SS	6.98 (.275)	B
D4-X485-300	D4-X485-300SS	7.62 (.300)	

Part Number

See table

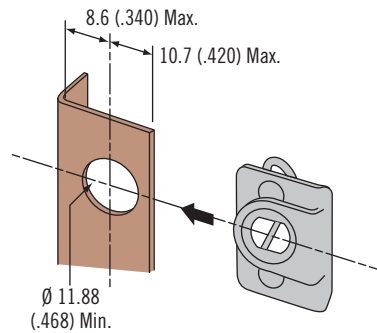
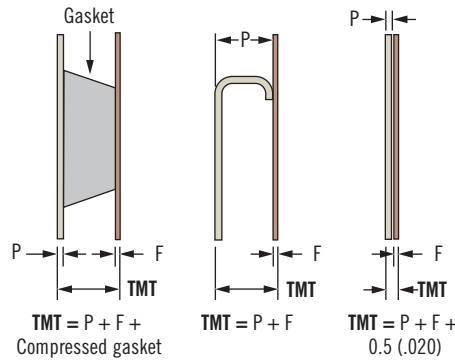
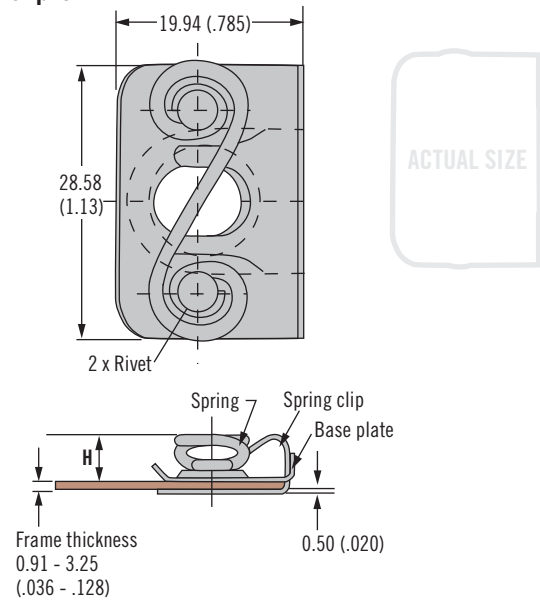
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 418-419

D4 DZUS® Standard Line Quarter-Turn Fasteners

Receptacles · Size 4



Clip-On



Part Number	H	Stud Selection Column
D4-SL4-280	7.11 (.280)	C
D4-SL4-305	7.75 (.305)	

Material and Finish

Steel, zinc plated

Notes

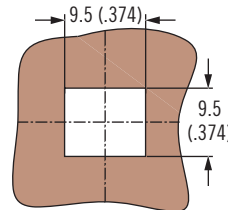
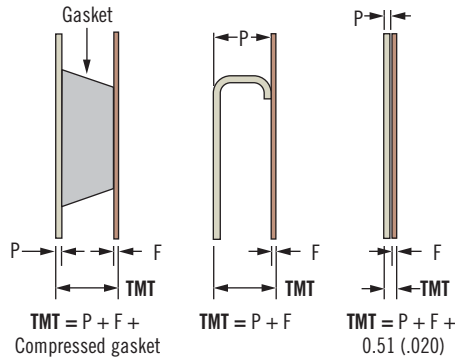
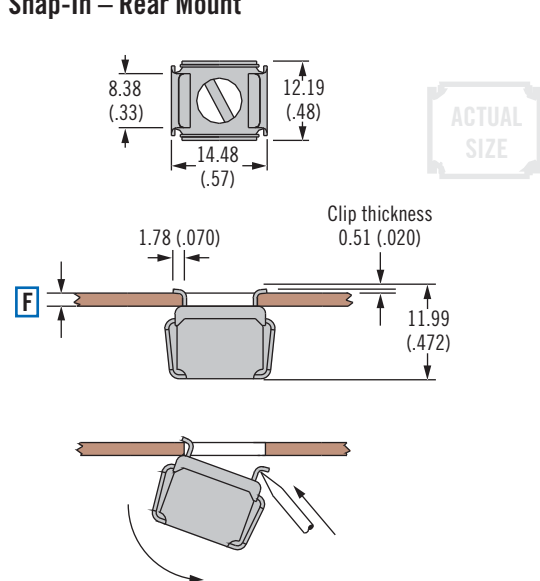
After selecting receptacle use stud selection letter **C** and follow instruction on page 418

Part Number

See table

Utilize stud selection column indicated when choosing a stud length from the stud length table on pages 418-419

Snap-In – Rear Mount



Part Number	F Frame Thickness	H	Stud Selection Column
D4-SQC4-16	0.78 - 1.42 (.031 - .056)	11.48 (.452)	D
D4-SQC4-20	1.47 - 1.98 (.058 - .078)	11.48 (.452)	
D4-SQC4-25	2 - 2.49 (.079 - .098)	11.48 (.452)	
D4-SQC4-30	2.59 - 3.18 (.102 - .125)	11.48 (.452)	

Material and Finish

Steel, zinc plated

Installation Notes

For stud retention use only retaining ring part number: D4-RR4

Notes

After selecting receptacle use stud selection letter **D** and follow instruction on page 418

Part Number

See table

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 418-419



D4 DZUS® Standard Line Quarter-Turn Fasteners

Stud selection · Size 5

Material and Finish

Studs:
Steel, zinc plated or stainless steel

82

85

D8

D1

D4

D5

D7

NY

To select correct fastener:

1. Select receptacle

Choose a receptacle from pages 424-425

2. Select retainer and accessories

from pages 416-417 and note any adjustment values

3. Specify stud length

Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the stud length selection table (right) using the column (A, B or C) given for the receptacle selected.

4. Complete the stud part number

by specifying the head style **H**, stud length **K**, and material **M**

Example:

For rivet-on

D4-S5-225 use column A

For TMT value calculated as 5.21 (.205), K = 40

For slotted head style in steel material, completed part number: D4-AJ5-40

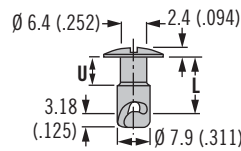
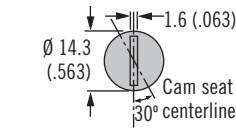
A complete example can be found on page 377.

Notes

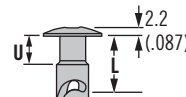
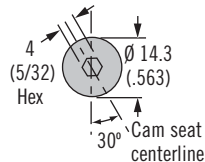
Stainless steel material may require a higher minimum order quantity. Contact Southco for details.

H Head Styles - Tool Actuated

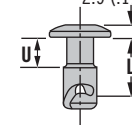
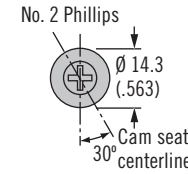
Slot



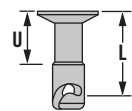
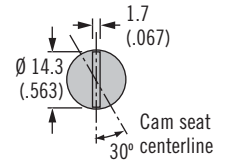
Hex Recess



Phillips Recess

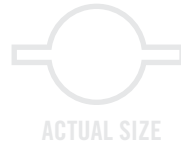
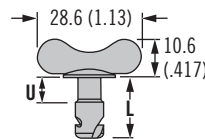
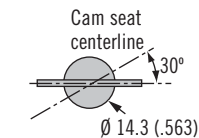


Flush slot

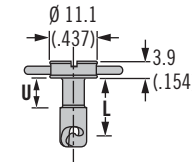
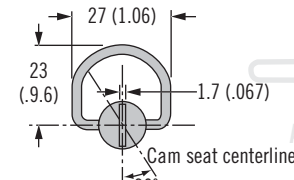


H Head Styles - Hand Actuated

Wing



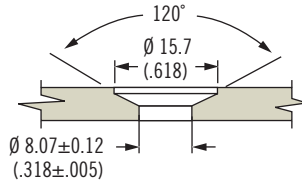
Bail



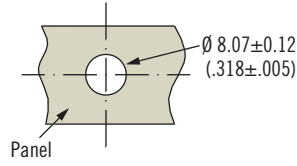
Stud Length Table										
A				B				U	L	K
TMT Range For: Rivet-On Receptacle D4-S5-225		TMT Range For: Rivet-On Receptacle D4-S5-200		TMT Range For: Weld-On Receptacle D4-X414-310		TMT Range For: Weld-On Receptacle D4-X414-285				
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.			
2.67 (.105)	3.28 (.129)	3.3 (.13)	3.91 (.154)	~	~	~	~	3.18 (.125)	7.62 (.300)	30
3.94 (.155)	4.55 (.179)	4.57 (.18)	5.18 (.204)	1.65 (.065)	2.26 (.089)	2.29 (.09)	2.9 (.114)		8.89 (.350)	35
5.21 (.205)	5.82 (.229)	5.84 (.23)	6.45 (.254)	2.92 (.115)	3.53 (.139)	3.56 (.14)	4.17 (.164)	4.83 (.200)	10.16 (.400)	40
6.48 (.255)	7.09 (.279)	7.11 (.28)	7.72 (.304)	4.19 (.165)	4.8 (.189)	4.83 (.19)	5.44 (.214)		11.43 (.450)	45
7.75 (.305)	8.36 (.329)	8.38 (.33)	8.99 (.354)	5.46 (.215)	6.07 (.239)	6.1 (.24)	6.71 (.264)	6.35 (.250)	12.70 (.500)	50
9.02 (.355)	9.63 (.379)	9.65 (.38)	10.26 (.404)	6.73 (.265)	7.34 (.289)	7.37 (.29)	7.98 (.314)	6.99 (.275)	13.97 (.550)	55
10.29 (.405)	10.9 (.429)	10.92 (.43)	11.53 (.454)	8.00 (.315)	8.61 (.339)	8.64 (.34)	9.25 (.364)	7.62 (.300)	15.24 (.600)	60
11.56 (.455)	12.17 (.479)	12.19 (.48)	12.8 (.504)	9.27 (.365)	9.88 (.389)	9.91 (.39)	10.52 (.414)	8.89 (.350)	16.51 (.650)	65
12.83 (.505)	13.44 (.529)	13.46 (.53)	14.07 (.554)	10.54 (.415)	11.15 (.439)	11.18 (.44)	11.79 (.464)	10.16 (.400)	17.78 (.700)	70
14.1 (.555)	14.71 (.579)	14.73 (.58)	15.34 (.604)	11.81 (.465)	12.42 (.489)	12.45 (.49)	13.06 (.514)		19.05 (.750)	75
15.37 (.605)	15.98 (.629)	16.00 (.63)	16.61 (.654)	13.08 (.515)	13.69 (.539)	13.72 (.54)	14.33 (.564)	12.7 (.500)	20.32 (.800)	80
16.64 (.655)	17.25 (.679)	17.27 (.68)	17.88 (.704)	14.35 (.565)	14.96 (.589)	14.99 (.59)	15.6 (.614)		21.59 (.850)	85
17.91 (.705)	18.52 (.729)	18.54 (.73)	19.15 (.754)	15.62 (.615)	16.23 (.639)	16.26 (.64)	16.87 (.664)	15.24 (.600)	22.86 (.900)	90
19.18 (.755)	19.79 (.779)	19.81 (.78)	20.42 (.804)	16.89 (.665)	17.5 (.689)	17.53 (.69)	18.14 (.714)		24.13 (.950)	95
20.45 (.805)	21.06 (.829)	21.08 (.83)	21.69 (.854)	18.16 (.715)	18.77 (.739)	18.8 (.74)	19.41 (.764)	17.78 (.70)	25.40 (1.00)	100

Dimensions in millimeters (inch) unless otherwise stated

Flush



Standard



Part Number Selection

H Head style

- AJ Slot
- ASHJ Hex recess
- APRJ Phillips recess
- FJ Flush slot
- AJW Wing head
- BJR Bail head

K Length

Enter number from selection table below

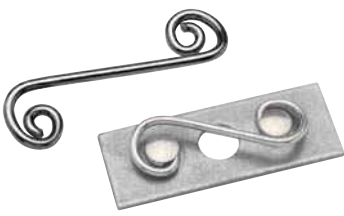
M Material

- SS Stainless steel
- Omit for steel, zinc plated

D4 - H 5 - K M

Stud Length Table

TMT Range For: Clip-On Receptacle D4-SL5-305		TMT Range For: Clip-On Receptacle D5-SL5-280		U	L	K
Min.	Max.	Min.	Max.			
~	~	1.17 (.046)	1.78 (.07)	3.18 (.125)	7.62 (.300)	30
1.8 (.071)	2.41 (.095)	2.44 (.096)	3.05 (.12)		8.89 (.350)	35
3.07 (.121)	3.68 (.145)	3.71 (.146)	4.32 (.17)	4.83 (.200)	10.16 (.400)	40
4.34 (.171)	4.95 (.195)	4.98 (.196)	5.59 (.22)		11.43 (.450)	45
5.61 (.221)	6.22 (.245)	6.25 (.246)	6.86 (.27)	6.35 (.250)	12.70 (.500)	50
6.88 (.271)	7.49 (.295)	7.52 (.296)	8.13 (.32)	6.99 (.275)	13.97 (.550)	55
8.15 (.321)	8.76 (.345)	8.79 (.346)	9.4 (.37)	7.62 (.300)	15.24 (.600)	60
9.42 (.371)	10.03 (.395)	10.06 (.396)	10.67 (.42)	8.89 (.350)	16.51 (.650)	65
10.69 (.421)	11.3 (.445)	11.33 (.446)	11.94 (.47)	10.16 (.400)	17.78 (.700)	70
11.96 (.471)	12.57 (.495)	12.6 (.496)	13.21 (.52)		19.05 (.750)	75
13.23 (.521)	13.84 (.545)	13.87 (.546)	14.48 (.57)	12.7 (.500)	20.32 (.800)	80
14.5 (.571)	15.11 (.595)	15.14 (.596)	15.75 (.62)		21.59 (.850)	85
15.77 (.621)	16.38 (.645)	16.41 (.646)	17.02 (.67)	15.24 (.600)	22.86 (.900)	90
17.04 (.671)	17.65 (.695)	17.68 (.696)	18.29 (.72)		24.13 (.950)	95
18.31 (.721)	18.92 (.745)	18.95 (.746)	19.56 (.77)	17.78 (.70)	25.40 (1.00)	100

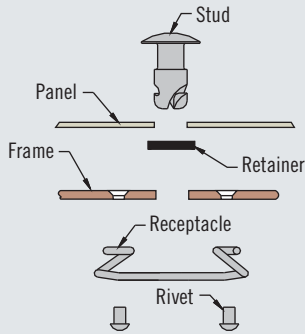


D4 DZUS® Standard Line Quarter-Turn Fasteners

Receptacles · Size 5

Material and Finish

Steel, zinc plated or stainless steel



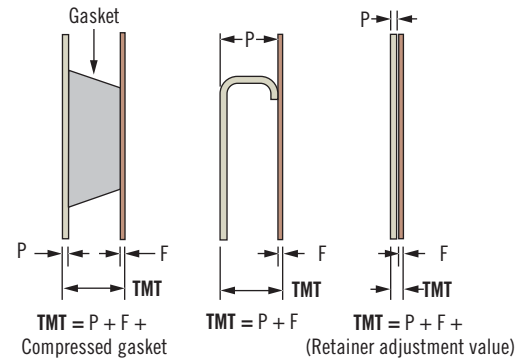
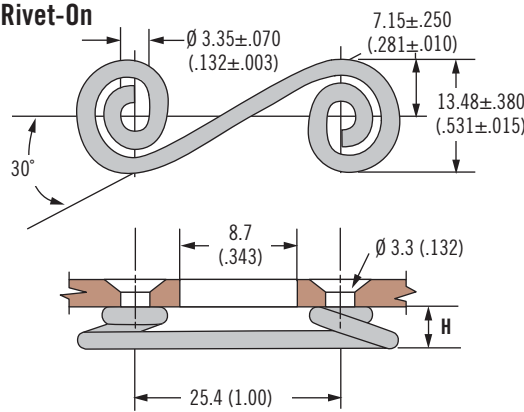
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on pages 422-423

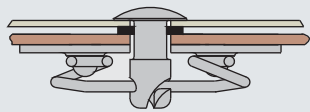
Rivet-On



Part Number		H	Stud Selection Column
Steel	Stainless Steel		
D4-S5-200	D4-S5-200SS	5.08 (.200)	A
D4-S5-225	D4-S5-225SS	5.72 (.225)	

Material and Finish

Steel, zinc plated or stainless steel



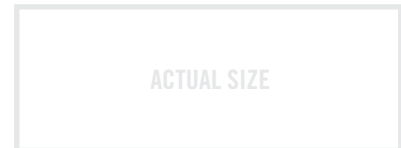
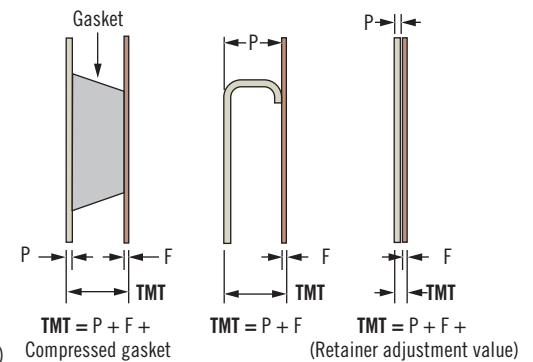
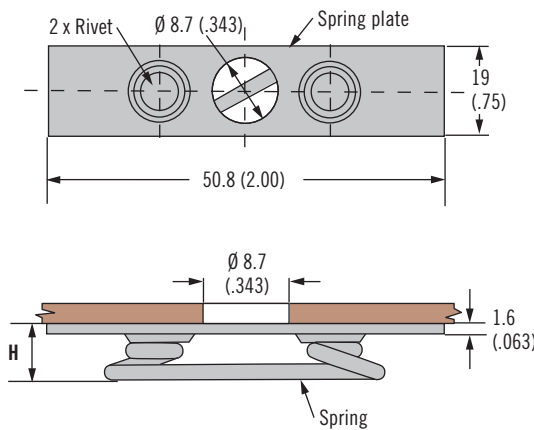
Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on pages 422-423

Weld-On



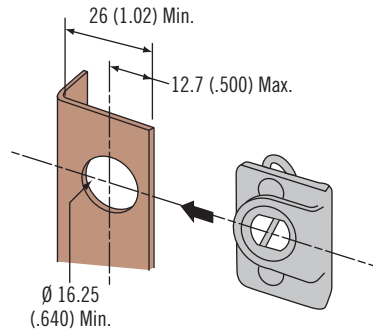
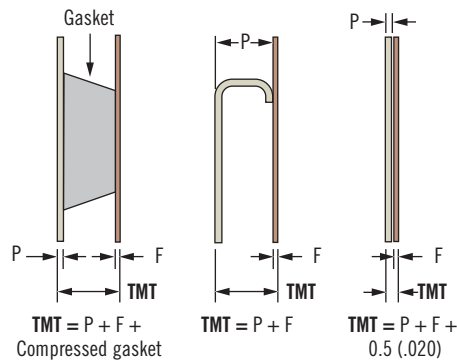
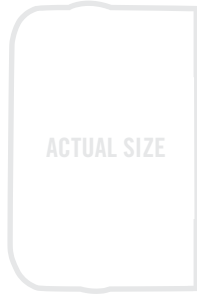
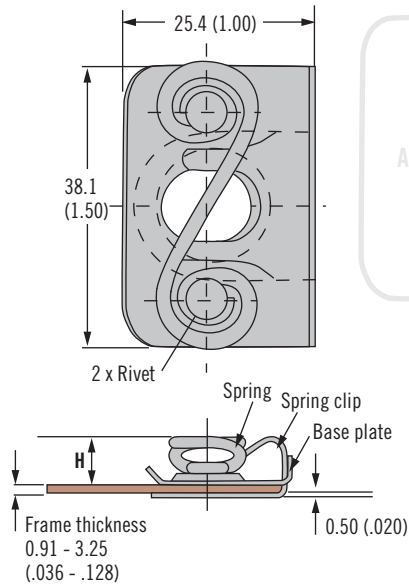
Part Number		H	Stud Selection Column
Steel	Stainless Steel		
D4-X414-285	D4-X414-285SS	7.2 (.285)	B
D4-X414-310	D4-X414-310SS	7.9 (.310)	

D4 DZUS® Standard Line Quarter-Turn Fasteners

Receptacles · Size 5



Clip-On



Note:
Panel misalignment can be tolerated by increasing the support hole to 17.86 (.703) and decreasing the hole center to edge distance to 11.43 (.450)

Part Number	H	Stud Selection Column
D4-SL5-280	7.11 (.280)	c
D4-SL5-305	7.75 (.305)	

Material and Finish

Steel, zinc plated

82

85

D8

D1

D4

D5

D7

NY



Part Number

See table

Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on pages 422-423



D4 DZUS® Standard Line Quarter-Turn Fasteners

Stud selection · Size 6

Material and Finish

Studs:
Steel, zinc plated or stainless steel

82

85

D8

D1

D4

D5

D7

NY

To select correct fastener:

1. Select receptacle

Choose a receptacle from page 427

2. Select retainer and accessories

from pages 416-417 and note any adjustment values

3. Specify stud length

Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the stud length selection table (right) using the column (A or B) given for the receptacle selected.

4. Complete the stud part number

by specifying the head style **H**, stud length **K**, and material **M**

Example:

For rivet-on

D4-S6-300 use column A

For TMT value calculated as 5.2 (.206), K = 45

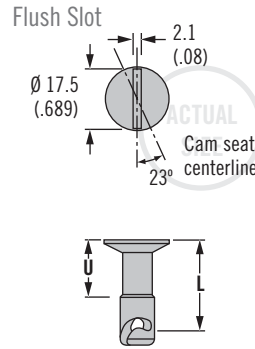
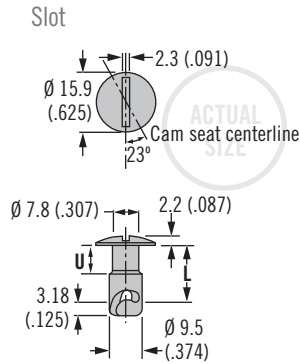
For slotted head style in steel material, completed part number: D4-AJ6-45

A complete example can be found on page 377.

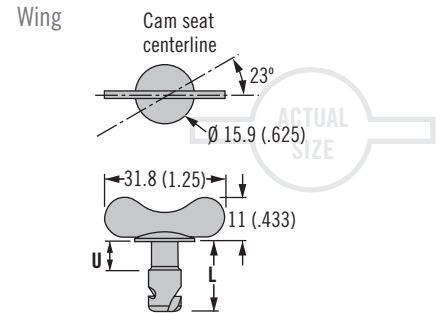
Notes

Stainless steel material may require a higher minimum order quantity. Contact Southco for details.

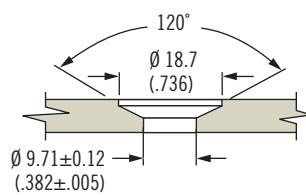
H Head Styles - Tool Actuated



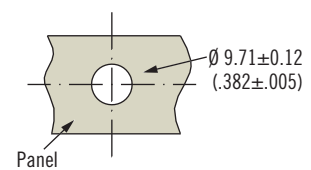
H Head Styles - Hand Actuated



Flush



Standard



H Head style

- AJ Slot recess
- AJW Wing head
- FJ Flush slot

K Length

Enter number from selection table below

M Material

- SS Stainless steel
- Omit for steel, zinc plated

D4 - H 6 - K M

Stud Length Table										
A				B				U	L	K
TMT Range For: Rivet-On Receptacle D4-S6-300		TMT Range For: Rivet-On Receptacle D4-S6-275		TMT Range For: Weld-On Receptacle D4-X441-335		TMT Range For: Weld-On Receptacle D4-X441-310				
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.			
2.29 (.090)	2.90 (.114)	2.92 (.115)	3.53 (.139)	1.40 (.055)	2.01 (.079)	2.03 (.080)	2.64 (.104)	4.45 (.175)	8.89 (.350)	35
3.56 (.140)	4.17 (.164)	4.19 (.165)	4.80 (.189)	2.67 (.105)	3.28 (.129)	3.30 (.130)	3.91 (.154)	5.08 (.200)	10.16 (.400)	40
4.83 (.190)	5.44 (.214)	5.46 (.215)	6.07 (.239)	3.94 (.155)	4.55 (.179)	4.57 (.180)	5.18 (.204)	5.72 (.225)	11.43 (.450)	45
6.10 (.240)	6.71 (.264)	6.73 (.265)	7.34 (.289)	5.21 (.205)	5.82 (.229)	5.84 (.230)	6.45 (.254)	6.35 (.250)	12.70 (.500)	50
7.37 (.290)	7.98 (.314)	8.00 (.315)	8.61 (.339)	6.48 (.255)	7.09 (.279)	7.11 (.280)	7.72 (.304)	6.99 (.275)	13.97 (.550)	55
8.64 (.340)	9.25 (.364)	9.27 (.365)	9.88 (.389)	7.75 (.305)	8.36 (.329)	8.38 (.330)	8.99 (.354)	7.62 (.300)	15.24 (.600)	60
9.91 (.390)	10.52 (.414)	10.54 (.415)	11.15 (.439)	9.02 (.355)	9.63 (.379)	9.65 (.380)	10.26 (.404)	8.89 (.350)	16.51 (.650)	65
11.18 (.440)	11.79 (.464)	11.81 (.465)	12.42 (.489)	10.29 (.405)	10.90 (.429)	10.92 (.430)	11.53 (.454)		17.78 (.700)	70
12.45 (.490)	13.06 (.514)	13.08 (.515)	13.69 (.539)	11.56 (.455)	12.17 (.479)	12.19 (.480)	12.80 (.504)	10.16 (.400)	19.05 (.750)	75
13.72 (.540)	14.33 (.564)	14.35 (.565)	14.96 (.589)	12.83 (.505)	13.44 (.529)	13.46 (.530)	14.07 (.554)	11.43 (.450)	20.32 (.800)	80
14.99 (.590)	15.60 (.614)	15.62 (.615)	16.23 (.639)	14.10 (.555)	14.71 (.579)	14.73 (.580)	15.34 (.604)	12.7 (.500)	21.59 (.850)	85
16.26 (.640)	16.87 (.664)	16.89 (.665)	17.50 (.689)	15.37 (.605)	15.98 (.629)	16.00 (.630)	16.61 (.654)	13.97 (.550)	22.86 (.900)	90
17.53 (.690)	18.14 (.714)	18.16 (.715)	18.77 (.739)	16.64 (.655)	17.25 (.679)	17.27 (.680)	17.88 (.704)	15.24 (.600)	24.13 (.950)	95
18.80 (.740)	19.41 (.764)	19.43 (.765)	20.04 (.789)	17.91 (.705)	18.52 (.729)	18.54 (.730)	19.15 (.754)	16.51 (.650)	25.40 (1.00)	100

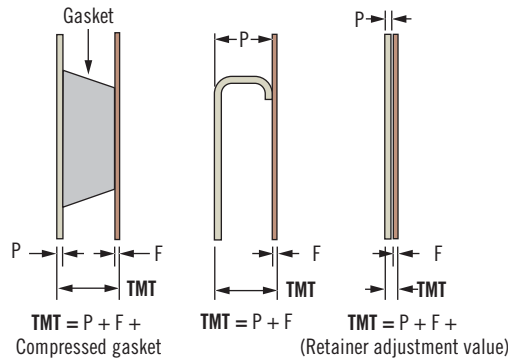
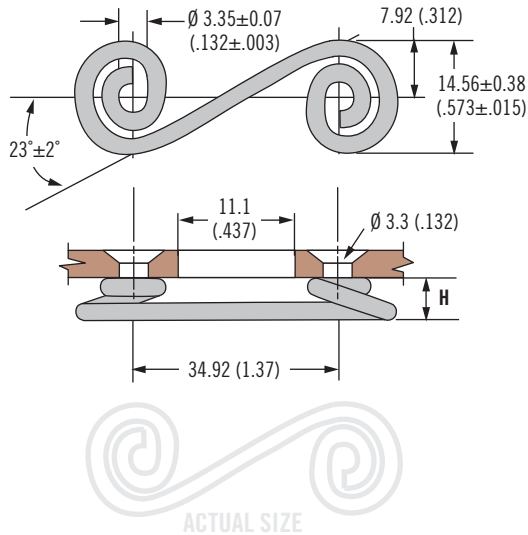
D4 DZUS® Standard Line Quarter-Turn Fasteners

Receptacles · Size 6



427

Rivet-On

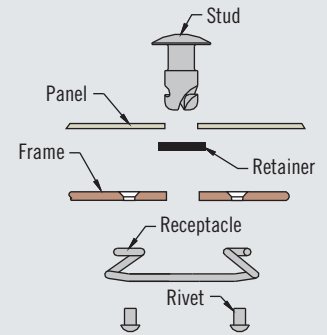


Material and Finish

Steel, zinc plated or stainless steel

Notes

After selecting receptacle use stud selection letter **A** and follow instruction on page 426

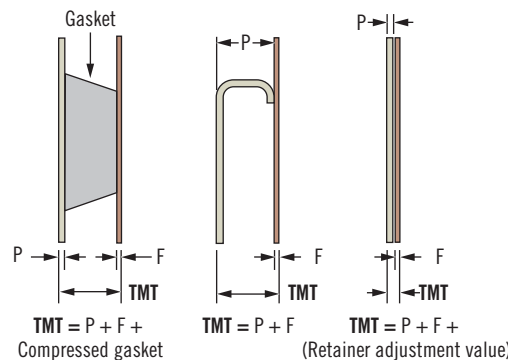
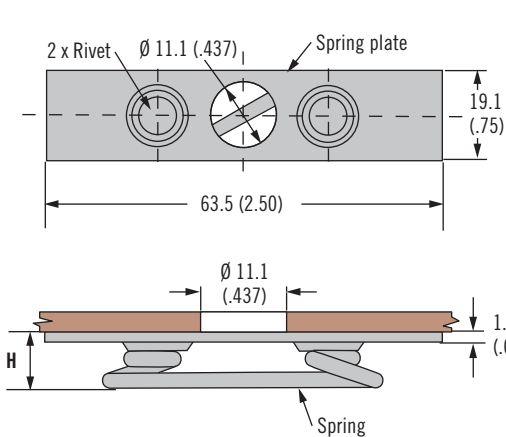


Part Number		H	Stud Selection Column
Steel	Stainless Steel		
D4-S6-275	D4-S6-275SS	6.99 (.275)	A
D4-S6-300	D4-S6-300SS	7.62 (.300)	

Part Number

See table

Weld-On

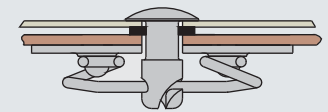


Material and Finish

Steel, zinc plated

Notes

After selecting receptacle use stud selection letter **B** and follow instruction on page 426



Part Number	H	Stud Selection Column
D4-X441-310	7.87 (.310)	B
D4-X441-335	8.51 (.335)	

Part Number

See table



D5 DZUS® Panel Line Quarter-turn Fasteners Studs

DZUS® Panel line features captive, flare-in stud assemblies and continuous receptacle strip.

- **Captive to outer panel**
- **Predictable clamping force**
- **High vibration resistance**
- **Visual latched indication**

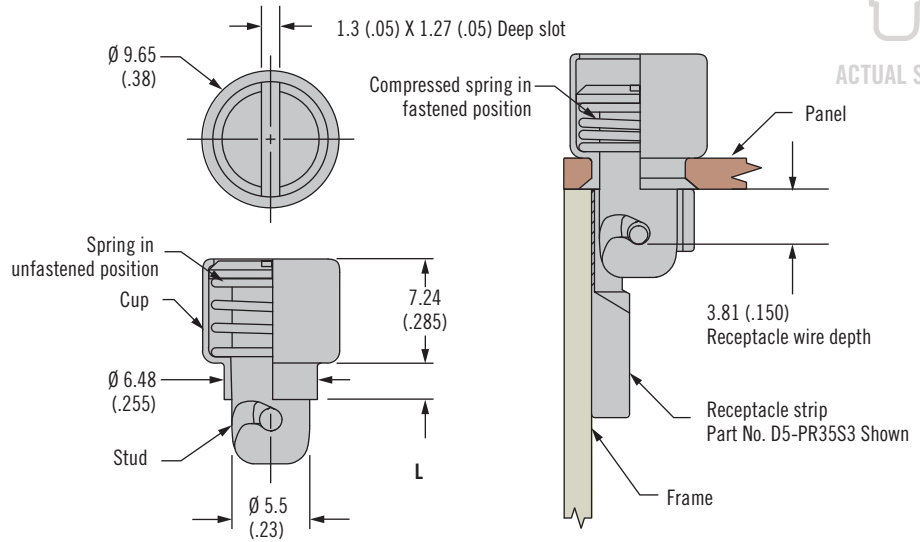
Material and Finish

Steel, zinc plated

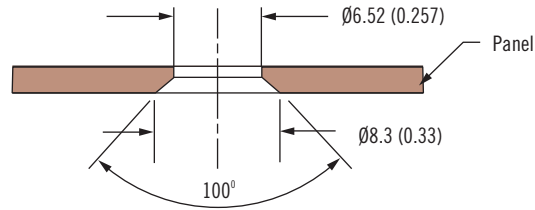
Performance Details

Rated tensile and shear:
890 N (200 lbs.) when used with
DZUS® receptacles

Stud assembly



Panel Preparation



1. Select receptacle type
2. D5-PR35S3 (angle) or D5-PR35-IS3 (flat) receptacle types. Determine outer panel thickness and use column A. Select from column C for assemblies.

OR

D5-PB35 (Single hole wire form) receptacle type. Determine outer panel thickness and use column A, then calculate total material thickness (TMT) required as indicated in column B. Select from column C for assemblies.

Panel line stud assembly options					
A		Cup flange length L	B		C
Outer panel dimensions			TMT Range for: D5-PB35		
A Min.	A Max.		Min.	Max.	Stud assembly
1.27 (.050)	1.50 (.059)	1.78 (.070)	3.81 (.150)	4.04 (.159)	D5-PFSC35-37A-190
1.52 (.060)	1.75 (.069)	2.03 (.080)	4.06 (.160)	4.29 (.169)	D5-PFSC35-38A-190
1.77 (.070)	2.01 (.079)	2.29 (.090)	4.32 (.170)	4.55 (.179)	D5-PFSC35-39A-190
2.03 (.080)	2.26 (.089)	2.54 (.100)	4.57 (.180)	4.80 (.189)	D5-PFSC35-40A-190
2.29 (.090)	2.51 (.099)	2.80 (.110)	4.83 (.190)	5.05 (.199)	D5-PFSC35-41A-190
2.54 (.100)	2.77 (.109)	3.05 (.120)	5.08 (.200)	5.31 (.209)	D5-PFSC35-42A-190
2.79 (.110)	3.02 (.119)	3.30 (.130)	5.33 (.210)	5.56 (.219)	D5-PFSC35-43A-190
3.05 (.120)	3.28 (.129)	3.56 (.140)	5.59 (.220)	5.82 (.229)	D5-PFSC35-44A-190

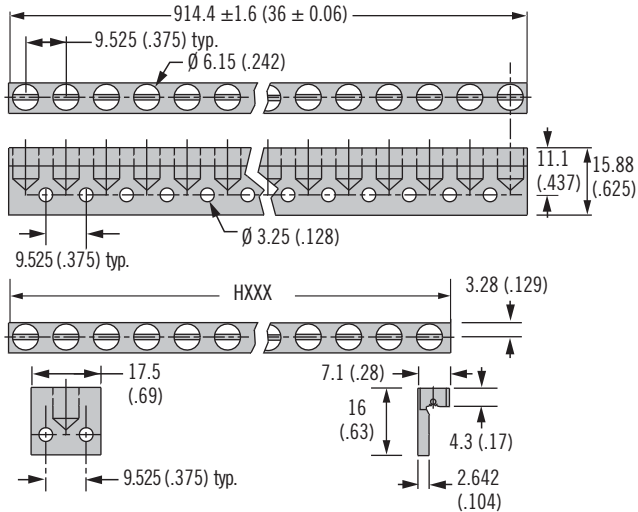
Installation Tools	
Panel installation	
Flare tool	Support block
29-TP1PT35A	29-TB1PT35A

Dimensions in millimeters (inch) unless otherwise stated

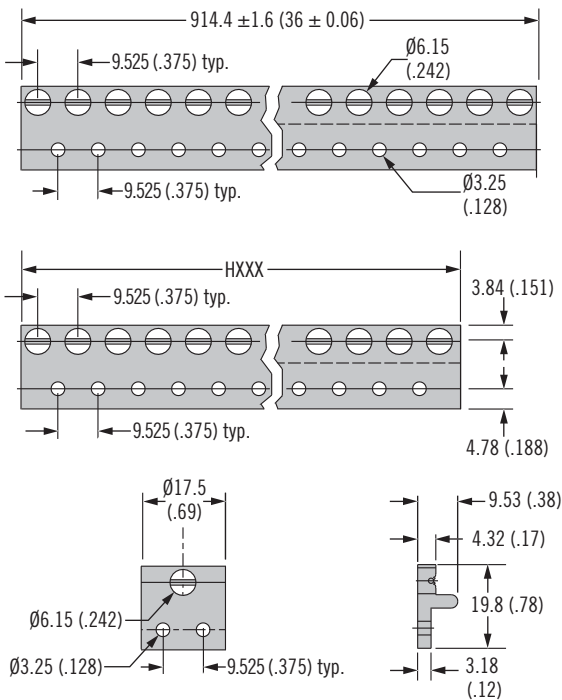
D5 DZUS® Panel Line Quarter-turn Fasteners Receptacles



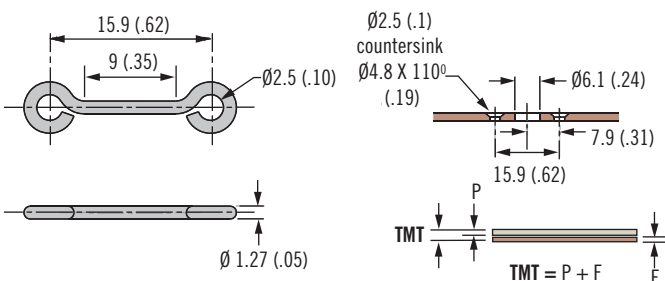
Angle



Flat



Single hole wire form



Angle Receptacle		Stud selection column
Standard length D5-PR35S3		A
Custom length D5-PR35HXXX		
Single hole D5-PRB35		

Flat Receptacle		Stud selection column
Standard length D5-PR35-IS3		A
Custom length D5-PR35-1HXXX		
Single hole D5-PRC35		

Single hole wire form receptacle		Stud selection column
D5-PB35		B

Material and Finish

Right angle, flat aluminum and stainless steel
Single hole wire form steel zinc plated

Select Receptacle Profile

1. Right angle or flat
2. Single hole, standard length (96 holes) or custom length
3. If custom length HXXX (2 holes Min. - 319 holes Max.) determine number of useable receptacle holes.
Total length = No of useable holes multiplied by 9.525 (.375) minus 1.525 (.06)

Example:

319 useable holes
= 319 x 9.525 (.375)
- 1.525 (.06) = 3037 (119.56)
Replace HXXX with H319

* Longer standard lengths available.
Contact Southco for details.



D7 DZUS® Pilot Quarter-Turn Fasteners Studs

Material and Finish

Studs: Steel, zinc plated plus chromate

Washer: Neoprene, black

Notes

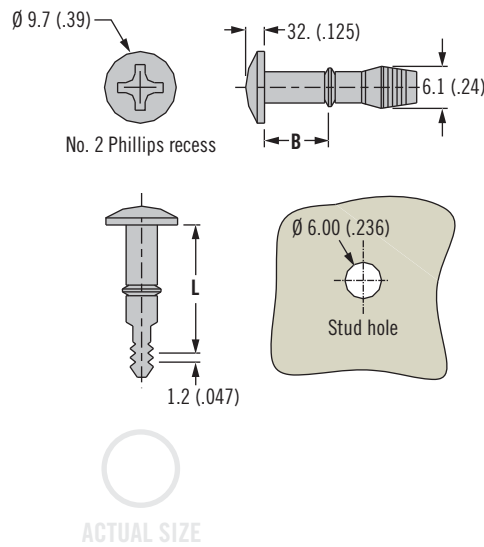
Select stud and washer part number from table based on your panel thickness **P**

Part Number

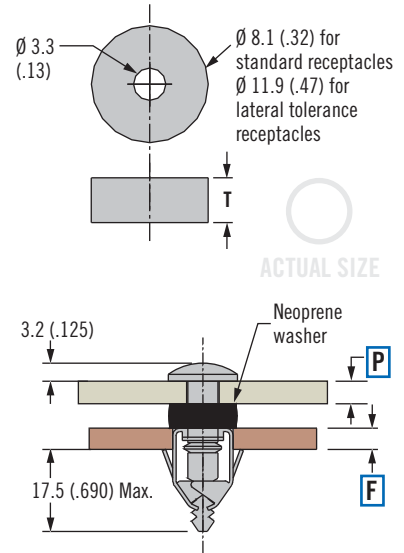
See table

Order stud and washer separately

Studs



Washer



Panel Thickness P	Stud L	Stud B	T Washer Thickness	Part Number			
				Stud		Neoprene Washer	
				Black chromate	Bright chromate	For standard receptacle	For lateral tolerance receptacle
1.3 (.05) to 1.7 (.07)	16 (.63)	7.1 (.28)	4.1 (.16)	D7-265-716-191	D7-265-716-190	D7-275-040-400	D7-275-140-400
1.8 (.07) to 2.2 (.09)	16 (.63)	7.1 (.28)	3.6 (.14)	D7-265-716-191	D7-265-716-190	D7-275-035-400	D7-275-135-400
2.3 (.09) to 2.7 (.11)	17.8 (.70)	8.9 (.35)	5.1 (.20)	D7-265-718-191	D7-265-718-190	D7-275-050-400	D7-275-150-400
2.8 (.11) to 3.2 (.12)	17.8 (.70)	8.9 (.35)	4.6 (.18)	D7-265-718-191	D7-265-718-190	D7-275-045-400	D7-275-145-400
3.3 (.13) to 3.7 (.15)	17.8 (.70)	8.9 (.35)	4.1 (.16)	D7-265-718-191	D7-265-718-190	D7-275-040-400	D7-275-140-400
3.8 (.15) to 4.2 (.17)	17.8 (.70)	8.9 (.35)	3.6 (.14)	D7-265-718-191	D7-265-718-190	D7-275-035-400	D7-275-135-400
4.3 (.17) to 4.8 (.19)	20.0 (.79)	10.9 (.43)	5.1 (.20)	D7-265-720-191	D7-265-720-190	D7-275-050-400	D7-275-150-400

Material and Finish

Steel, zinc plated and thermoplastic black

Notes

Select stud and washer part number from table based on your panel thickness **P**

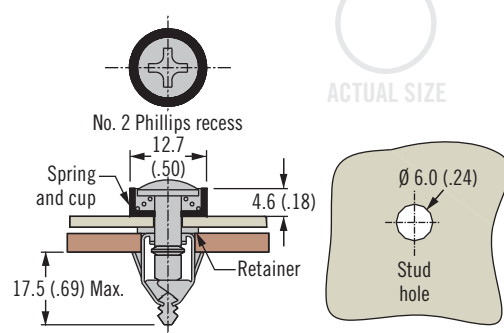
Part Number

See table

Stud, cup and spring shipped pre-assembled

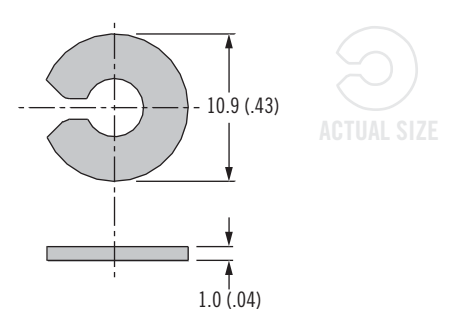
Order retainer separately

Self-Ejecting Studs



Panel Thickness P	Part Number	
	Black	Bright
0.5 - 3.0 (.02 - .12)	D7-290-718-191	D7-290-718-190
2.5 - 5.1 (.10 - .20)	D7-290-720-191	D7-290-720-190

Retainer, Plastic

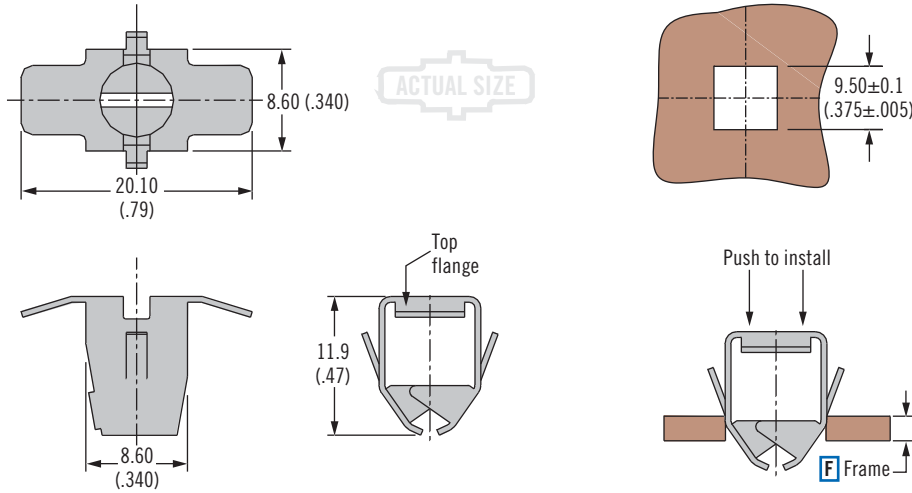


Part Number
D7-275-203-040

D7 DZUS® Pilot Quarter-Turn Fasteners Receptacles



Standard



F Frame Thickness		Part Number
Min.	Max.	
0.63 (.025)	1.24 (.049)	D7-285-101-161
1.27 (.050)	1.75 (.069)	D7-285-102-161
1.78 (.070)	2.26 (.089)	D7-285-103-161

Material and Finish

Spring steel, zinc phosphate

Notes

Select receptacle based on frame thickness **F**

82

85

D8

D1

D4

D5

D7

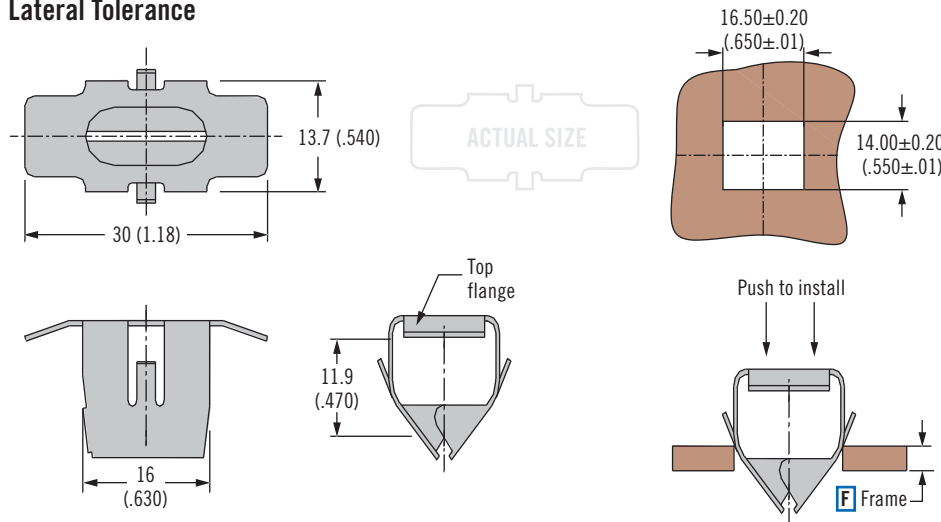
NY



Part Number

See table

Lateral Tolerance



F Frame Thickness		Part Number
Min.	Max.	
0.63 (.025)	1.24 (.049)	D7-285-201-161
1.27 (.050)	1.75 (.069)	D7-285-202-161
1.78 (.070)	2.26 (.089)	D7-285-203-161
2.29 (.090)	2.77 (.109)	D7-285-204-161
2.79 (.110)	3.28 (.129)	D7-285-205-161

Material and Finish

Spring steel, zinc phosphate

Notes

Select receptacle based on frame thickness **F**

Part Number

See table



D7 DZUS® Arrow Quarter-Turn Fasteners Assembly

- Surface install
- Panel mounted assembly

Material and Finish

Acetal, black

Performance Details

Flammability rating: UL94-HB

ASTM E-162 Flame spread Index:

130

D7 Arrow Installation notes

200 series:

1. Press receptacle into outer panel.
2. Press stud into receptacle.
3. Press and turn stud to latch.
4. Turn stud 90 degree to unlatch.

2001 series:

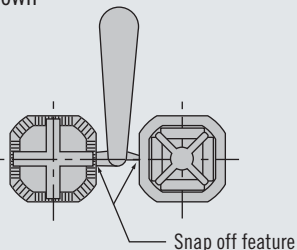
1. Separate Stud and receptacle from runner.
2. Press receptacle into outer panel.
3. Press stud into receptacle.
4. Press and turn stud to latch.
5. Turn stud 90 degree to unlatch.

Part Number

See table

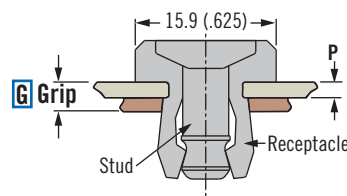
200 Series: Order one receptacle and stud from the same size separately

2001 Series: Complete assembly supplied with runner attached as shown

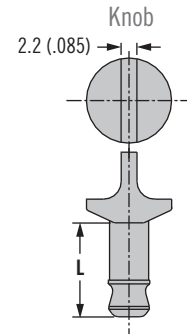
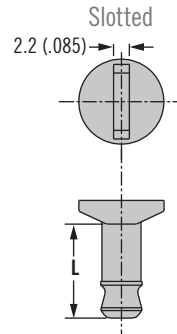
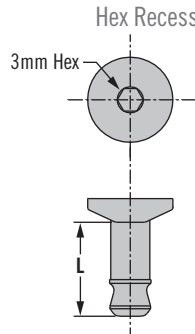
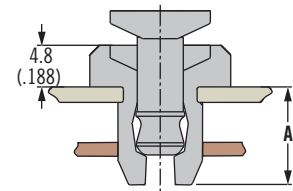


200 Series (order stud and receptacle separately)

Locked

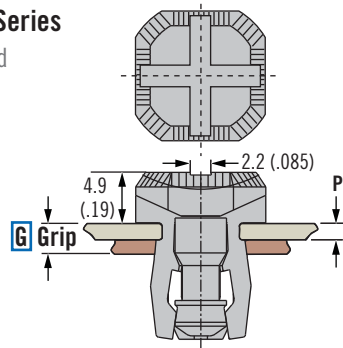


Released

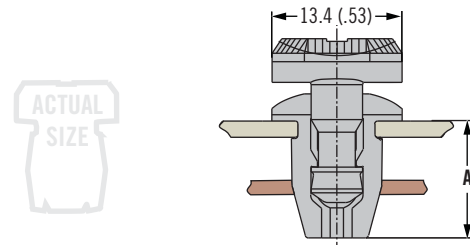


2001 Series

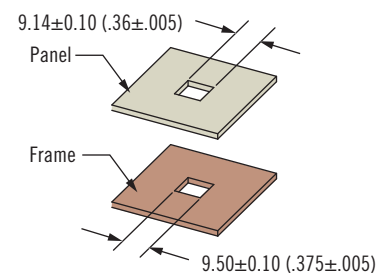
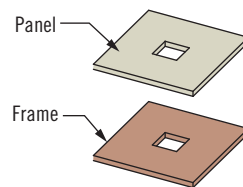
Latched



Unlatched



Installation



Series	A	Receptacle			Stud				
		Panel Thickness	Part Number	Part Number	Grip Range		Part Number		
					Min.	Max.	Hex recess	Slotted recess	Knob
200	12.3 (.48)	0.50 (.020)	1.78 (.070)	D7-200-802-010	2.03 (.080)	5.08 (.200)	D7-200-701-010	D7-200-711-010	D7-200-721-010
	13.7 (.54)	1.80 (.071)	3.10 (.125)	D7-201-802-010	3.43 (.135)	6.35 (.250)	D7-201-701-010	D7-201-711-010	D7-201-721-010
2001	12.0 (.47)	Complete Assembly							
		0.05 (.020)	1.7 (.067)	~	2.5 (.098)	6.7 (.263)	D7-2001-010		

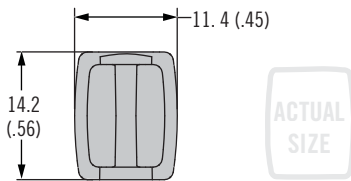
Dimensions in millimeters (inch) unless otherwise stated

NY DZUS® Q-Latch Quarter-Turn Fasteners

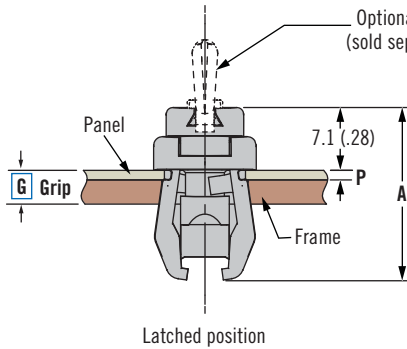
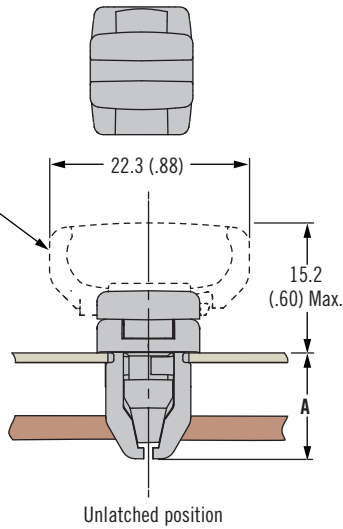
Assembly



Latched



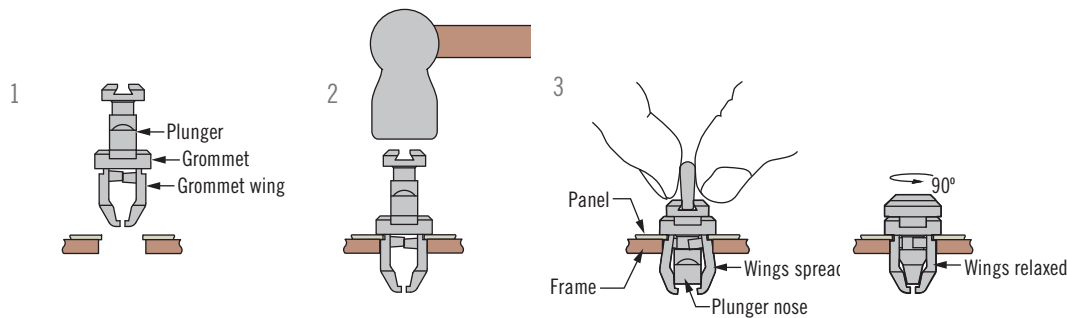
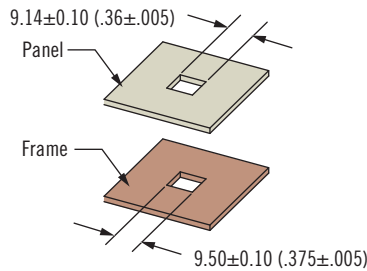
Unlatched



Latched position

Unlatched position

G	Grip Range		P Max.	A
	Min.	Max.		
1	1.50 (.059)	3.76 (.148)	1.0 (.042)	12.7 (.50)
2	1.93 (.076)	4.19 (.165)	1.5 (.057)	12.95 (.51)
3	3.00 (.118)	5.26 (.207)	2.5 (.098)	13.97 (.55)
4	4.62 (.182)	6.88 (.271)	4.1 (.162)	15.75 (.62)



- Surface install
- Panel mounted assembly

Material and Finish

Acetal copolymer resin, black

82

85

D8

D1

D4

D5

D7

NY



NY Q-latch Installation notes

1. Insert assembly into outer panel.
2. Strike head of assembly to captivate assembly into outer panel.
3. Turn stud 90 degree to latch and unlatch.
4. Slide wing into slot

Part Number Selection

Latch assembly shipped as one piece

Wing must be ordered separately

Assembly

Optional Wing (order separately)

NY - N6 - **G** - **F**

NY - H6 - **F**

- G** Grip range
- 1 1.50 - 3.76 (.059 - .148)
 - 2 1.93 - 4.19 (.076 - .165)
 - 3 3.00 - 5.26 (.118 - .207)
 - 4 4.62 - 6.88 (.182 - .271)

- F** Finish
- 10 Polycarbonate, white
 - 20 Polycarbonate, black
 - 30 Polysulfone, black
 - 31 Polysulfone, white

CAPTIVE SCREWS

Metric/Unified Threaded Fasteners

Pages 436-481, 490

Captivating fasteners to panels prevents the loss of hardware and the potential damage caused by dropping fasteners into operating equipment. Captive screws are especially useful for applications requiring repetitive fastening. Numerous Southco styles are available to suit specific space and access requirements.

SOUTHCO[®] Captive Screws are available in a variety of panel mounting styles and head styles to suit industry-standard and application requirements. The overmolded 4C Captive Screws are available in several screw sizes and feature colored molded polycarbonate / ABS knobs that enable you to coordinate color to design schemes or to differentiate access points for quick identification.

- ➔ High strength screws for use with high torque drivers
- ➔ Increased strength and corrosion-resistance
- ➔ Standard and custom colors available
- ➔ Variety of installation styles
- ➔ Tool or hand operation
- ➔ Modifications and custom solutions are available to suit individual application requirements



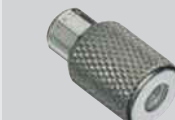
F5



52



5T



N7



4C



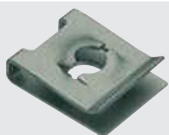
47

When flexibility is of the utmost importance, Southco's line of fast-lead screw fasteners provide access in just a few turns. The coarse pitch of the fast-lead screw, when matched with the broad range of receptacles, provides built in vibration resistance over a wide range of panel thicknesses.

- ➔ High strength fastening system
- ➔ Vibration resistant
- ➔ Fast access in just a few turns
- ➔ Tolerant of material variation

Fast-Lead Screws

Pages 482-489



09, 12, 17



09, 12, 17



09, 12, 17



09, 12, 17



09, 12, 17



09, 12, 17



Captive Screws

Metric/Unified threaded fasteners selection guide

Use this selection guide to help make the right choice of captive screw for your application

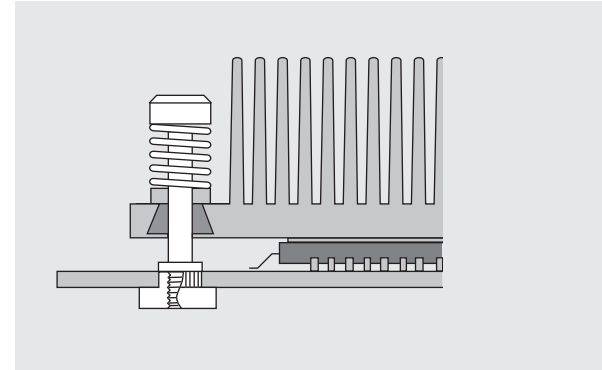


Contact Southco

Design Considerations:

- Panel Material
- Panel Thickness
- Environment
- Alignment Tolerance
- Space Available
- Recess Requirements
- Strength Required

Heat Sink Installation



	Product Class	THREADED SIZE										TOOL RECESS					
		M3	M3.5	M4	M5	M6	4-40	6-32	8-32	10-32	1/4-20	Slot	Phillips	TORX®	TORX® / Slot	Phillips / Slot	
PAGES 440-459, 470	47	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
PAGES 460-463, 471	4C	✓		✓	✓		✓	✓		✓			✓		✓	✓	
PAGES 464-467	47 Restricted access			✓	✓		✓	✓	✓	✓		✓	✓	✓			
PAGES 472, 474-475	52	✓		✓			✓	✓								✓	✓
PAGE 480	5T	✓	✓				✓	✓								✓	✓
PAGE 479	F5	✓		✓			✓	✓	✓			✓	✓				
PAGE 481	N7 Captive Nut	✓		✓	✓	✓	✓	✓	✓	✓	✓						

TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC

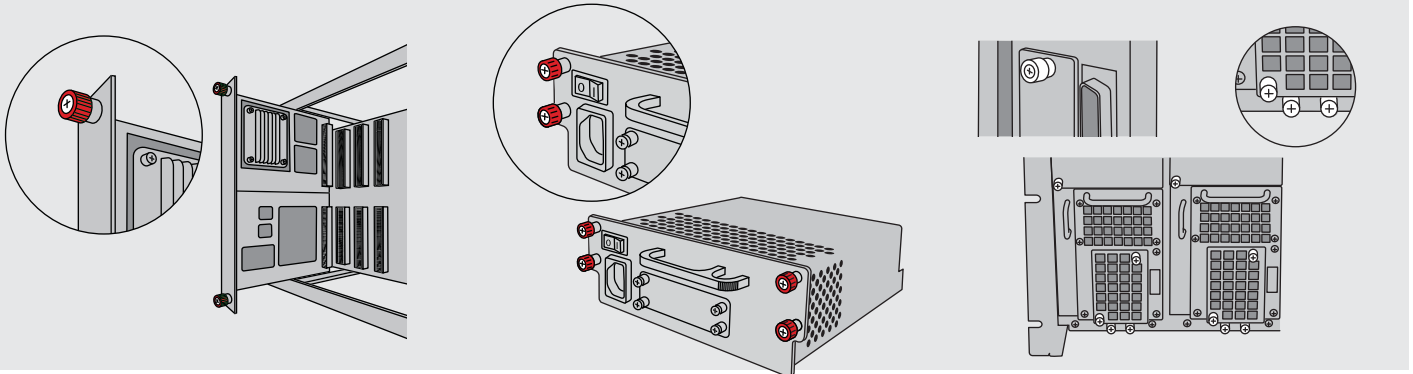
Dimensions in millimeters (inch) unless otherwise stated

Rapid Assembly Serviceability

Color Coded

Restricted Access

Limited Space



INSTALLATION						APPLICATION REQUIREMENTS										
Self Clinching (Press-In)	Flare-In	Floating	PCB	SMT	Snap-In	Stainless Steel	Low Profile	Flush	Hand Operable	Black Finish	Color Coded Knob	Restricted Access UL-1950	ATCA Compliant	High Strength Screw	Fixed Spring Preload	
✓	✓	✓	✓	✓	✓	☒	☒		✓	✓	☒	Smooth knob ✓	Page 480 ✓	✓		
✓	✓	✓	✓	✓					✓	Knob only as standard	✓	Smooth knob ✓	Page 480 ✓	✓		
✓	✓	✓							✓	✓		✓		✓		
✓	✓			✓		☒	✓		✓	☒	☒	Smooth knob ✓		✓		
☒	✓									☒				✓	✓	
✓						✓		✓		☒						
✓									✓	✓						



Captive Screws Specification

Metric/Unified threaded fasteners selection guide

How to specify SOUTHCO® Captive Screws

1. Choose the product type that best suits your application using the product benefits table.
2. Select your product features: Recess, installation style, color, size.
3. Specify the final part numbers using the tables found with each product style.
4. You can also specify your SOUTHCO® hardware on the web. Simply enter your product type into the search engine and configure online.

SOUTHCO® Captive Screws are available in a variety of sizes and configurations to give you endless options to control or enable access in your applications. Specifying SOUTHCO® Captive Screws is easy.






Product benefits table: Determine the product that best fits your application requirements. Additional information is available in the selection table on page 436-437.

47	<ul style="list-style-type: none"> • Stylized designer knob • Installation for a wide variety of material configurations • Knurled knob for easy, hand operation • Custom powder coat color matching 		
4C	<ul style="list-style-type: none"> • Define access points with color • Color match to your industrial design 		
47	<ul style="list-style-type: none"> • Restrict access to service areas with tighten by hand, tool to release options • Meets service access standards 		
52	<ul style="list-style-type: none"> • Lower profile knob for tight spaces • High strength screw for fast assembly 		
5T	<ul style="list-style-type: none"> • Maximize heat transfer • Screw sets defined preload • Maintain contact under vibration • Allows for thermal expansion while maintaining preload to defined range 		
F5	<ul style="list-style-type: none"> • Flush recessed captive design • Tool only access • All stainless steel design 		
N7	<ul style="list-style-type: none"> • Fastens to thread stud for a flush panel configuration • Available with blind threaded hole for a finished appearance 		


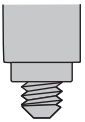
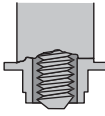
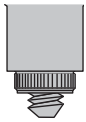
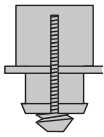
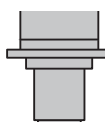
Dimensions in millimeters (inch) unless otherwise stated

Select the product features that you need

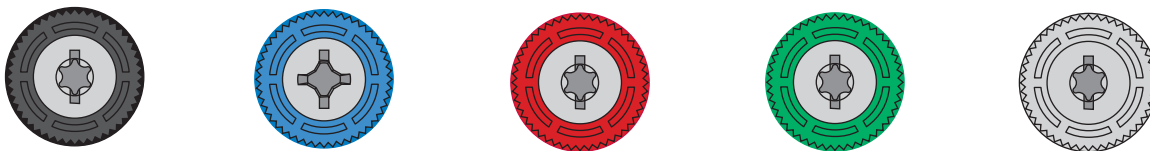
Tool Recess

Which access is best for your application?				
<p>Slotted: Common recess</p> 	<p>Phillips: Better tool retention Meets certain limited-access restrictions</p> 	<p>Phillips / Slot: Combine the better tool retention of Phillips with the convenience of a slotted recess</p> 	<p>TORX®: Higher torque transfer Reduced cam-out and end load High speed assembly Longer tool life</p> 	<p>TORX® / Slot: Combine the benefits of TORX® with the convenience of a slotted recess</p> 

Installation Style

Which installation method is best for your application?					
<p>Self-Clinching, Press-In: One-step press operation</p> 	<p>Flare-In: Near edge installation in plastics, castings and any material</p> 	<p>Floating: Provides additional radial float to accommodate a significant amount of misalignment</p> 	<p>P.C. Board: Designed for use in P.C. boards and other composites such as fiberglass</p> 	<p>Snap-In: Install by hand, no special tools required</p> 	<p>SMT: For installation to PC Board material utilizing surface mount technology</p> 

Color



When an off-the-shelf design doesn't quite meet your needs...

Lower profile, ergonomic, extended reach, small space envelope...no problem!



Speed up service and decrease assembly time in tight spaces!



Have a wish list?
Southco can give you the solution.





47 Captive Screws

Styled knob series · M3 thread size

- Smooth knob meets UL-1950
- Designed for hand operation
- Spring ejected
- Wide variety of sizes, recesses and installation options

Material and Finish

Ferrule:

Press-in: Hardened carbon steel, zinc plated, chromate, plus sealer

Flare-in and Floating:

Aluminum, natural

P.C. board style: 300 Series stainless steel, passivated

Knob:

Aluminum, natural or black powder coated

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Installation Notes

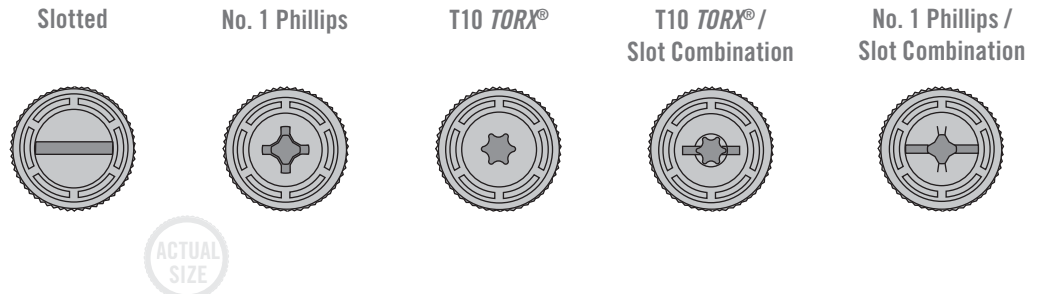
See pages 468-469, 543

Notes



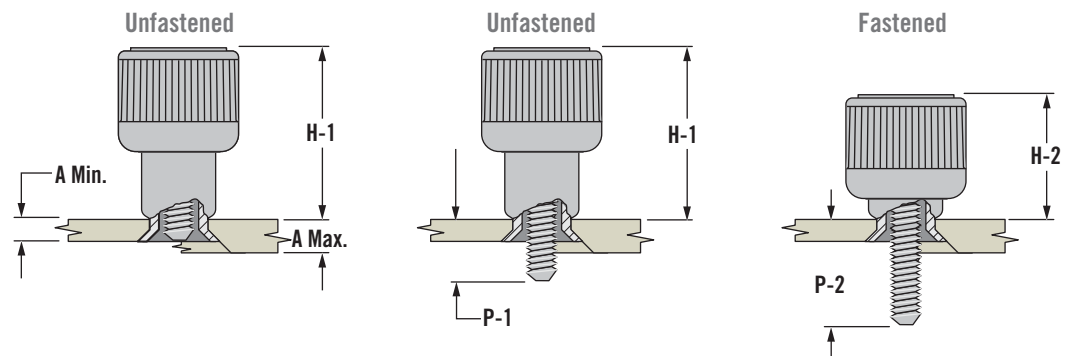
To ensure you receive **SOUTHCO**® quality parts, look for the segmented circle

Recess Styles

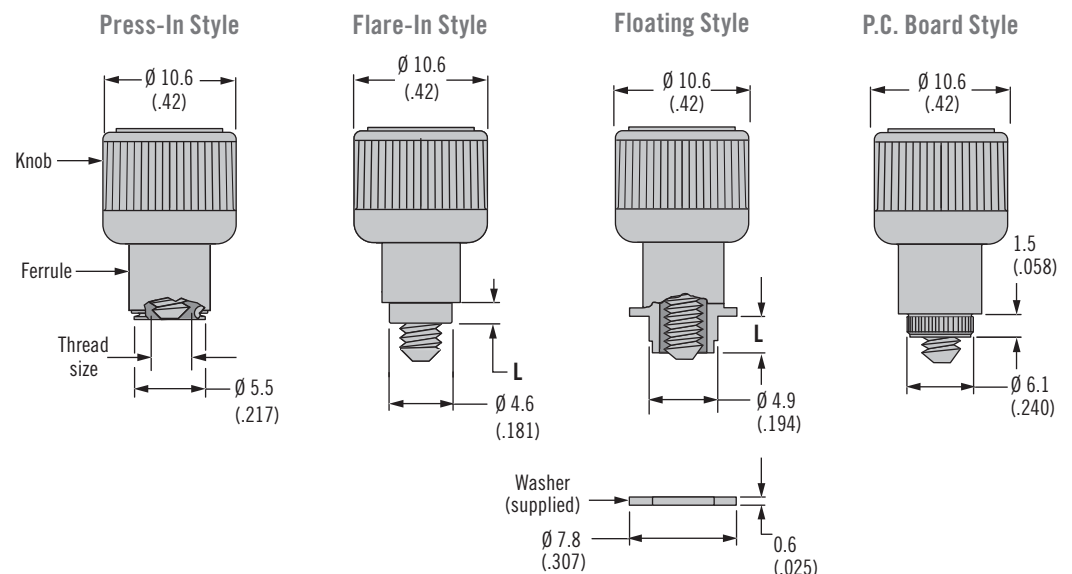


Knob Height and Screw Projection

(Flare-in style shown)



Installation Styles



TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

Installation Style	Knob Height		Outer Panel Dimensions		B	Total Float	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number				
	H-1	H-2	A Min.	A Max.				P-1	P-2	Slotted Recess	Phillips Recess	TORX® Recess	TORX® / Slot Combination	Phillips / Slot Combination
Press-In Style	11.3 (.45)	8.3 (.33)	0.9 (.036)	~	~	0.7 (.03)	~	0.8 (.03)	3.8 (.15)	47-90-101-24	47-90-121-24	47-90-141-24	47-90-161-20	47-90-181-24
								2.5 (.10)	5.5 (.22)	47-91-101-24	47-91-121-24	47-91-141-24	47-91-161-20	47-91-181-24
								4 (.16)	7 (.28)	47-92-101-24	47-92-121-24	47-92-141-24	47-92-161-20	47-92-181-24
								5.6 (.22)	8.6 (.34)	47-93-101-24	47-93-121-24	47-93-141-24	47-93-161-20	47-93-181-24
P.C. Board Style	11.5 (.45)	8.3 (.33)	1.6 (.061)	~	~	0.7 (.03)	~	1.5 (.06)	4.5 (.18)	47-95-101-34	47-95-121-34	47-95-141-34	47-95-161-30	47-95-181-34
Flare-In Style	11.5 (.45)	8.1 (.32)	0.8 (.031)	1.5 (.058)	0.4 (.015)	0.7 (.03)	1.0 (.041)	0.8 (.03)	4 (.16)	47-80-101-14	47-80-121-14	47-80-141-14	47-80-161-10	47-80-181-14
			1.5 (.059)	2.5 (.098)	0.4 (.015)		1.8 (.070)	1.5 (.06)	4.7 (.19)	47-80-102-14	47-80-122-14	47-80-142-14	47-80-162-10	47-80-182-14
			2.5 (.098)	4 (.156)	0.8 (.031)		2.6 (.104)	2.5 (.10)	5.7 (.22)	47-80-103-14	47-80-123-14	47-80-143-14	47-80-163-10	47-80-183-14
			4 (.157)	5.6 (.219)	2.4 (.093)		4.2 (.166)	4 (.16)	7.2 (.28)	47-80-105-14	47-80-125-14	47-80-145-14	47-80-165-10	47-80-185-14
			5.6 (.220)	7.1 (.281)	4 (.156)		5.8 (.299)	5.6 (.22)	8.8 (.35)	47-80-107-14	47-80-127-14	47-80-147-14	47-80-167-10	47-80-187-14
			0.8 (.031)	1.5 (.058)	0.4 (.015)		1.0 (.041)	2.5 (.10)	5.7 (.22)	47-81-101-14	47-81-121-14	47-81-141-14	47-81-161-10	47-81-181-14
			4 (.16)	7.2 (.28)	47-82-101-14		47-82-121-14	47-82-141-14	47-82-161-10	47-82-181-14				
			5.6 (.22)	8.8 (.35)	47-83-101-14		47-83-121-14	47-83-141-14	47-83-161-10	47-83-181-14				
			3.2 (.13)	6.4 (.25)	47-81-102-14		47-81-122-14	47-81-142-14	47-81-162-10	47-81-182-14				
			4.7 (.19)	7.9 (.31)	47-82-102-14		47-82-122-14	47-82-142-14	47-82-162-10	47-82-182-14				
			6.3 (.25)	9.5 (.37)	47-83-102-14		47-83-122-14	47-83-142-14	47-83-162-10	47-83-182-14				
			1.9 (.07)	5.1 (.20)	47-80-110-14		47-80-130-14	47-80-150-14	47-80-170-10	47-80-190-14				
			3.4 (.13)	6.6 (.26)	47-81-110-14		47-81-130-14	47-81-150-14	47-81-170-10	47-81-190-14				
			5 (.19)	8.2 (.32)	47-82-110-14		47-82-130-14	47-82-150-14	47-82-170-10	47-82-190-14				
1.9 (.07)	5.1 (.20)	47-80-111-14	47-80-131-14	47-80-151-14	47-80-171-10	47-80-191-14								
3.4 (.13)	6.6 (.26)	47-81-111-14	47-81-131-14	47-81-151-14	47-81-171-10	47-81-191-14								
5 (.19)	8.2 (.32)	47-82-111-14	47-82-131-14	47-82-151-14	47-82-171-10	47-82-191-14								
3.4 (.13)	6.6 (.26)	47-80-112-14	47-80-132-14	47-80-152-14	47-80-172-10	47-80-192-14								
5 (.19)	8.2 (.32)	47-81-112-14	47-81-132-14	47-81-152-14	47-81-172-10	47-81-192-14								
Floating Style	11.4 (.45)	8.6 (.34)	~	0.8 (.031)	2 (.080)	2.0 (.08)	2.6 (.101)	1.9 (.07)	5.1 (.20)	47-80-110-14	47-80-130-14	47-80-150-14	47-80-170-10	47-80-190-14
			0.8 (.031)	1.6 (.063)	2.8 (.111)		3.4 (.132)	1.9 (.07)	5.1 (.20)	47-80-111-14	47-80-131-14	47-80-151-14	47-80-171-10	47-80-191-14
			1.6 (.063)	2.4 (.094)	3.6 (.143)		4.2 (.164)	3.4 (.13)	6.6 (.26)	47-81-111-14	47-81-131-14	47-81-151-14	47-81-171-10	47-81-191-14
			3.4 (.13)	6.6 (.26)	47-82-111-14		47-82-131-14	47-82-151-14	47-82-171-10	47-82-191-14				
			3.4 (.13)	6.6 (.26)	47-80-112-14		47-80-132-14	47-80-152-14	47-80-172-10	47-80-192-14				
			5 (.19)	8.2 (.32)	47-81-112-14		47-81-132-14	47-81-152-14	47-81-172-10	47-81-192-14				

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness



To add a black powder coated finish, change the part number from the table as shown:

- Change 1 to 5: 47-80-102-14
47-80-102-54
- Change 2 to 6: 47-80-102-24
47-80-102-64
- Change 3 to 7: 47-80-102-34
47-80-102-74



For a smooth knob, change the part number from the table as shown:

- Change 0 to 1: 47-90-161-20
47-90-161-21
- Change 4 to 5: 47-90-101-24
47-90-101-25

Part Number

See table

All screw part numbers shown in table are for a natural knob finish and a knurled knob

For black finish and smooth knob options, minimums may apply



47 Captive Screws

Styled knob series · M3.5 thread size

- Smooth knob meets UL-1950
- Designed for hand operation
- Spring ejected
- Wide variety of sizes, recesses and installation options

Material and Finish

Ferrule:

Press-in: Hardened carbon steel, zinc plate, chromate, plus sealer
P.C. board: 300 Series stainless steel, passivated

Flare-in, floating and snap-in: Aluminum, natural

Knob: Aluminum, natural or black powder coated

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Installation Notes

See pages 468-469, 543

Notes



To ensure you receive **SOUTHCO**® quality parts, look for the segmented circle

Recess Styles

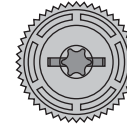
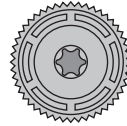
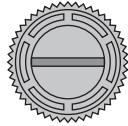
Slotted

No. 2 Phillips

T15 TORX®

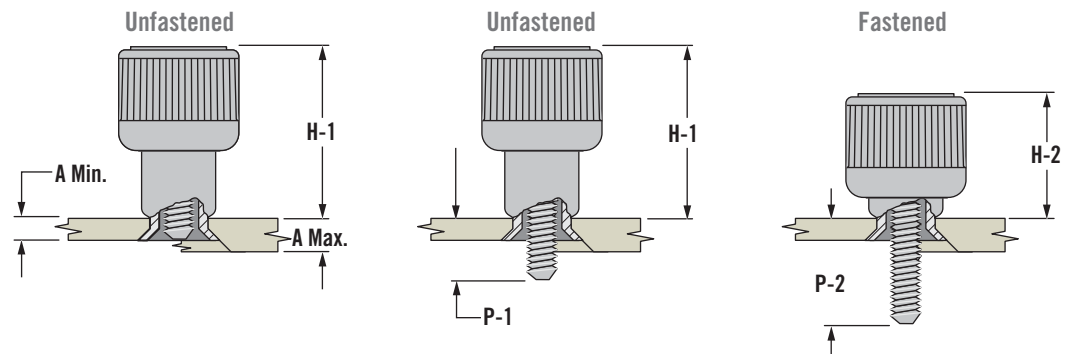
T15 TORX® /
Slot Combination

No. 2 Phillips /
Slot Combination

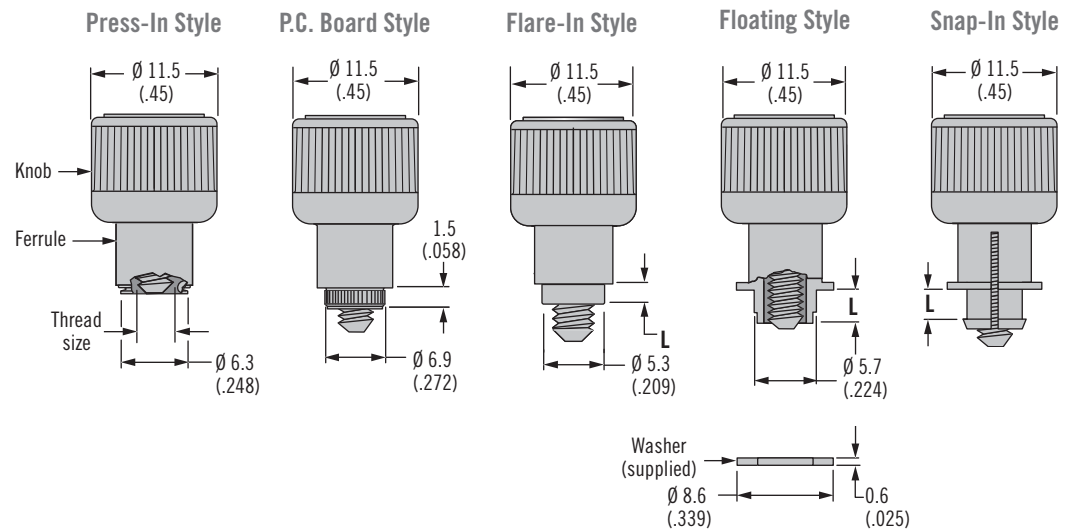


Knob Height and Screw Projection

(Flare-in style shown)



Installation Styles



TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

southco®
CONNECT · CREATE · INNOVATE

Installation Style	Knob Height		Outer Panel Dimensions		B	Total Float	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number				
	H-1	H-2	A Min.	A Max.				P-1	P-2	Slotted Recess	Phillips Recess	TORX® Recess	TORX® / Slot Combination	Phillips / Slot Combination
Press-In Style	15.9 (.63)	11.2 (.44)	0.9 (.036)	~	~	0.8 (.03)	~	0.5 (.02)	5.3 (.21)	47-90-201-24	47-90-221-24	47-90-241-24	47-90-261-20	47-90-281-24
								2.1 (.09)	6.9 (.27)	47-91-201-24	47-91-221-24	47-91-241-24	47-91-261-20	47-91-281-24
								3.7 (.15)	8.5 (.33)	47-92-201-24	47-92-221-24	47-92-241-24	47-92-261-20	47-92-281-24
								5.3 (.21)	10.1 (.40)	47-93-201-24	47-93-221-24	47-93-241-24	47-93-261-20	47-93-281-24
P.C. Board Style	14.8 (.58)	10 (.39)	1.6 (.061)	~	~	0.8 (.03)	~	1.4 (.06)	6.2 (.24)	47-95-201-34	47-95-221-34	47-95-241-34	47-95-261-30	47-95-281-34
Flare-In Style	15.3 (.60)	10.4 (.41)	1.5 (.058)	3.2 (.125)	0.4 (.015)	0.8 (.03)	1.8 (.07)	1.1 (.04)	6 (.24)	47-80-202-14	47-80-222-14	47-80-242-14	47-80-262-10	47-80-282-14
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	2.7 (.11)	7.6 (.30)	47-80-204-14	47-80-224-14	47-80-244-14	47-80-264-10	47-80-284-14
			4.8 (.188)	6.4 (.250)	3.2 (.125)		5 (.197)	4.3 (.17)	9.2 (.36)	47-80-206-14	47-80-226-14	47-80-246-14	47-80-266-10	47-80-286-14
			6.4 (.252)	7.9 (.312)	4.8 (.189)		6.6 (.26)	5.9 (.23)	10.8 (.43)	47-80-208-14	47-80-228-14	47-80-248-14	47-80-268-10	47-80-288-14
			1.5 (.058)	3.2 (.125)	0.4 (.015)		1.8 (.07)	2.7 (.11)	7.6 (.30)	47-81-202-14	47-81-222-14	47-81-242-14	47-81-262-10	47-81-282-14
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	4.3 (.17)	9.2 (.36)	47-82-202-14	47-82-222-14	47-82-242-14	47-82-262-10	47-82-282-14
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	5.9 (.23)	10.8 (.43)	47-83-202-14	47-83-222-14	47-83-242-14	47-83-262-10	47-83-282-14
			6.4 (.252)	7.9 (.312)	4.8 (.189)		6.6 (.26)	5.9 (.23)	10.8 (.43)	47-82-204-14	47-82-224-14	47-82-244-14	47-82-264-10	47-82-284-14
			1.5 (.058)	3.2 (.125)	0.4 (.015)		1.8 (.07)	2.7 (.11)	7.6 (.30)	47-81-204-14	47-81-224-14	47-81-244-14	47-81-264-10	47-81-284-14
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	4.3 (.17)	9.2 (.36)	47-82-204-14	47-82-224-14	47-82-244-14	47-82-264-10	47-82-284-14
4.8 (.189)	6.4 (.250)	3.2 (.125)	5 (.197)	5.9 (.23)	10.8 (.43)	47-81-206-14	47-81-226-14	47-81-246-14	47-81-266-10	47-81-286-14				
Floating Style	15.4 (.60)	10.6 (.42)	~	0.8 (.031)	2.1 (.083)	2.2 (.09)	2.9 (.113)	2.4 (.09)	7.2 (.28)	47-80-210-14	47-80-230-14	47-80-250-14	47-80-270-10	47-80-290-14
			0.8 (.031)	1.6 (.063)	2.9 (.114)		3.7 (.144)	4 (.16)	8.8 (.35)	47-81-210-14	47-81-230-14	47-81-250-14	47-81-270-10	47-81-290-14
			1.6 (.063)	2.4 (.094)	3.7 (.146)		4.5 (.176)	5.6 (.22)	10.4 (.41)	47-82-210-14	47-82-230-14	47-82-250-14	47-82-270-10	47-82-290-14
			2.4 (.094)	3.7 (.146)	4.5 (.176)		5.6 (.22)	10.4 (.41)	47-81-211-14	47-81-231-14	47-81-251-14	47-81-271-10	47-81-291-14	
			3.7 (.144)	4.5 (.176)	5.6 (.22)		10.4 (.41)	10.4 (.41)	47-82-211-14	47-82-231-14	47-82-251-14	47-82-271-10	47-82-291-14	
			4.5 (.176)	5.6 (.22)	10.4 (.41)		10.4 (.41)	10.4 (.41)	47-80-212-14	47-80-232-14	47-80-252-14	47-80-272-10	47-80-292-14	
			5.6 (.22)	10.4 (.41)	10.4 (.41)		10.4 (.41)	10.4 (.41)	47-81-212-14	47-81-232-14	47-81-252-14	47-81-272-10	47-81-292-14	
			0.8 (.03)	2.4 (.09)	7.2 (.28)		47-91-210-14	47-91-230-14	47-91-250-14	47-91-270-10	47-91-290-14			
			2.4 (.09)	7.2 (.28)	47-92-210-14		47-92-230-14	47-92-250-14	47-92-270-10	47-92-290-14				
			4 (.16)	8.8 (.35)	47-93-210-14		47-93-230-14	47-93-250-14	47-93-270-10	47-93-290-14				
Snap-In Style	15.4 (.60)	10.6 (.42)	0.5 (.02)	1 (.039)	2 (.079)	0.8 (.03)	1.1 (.044)	0.8 (.03)	5.6 (.22)	47-90-210-14	47-90-230-14	47-90-250-14	47-90-270-10	47-90-290-14
			2.4 (.09)	7.2 (.28)	47-91-210-14		47-91-230-14	47-91-250-14	47-91-270-10	47-91-290-14				
			4 (.16)	8.8 (.35)	47-92-210-14		47-92-230-14	47-92-250-14	47-92-270-10	47-92-290-14				
			5.6 (.22)	10.4 (.41)	47-93-210-14		47-93-230-14	47-93-250-14	47-93-270-10	47-93-290-14				
			2.4 (.09)	7.2 (.28)	47-90-212-14		47-90-232-14	47-90-252-14	47-90-272-10	47-90-292-14				
			4 (.16)	8.8 (.35)	47-91-212-14		47-91-232-14	47-91-252-14	47-91-272-10	47-91-292-14				
5.6 (.22)	10.4 (.41)	47-92-212-14	47-92-232-14	47-92-252-14	47-92-272-10	47-92-292-14								

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness



To add a black powder coated finish, change the part number from the table as shown:

- Change 1 to 5: 47-80-102-14
- 47-80-102-54
- Change 2 to 6: 47-80-102-24
- 47-80-102-64
- Change 3 to 7: 47-80-102-34
- 47-80-102-74



For a smooth knob, change the part number from the table as shown:

- Change 0 to 1: 47-90-161-20
- 47-90-161-21
- Change 4 to 5: 47-90-101-24
- 47-90-101-25

Part Number

See table

All screw part numbers shown in table are for a natural knob finish and a knurled knob

For black finish and smooth knob options, minimums may apply



47 Captive Screws

Styled knob series · M4 thread size

- Designed for hand operation
- Spring ejected
- Wide variety of sizes, recesses and installation options

Material and Finish

Ferrule:

Press-in: Hardened carbon steel, zinc plate, chromate, plus sealer

Flare-in, floating and snap-in:

Aluminum, natural

Knob: Aluminum, natural or black powder coated

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Installation Notes

See pages 468-469, 543

Notes



To ensure you receive **SOUTHCO**® quality parts, look for the segmented circle

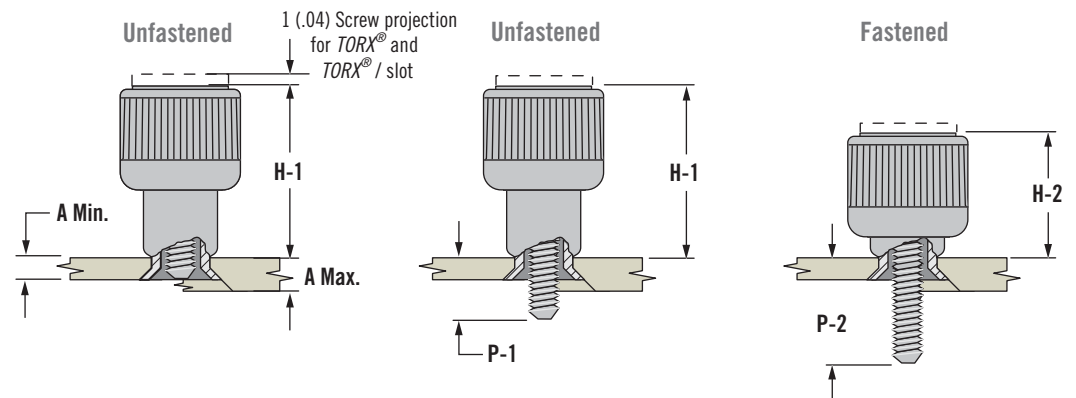
Recess Styles



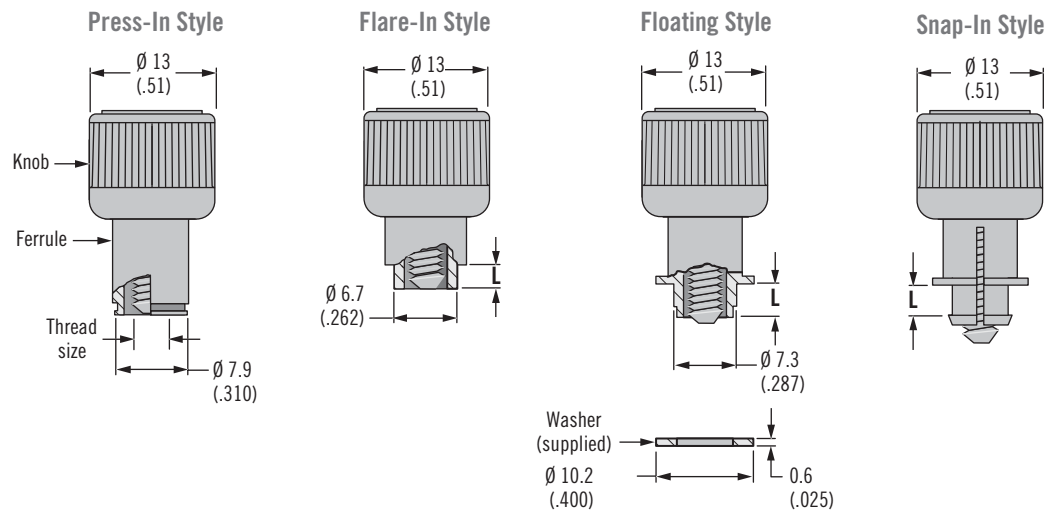
ACTUAL SIZE

Knob Height and Screw Projection

(Flare-in style shown)



Installation Styles



TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

Installation Style	Knob Height		Outer Panel Dimensions		B	Total Float	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number					
	H-1	H-2	A Min.	A Max.				P-1	P-2	Slotted Recess	Phillips Recess	TORX® Recess	TORX® / Slot Combination	Phillips / Slot Combination	
Press-In Style	16.2 (.64)	11.3 (.45)	0.9 (.036)	~	~	0.8 (.03)	~	0.6 (.02)	5.6 (.22)	47-90-301-24	47-90-321-24	47-90-341-20	47-90-361-20	47-90-381-20	
								2.2 (.09)	7.2 (.28)	47-91-301-24	47-91-321-24	47-91-341-20	47-91-361-20	47-91-381-20	
								3.8 (.15)	8.7 (.34)	47-92-301-24	47-92-321-24	47-92-341-20	47-92-361-20	47-92-381-20	
								5.4 (.21)	10.3 (.41)	47-93-301-24	47-93-321-24	47-93-341-20	47-93-361-20	47-93-381-20	
Flare-In Style	15.6 (.61)	10.5 (.41)	1.5 (.058)	3.2 (.125)	0.4 (.015)	0.9 (.03)	1.8 (.070)	1.2 (.05)	6.3 (.25)	47-80-302-14	47-80-322-14	47-80-342-10	47-80-362-10	47-80-382-10	
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	2.8 (.11)	7.9 (.31)	47-80-304-14	47-80-324-14	47-80-344-10	47-80-364-10	47-80-384-10	
			4.8 (.189)	6.4 (.251)	3.2 (.125)		5 (.197)	4.4 (.17)	9.5 (.37)	47-80-306-14	47-80-326-14	47-80-346-10	47-80-366-10	47-80-386-10	
			6.4 (.251)	7.9 (.312)	4.8 (.187)		6.6 (.26)	6 (.24)	11.1 (.44)	47-80-308-14	47-80-328-14	47-80-348-10	47-80-368-10	47-80-388-10	
			1.5 (.058)	3.2 (.125)	0.4 (.015)		1.8 (.07)	2.8 (.11)	7.9 (.31)	47-81-302-14	47-81-322-14	47-81-342-10	47-81-362-10	47-81-382-10	
			3.2 (.126)	4.8 (.189)	1.6 (.062)		6 (.24)	11.1 (.44)	47-82-302-14	47-82-322-14	47-82-342-10	47-82-362-10	47-82-382-10		
			4.8 (.189)	6.4 (.250)	3.2 (.125)		6 (.24)	11.1 (.44)	47-83-302-14	47-83-322-14	47-83-342-10	47-83-362-10	47-83-382-10		
			3.2 (.126)	4.8 (.189)	1.6 (.062)		4.4 (.17)	9.5 (.37)	47-81-304-14	47-81-324-14	47-81-344-10	47-81-364-10	47-81-384-10		
			6.4 (.251)	7.9 (.312)	4.8 (.187)		6 (.24)	11.1 (.44)	47-82-304-14	47-82-324-14	47-82-344-10	47-82-364-10	47-82-384-10		
			1.5 (.058)	3.2 (.125)	0.4 (.015)		5 (.197)	4.4 (.17)	11.1 (.44)	47-81-306-14	47-81-326-14	47-81-346-10	47-81-366-10	47-81-386-10	
			3.2 (.126)	4.8 (.189)	1.6 (.062)		4.4 (.17)	9.5 (.37)	47-82-306-14	47-82-326-14	47-82-346-10	47-82-366-10	47-82-386-10		
			6.4 (.251)	7.9 (.312)	4.8 (.187)		5 (.197)	4.4 (.17)	11.1 (.44)	47-83-306-14	47-83-326-14	47-83-346-10	47-83-366-10	47-83-386-10	
Floating Style	16.2 (.64)	11.2 (.44)	~	0.8 (.031)	2.3 (.09)	2.3 (.09)	3.2 (.127)	2.4 (.09)	7.2 (.28)	47-80-310-14	47-80-330-14	47-80-350-10	47-80-370-10	47-80-390-10	
			4 (.16)	8.8 (.35)	47-81-310-14		47-81-330-14	47-81-350-10	47-81-370-10	47-81-390-10					
			5.6 (.22)	10.4 (.41)	47-82-310-14		47-82-330-14	47-82-350-10	47-82-370-10	47-82-390-10					
			2.4 (.09)	7.2 (.28)	47-80-311-14		47-80-331-14	47-80-351-10	47-80-371-10	47-80-391-10					
			4 (.16)	8.8 (.35)	47-81-311-14		47-81-331-14	47-81-351-10	47-81-371-10	47-81-391-10					
			5.6 (.22)	10.4 (.41)	47-82-311-14		47-82-331-14	47-82-351-10	47-82-371-10	47-82-391-10					
			1.6 (.063)	2.4 (.094)	3.9 (.153)		4.8 (.190)	4 (.16)	7.2 (.28)	47-80-312-14	47-80-332-14	47-80-352-10	47-80-372-10	47-80-392-10	
			5.6 (.22)	8.8 (.35)	47-81-312-14		47-81-332-14	47-81-352-10	47-81-372-10	47-81-392-10					
			1.1 (.044)	1.1 (.044)	2 (.079)		1.1 (.044)	1.1 (.044)	5.8 (.23)	10.4 (.41)	47-90-310-14	47-90-330-14	47-90-350-10	47-90-370-10	47-90-390-10
			2.7 (.11)	7.2 (.28)	47-91-310-14		47-91-330-14	47-91-350-10	47-91-370-10	47-91-390-10					
			4.3 (.17)	8.8 (.35)	47-93-310-14		47-92-330-14	47-92-350-10	47-92-370-10	47-92-390-10					
			1.7 (.068)	1.7 (.068)	2.6 (.102)		1.7 (.068)	1.7 (.068)	2.7 (.11)	7.2 (.28)	47-90-312-14	47-90-332-14	47-90-352-10	47-90-372-10	47-90-392-10
4.3 (.17)	8.8 (.35)	47-91-312-14	47-91-332-14	47-91-352-10	47-91-372-10	47-91-392-10									
5.9 (.23)	10.4 (.41)	47-92-312-14	47-92-332-14	47-92-352-10	47-92-372-10	47-92-392-10									
2.6 (.103)	2.6 (.103)	3.5 (.138)	2.6 (.103)	2.6 (.103)	2.7 (.11)	7.2 (.28)	47-90-314-14	47-90-334-14	47-90-354-10	47-90-374-10	47-90-394-10				
4.3 (.17)	8.8 (.35)	47-91-314-14	47-91-334-14	47-91-354-10	47-91-374-10	47-91-394-10									
5.9 (.23)	10.4 (.41)	47-92-314-14	47-92-334-14	47-92-354-10	47-92-374-10	47-92-394-10									

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness



To add a black powder coated finish, change the part number from the table as shown:

- Change 1 to 5: 47-80-102-14, 47-80-102-54
- Change 2 to 6: 47-80-102-24, 47-80-102-64



For a smooth knob, change the part number from the table as shown:

- Change 0 to 1: 47-90-161-20, 47-90-161-21
- Change 4 to 5: 47-90-101-24, 47-90-101-25

Part Number

See table
 All screw part numbers shown in table are for a natural knob finish and a knurled knob
 For black finish and smooth knob options, minimums may apply



47 Captive Screws

Styled knob series · M5 thread size

- Designed for hand operation
- Spring ejected
- Wide variety of sizes, recesses and installation options

Material and Finish

Ferrule:

Press-in: Hardened carbon steel, zinc plate, chromate, plus sealer

Flare-in, floating and snap-in:

Aluminum, natural

Knob: Aluminum, natural or black powder coated

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Installation Notes

See pages 468-469, 543

Notes



To ensure you receive **SOUTHCO®** quality parts, look for the segmented circle

Recess Styles

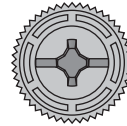
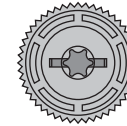
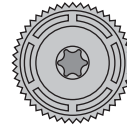
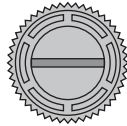
Slotted

No. 2 Phillips

T25 TORX®

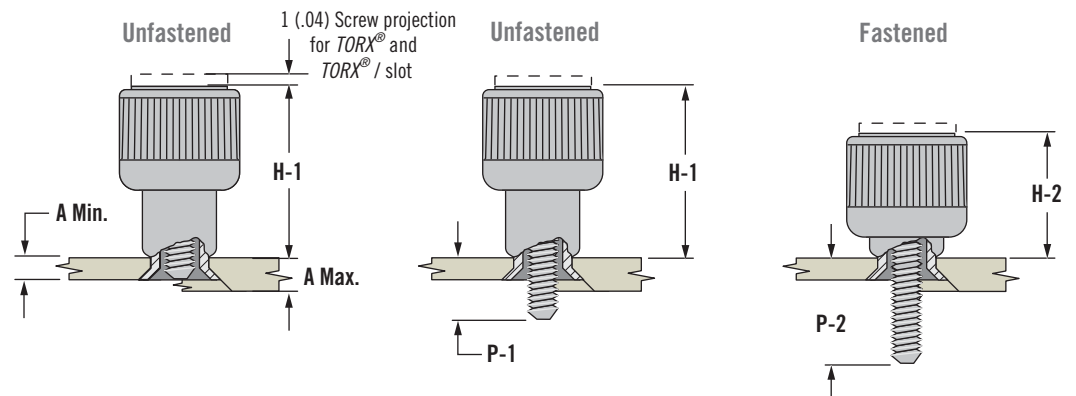
T25 TORX® /
Slot Combination

No. 2 Phillips /
Slot Combination

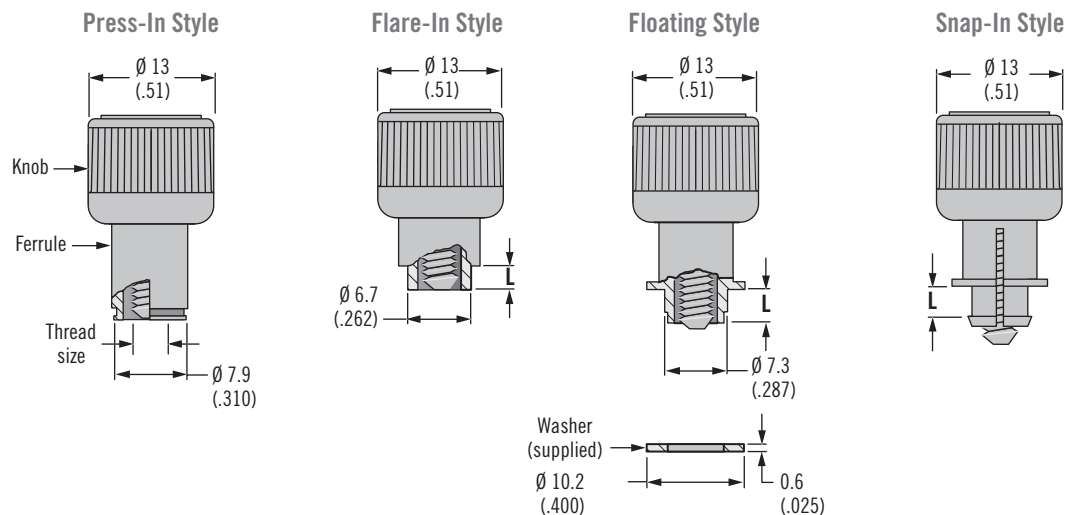


Knob Height and Screw Projection

(Flare-in style shown)



Installation Styles



TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

southco®
CONNECT · CREATE · INNOVATE

Installation Style	Knob Height		Outer Panel Dimensions			Total Float	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number								
	H-1	H-2	A Min.	A Max.	B			P-1	P-2	Slotted Recess	Phillips Recess	TORX® Recess	TORX® / Slot Combination	Phillips / Slot Combination				
Press-In Style	16.2 (.64)	11.3 (.45)	0.9 (.036)	~	~	0.6 (.02)	~	0.6 (.024)	5.5 (.22)	47-90-501-24	47-90-521-24	47-90-541-20	47-90-561-20	47-90-581-20				
								2.2 (.087)	7.1 (.28)	47-91-501-24	47-91-521-24	47-91-541-20	47-91-561-20	47-91-581-20				
								3.8 (.15)	8.7 (.34)	47-92-501-24	47-92-521-24	47-92-541-20	47-92-561-20	47-92-581-20				
								5.4 (.21)	10.3 (.41)	47-93-501-24	47-93-521-24	47-93-541-20	47-93-561-20	47-93-581-20				
Flare-In Style	15.6 (.61)	10.5 (.41)	1.5 (.058)	3.2 (.125)	0.4 (.015)	0.6 (.02)	1.8 (.070)	1.2 (.05)	6.3 (.25)	47-80-502-14	47-80-522-14	47-80-542-10	47-80-562-10	47-80-582-10				
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	2.8 (.11)	7.9 (.31)	47-80-504-14	47-80-524-14	47-80-544-10	47-80-564-10	47-80-584-10				
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	4.4 (.17)	9.5 (.37)	47-80-506-14	47-80-526-14	47-80-546-10	47-80-566-10	47-80-586-10				
			6.3 (.251)	7.9 (.312)	4.8 (.189)		6.6 (.260)	6 (.24)	11.1 (.44)	47-80-508-14	47-80-528-14	47-80-548-10	47-80-568-10	47-80-588-10				
			1.5 (.058)	3.2 (.125)	0.4 (.015)		1.8 (.070)	2.8 (.11)	7.9 (.31)	47-81-502-14	47-81-522-14	47-81-542-10	47-81-562-10	47-81-582-10				
			4.4 (.17)	9.5 (.37)	47-82-502-14		47-82-522-14	47-82-542-10	47-82-562-10	47-82-582-10								
			6 (.24)	11.1 (.44)	47-83-502-14		47-83-522-14	47-83-542-10	47-83-562-10	47-83-582-10								
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	4.4 (.17)	9.5 (.37)	47-81-504-14	47-81-524-14	47-81-544-10	47-81-564-10	47-81-584-10				
			6 (.24)	11.1 (.44)	47-82-504-14		47-82-524-14	47-82-544-10	47-82-564-10	47-82-584-10								
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	6 (.24)	11.1 (.44)	47-81-506-14	47-81-526-14	47-81-546-10	47-81-566-10	47-81-586-10				
			Floating Style	16 (.63)	11.2 (.44)		~	0.8 (.031)	2.3 (.090)	2.3 (.09)	3.2 (.127)	2.4 (.09)	7.2 (.28)	47-80-510-14	47-80-530-14	47-80-550-10	47-80-570-10	47-80-590-10
							4 (.16)	8.8 (.35)	47-81-510-14		47-81-530-14	47-81-550-10	47-81-570-10	47-81-590-10				
5.6 (.22)	10.4 (.41)	47-82-510-14				47-82-530-14	47-82-550-10	47-82-570-10	47-82-590-10									
0.8 (.031)	1.6 (.063)	3.1 (.121)				4 (.158)	2.4 (.09)	7.2 (.28)	47-80-511-14		47-80-531-14	47-80-551-10	47-80-571-10	47-80-591-10				
4 (.16)	8.8 (.35)	47-81-511-14				47-81-531-14	47-81-551-10	47-81-571-10	47-81-591-10									
5.6 (.22)	10.4 (.41)	47-82-511-14				47-82-531-14	47-82-551-10	47-82-571-10	47-82-591-10									
1.6 (.063)	2.4 (.094)	3.9 (.153)				4.8 (.190)	4 (.16)	8.8 (.35)	47-80-512-14		47-80-532-14	47-80-552-10	47-80-572-10	47-80-592-10				
5.6 (.22)	10.4 (.41)	47-81-512-14				47-81-532-14	47-81-552-10	47-81-572-10	47-81-592-10									
Snap-In Style	15.7 (.62)	11.2 (.44)				0.5 (.020)	1 (.039)	2 (.079)	.9 (.04)		1.1 (.044)	1.1 (.04)	5.6 (.22)	47-90-510-14	47-90-530-14	47-90-550-10	47-90-570-10	47-90-590-10
						2.7 (.11)	7.2 (.28)	47-91-510-14			47-91-530-14	47-91-550-10	47-91-570-10	47-91-590-10				
						4.3 (.17)	8.8 (.35)	47-92-510-14			47-92-530-14	47-92-550-10	47-92-570-10	47-92-590-10				
						5.9 (.23)	10.4 (.41)	47-93-510-14			47-93-530-14	47-93-550-10	47-93-570-10	47-93-590-10				
			1 (.039)	1.6 (.063)	2.6 (.103)	1.7 (.068)	2.7 (.11)	7.2 (.28)		47-90-512-14	47-90-532-14	47-90-552-10	47-90-572-10	47-90-592-10				
			4.3 (.17)	8.8 (.35)	47-91-512-14	47-91-532-14	47-91-552-10	47-91-572-10		47-91-592-10								
			5.9 (.23)	10.4 (.41)	47-92-512-14	47-92-532-14	47-92-552-10	47-92-572-10		47-92-592-10								
			1.6 (.063)	2.5 (.098)	3.5 (.138)	2.6 (.103)	2.7 (.11)	7.2 (.28)		47-90-514-14	47-90-534-14	47-90-554-10	47-90-574-10	47-90-594-10				
			4.3 (.17)	8.8 (.35)	47-91-514-14	47-91-534-14	47-91-554-10	47-91-574-10		47-91-594-10								
			5.9 (.23)	10.4 (.41)	47-92-514-14	47-92-534-14	47-92-554-10	47-92-574-10		47-92-594-10								

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness



To add a black powder coated finish, change the part number from the table as shown:

- Change 1 to 5: 47-80-102-14
- 47-80-102-54
- Change 2 to 6: 47-80-102-24
- 47-80-102-64



For a smooth knob, change the part number from the table as shown:

- Change 0 to 1: 47-90-161-20
- 47-90-161-21
- Change 4 to 5: 47-90-101-24
- 47-90-101-25

Part Number

See table

All screw part numbers shown in table are for a natural knob finish and a knurled knob

For black finish and smooth knob options, minimums may apply



47 Captive Screws

Styled knob series · M6 thread size

- Designed for hand operation
- Spring ejected
- Wide variety of sizes, recesses and installation options

Material and Finish

Ferrule:

Press-in: Hardened carbon steel, zinc plate, chromate, plus sealer

Flare-in and Floating:

Aluminum, natural

Knob: Aluminum, natural or black powder coated

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Installation Notes

See pages 468-469, 543

Notes



To ensure you receive **SOUTHCO®** quality parts, look for the segmented circle

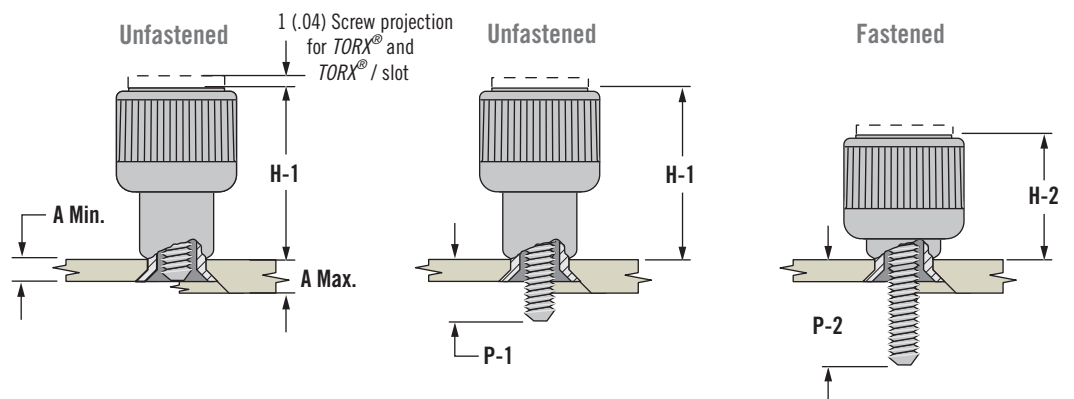
Recess Styles



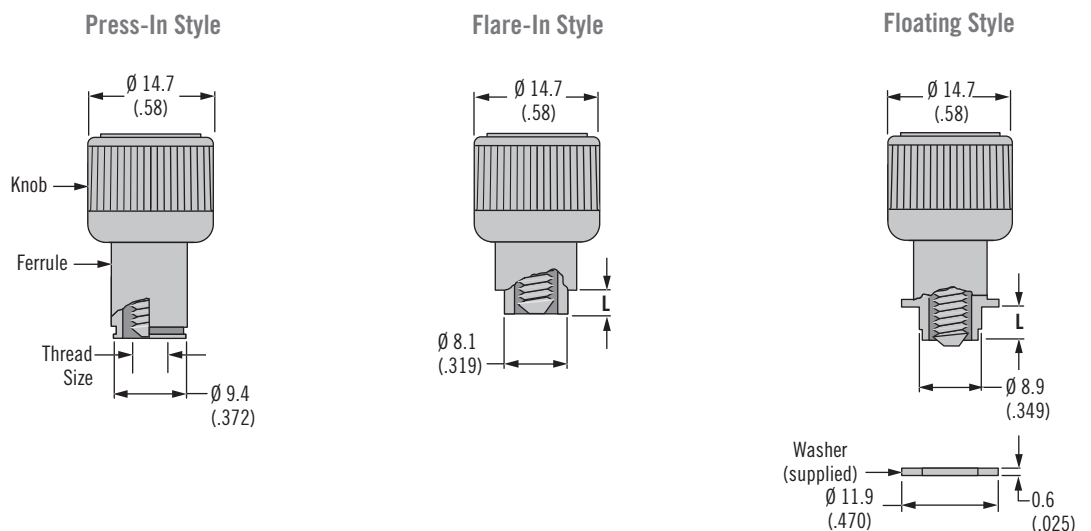
ACTUAL SIZE

Knob Height and Screw Projection

(Flare-in style shown)



Installation Styles



TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

southco®
CONNECT · CREATE · INNOVATE

Installation Style	Knob Height		Outer Panel Dimensions		B	Total Float	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number								
	H-1	H-2	A Min.	A Max.				P-1	P-2	Slotted Recess	Phillips Recess	TORX® Recess	TORX® / Slot Combination	Phillips / Slot Combination				
Press-In Style	20 (.79)	13.4 (.53)	0.9 (.036)	~	~	0.8 (.03)	~	0.5 (.02)	7.1 (.28)	47-90-601-24	47-90-621-24	47-90-641-20	47-90-661-20	47-90-681-20				
								2.1 (.08)	8.7 (.34)	47-91-601-24	47-91-621-24	47-91-641-20	47-91-661-20	47-91-681-20				
								3.7 (.15)	10.3 (.41)	47-92-601-24	47-92-621-24	47-92-641-20	47-92-661-20	47-92-681-20				
								5.3 (.21)	11.9 (.47)	47-93-601-24	47-93-621-24	47-93-641-20	47-93-661-20	47-93-681-20				
Flare-In Style	19.3 (.76)	12.7 (.50)	1.5 (.058)	3.2 (.125)	0.4 (.015)	0.9 (.03)	1.8 (.070)	1.2 (.05)	7.8 (.31)	47-80-602-14	47-80-622-14	47-80-642-10	47-80-662-10	47-80-682-10				
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	2.8 (.11)	9.4 (.31)	47-80-604-14	47-80-624-14	47-80-644-10	47-80-664-10	47-80-684-10				
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	4.4 (.17)	11 (.43)	47-80-606-14	47-80-626-14	47-80-646-10	47-80-666-10	47-80-686-10				
			6.4 (.251)	7.9 (.312)	4.8 (.189)		6.6 (.260)	6 (.24)	12.6 (.50)	47-80-608-14	47-80-628-14	47-80-648-10	47-80-668-10	47-80-688-10				
			1.5 (.058)	3.2 (.125)	0.4 (.015)		1.8 (.070)	2.8 (.11)	9.4 (.37)	47-81-602-14	47-81-622-14	47-81-642-10	47-81-662-10	47-81-682-10				
			4.4 (.17)	11 (.43)	47-82-602-14		47-82-622-14	47-82-642-10	47-82-662-10	47-82-682-10								
			6 (.24)	12.6 (.50)	47-83-602-14		47-83-622-14	47-83-642-10	47-83-662-10	47-83-682-10								
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	4.4 (.17)	11 (.43)	47-81-604-14	47-81-624-14	47-81-644-10	47-81-664-10	47-81-684-10				
			6 (.24)	12.6 (.50)	47-82-604-14		47-82-624-14	47-82-644-10	47-82-664-10	47-82-684-10								
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	6 (.24)	12.6 (.50)	47-81-606-14	47-81-626-14	47-81-646-10	47-81-666-10	47-81-686-10				
			Floating Style	20 (.79)	13.3 (.52)		~	0.8 (.031)	2.5 (.097)	2.3 (.09)	3.2 (.127)	2.1 (.08)	8.8 (.35)	47-80-610-14	47-80-630-14	47-80-650-10	47-80-670-10	47-80-690-10
							0.8 (.031)	1.6 (.063)	3.3 (.128)		3.7 (.15)	10.4 (.41)	47-81-610-14	47-81-630-14	47-81-650-10	47-81-670-10	47-81-690-10	
1.6 (.063)	2.4 (.094)	4.1 (.160)				5.3 (.21)	12 (.47)	47-82-610-14	47-82-630-14		47-82-650-10	47-82-670-10	47-82-690-10					
2.1 (.08)	8.8 (.35)	47-80-611-14				47-80-631-14	47-80-651-10	47-80-671-10	47-80-691-10									
3.7 (.15)	10.4 (.41)	47-81-611-14				47-81-631-14	47-81-651-10	47-81-671-10	47-81-691-10									
5.3 (.21)	12 (.47)	47-82-611-14				47-82-631-14	47-82-651-10	47-82-671-10	47-82-691-10									
3.7 (.15)	10.4 (.41)	47-80-612-14				47-80-632-14	47-80-652-10	47-80-672-10	47-80-692-10									
5.3 (.21)	12 (.47)	47-81-612-14				47-81-632-14	47-81-652-10	47-81-672-10	47-81-692-10									

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness



To add a black powder coated finish, change the part number from the table as shown:

- Change 1 to 5: 47-80-102-14
- 47-80-102-54
- Change 2 to 6: 47-80-102-24
- 47-80-102-64



For a smooth knob, change the part number from the table as shown:

- Change 0 to 1: 47-90-161-20
- 47-90-161-21
- Change 4 to 5: 47-90-101-24
- 47-90-101-25

Part Number

See table

All screw part numbers shown in table are for a natural knob finish and a knurled knob

For black finish and smooth knob options, minimums may apply



47 Captive Screws

Styled knob series · 4-40 thread size

- Smooth knob meets UL-1950
- Designed for hand operation
- Spring ejected
- Wide variety of sizes, recesses and installation options

Material and Finish

Ferrule:

Press-in: Hardened carbon steel, zinc plate, chromate, plus sealer
P.C. board style:

300 Series stainless steel

Flare-in and Floating:

Aluminum, natural

Knob: Aluminum, natural or black powder coated

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Installation Notes

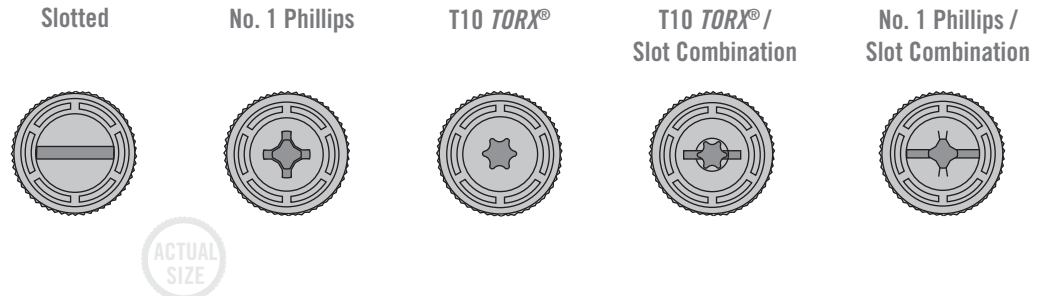
See pages 468-469, 543

Notes



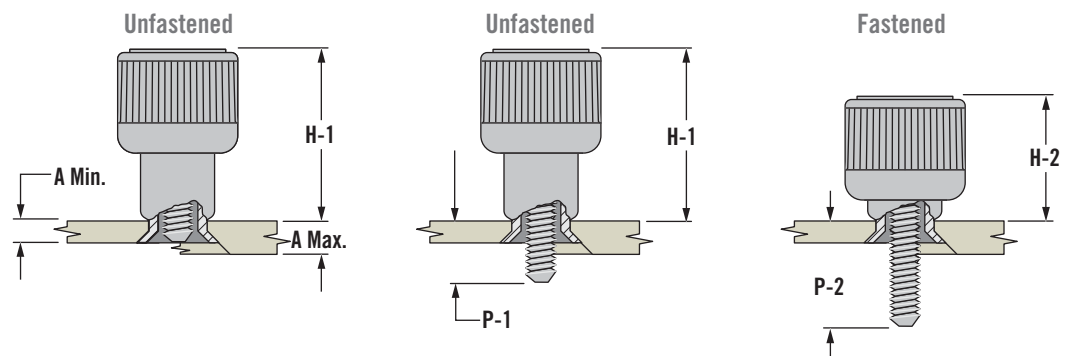
To ensure you receive **SOUTHCO**® quality parts, look for the segmented circle

Recess Styles

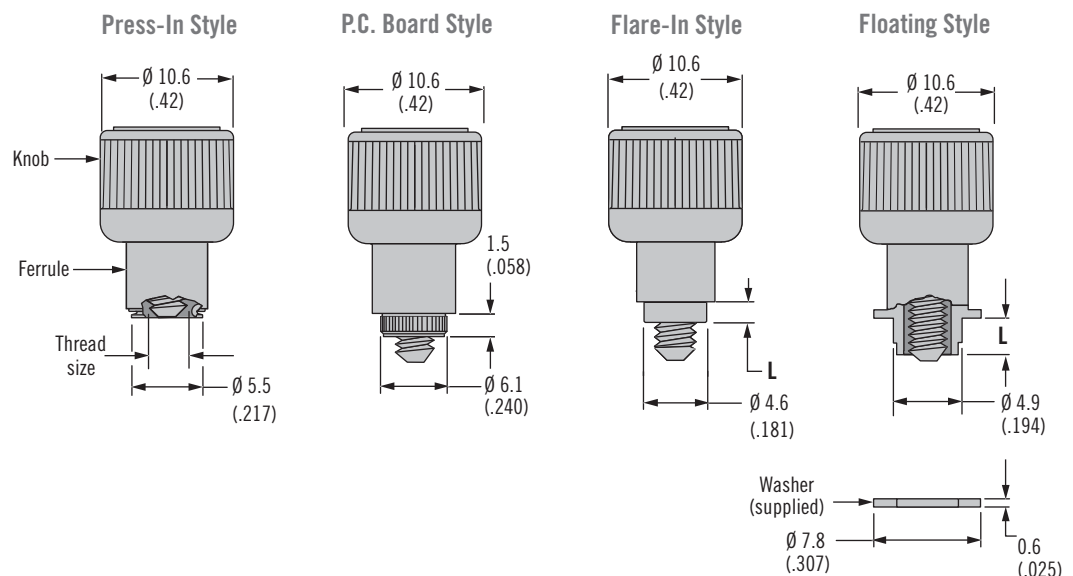


Knob Height and Screw Projection

(Flare-in style shown)



Installation Styles



TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

southco
CONNECT · CREATE · INNOVATE

Installation Style	Knob Height		Outer Panel Dimensions		B	Total Float	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number								
	H-1	H-2	A Min.	A Max.				P-1	P-2	Slotted Recess	Phillips Recess	TORX® Recess	TORX® / Slot Combination	Phillips / Slot Combination				
Press-In Style	11.3 (.45)	8.3 (.33)	0.9 (.036)	~	~	0.8 (.03)	~	0.8 (.03)	3.8 (.15)	47-60-101-24	47-60-121-24	47-60-141-24	47-60-161-20	47-60-181-24				
								2.5 (.10)	5.5 (.22)	47-61-101-24	47-61-121-24	47-61-141-24	47-61-161-20	47-61-181-24				
								4 (.16)	7 (.28)	47-62-101-24	47-62-121-24	47-62-141-24	47-62-161-20	47-62-181-24				
								5.6 (.22)	8.6 (.34)	47-63-101-24	47-63-121-24	47-63-141-24	47-63-161-20	47-63-181-24				
P.C. Board Style	11.5 (.45)	8.3 (.33)	1.6 (.061)	~	~	0.8 (.03)	~	1.5 (.06)	4.5 (.18)	47-65-101-34	47-65-121-34	47-65-141-34	47-65-161-30	47-65-181-34				
Flare-In Style	11.5 (.45)	8.1 (.32)	0.8 (.031)	1.5 (.058)	0.4 (.015)	0.6 (.03)	1 (.041)	0.8 (.03)	4 (.16)	47-10-101-14	47-10-121-14	47-10-141-14	47-10-161-10	47-10-181-14				
			1.5 (.059)	2.5 (.100)	0.4 (.015)		1.8 (.070)	1.5 (.06)	4.7 (.19)	47-10-102-14	47-10-122-14	47-10-142-14	47-10-162-10	47-10-182-14				
			2.5 (.1)	4 (.156)	0.8 (.031)		2.6 (.104)	2.5 (.10)	5.7 (.22)	47-10-103-14	47-10-123-14	47-10-143-14	47-10-163-10	47-10-183-14				
			4 (.157)	5.6 (.219)	2.4 (.093)		4.2 (.166)	4 (.16)	7.2 (.28)	47-10-105-14	47-10-125-14	47-10-145-14	47-10-165-10	47-10-185-14				
			5.6 (.220)	7.1 (.281)	4 (.156)		5.8 (.229)	5.6 (.22)	8.8 (.35)	47-10-107-14	47-10-127-14	47-10-147-14	47-10-167-10	47-10-187-14				
			0.8 (.031)	1.5 (.058)	0.4 (.015)		1 (.041)	2.5 (.10)	5.7 (.22)	47-11-101-14	47-11-121-14	47-11-141-14	47-11-161-10	47-11-181-14				
			4 (.16)	7.2 (.28)	47-12-101-14			47-12-121-14	47-12-141-14	47-12-161-10	47-12-181-14							
			5.6 (.22)	8.8 (.35)	47-13-101-14			47-13-121-14	47-13-141-14	47-13-161-10	47-13-181-14							
			1.5 (.059)	2.5 (.100)	0.4 (.015)		1.8 (.070)	3.2 (.13)	6.4 (.25)	47-11-102-14	47-11-122-14	47-11-142-14	47-11-162-10	47-11-182-14				
								4.7 (.19)	7.9 (.31)	47-12-102-14	47-12-122-14	47-12-142-14	47-12-162-10	47-12-182-14				
								6.3 (.25)	9.5 (.37)	47-13-102-14	47-13-122-14	47-13-142-14	47-13-162-10	47-13-182-14				
								1.9 (.07)	5.1 (.20)	47-10-110-14	47-10-130-14	47-10-150-14	47-10-170-10	47-10-190-10				
			Floating Style	11.4 (.45)	8.6 (.34)		~	0.8 (.031)	2 (.080)	2.1 (.08)	2.6 (.101)	3.4 (.13)	6.6 (.26)	47-11-110-14	47-11-130-14	47-11-150-14	47-11-170-10	47-11-190-14
												5 (.19)	8.2 (.32)	47-12-110-14	47-12-130-14	47-12-150-14	47-12-170-10	47-12-190-14
0.8 (.031)	1.6 (.063)	2.8 (.111)				3.4 (.132)	1.9 (.07)	5.1 (.20)	47-10-111-14		47-10-131-14	47-10-151-14	47-10-171-10	47-10-191-14				
							3.4 (.13)	6.6 (.26)	47-11-111-14		47-11-131-14	47-11-151-14	47-11-171-10	47-11-191-14				
							5 (.19)	8.2 (.32)	47-12-111-14		47-12-131-14	47-12-151-14	47-12-171-10	47-12-191-14				
1.6 (.063)	2.4 (.094)	3.6 (.143)				4.2 (.164)	3.4 (.13)	6.6 (.26)	47-10-112-14		47-10-132-14	47-10-152-14	47-10-172-10	47-10-192-14				
							5 (.19)	8.2 (.32)	47-11-112-14		47-11-132-14	47-11-152-14	47-11-172-10	47-11-192-14				

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness



To add a black powder coated finish, change the part number from the table as shown:

- Change 1 to 5: 47-80-102-14
47-80-102-54
- Change 2 to 6: 47-80-102-24
47-80-102-64
- Change 3 to 7: 47-80-102-34
47-80-102-74



For a smooth knob, change the part number from the table as shown:

- Change 0 to 1: 47-90-161-20
47-90-161-21
- Change 4 to 5: 47-90-101-24
47-90-101-25

Part Number

See table

All screw part numbers shown in table are for a natural knob finish and a knurled knob

For black finish and smooth knob options, minimums may apply



47 Captive Screws

Styled knob series · 6-32 thread size

- Smooth knob meets UL-1950
- Designed for hand operation
- Spring ejected
- Wide variety of sizes, recesses and installation options

Material and Finish

Ferrule:

Press-in: Hardened carbon steel, zinc plate, chromate, plus sealer
P.C. board style: 300 Series stainless steel, passivated
Flare-in, floating and snap-in: Aluminum, natural

Knob: Aluminum, natural or black powder coated

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Installation Notes

See pages 468-469, 543

Notes



To ensure you receive **SOUTHCO**® quality parts, look for the segmented circle

Recess Styles

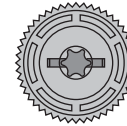
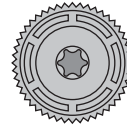
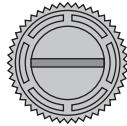
Slotted

No. 2 Phillips

T15 TORX®

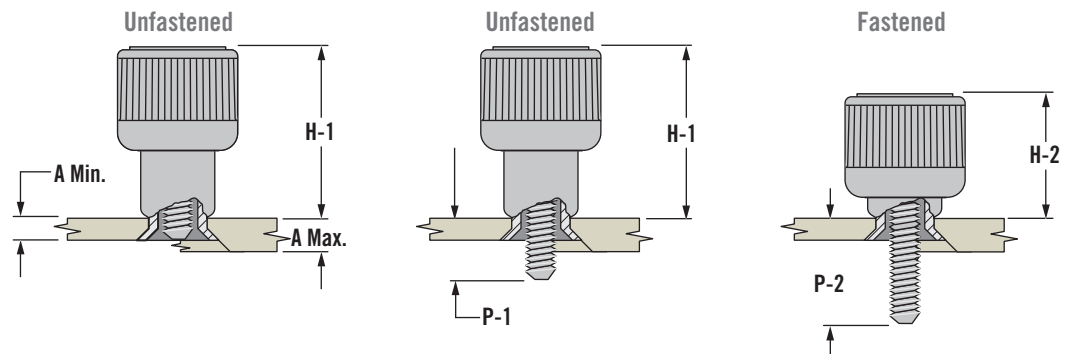
T15 TORX® /
Slot Combination

No. 2 Phillips /
Slot Combination

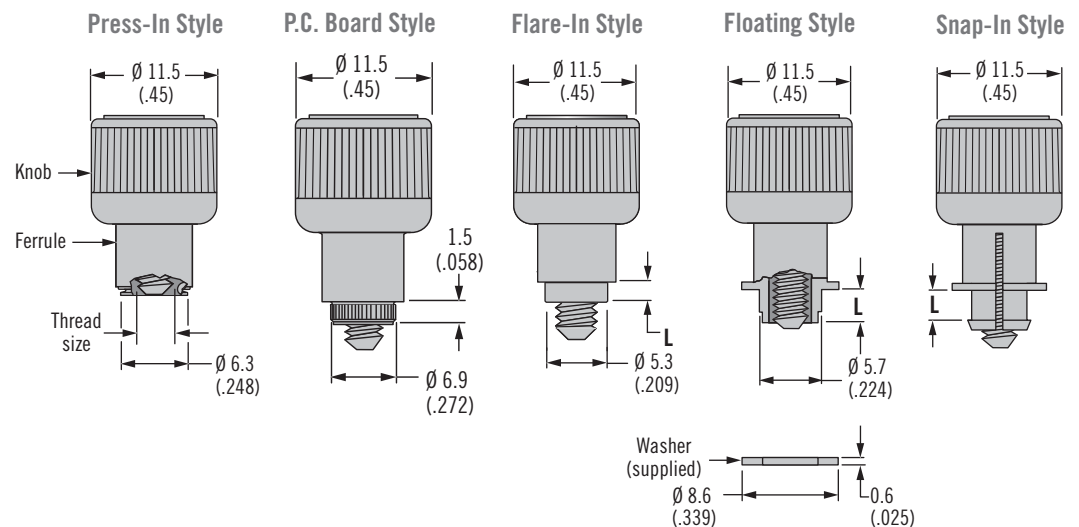


Knob Height and Screw Projection

(Flare-in style shown)



Installation Styles



TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

southco
CONNECT · CREATE · INNOVATE

Installation Style	Knob Height		Outer Panel Dimensions		B	Total Float	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number				
	H-1	H-2	A Min.	A Max.				P-1	P-2	Slotted Recess	Phillips Recess	TORX® Recess	TORX® / Slot Combination	Phillips / Slot Combination
Press-In Style	15.9 (.63)	11.2 (.44)	0.9 (.036)	~	~	0.8 (.03)	~	0.5 (.02)	5.3 (.21)	47-60-201-24	47-60-221-24	47-60-241-24	47-60-261-20	47-60-281-24
								2.1 (.08)	6.9 (.27)	47-61-201-24	47-61-221-24	47-61-241-24	47-61-261-20	47-61-281-24
								3.7 (.15)	8.5 (.33)	47-62-201-24	47-62-221-24	47-62-241-24	47-62-261-20	47-62-281-24
								5.3 (.21)	10.1 (.40)	47-63-201-24	47-63-221-24	47-63-241-24	47-63-261-20	47-63-281-24
P.C. Board Style	14.8 (.58)	10 (.39)	1.6 (.061)	~	~	0.8 (.03)	~	1.4 (.06)	6.1 (.24)	47-65-201-34	47-65-221-34	47-65-241-34	47-65-261-30	47-65-281-34
Flare-In Style	15.3 (.60)	10.4 (.41)	1.5 (.058)	3.2 (.125)	0.4 (.015)	0.8 (.03)	1.8 (.07)	1.1 (.04)	6 (.24)	47-10-202-14	47-10-222-14	47-10-242-14	47-10-262-10	47-10-282-14
			3.2 (.125)	4.8 (.189)	1.6 (.062)		3.4 (.135)	2.7 (.11)	7.6 (.30)	47-10-204-14	47-10-224-14	47-10-244-14	47-10-264-10	47-10-284-14
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	4.3 (.17)	9.2 (.36)	47-10-206-14	47-10-226-14	47-10-246-14	47-10-266-10	47-10-286-14
			6.4 (.250)	7.9 (.312)	4.8 (.189)		6.1 (.26)	5.9 (.23)	10.8 (.43)	47-10-208-14	47-10-228-14	47-10-248-14	47-10-268-10	47-10-288-14
			1.5 (.058)	3.2 (.125)	0.4 (.015)		1.8 (.07)	2.7 (.11)	7.6 (.30)	47-11-202-14	47-11-222-14	47-11-242-14	47-11-262-10	47-11-282-14
			3.2 (.125)	4.8 (.189)	1.6 (.062)		3.4 (.135)	4.3 (.17)	9.2 (.36)	47-12-202-14	47-12-222-14	47-12-242-14	47-12-262-10	47-12-282-14
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	5.9 (.23)	10.8 (.43)	47-13-202-14	47-13-222-14	47-13-242-14	47-13-262-10	47-13-282-14
			6.4 (.250)	7.9 (.312)	4.8 (.189)		6.1 (.26)	5.9 (.23)	10.8 (.43)	47-11-204-14	47-11-224-14	47-11-244-14	47-11-264-10	47-11-284-14
			1.5 (.058)	3.2 (.125)	0.4 (.015)		1.8 (.07)	2.7 (.11)	7.6 (.30)	47-12-204-14	47-12-224-14	47-12-244-14	47-12-264-10	47-12-284-14
			3.2 (.125)	4.8 (.189)	1.6 (.062)		3.4 (.135)	4.3 (.17)	9.2 (.36)	47-11-206-14	47-11-226-14	47-11-246-14	47-11-266-10	47-11-286-14
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	5.9 (.23)	10.8 (.43)	47-11-208-14	47-11-228-14	47-11-248-14	47-11-268-10	47-11-288-14
			Floating Style	15.3 (.60)	10.6 (.42)		~	0.8 (.031)	2.1 (.083)	2.2 (.09)	2.9 (.113)	2.4 (.09)	7.2 (.28)	47-10-210-14
4 (.16)	8.8 (.35)	47-11-210-14				47-11-230-14	47-11-250-14	47-11-270-10	47-11-290-14					
5.6 (.22)	10.4 (.41)	47-12-210-14				47-12-230-14	47-12-250-14	47-12-270-10	47-12-290-14					
2.4 (.09)	7.2 (.28)	47-10-211-14				47-10-231-14	47-10-251-14	47-10-271-10	47-10-291-14					
4 (.16)	8.8 (.35)	47-11-211-14				47-11-231-14	47-11-251-14	47-11-271-10	47-11-291-14					
5.6 (.22)	10.4 (.41)	47-12-211-14				47-12-231-14	47-12-251-14	47-12-271-10	47-12-291-14					
4 (.16)	8.8 (.35)	47-10-212-14				47-10-232-14	47-10-252-14	47-10-272-10	47-10-292-14					
5.6 (.22)	10.4 (.41)	47-11-212-14				47-11-232-14	47-11-252-14	47-11-272-10	47-11-292-14					
0.8 (.03)	5.6 (.22)	47-60-210-14				47-60-230-14	47-60-250-14	47-60-270-10	47-60-290-14					
2.4 (.09)	7.2 (.28)	47-61-210-14				47-61-230-14	47-61-250-14	47-61-270-10	47-61-290-14					
4 (.16)	8.8 (.35)	47-62-210-14				47-62-230-14	47-62-250-14	47-62-270-10	47-62-290-14					
5.6 (.22)	10.4 (.41)	47-63-210-14				47-63-230-14	47-63-250-14	47-63-270-10	47-63-290-14					
Snap-In Style	15.3 (.60)	10.6 (.42)	0.5 (.020)	1 (.039)	2 (.079)	0.8 (.03)	1.1 (.044)	2.4 (.09)	7.2 (.28)	47-60-212-14	47-60-232-14	47-60-252-14	47-60-272-10	47-60-292-14
			1 (.039)	1.6 (.063)	2.6 (.103)		1.7 (.067)	4 (.16)	8.8 (.35)	47-61-212-14	47-61-232-14	47-61-252-14	47-61-272-10	47-61-292-14
			5.6 (.22)	10.4 (.41)	47-62-212-14		47-62-232-14	47-62-252-14	47-62-272-10	47-62-292-14				
			2.4 (.09)	7.2 (.28)	47-60-212-14		47-60-232-14	47-60-252-14	47-60-272-10	47-60-292-14				
			4 (.16)	8.8 (.35)	47-61-212-14		47-61-232-14	47-61-252-14	47-61-272-10	47-61-292-14				
			5.6 (.22)	10.4 (.41)	47-62-212-14		47-62-232-14	47-62-252-14	47-62-272-10	47-62-292-14				

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness



To add a black powder coated finish, change the part number from the table as shown:

- Change 1 to 5: 47-80-102-14
47-80-102-54
- Change 2 to 6: 47-80-102-24
47-80-102-64
- Change 3 to 7: 47-80-102-34
47-80-102-74



For a smooth knob, change the part number from the table as shown:

- Change 0 to 1: 47-90-161-20
47-90-161-21
- Change 4 to 5: 47-90-101-24
47-90-101-25

Part Number

See table

All screw part numbers shown in table are for a natural knob finish and a knurled knob

For black finish and smooth knob options, minimums may apply



47 Captive Screws

Styled knob series · 8-32 thread size

- Designed for hand operation
- Spring ejected
- Wide variety of sizes, recesses and installation options

Material and Finish

Ferrule:

Press-in: Hardened carbon steel, zinc plate, chromate, plus sealer

Flare-in, floating and snap-in:

Aluminum, natural

Knob: Aluminum, natural or black powder coated

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Installation Notes

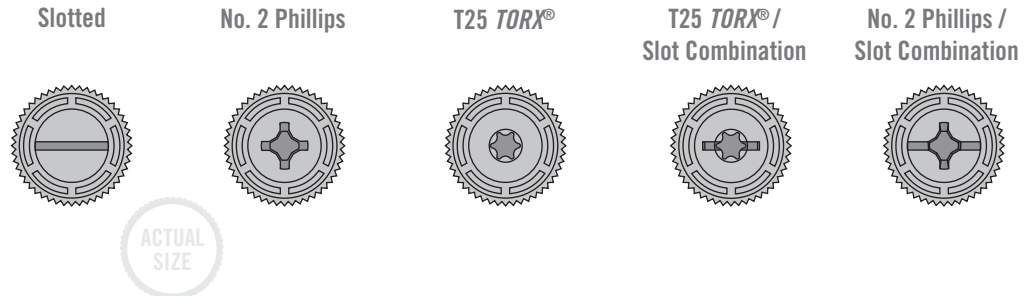
See pages 468-469, 543

Notes



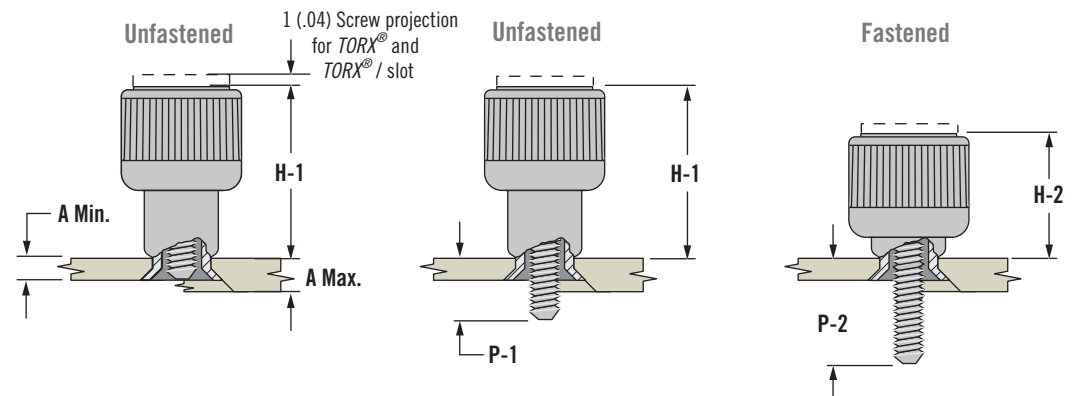
To ensure you receive **SOUTHCO®** quality parts, look for the segmented circle

Recess Styles

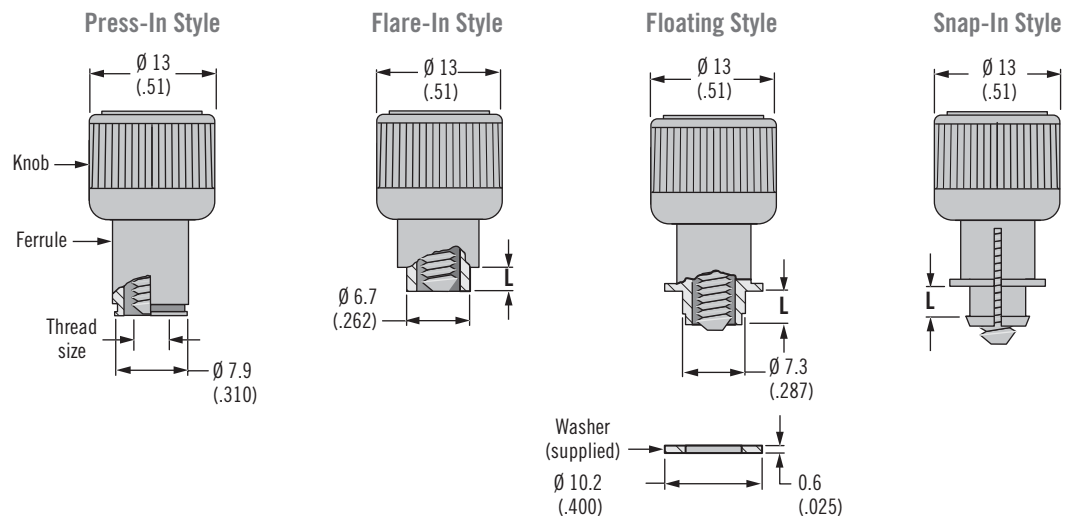


Knob Height and Screw Projection

(Flare-in style shown)



Installation Styles



TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

Installation Style	Knob Height		Outer Panel Dimensions		B	Total Float	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number								
	H-1	H-2	A Min.	A Max.				P-1	P-2	Slotted Recess	Phillips Recess	TORX® Recess	TORX® / Slot Combination	Phillips / Slot Combination				
Press-In Style	16.2 (.64)	11.2 (.44)	0.9 (.036)	~	~	0.8 (.03)	~	0.5 (.02)	5.6 (.22)	47-60-301-24	47-60-321-24	47-60-341-20	47-60-361-20	47-60-381-20				
								2 (.08)	7.1 (.28)	47-61-301-24	47-61-321-24	47-61-341-20	47-61-361-20	47-61-381-20				
								3.8 (.15)	8.9 (.35)	47-62-301-24	47-62-321-24	47-62-341-20	47-62-361-20	47-62-381-20				
								5.3 (.21)	10.4 (.41)	47-63-301-24	47-63-321-24	47-63-341-20	47-63-361-20	47-63-381-20				
Flare-In Style	15.6 (.61)	10.5 (.41)	1.5 (.058)	3.2 (.125)	0.4 (.015)	0.9 (.03)	1.8 (.070)	1 (.04)	6 (.24)	47-10-302-14	47-10-322-14	47-10-342-10	47-10-362-10	47-10-382-10				
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	2.8 (.11)	7.6 (.3)	47-10-304-14	47-10-324-14	47-10-344-10	47-10-364-10	47-10-384-10				
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	4.3 (.17)	9.2 (.36)	47-10-306-14	47-10-326-14	47-10-346-10	47-10-366-10	47-10-386-10				
			6.3 (.251)	7.9 (.312)	4.8 (.189)		6.6 (.260)	5.8 (.23)	10.8 (.43)	47-10-308-14	47-10-328-14	47-10-348-10	47-10-368-10	47-10-388-10				
			1.5 (.058)	3.2 (.125)	0.4 (.015)		1.8 (.07)	2.8 (.11)	7.6 (.3)	47-11-302-14	47-11-322-14	47-11-342-10	47-11-362-10	47-11-382-10				
			4.3 (.17)	9.2 (.36)	47-12-302-14		47-12-322-14	47-12-342-10	47-12-362-10	47-12-382-10								
			5.8 (.23)	10.8 (.43)	47-13-302-14		47-13-322-14	47-13-342-10	47-13-362-10	47-13-382-10								
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	4.3 (.17)	9.2 (.36)	47-11-304-14	47-11-324-14	47-11-344-10	47-11-364-10	47-11-384-10				
			5.8 (.23)	10.8 (.43)	47-12-304-14		47-12-324-14	47-12-344-10	47-12-364-10	47-12-384-10								
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	5.8 (.23)	10.8 (.43)	47-11-306-14	47-11-326-14	47-11-346-10	47-11-366-10	47-11-386-10				
			Floating Style	16 (.63)	11.2 (.44)		~	0.8 (.031)	2.3 (.09)	2.3 (.09)	3.2 (.127)	2.3 (.09)	7.1 (.28)	47-10-310-14	47-10-330-14	47-10-350-10	47-10-370-10	47-10-390-10
							3.8 (.15)	8.9 (.35)	47-11-310-14		47-11-330-14	47-11-350-10	47-11-370-10	47-11-390-10				
5.6 (.22)	10.4 (.41)	47-12-310-14				47-12-330-14	47-12-350-10	47-12-370-10	47-12-390-10									
2.3 (.09)	7.1 (.28)	47-10-311-14				47-10-331-14	47-10-351-10	47-10-371-10	47-10-391-10									
3.8 (.15)	8.9 (.35)	47-11-311-14				47-11-331-14	47-11-351-10	47-11-371-10	47-11-391-10									
5.6 (.22)	10.4 (.41)	47-12-311-14				47-12-331-14	47-12-351-10	47-12-371-10	47-12-391-10									
4.8 (.190)	3.8 (.15)	8.9 (.35)				47-10-312-14	47-10-332-14	47-10-352-10	47-10-372-10		47-10-392-10							
5.6 (.22)	10.4 (.41)	47-11-312-14				47-11-332-14	47-11-352-10	47-11-372-10	47-11-392-10									
Snap-In Style	15.7 (.62)	11.2 (.44)				0.5 (.020)	1 (.039)	2 (.079)	0.9 (.03)		1.1 (.044)	1 (.04)	3 (.22)	47-60-310-14	47-60-330-14	47-60-350-10	47-60-370-10	47-60-390-10
						2.8 (.11)	7.1 (.28)	47-61-310-14			47-61-330-14	47-61-350-10	47-61-370-10	47-61-390-10				
			4.3 (.17)	8.9 (.35)	47-63-310-14	47-62-330-14	47-62-350-10	47-62-370-10		47-62-390-10								
			5.8 (.23)	10.4 (.41)	47-63-310-14	47-63-330-14	47-63-350-10	47-63-370-10		47-63-390-10								
			2.8 (.11)	7.1 (.28)	47-60-312-14	47-60-332-14	47-60-352-10	47-60-372-10		47-60-392-10								
			4.3 (.17)	8.9 (.35)	47-61-312-14	47-61-332-14	47-61-352-10	47-61-372-10		47-61-392-10								
			5.8 (.23)	10.4 (.41)	47-62-312-14	47-62-332-14	47-62-352-10	47-62-372-10		47-62-392-10								
			2.8 (.11)	7.1 (.28)	47-60-314-14	47-60-334-14	47-60-354-10	47-60-374-10		47-60-394-10								
			4.3 (.17)	8.9 (.35)	47-61-314-14	47-61-334-14	47-61-354-10	47-61-374-10		47-61-394-10								
			5.8 (.23)	10.4 (.41)	47-62-314-14	47-62-334-14	47-62-354-10	47-62-374-10		47-62-394-10								

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness



To add a black powder coated finish, change the part number from the table as shown:

- Change 1 to 5: 47-80-102-14
- 47-80-102-54
- Change 2 to 6: 47-80-102-24
- 47-80-102-64



For a smooth knob, change the part number from the table as shown:

- Change 0 to 1: 47-90-161-20
- 47-90-161-21
- Change 4 to 5: 47-90-101-24
- 47-90-101-25

Part Number

See table

All screw part numbers shown in table are for a natural knob finish and a knurled knob

For black finish and smooth knob options, minimums may apply



47 Captive Screws

Styled knob series · 10-32 thread size

- Designed for hand operation
- Spring ejected
- Wide variety of sizes, recesses and installation options

Material and Finish

Ferrule:

Press-in: Hardened carbon steel, zinc plate, chromate, plus sealer

Flare-in, floating and snap-in:

Aluminum, natural

Knob: Aluminum, natural or black powder coated

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Installation Notes

See pages 468-469, 543

Notes



To ensure you receive **SOUTHCO**® quality parts, look for the segmented circle

Recess Styles

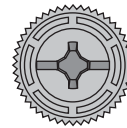
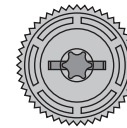
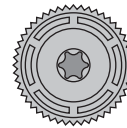
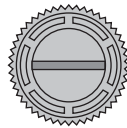
Slotted

No. 2 Phillips

T25 TORX®

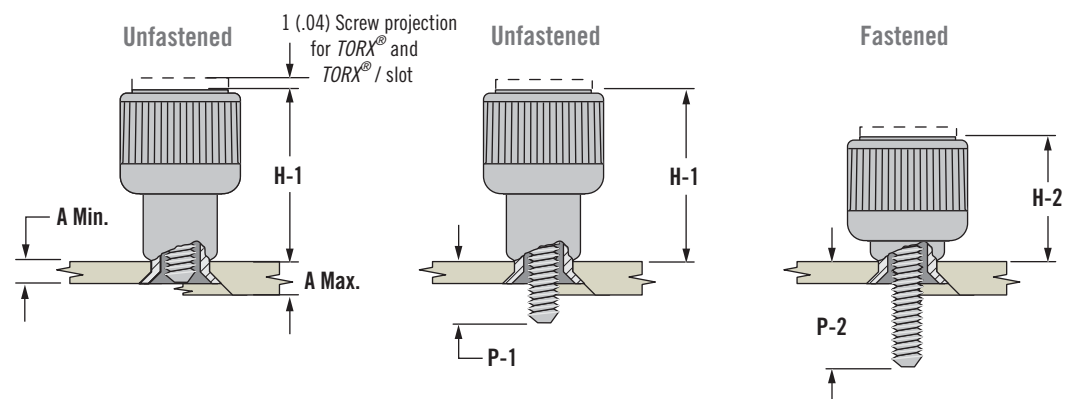
T25 TORX® /
Slot Combination

No. 2 Phillips /
Slot Combination

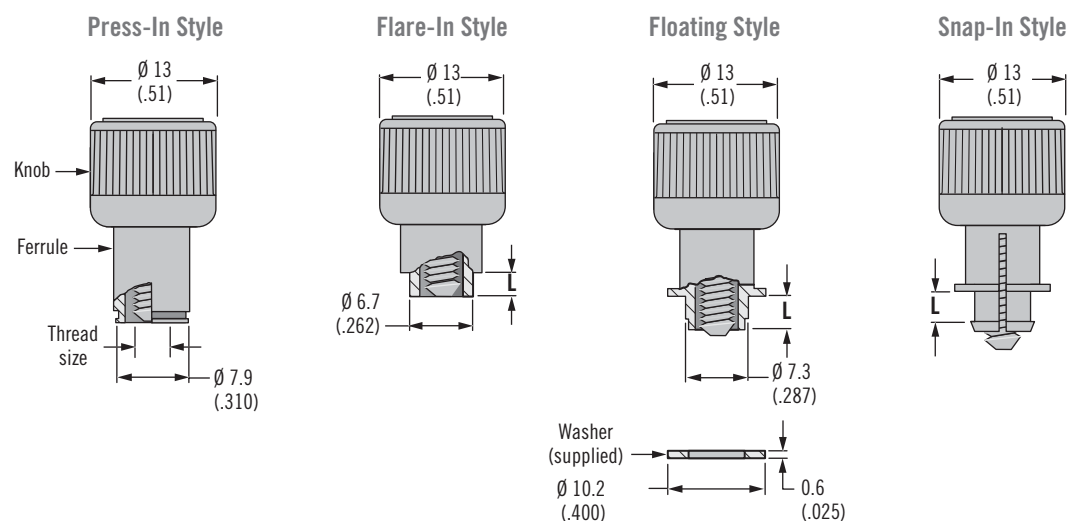


Knob Height and Screw Projection

(Flare-in style shown)



Installation Styles



TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

southco®
CONNECT · CREATE · INNOVATE

Installation Style	Knob Height		Outer Panel Dimensions		B	Total Float	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number				
	H-1	H-2	A Min.	A Max.				P-1	P-2	Slotted Recess	Phillips Recess	TORX® Recess	TORX® / Slot Combination	Phillips / Slot Combination
Press-In Style	16.2 (.64)	11.2 (.44)	0.9 (.036)	~	~	0.6 (.02)	~	0.6 (.02)	5.5 (.22)	47-60-501-24	47-60-521-24	47-60-541-20	47-60-561-20	47-60-581-20
								2.2 (.09)	7.2 (.28)	47-61-501-24	47-61-521-24	47-61-541-20	47-61-561-20	47-61-581-20
								3.8 (.15)	8.9 (.35)	47-62-501-24	47-62-521-24	47-62-541-20	47-62-561-20	47-62-581-20
								5.4 (.21)	10.3 (.41)	47-63-501-24	47-63-521-24	47-63-541-20	47-63-561-20	47-63-581-20
Flare-In Style	15.6 (.61)	10.5 (.41)	1.5 (.058)	3.2 (.125)	0.4 (.015)	0.6 (.02)	1.8 (.070)	1.2 (.05)	6.3 (.25)	47-10-502-14	47-10-522-14	47-10-542-10	47-10-562-10	47-10-582-10
			3.2 (.125)	4.7 (.187)	1.6 (.062)		3.4 (.135)	2.8 (.11)	7.9 (.31)	47-10-504-14	47-10-524-14	47-10-544-10	47-10-564-10	47-10-584-10
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	4.4 (.17)	9.5 (.37)	47-10-506-14	47-10-526-14	47-10-546-10	47-10-566-10	47-10-586-10
			6.3 (.251)	7.9 (.312)	4.8 (.187)		6.6 (.260)	6 (.24)	11.1 (.44)	47-10-508-14	47-10-528-14	47-10-548-10	47-10-568-10	47-10-588-10
			1.5 (.058)	3.2 (.125)	0.4 (.015)		1.8 (.070)	2.8 (.11)	7.9 (.31)	47-11-502-14	47-11-522-14	47-11-542-10	47-11-562-10	47-11-582-10
			3.2 (.125)	4.8 (.187)	1.6 (.062)		3.4 (.135)	4.4 (.17)	9.5 (.37)	47-12-502-14	47-12-522-14	47-12-542-10	47-12-562-10	47-12-582-10
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	6 (.24)	11.1 (.44)	47-13-502-14	47-13-522-14	47-13-542-10	47-13-562-10	47-13-582-10
			6.3 (.251)	7.9 (.312)	4.8 (.187)		6.6 (.260)	6 (.24)	11.1 (.44)	47-11-504-14	47-11-524-14	47-11-544-10	47-11-564-10	47-11-584-10
			1.5 (.058)	3.2 (.125)	0.4 (.015)		1.8 (.070)	2.8 (.11)	7.9 (.31)	47-12-504-14	47-12-524-14	47-12-544-10	47-12-564-10	47-12-584-10
			3.2 (.125)	4.8 (.187)	1.6 (.062)		3.4 (.135)	4.4 (.17)	9.5 (.37)	47-11-506-14	47-11-526-14	47-11-546-10	47-11-566-10	47-11-586-10
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	6 (.24)	11.1 (.44)	47-11-508-14	47-11-528-14	47-11-548-10	47-11-568-10	47-11-588-10
			Floating Style	16 (.63)	11.2 (.44)		~	0.8 (.031)	2.3 (.090)	2.3 (.09)	3.2 (.127)	2.3 (.09)	7.1 (.28)	47-10-510-14
0.8 (.031)	1.6 (.063)	3.1 (.122)				4 (.158)	4 (.16)	8.8 (.35)	47-11-510-14		47-11-530-14	47-11-550-10	47-11-570-10	47-11-590-10
1.6 (.063)	2.4 (.094)	3.9 (.153)				4 (.158)	5.6 (.22)	10.4 (.41)	47-12-510-14		47-12-530-14	47-12-550-10	47-12-570-10	47-12-590-10
~	0.8 (.031)	2.3 (.090)				4 (.158)	2.4 (.09)	7.1 (.28)	47-10-511-14		47-10-531-14	47-10-551-10	47-10-571-10	47-10-591-10
0.8 (.031)	1.6 (.063)	3.1 (.122)				4 (.158)	4 (.16)	8.8 (.35)	47-11-511-14		47-11-531-14	47-11-551-10	47-11-571-10	47-11-591-10
1.6 (.063)	2.4 (.094)	3.9 (.153)				4.8 (.190)	5.6 (.22)	10.4 (.41)	47-12-511-14		47-12-531-14	47-12-551-10	47-12-571-10	47-12-591-10
~	0.8 (.031)	2.3 (.090)				4.8 (.190)	4 (.16)	8.8 (.35)	47-10-512-14		47-10-532-14	47-10-552-10	47-10-572-10	47-10-592-10
0.8 (.031)	1.6 (.063)	3.1 (.122)				4.8 (.190)	5.6 (.22)	10.4 (.41)	47-11-512-14		47-11-532-14	47-11-552-10	47-11-572-10	47-11-592-10
1.6 (.063)	2.4 (.094)	3.9 (.153)				1.1 (.044)	1.2 (.04)	5.6 (.22)	47-60-510-14		47-60-530-14	47-60-550-10	47-60-570-10	47-60-590-10
0.5 (.020)	1 (.039)	2 (.079)				1.1 (.044)	2.8 (.11)	7.1 (.28)	47-61-510-14		47-61-530-14	47-61-550-10	47-61-570-10	47-61-590-10
1 (.039)	1.6 (.063)	2.6 (.103)				1.1 (.044)	4.3 (.17)	8.8 (.35)	47-63-510-14		47-62-530-14	47-62-550-10	47-62-570-10	47-62-590-10
1.6 (.063)	2.5 (.098)	3.5 (.138)				1.1 (.044)	5.9 (.23)	10.4 (.41)	47-63-510-14		47-63-530-14	47-63-550-10	47-63-570-10	47-63-590-10
0.5 (.020)	1 (.039)	2 (.079)	1.7 (.068)	2.8 (.11)	7.1 (.28)	47-60-512-14	47-60-532-14	47-60-552-10	47-60-572-10	47-60-592-10				
1 (.039)	1.6 (.063)	2.6 (.103)	1.7 (.068)	4.3 (.17)	8.8 (.35)	47-61-512-14	47-61-532-14	47-61-552-10	47-61-572-10	47-61-592-10				
1.6 (.063)	2.5 (.098)	3.5 (.138)	1.7 (.068)	5.9 (.23)	10.4 (.41)	47-62-512-14	47-62-532-14	47-62-552-10	47-62-572-10	47-62-592-10				
0.5 (.020)	1 (.039)	2 (.079)	2.6 (.103)	2.8 (.11)	7.1 (.28)	47-60-514-14	47-60-534-14	47-60-554-10	47-60-574-10	47-60-594-10				
1 (.039)	1.6 (.063)	2.6 (.103)	2.6 (.103)	4.3 (.17)	8.8 (.35)	47-61-514-14	47-61-534-14	47-61-554-10	47-61-574-10	47-61-594-10				
1.6 (.063)	2.5 (.098)	3.5 (.138)	2.6 (.103)	5.9 (.23)	10.4 (.41)	47-62-514-14	47-62-534-14	47-62-554-10	47-62-574-10	47-62-594-10				

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness



To add a black powder coated finish, change the part number from the table as shown:

- Change 1 to 5: 47-80-102-14
- 47-80-102-54
- Change 2 to 6: 47-80-102-24
- 47-80-102-64



For a smooth knob, change the part number from the table as shown:

- Change 0 to 1: 47-90-161-20
- 47-90-161-21
- Change 4 to 5: 47-90-101-24
- 47-90-101-25

Part Number

See table

All screw part numbers shown in table are for a natural knob finish and a knurled knob

For black finish and smooth knob options, minimums may apply



47 Captive Screws

Styled knob series · 1/4-20 thread size

- Designed for hand operation
- Spring ejected
- Wide variety of sizes, recesses and installation options

Material and Finish

Ferrule:

Press-in: Hardened carbon steel, zinc plate, chromate, plus sealer
Flare-in and Floating: Aluminum, natural

Knob: Aluminum, natural or black powder coated

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Installation Notes

See pages 468-469, 543

Notes



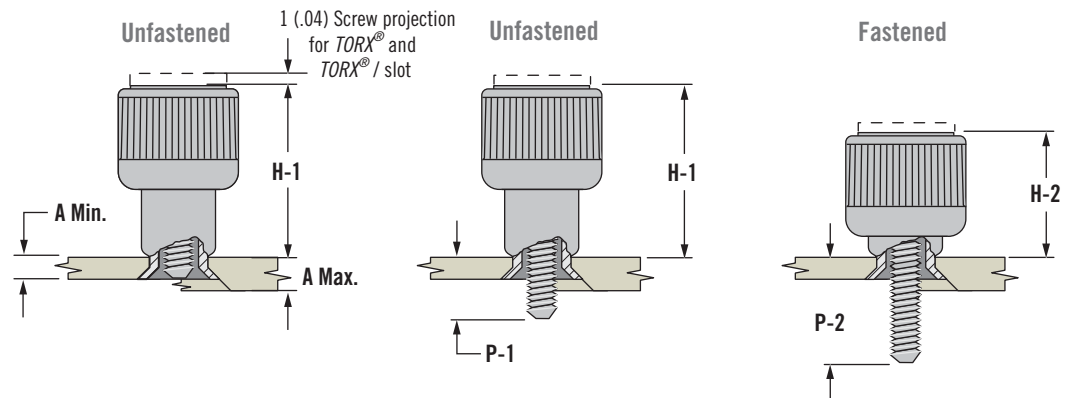
To ensure you receive **SOUTHCO®** quality parts, look for the segmented circle

RecessStyles



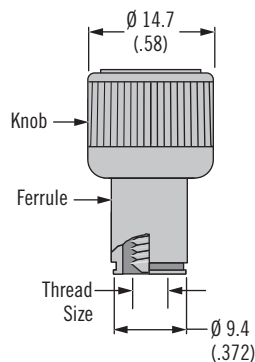
Knob Height and Screw Projection

(Flare-in style shown)

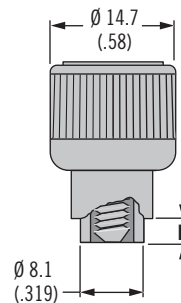


Installation Styles

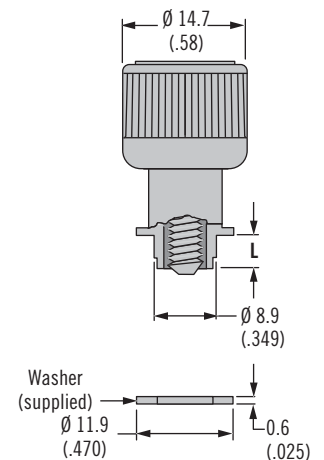
Press-In Style



Flare-In Style



Floating Style



TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

southco®
CONNECT · CREATE · INNOVATE

Installation Style	Knob Height		Outer Panel Dimensions		B	Total Float	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number								
	H-1	H-2	A Min.	A Max.				P-1	P-2	Slotted Recess	Phillips Recess	TORX® Recess	TORX® / Slot Combination	Phillips / Slot Combination				
Press-In Style	20 (.79)	13.4 (.53)	0.9 (.036)	~	~	0.8 (.03)	~	0.5 (.02)	7.1 (.28)	47-60-601-24	47-60-621-24	47-60-641-20	47-60-661-20	47-60-681-20				
								2.1 (.08)	8.7 (.34)	47-61-601-24	47-61-621-24	47-61-641-20	47-61-661-20	47-61-681-20				
								3.7 (.15)	10.3 (.41)	47-62-601-24	47-62-621-24	47-62-641-20	47-62-661-20	47-62-681-20				
								5.3 (.21)	11.9 (.47)	47-63-601-24	47-63-621-24	47-63-641-20	47-63-661-20	47-63-681-20				
Flare-In Style	19.3 (.76)	12.7 (.50)	1.5 (.058)	3.2 (.125)	0.4 (.015)	0.9 (.03)	1.8 (.070)	1.2 (.05)	7.8 (.31)	47-10-602-14	47-10-622-14	47-10-642-10	47-10-662-10	47-10-682-10				
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	2.8 (.11)	9.4 (.37)	47-10-604-14	47-10-624-14	47-10-644-10	47-10-664-10	47-10-684-10				
			4.8 (.188)	6.4 (.250)	3.2 (.125)		5 (.197)	4.4 (.17)	11 (.43)	47-10-606-14	47-10-626-14	47-10-646-10	47-10-666-10	47-10-686-10				
			6.4 (.251)	7.9 (.312)	4.8 (.189)		6.6 (.260)	6 (.24)	12.6 (.50)	47-10-608-14	47-10-628-14	47-10-648-10	47-10-668-10	47-10-688-10				
			1.5 (.058)	3.2 (.125)	0.4 (.015)		1.8 (.070)	2.8 (.11)	9.4 (.37)	47-11-602-14	47-11-622-14	47-11-642-10	47-11-662-10	47-11-682-10				
			4.4 (.17)	11 (.43)	47-12-602-14		47-12-622-14	47-12-642-10	47-12-662-10	47-12-682-10								
			6 (.24)	12.6 (.50)	47-13-602-14		47-13-622-14	47-13-642-10	47-13-662-10	47-13-682-10								
			3.2 (.126)	4.8 (.189)	1.6 (.062)		3.4 (.135)	4.4 (.17)	11 (.43)	47-11-604-14	47-11-624-14	47-11-644-10	47-11-664-10	47-11-684-10				
			6 (.24)	12.6 (.50)	47-12-604-14		47-12-624-14	47-12-644-10	47-12-664-10	47-12-684-10								
			4.8 (.189)	6.4 (.250)	3.2 (.125)		5 (.197)	6 (.24)	12.6 (.50)	47-11-606-14	47-11-626-14	47-11-646-10	47-11-666-10	47-11-686-10				
			Floating Style	20 (.79)	13.3 (.52)		~	0.8 (.031)	2.3 (.090)	2.3 (.09)	3.2 (.127)	2.1 (.08)	8.8 (.35)	47-10-610-14	47-10-630-14	47-10-650-10	47-10-670-10	47-10-690-10
							0.8 (.031)	1.6 (.063)	3.1 (.122)		3.7 (.15)	10.4 (.41)	47-11-610-14	47-11-630-14	47-11-650-10	47-11-670-10	47-11-690-10	
5.3 (.21)	12 (.47)	47-12-610-14				47-12-630-14					47-12-650-10	47-12-670-10	47-12-690-10					
2.1 (.08)	8.8 (.35)	47-10-611-14				47-10-631-14					47-10-651-10	47-10-671-10	47-10-691-10					
1.6 (.063)	2.4 (.094)	3.9 (.153)				3.7 (.15)	10.4 (.41)	47-11-611-14	47-11-631-14		47-11-651-10	47-11-671-10	47-11-691-10					
						5.3 (.21)	12 (.47)	47-12-611-14	47-12-631-14		47-12-651-10	47-12-671-10	47-12-691-10					
						3.7 (.15)	10.4 (.41)	47-10-612-14	47-10-632-14		47-10-652-10	47-10-672-10	47-10-692-10					
5.3 (.21)	12 (.47)	47-11-610-14				47-11-632-14	47-11-652-10	47-11-672-10	47-11-692-10									

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness



To add a black powder coated finish, change the part number from the table as shown:

- Change 1 to 5: 47-80-102-14
- 47-80-102-54
- Change 2 to 6: 47-80-102-24
- 47-80-102-64



For a smooth knob, change the part number from the table as shown:

- Change 0 to 1: 47-90-161-20
- 47-90-161-21
- Change 4 to 5: 47-90-101-24
- 47-90-101-25

Part Number

See table

All screw part numbers shown in table are for a natural knob finish and a knurled knob

For black finish and smooth knob options, minimums may apply



4C Captive Screws

Prism series · M3, M4 and M5 thread size

- Designate access points with color
- Color match captive screws to your industrial design
- High strength screw for use with high torque drivers
- Knurled and smooth knobs available

Material and Finish

Knob: PC/ABS

Screw: Hardened carbon steel, zinc plate, chromate, plus sealer

Spring: 300 series stainless steel, passivated

Standoff:

Press-in: Carbon steel, zinc plate, chromate, plus sealer

PCB: Stainless steel

Flare-in and Floating:

Aluminum, natural

Performance Details

Flammability Rating: UL94-V0

Installation Notes

See pages 468-469, 543

Notes

Press-in: Maximum panel hardness 170 HV (85 HRB)

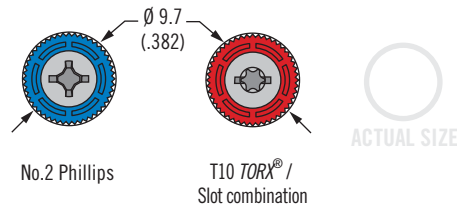
See page 480 for details on ATCA compliant captive screws.



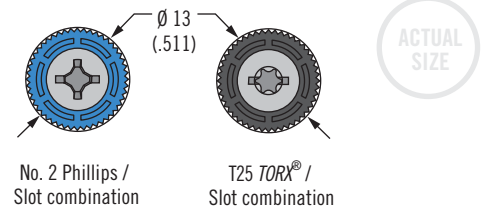
To ensure you receive **SOUTHCO**® quality parts, look for the segmented circle.

Recess Styles

M3

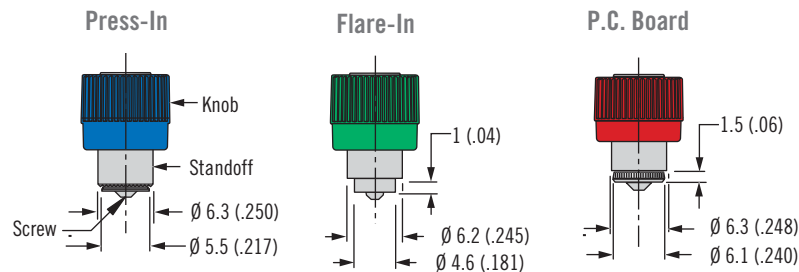


M4 and M5

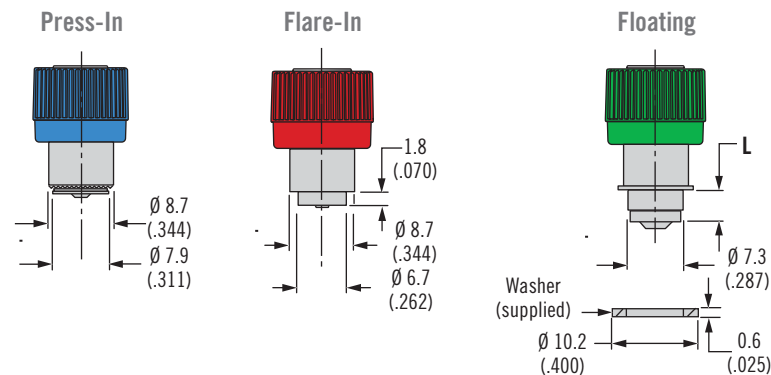


Installation Styles

M3

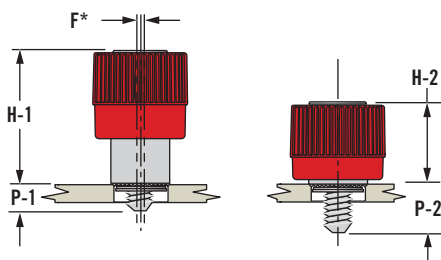


M4 and M5



Knob Height and Screw Projection

(Press-in style shown)



TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

M3 Thread Size

Installation Style	Outer Panel Dimensions		B	Part Number		Screw Projection Beyond Outer Surface of Panel		Knob Height†		Total Float	Panel Preparation	
	A Min.	A Max.		Phillips Recess	TORX® / Slot Combination	P-1	P-2	H-1	H-2	F*	∅ D	∅ Z
Press-In Style	0.9 (.036)	~	~	4C-PH-M3-1P0-K000	4C-TS-M3-1P0-K000	0.8 (.03)	3.7 (.15)	11.5 (.45)	8.6 (.34)	0.7 (.03)	5.6 ^{+0.04} _{-0.04}	3.2 ^{+0.2} _{-0.1}
				4C-PH-M3-2P0-K000	4C-TS-M3-2P0-K000	2.5 (.10)	5.4 (.21)				(.219 ^{+0.03} ₋₀)	(.125 ^{+0.08} _{-0.04})
P.C. Board Style	1.6 (.063)	~	~	4C-PH-M3-1B0-K000	4C-TS-M3-1B0-K000	1.5 (.06)	3.8 (.15)	10.9 (.43)	8.5 (.33)	0.7 (.03)	5.6 ^{+0.1} _{-0.05}	3.2 ^{+0.2} _{-0.1}
Flare-In Style	0.8 (.031)	1.5 (.058)	0.4 (.016)	4C-PH-M3-1F1-K000	4C-TS-M3-1F1-K000	0.8 (.03)	3.7 (.15)	11.5 (.45)	8.6 (.34)	0.7 (.03)	4.8 ^{+0.08} _{-0.05}	3.0 ^{+0.2} _{-0.1}
				4C-PH-M3-2F1-K000	4C-TS-M3-2F1-K000	1.5 (.06)	5.4 (.21)				(.189 ^{+0.03} _{-0.02})	(.125 ^{+0.08} _{-0.04})

M4 Thread Size

Installation Style	Outer Panel Dimensions		B	L	Part Number		Screw Projection Beyond Outer Surface Of Panel		Knob Height†		Total Float	Panel Preparation	
	A Min.	A Max.			Phillips / Slot Combination	TORX® / Slot Combination	P-1	P-2	H-1	H-2	F*	∅ D	∅ Z
Press-In Style	0.9 (.036)†	~	~	~	4C-PS-M4-1P0-K000	4C-TS-M4-1P0-K000	0.5 (.02)	5.6 (.22)	16.3 (.64)	11.3 (.45)	0.7 (.03)	8 ⁺⁰ _{-0.08}	4.4 ^{+0.2} _{-0.1}
					4C-PS-M4-2P0-K000	4C-TS-M4-2P0-K000	2 (.08)	7.1 (.28)				(.315 ⁺⁰ _{-0.03})	(.173 ^{+0.08} _{-0.04})
Flare-In Style	1.5 (.060)	3.2 (.058)	0.4 (.016)	~	4C-PS-M4-1F1-K000	4C-TS-M4-1F1-K000	0.6 (.02)	5.6 (.22)	16.3 (.64)	11.3 (.45)	0.6 (.02)	6.8 ^{+0.08} _{-0.04}	4.2 ^{+0.05} ₋₀
					4C-PS-M4-2F1-K000	4C-TS-M4-2F1-K000	2.1 (.08)	7.1 (.28)				(.266 ^{+0.05} ₋₀)	(.165 ^{+0.02} ₋₀)
Floating Style	0.8 (.031)	1.6 (.063)	3.1 (.122)	4 (.158)	4C-PS-M4-3T2-K000	4C-TS-M4-3T2-K000	3.8 (.15)	8.8 (.35)	16.2 (.64)	11.2 (.44)	2.3 (.09)	8.8 ^{+0.08} _{-0.03}	~
					4C-PS-M4-4T2-K000	4C-TS-M4-4T2-K000	5.4 (.21)	10.4 (.41)					
	1.6 (.063)	2.4 (.094)	3.9 (.153)	4.8 (.190)	4C-PS-M4-3T3-K000	4C-TS-M4-3T3-K000	3.8 (.15)	8.8 (.35)					
					4C-PS-M4-4T3-K000	4C-TS-M4-4T3-K000	5.4 (.21)	10.4 (.41)					

M5 Thread Size

Installation Style	Outer Panel Dimensions		B	L	Part Number		Screw Projection Beyond Outer Surface of Panel		Knob Height†		Total Float	Panel Preparation	
	A Min.	A Max.			Phillips / Slot Combination	TORX® / Slot Combination	P-1	P-2	H-1	H-2	F*	∅ D	∅ Z
Press-In Style	0.9 (.036)†	~	~	~	4C-PS-M5-1P0-K000	4C-TS-M5-1P0-K000	0.4 (.2)	5.6 (.22)	16.4 (.65)	11.3 (.45)	0.8 (.03)	8 ⁺⁰ _{-0.08}	5.2 ^{+0.2} _{-0.1}
					4C-PS-M5-2P0-K000	4C-TS-M5-2P0-K000	2 (.08)	7.2 (.28)				(.315 ⁺⁰ _{-0.03})	(.205 ^{+0.08} _{-0.04})
Flare-In Style	1.5 (.06)	3.2 (.058)	0.4 (.016)	~	4C-PS-M5-1F1-K000	4C-TS-M5-1F1-K000	0.5 (.02)	5.6 (.22)	16.4 (.65)	11.3 (.45)	0.7 (.03)	6.8 ^{+0.08} _{-0.04}	4.9 ^{+0.05} ₋₀
					4C-PS-M5-2F1-K000	4C-TS-M5-2F1-K000	2.1 (.08)	7.2 (.28)				(.266 ^{+0.05} ₋₀)	(.191 ^{+0.02} ₋₀)
Floating Style	0.8 (.031)	1.6 (.063)	3.1 (.122)	4 (.158)	4C-PS-M5-3T2-K000	4C-TS-M5-3T2-K000	3.7 (.15)	8.9 (.35)	16.3 (.64)	11.2 (.44)	2.3 (.09)	8.8 ^{+0.08} _{-0.03}	~
					4C-PS-M5-4T2-K000	4C-TS-M5-4T2-K000	5.3 (.21)	10.5 (.41)				(.346 ^{+0.03} _{-0.01})	

(shown in table)



000
Black



008
Blue



013
Red



014
Green



Your Color
Contact Southco

Part Number

See table

To indicate color, change the last three digits of the part number. For knob style, K = knurled and N = smooth. For smooth knob change K to N. Example:
4C-PS-06-1P0-K000, black, knurled
4C-PS-06-1P0-N013, red, smooth

Notes: *F indicates the maximum float in the unfastened position.
† For panels thinner than 0.9 (.036), contact Southco.

TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC
Dimensions in millimeters (inch) unless otherwise stated



4C Captive Screws

Prism series · 4-40, 6-32 and 10-32 thread size

- Designate access points with color
- Color match captive screws to your industrial design
- High strength screw for use with high torque drivers
- Knurled and smooth knobs available

Material and Finish

Knob: PC/ABS

Screw: Hardened carbon steel, zinc plate, chromate, plus sealer

Spring: 300 series stainless steel, passivated

Standoff:

Press-in: Carbon steel, zinc plate, chromate, plus sealer

PCB: Stainless steel

Flare-in and Floating: Aluminum, natural

Performance Details


Flammability Rating: UL94-V0

Installation Notes

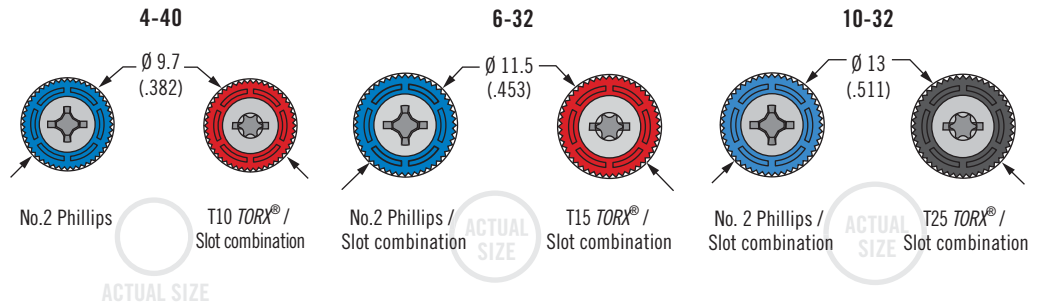
See pages 468-469, 543

Notes

Press-in: Maximum panel hardness 170 HV (85 HRB)

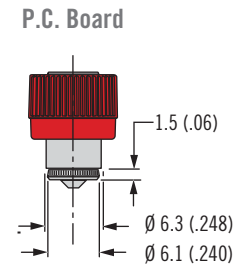
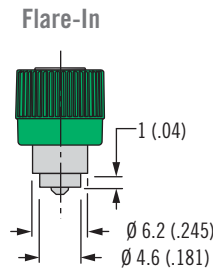
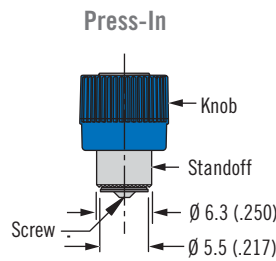
 To ensure you receive **SOUTHCO®** quality parts, look for the segmented circle.

Recess Styles

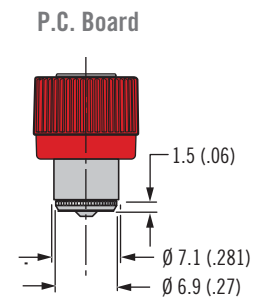
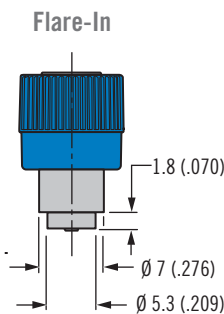
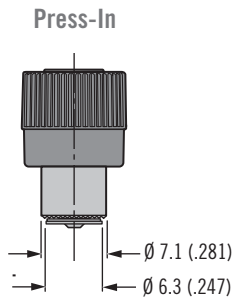


Installation Styles

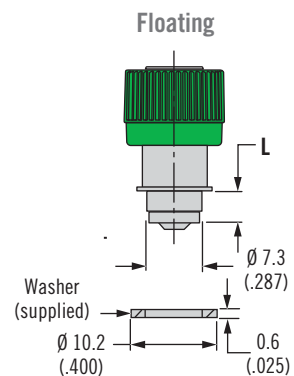
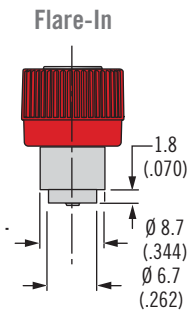
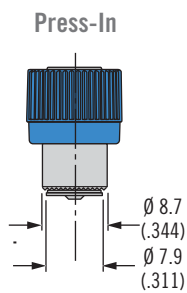
4-40



6-32

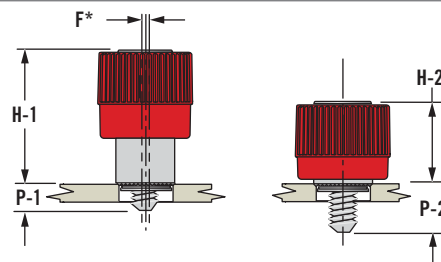


10-32



Knob Height and Screw Projection

(Press-in style shown)



TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

4-40 Thread Size

Installation Style	Outer Panel Dimensions		B	Part Number		Screw Projection Beyond Outer Surface of Panel		Knob Height†		Total Float	Panel Preparation	
	A Min.	A Max.		Phillips Recess	TORX® / Slot Combination	P-1	P-2	H-1	H-2		F*	∅ D
Press-In Style	0.9† (.036)	~	~	4C-PH-04-1P0-K000	4C-TS-04-1P0-K000	0.8 (.03)	3.8 (.15)	11.5 (.45)	8.6 (.34)	0.7 (.03)	5.6 ^{+0.04} _{-0.04} (.219 ^{+0.003} ₋₀)	3.2 ^{+0.2} _{-0.1} (.125 ^{+0.008} _{-0.004})
				4C-PH-04-2P0-K000	4C-TS-04-2P0-K000	2.5 (.10)	5.3 (.21)					
P.C. Board Style	1.6 (.063)	~	~	4C-PH-04-1B0-K000	4C-TS-04-1B0-K000	1.5 (.06)	3.8 (.15)	10.9 (.43)	8.5 (.33)	0.7 (.03)	5.6 ^{+0.1} _{-0.05} (.220 ^{+0.004} _{-0.002})	3.2 ^{+0.2} _{-0.1} (.220 ^{+0.008} _{-0.004})
				4C-PH-04-2B0-K000	4C-TS-04-2B0-K000	3.3 (.13)	5.5 (.22)					
Flare-In Style	0.8 (.031)	1.5 (.059)	0.4 (.016)	4C-PH-04-1F1-K000	4C-TS-04-1F1-K000	0.8 (.03)	3.7 (.15)	11.5 (.45)	8.6 (.34)	0.7 (.03)	4.8 ^{+0.08} _{-0.05} (.187 ^{+0.005} _{-0.000})	3.0 ^{+0.2} _{-0.1} (.125 ^{+0.008} _{-0.004})
				4C-PH-04-2F1-K000	4C-TS-04-2F1-K000	2.5 (.10)	5.4 (.21)					

6-32 Thread Size

Installation Style	Outer Panel Dimensions		B	Part Number		Screw Projection Beyond Outer Surface of Panel		Knob Height†		Total Float	Panel Preparation	
	A Min.	A Max.		Phillips / Slot Combination	TORX® / Slot Combination	P-1	P-2	H-1	H-2		F*	∅ D
Press-In Style	0.9† (.036)	~	~	4C-PS-06-1P0-K000	4C-TS-06-1P0-K000	0.7 (.03)	5 (.20)	15.5 (.61)	11.3 (.44)	0.7 (.03)	6.4 ^{+0.03} _{-0.05} (.250 ^{+0.003} ₋₀)	3.7 ^{+0.2} _{-0.1} (.146 ^{+0.008} _{-0.004})
				4C-PS-06-2P0-K000	4C-TS-06-2P0-K000	2.3 (.09)	6.6 (.26)					
P.C. Board Style	1.5 (.06)	~	~	4C-PS-06-1B0-K000	4C-TS-06-1B0-K000	1.7 (.07)	6.2 (.25)	14.5 (.57)	10 (.39)	0.7 (.03)	6.4 ± 0.1 (.252 ± .004)	3.7 ^{+0.2} _{-0.1} (.146 ^{+0.008} _{-0.004})
Flare-In Style	1.5 (.059)	3.2 (.125)	0.4 (.016)	4C-PS-06-1F1-K000	4C-TS-06-1F1-K000	0.8 (.03)	5 (.20)	15.5 (.61)	11.3 (.44)	0.7 (.03)	5.4 ^{+0.1} ₋₀ (.213 ^{+0.005} _{-0.000})	3.7 ^{+0.2} _{-0.1} (.146 ^{+0.008} _{-0.004})
				4C-PS-06-2F1-K000	4C-TS-06-2F1-K000	2.3 (.09)	6.6 (.26)					

10-32 Thread Size

Installation Style	Outer Panel Dimensions		B	L	Part Number		Screw Projection Beyond Outer Surface of Panel		Knob Height†		Total Float	Panel Preparation	
	A Min.	A Max.			Phillips / Slot Combination	TORX® / Slot Combination	P-1	P-2	H-1	H-2		F*	∅ D
Press-In Style	0.9† (.036)	~	~	~	4C-PS-10-1P0-K000	4C-TS-10-1P0-K000	0.5 (.02)	5.6 (.22)	11.3 (.45)	11.3 (.45)	0.6 (.02)	8 ⁺⁰ _{-0.08} (.315 ⁺⁰ _{-0.003})	5.2 ^{+0.2} _{-0.1} (.205 ^{+0.008} _{-0.004})
					4C-PS-10-2P0-K000	4C-TS-10-2P0-K000	2 (.08)	7.1 (.28)					
Flare-In Style	1.5 (.058)	3.2 (.125)	0.4 (.016)	1.8 (.070)	4C-PS-10-1F1-K000	4C-TS-10-1F1-K000	0.6 (.02)	5.6 (.22)	16.3 (.64)	16.3 (.64)	0.6 (.02)	6.8 ^{+0.08} _{-0.04} (.266 ^{+0.005} ₋₀)	4.9 ^{+0.05} ₋₀ (.191 ^{+0.002} ₋₀)
					4C-PS-10-2F1-K000	4C-TS-10-2F1-K000	2.1 (.08)	7.1 (.28)					
Floating Style	0.8 (.031)	1.6 (.063)	3.1 (.122)	4	4C-PS-10-3T2-K000	4C-TS-10-3T2-K000	3.8 (.15)	8.8 (.35)	11.2 (.44)	11.2 (.44)	2.3 (.09)	8.8 ^{+0.08} _{-0.03} (.346 ^{+0.003} _{-0.001})	~
				4	4C-PS-10-4T2-K000	4C-TS-10-4T2-K000	5.4 (.21)	10.4 (.41)					
				4.8	4C-PS-10-3T3-K000	4C-TS-10-3T3-K000	3.8 (.15)	8.8 (.35)					
	1.6 (.063)	2.4 (.094)	3.9 (.153)	4.8 (.190)	4C-PS-10-4T3-K000	4C-TS-10-4T3-K000	5.4 (.21)	10.4 (.41)					

(shown in table)



000
Black



008
Blue



013
Red



014
Green



Your Color
Contact Southco

Part Number

See table

To indicate color, change the last three digits of the part number. For knob style, K = knurled and N = smooth. For smooth knob change K to N. Example:
4C-PS-06-1P0-K000, black, knurled
4C-PS-06-1P0-N013, red, smooth

Notes: *F indicates the maximum float in the unfastened position.
† For panels thinner than 0.9 (.036), contact Southco.



47 Captive Screws

Restricted access series · M4 and M5 thread size

- Reduces risk of unauthorized access
- Meets UL-1950, IEC 950 and EN-60950
- Hand operation to secure with tool-only removal

Material and Finish

Ferrule:

Press-in: Hardened carbon steel, zinc plate, chromate, plus sealer
Flare-in and Floating: Aluminum, natural

Knob: Aluminum, natural or black organic coating

Screw: Hardened carbon steel, zinc plate, chromate, plus sealer

Installation Notes

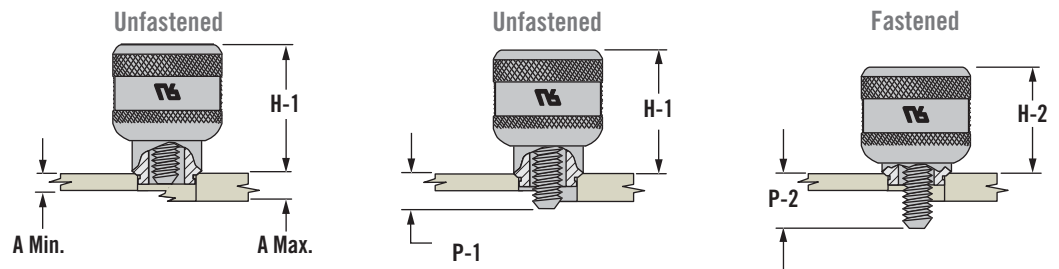
See pages 468-469, 543

Recess Styles

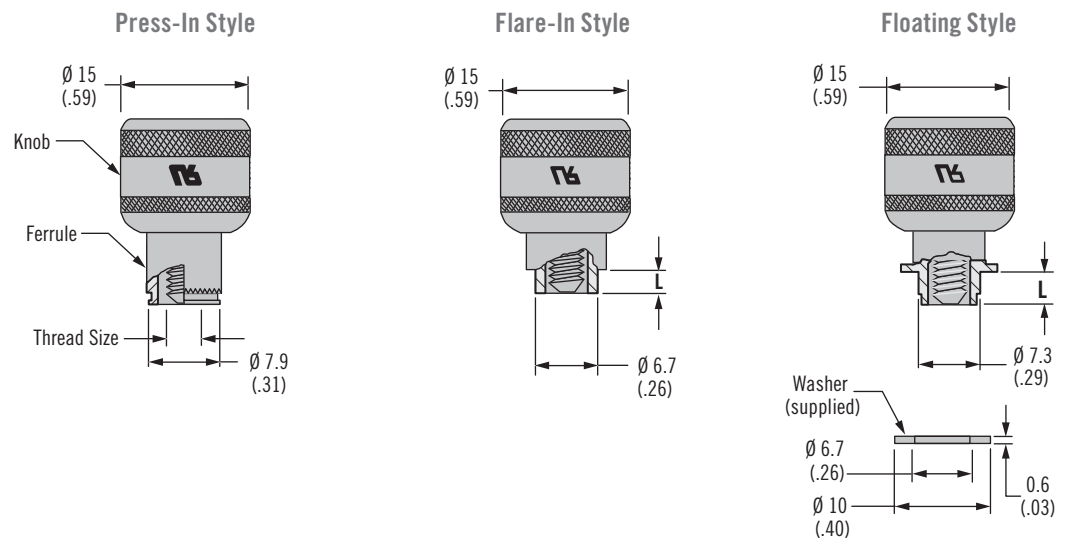


Knob Height and Screw Projection

(Press-in style shown)



Installation Styles



TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

M4 Thread Size

Installation Style	Knob Height		Outer Panel Dimensions		Dimension B*	Flange Length L	Screw Projection Beyond Outer Surface of Panel		Part Number		
	H-1	H-2	A Min.	A Max.			P-1	P-2	Slotted Recess	Phillips Recess	TORX® Recess
Press-In Style	18.5 (.73)	14 (.55)	0.9 (.036)	~	~	~	0.7 (.03)	5.6 (.22)	47-90-301-22	47-90-321-22	47-90-341-22
							2.3 (.09)	7.2 (.28)	47-91-301-22	47-91-321-22	47-91-341-22
							3.8 (.15)	8.7 (.34)	47-92-301-22	47-92-321-22	47-92-341-22
							5.4 (.21)	10.3 (.41)	47-93-301-22	47-93-321-22	47-93-341-22
Flare-In Style	18 (.70)	13 (.51)	1.5 (.058)	3.2 (.125)	0.6 (.023)	1.8 (.07)	1.4 (.06)	6.2 (.24)	47-80-302-22	47-80-322-22	47-80-342-22
			3.2 (.125)	4.8 (.188)	1.6 (.062)	3.4 (.14)	3.1 (.12)	7.9 (.31)	47-80-304-22	47-80-324-22	47-80-344-22
			1.5 (.058)	3.2 (.125)	0.6 (.023)	1.8 (.07)	3.1 (.12)	7.9 (.31)	47-81-302-22	47-81-322-22	47-81-342-22
							4.1 (.16)	8.9 (.35)	47-82-302-22	47-82-322-22	47-82-342-22
							6.1 (.24)	10.9 (.43)	47-83-302-22	47-83-322-22	47-83-342-22
							2.4 (.09)	7.2 (.28)	47-80-310-22	47-80-330-22	47-80-350-22
Floating Style	18 (.70)	14 (.55)	0.1 (.001)	0.8 (.031)	2.3 (.09)	3.2 (.13)	3.4 (.13)	8.2 (.32)	47-81-310-22	47-81-330-22	47-81-350-22
							5.4 (.21)	10.2 (.40)	47-82-310-22	47-82-330-22	47-82-350-22
							2.4 (.09)	7.2 (.22)	47-80-311-22	47-80-331-22	47-80-351-22
			0.8 (.031)	1.6 (.063)	3.1 (.12)	4 (.16)	3.4 (.13)	8.2 (.32)	47-81-311-22	47-81-331-22	47-81-351-22
							5.4 (.21)	10.2 (.40)	47-82-311-22	47-82-331-22	47-82-351-22

M5 Thread Size

Press-In Style	18.5 (.73)	14 (.55)	0.9 (.036)	~	~	~	0.7 (.03)	5.6 (.22)	47-90-501-22	47-90-521-22	47-90-541-22				
							2.3 (.09)	7.2 (.28)	47-91-501-22	47-91-521-22	47-91-541-22				
							3.8 (.15)	8.7 (.34)	47-92-501-22	47-92-521-22	47-92-541-22				
							5.4 (.21)	10.3 (.41)	47-93-501-22	47-93-521-22	47-93-541-22				
Flare-In Style	18 (.70)	13 (.51)	1.5 (.058)	3.2 (.125)	0.6 (.023)	1.8 (.07)	1.4 (.06)	6.2 (.24)	47-80-502-22	47-80-522-22	47-80-542-22				
			3.2 (.125)	4.8 (.188)	1.6 (.062)	3.4 (.14)	3.1 (.12)	7.9 (.31)	47-80-504-22	47-80-524-22	47-80-544-22				
			1.5 (.058)	3.2 (.125)	0.6 (.023)	1.8 (.07)	3.1 (.12)	7.9 (.31)	47-81-502-22	47-81-522-22	47-81-542-22				
							4.1 (.16)	8.9 (.35)	47-82-502-22	47-82-522-22	47-82-542-22				
							6.1 (.24)	10.9 (.43)	47-83-502-22	47-83-522-22	47-83-542-22				
							4.1 (.16)	8.9 (.35)	47-81-504-22	47-81-524-22	47-81-544-22				
			3.2 (.125)	4.8 (.188)	1.6 (.062)	3.4 (.14)	6.1 (.24)	10.9 (.43)	47-82-504-22	47-82-524-22	47-82-544-22				
							2.4 (.09)	7.2 (.28)	47-80-510-22	47-80-530-22	47-80-550-22				
Floating Style	18 (.70)	14 (.55)					0.1 (.001)	0.8 (.031)	2.3 (.09)	3.2 (.13)	3.4 (.13)	8.2 (.32)	47-81-510-22	47-81-530-22	47-81-550-22
											5.4 (.21)	10.2 (.40)	47-82-510-22	47-82-530-22	47-82-550-22
			2.4 (.09)	7.2 (.28)	47-80-511-22	47-80-531-22					47-80-551-22				
			0.8 (.031)	1.6 (.063)	3.1 (.12)	4 (.16)	3.4 (.13)	8.2 (.32)	47-81-511-22	47-81-531-22	47-81-551-22				
							5.4 (.21)	10.4 (.40)	47-82-511-22	47-82-531-22	47-82-551-22				
							3.4 (.15)	8.2 (.35)	47-80-512-22	47-80-532-22	47-80-552-22				
1.6 (.063)	2.4 (.094)	3.9 (.15)	4.8 (.19)	5.4 (.21)	10.2 (.40)	47-81-512-22	47-81-532-22	47-81-552-22							

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness



To add a black finish, change the part number from the table as shown:

Change 2 to 6: 47-80-102-22
47-80-102-62

Part Number

See table

All screw part numbers shown in table are for a natural finish

For black finish minimums may apply



47 Captive Screws

Restricted access series · 6-32 and 10-32 thread size

- Reduces risk of unauthorized access
- Meets UL-1950, IEC 950 and EN-60950
- Hand operation to secure with tool-only removal

Material and Finish

Ferrule:

Press-in: Hardened carbon steel, zinc plate, chromate, plus sealer
Flare-in and Floating: Aluminum, natural

Knob: Aluminum, natural or black organic coating

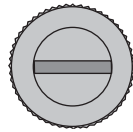
Screw: Hardened carbon steel, zinc plate, chromate, plus sealer

Installation Notes

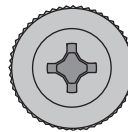
See pages 468-469, 543

Recess Styles

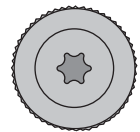
Slotted



No. 2 Phillips



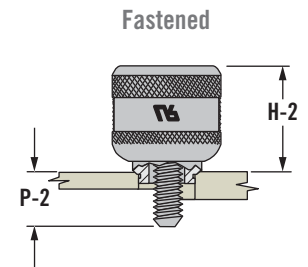
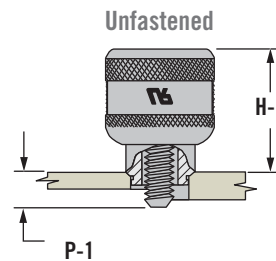
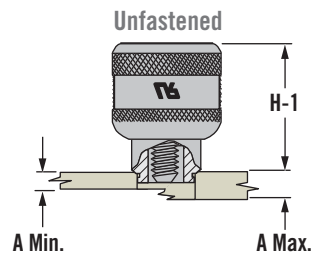
T15 TORX® - 6-32
T25 TORX® - 10-32



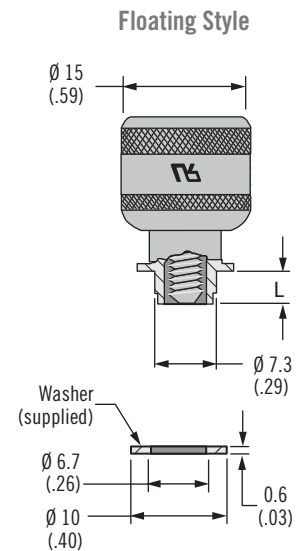
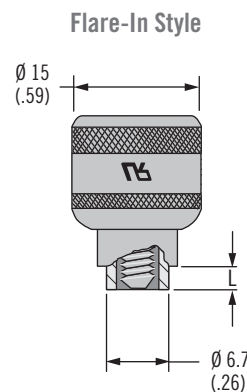
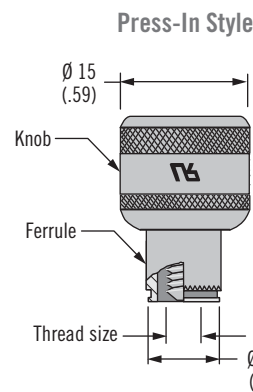
ACTUAL
SIZE

Knob Height and Screw Projection

(Press-in style shown)



Installation Styles



TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

6-32 Thread Size

Installation Style	Knob Height†		Outer Panel Dimensions		Dimension B*	Flange Length L	Screw Projection Beyond Outer Surface Of Panel		Part Number		
	H-1	H-2	A Min.	A Max.			P-1	P-2	Slotted Recess	Phillips Recess	TORX® Recess
Press-In Style	18.5 (.73)	14 (.54)	0.9 (.036)	~	~	~	0.5 (.02)	5.3 (.21)	47-60-201-22	47-60-221-22	47-60-241-22
							2.3 (.09)	6.9 (.27)	47-61-201-22	47-61-221-22	47-61-241-22
							3.8 (.15)	8.3 (.33)	47-62-201-22	47-62-221-22	47-62-241-22
							5.3 (.21)	10.1 (.41)	47-63-201-22	47-63-221-22	47-63-241-22
Flare-In Style	18 (.70)	13 (.51)	1.5 (.058)	3.2 (.125)	0.6 (.023)	1.8 (.07)	1.4 (.06)	6.2 (.24)	47-10-202-22	47-10-222-22	47-10-242-22
			3.2 (.125)	4.8 (.189)	1.6 (.062)	3.4 (.14)	3.1 (.12)	7.9 (.31)	47-10-204-22	47-10-224-22	47-10-244-22
			1.5 (.058)	3.2 (.125)	0.6 (.023)	1.8 (.07)	3.1 (.12)	7.9 (.31)	47-11-202-22	47-11-222-22	47-11-242-22
			4.1 (.16)	8.9 (.35)	47-12-202-22	47-12-222-22	47-12-242-22				
			6.1 (.24)	10.9 (.43)	47-13-202-22	47-13-222-22	47-13-242-22				
			4.1 (.16)	8.9 (.35)	47-11-204-22	47-11-224-22	47-11-244-22				
			6.1 (.24)	10.9 (.43)	47-12-204-22	47-12-224-22	47-12-244-22				
			3.2 (.125)	4.8 (.189)	1.6 (.062)	3.4 (.14)	6.1 (.24)	10.9 (.43)	47-12-204-22	47-12-224-22	47-12-244-22
Floating Style	18 (.70)	14 (.54)	0.1 (.001)	0.8 (.031)	2.3 (.09)	3.2 (.13)	2.4 (.09)	7.2 (.28)	47-10-210-22	47-10-230-22	47-10-250-22
							3.4 (.13)	8.2 (.32)	47-11-210-22	47-11-230-22	47-11-250-22
							5.4 (.21)	10.2 (.40)	47-12-210-22	47-12-230-22	47-12-250-22
			0.8 (.031)	1.6 (.063)	3.1 (.12)	4 (.16)	2.4 (.09)	7.2 (.22)	47-10-211-22	47-10-231-22	47-10-251-22
							3.4 (.13)	8.2 (.32)	47-11-211-22	47-11-231-22	47-11-251-22
							5.4 (.21)	10.2 (.40)	47-12-211-22	47-12-231-22	47-12-251-22
			1.6 (.063)	2.4 (.094)	3.9 (.15)	4.8 (.19)	3.4 (.13)	8.2 (.32)	47-10-212-22	47-10-232-22	47-10-252-22
							5.4 (.21)	10.2 (.40)	47-11-212-22	47-11-232-22	47-11-252-22

10-32 Thread Size

Press-In Style	18.5 (.73)	14 (.54)	0.9 (.036)	~	~	~	0.7 (.03)	5.6 (.22)	47-60-501-22	47-60-521-22	47-60-541-22
							2.3 (.09)	7.2 (.28)	47-61-501-22	47-61-521-22	47-61-541-22
							3.8 (.15)	8.7 (.34)	47-62-501-22	47-62-521-22	47-62-541-22
							5.4 (.21)	10.3 (.41)	47-63-501-22	47-63-521-22	47-63-541-22
Flare-In Style	18 (.70)	13 (.51)	1.5 (.058)	3.2 (.125)	0.6 (.023)	1.8 (.07)	1.4 (.06)	6.2 (.24)	47-10-502-22	47-10-522-22	47-10-542-22
			3.2 (.125)	4.8 (.189)	1.6 (.062)	3.4 (.14)	3.1 (.12)	7.9 (.31)	47-10-504-22	47-10-524-22	47-10-544-22
			1.5 (.058)	3.2 (.125)	0.6 (.023)	1.8 (.07)	3.1 (.12)	7.9 (.31)	47-11-502-22	47-11-522-22	47-11-542-22
			4.1 (.16)	8.9 (.35)	47-12-502-22	47-12-522-22	47-12-542-22				
			6.1 (.24)	10.9 (.43)	47-13-502-22	47-13-522-22	47-13-542-22				
			4.1 (.16)	8.9 (.35)	47-11-504-22	47-11-524-22	47-11-544-22				
			6.1 (.24)	10.9 (.43)	47-12-504-22	47-12-524-22	47-12-544-22				
			3.2 (.125)	4.8 (.189)	1.6 (.062)	3.2 (.14)	6.1 (.24)	10.9 (.43)	47-12-504-22	47-12-524-22	47-12-544-22
Floating Style	18 (.70)	14 (.54)	0.1 (.001)	0.8 (.031)	2.3 (.09)	3.2 (.13)	2.4 (.09)	7.2 (.28)	47-10-510-22	47-10-530-22	47-10-550-22
							3.4 (.13)	8.2 (.32)	47-11-510-22	47-11-530-22	47-11-550-22
							5.4 (.21)	10.2 (.40)	47-12-510-22	47-12-530-22	47-12-550-22
			0.8 (.031)	1.6 (.063)	3.1 (.12)	4 (.16)	2.4 (.09)	7.2 (.28)	47-10-511-22	47-10-531-22	47-10-551-22
							3.4 (.13)	8.2 (.32)	47-11-511-22	47-11-531-22	47-11-551-22
							5.4 (.21)	10.2 (.40)	47-12-511-22	47-12-531-22	47-12-551-22
			1.6 (.063)	2.4 (.094)	3.9 (.15)	4.8 (.19)	3.4 (.13)	8.2 (.32)	47-10-512-22	47-10-532-22	47-10-552-22
							5.4 (.21)	10.2 (.40)	47-11-512-22	47-11-532-22	47-11-552-22

Part numbers in shaded rows (shown in table) are fully retracting in minimum panel thickness



To add a black finish, change the part number from the table as shown:

Change 2 to 6: 47-80-102-22
 47-80-102-62

Part Number

See table

All screw part numbers shown in table are for a natural finish

For black finish minimums may apply



47/4C Captive Screws

Panel preparation and installation

Installation Notes

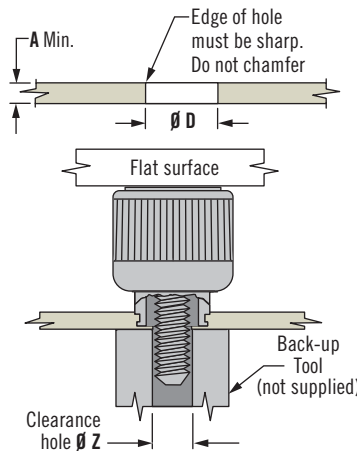
1. Prepare panel as shown. Top edge of hole should be sharp
2. Press captive screw into panel until ferrule is installed as shown

Installation closer to the panel edge requires a fixture to constrain the panel edges

Notes

Recommended minimum distance from edge of panel to centerline of hole is $1.5 \times \phi D$

Press-In Style



See page 543 for additional installation guidelines

Notes: For use in material hardnesses RB85 or less, such as low carbon steels that are half hard or softer, stainless steels in the annealed condition and aluminum.

Thread Size	ϕD	Clearance Hole ϕZ
M3 or 4-40	$5.6^{+0.03}_{-0.05}$ (.219 ^{+0.003} ₋₀)	3.2 (.125) $+0.2$ / $+0.008$ -0.1 / -0.004
M3.5 or 6-32	$6.4^{+0.03}_{-0.05}$ (.250 ^{+0.003} ₋₀)	3.7 (.146)
M4 or 8-32	$8^{+0}_{-0.08}$ (.315 ⁺⁰ _{-0.003})	4.4 (.173)
M5 or 10-32	$8^{+0}_{-0.08}$ (.315 ⁺⁰ _{-0.003})	5.2 (.205)
M6 or 1/4-20	$9.5^{+0.1}_{-0}$ (.375 ^{+0.003} ₋₀)	6.2 (.260)

Performance Details

Pullout force: 360 N (80 lbf)
Side load against unfastened knob: 200 N (45 lbf)

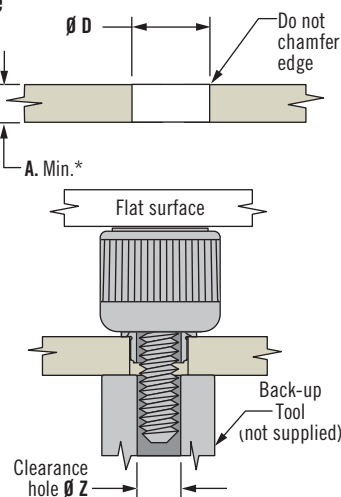
Installation Notes

1. Prepare panel as shown.
2. Use pilot lead-in to guide assembly into hole and press knurl into panel until ferrule shoulder contacts surface

Notes

Strength data based on drilled holes in G-10 P.C. Board

P.C. Board Style



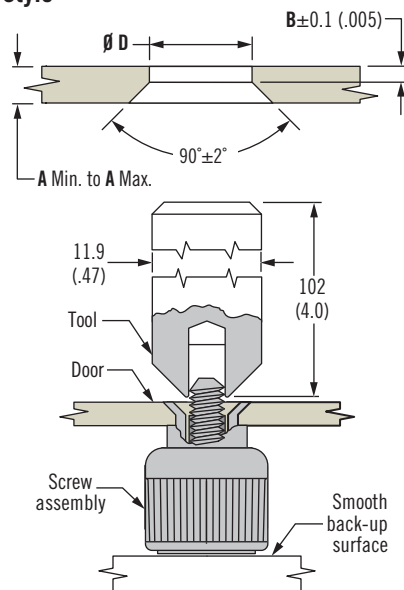
Thread Size	ϕD	Clearance Hole ϕZ
M3 or 4-40	$5.6^{+0.1}_{-0.05}$ (.219 ^{+0.004} _{-0.002})	3.2 (.125) $+0.2$ / $+0.008$ -0.1 / -0.004
M3.5 or 6-32	6.4 ± 1 (.252 \pm .004)	3.7 (.146)

Installation Notes

1. Prepare panel as shown.
2. Install tool in suitable press. Only LIGHT pressure will be required
3. Insert screw assembly into prepared hole in panel
4. Place work under press, center tool over screw thread and flare ferrule into counter-sink in panel. Use LIGHT pressure

Installation Force:
1600 N (350 lbf) to 2500 N (550 lbf)
Installation force depends on thread size

Flare-In Style

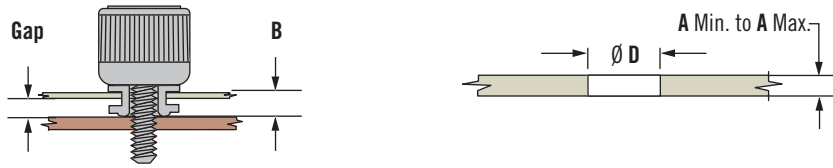


Dimensions in millimeters (inch) unless otherwise stated

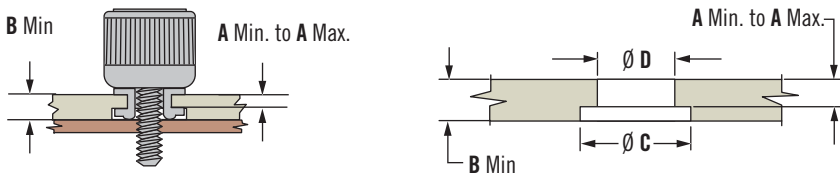
Thread Size	ϕD	Tool Part Number
M3 or 4-40	$4.8^{+0.08}_{-0.05}$ (.187 ^{+0.005} ₋₀)	47-104
M3.5 or 6-32	$5.4^{+0.1}_{-0}$ (.213 ^{+0.005} ₋₀)	47-106
M4 or 8-32	$6.8^{+0.08}_{-0.04}$ (.266 ^{+0.005} ₋₀)	47-108
10-32	$6.8^{+0.08}_{-0.04}$ (.266 ^{+0.005} ₋₀)	47-110
M5	$6.8^{+0.08}_{-0.04}$ (.266 ^{+0.005} ₋₀)	47-115
M6 or 1/4-20	$8.2^{+0.1}_{-0}$ (.323 ^{+0.005} ₋₀)	47-125

Floating Style

Panel preparation 1

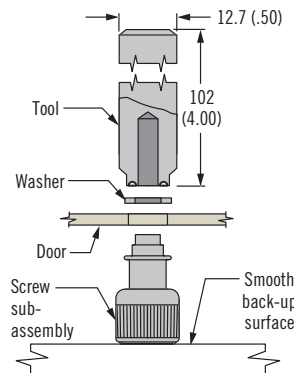


Panel preparation 2



Thread Size	Tool Part Number
M3 or 4-40	47-04
M3.5 or 6-32	47-06
M4 or 8-32	47-08
M5	47-05
10-32	47-10
M6 or 1/4-20	47-25

Thread Size	Ø D	Counterbore Min. Ø C
M3 or 4-40	6.4 (.250) <small>+0.008 (+.003) -0.03 -0.001</small>	9.4 (.375)
M3.5 or 6-32	7.2 (.283)	10.5 (.413)
M4 or 8-32	8.8 (.346)	12 (.469)
M5 or 10-32	8.8 (.346)	12 (.469)
M6 or 1/4-20	10.5 (.413)	13.5 (.531)



Installation Notes

Floating and Snap-in style:
 Panel preparation 1:
 Requires space between inner and outer panels.
 Specify the fastener for panel thickness A to fall between the range A Minimum to A Maximum:
 gap = B - A outer panel thickness

Panel preparation 2:
 Counter bore the panel (B = Minimum panel thickness) to a thickness (A) between the range of A Minimum and A Maximum
 Minimum bore depth = panel thickness - A Maximum

For gap = Ø, panel thickness must be ≥ to B value (before counterbore) for the given part number

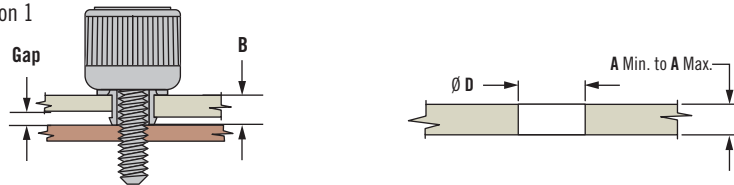
Notes

B and A Maximum values are provided in the corresponding fastener selection tables for each part number

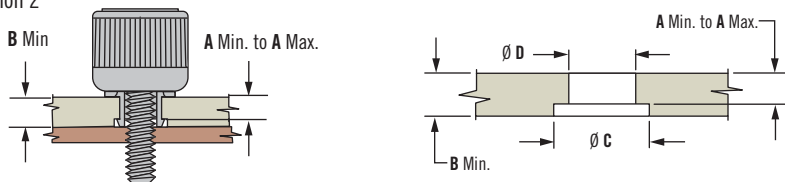
If holes are drilled, top edge of hole should be chamfered

Snap-In Style

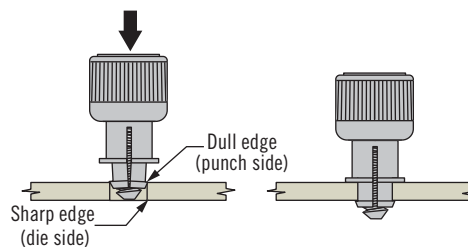
Panel preparation 1



Panel preparation 2



Thread Size	Ø D	Counterbore Min. Ø C
M3.5 or 6-32	6.4 (.250) <small>+0 -0.1 (±.002)</small>	7.5 (.295)
M4 or 8-32	6.4 (.250)	7.5 (.295)
M5 or 10-32	6.4 (.250)	7.5 (.295)



Dimensions in millimeters (inch) unless otherwise stated



47-SM Captive Screws

Styled knob series - Surface Mount Technology (SMT) Style

- For installation to PC Board material utilizing surface mount technology
- Smooth knob meets UL-1950
- Designed for hand operation
- Spring ejected
- Variety of sizes, recesses

Material and Finish

Ferrule: Steel, Tin plated

Knob:
Aluminum, natural

Screw: Hardened carbon steel,
zinc plated, chromate, plus sealer

Internal spring: 300 series stainless
steel passivated

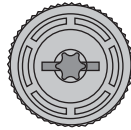
Plug: Silicone rubber

Part Number

See table

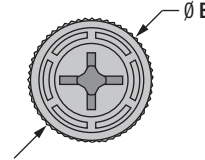
Recess Styles

TORX® / Slot Combination

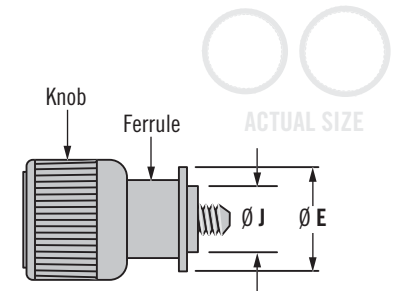


T10 TORX® / Slot Combination (M3,4-40)
T15 TORX® / Slot (6-32)

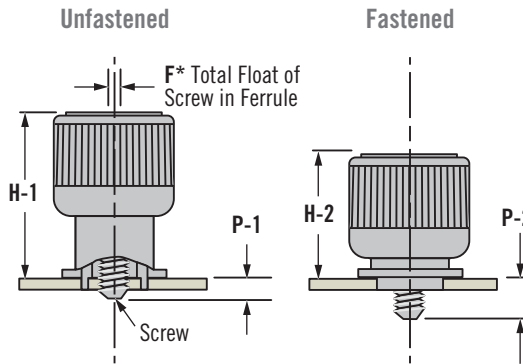
Phillips / Slot Combination



No. 1 Phillips / Slot Recess (M3,4-40)
No. 2 Phillips / Slot Recess (6-32)

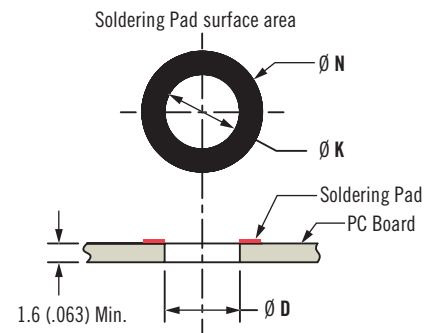


Knob Height and Screw Projection



* Value represents float in unfastened position
Notes: P-1, P-2 Screw Projection measured from the top side of panel

PC Board Preparation



47 Captive Screws Styled knob series - SMT Style

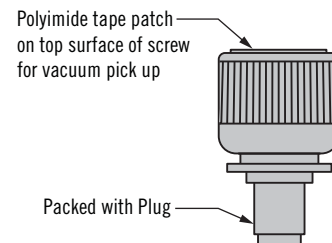
Part Number

Specify Package
Indicate package option with last digit
of the part number

Example

47-SM-1311-K-R: Reel Package (as shown in table)
47-SM-1311-K-T: Tray Package

Screw as Shipped in Reel Pack or Tray Pack



Thread Size	Part Number (Reel package shown)										Panel Preparation				
	Knurled Head		Smooth Head		H-1	H-2	P-1	P-2	ØB	ØJ	ØE	F*	ØK	ØN	ØD
	Phillips / Slotted	TORX® / Slotted	Phillips / Slotted	TORX® / Slotted											
M3 x 0.5	47-SM-3311-K-R	47-SM-3411-K-R	47-SM-3311-N-R	47-SM-3411-N-R	11.4 (.45)	8.4 (.33)	1.4 (.05)	4.4 (.17)	10.7 (.42)	5.5 (.217)	7.6 (.30)	0.7 (.03)	5.6 (.22)	8.6 (.34)	5.6 +0.08/-0 (.220 +.003/-0.000)
	47-SM-3321-K-R	47-SM-3421-K-R	47-SM-3321-N-R	47-SM-3421-N-R			1.4 (.05)	4.4 (.17)							
4-40	47-SM-1311-K-R	47-SM-1411-K-R	47-SM-1311-N-R	47-SM-1411-N-R	15.5 (.61)	10.7 (.42)	1.4 (.05)	4.4 (.17)	11.4 (.45)	6.2 (.244)	8.1 (.32)	0.7 (.03)	6.4 (.25)	10.2 (.40)	6.4 +0.08/-0 (.252 +.003/-0.000)
	47-SM-1321-K-R	47-SM-1421-K-R	47-SM-1321-N-R	47-SM-1421-N-R			2.2 (.09)	5.2 (.20)							
6-32	47-SM-2311-K-R	47-SM-2411-K-R	47-SM-2311-N-R	47-SM-2411-N-R	15.5 (.61)	10.7 (.42)	0.8 (.03)	5.6 (.22)	11.4 (.45)	6.2 (.244)	8.1 (.32)	0.7 (.03)	6.4 (.25)	10.2 (.40)	6.4 +0.08/-0 (.252 +.003/-0.000)
	47-SM-2321-K-R	47-SM-2421-K-R	47-SM-2321-N-R	47-SM-2421-N-R			2.3 (.09)	7.1 (.28)							

TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC

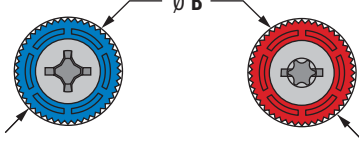
Dimensions in millimeters (inch) unless otherwise stated

4C-SM Captive Screws

Prism series - Surface Mount Technology (SMT) Style

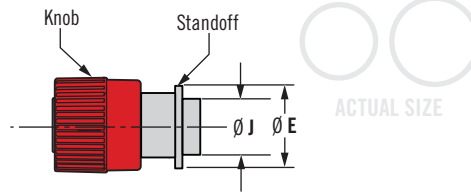


Recess Styles

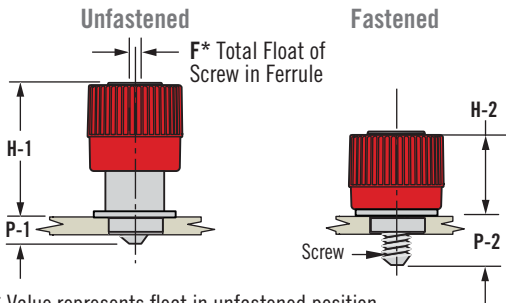


No. 2 Phillips Recess (M3,4-40)
No. 2 Phillips / Slot Recess (6-32)

T10 TORX® / Slot Combination (M3,4-40)
T15 TORX® / Slot Combination (6-32)

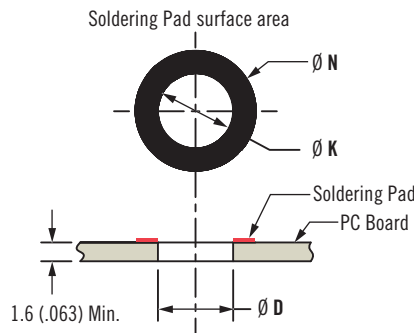


Knob Height and Screw Projection



* Value represents float in unfastened position
Notes: P-1, P-2 Screw Projection measured from the top side of panel

PC Board Preparation



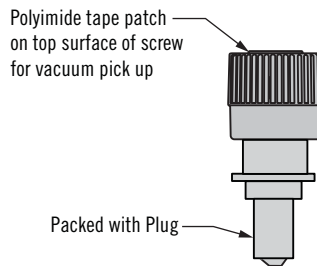
- For installation to PC Board material utilizing surface mount technology
- Designate access points with color
- Color match captive screws to your industrial design
- High strength screw for use with high torque drivers

Material and Finish

- Standoff: Steel, Tin plated
- Knob: High heat resistant plastic
- Screw: Hardened carbon steel, zinc plated, chromate, plus sealer
- Internal spring: 300 series stainless steel passivated
- Plug: Silicone rubber



Screw as Shipped in Reel Pack or Tray Pack



4C Captive Screws Prism series - SMT Style

Part Number

Specify Package

Indicate package option with last digit of the part number

Example

4C-SM-1111-N000-R, Reel Package (as shown in table)
4C-SM-1111-N000-T, Tray Package

Part Number

Specify Color

To indicate Color, change the three digits of the part number indicated below

Example

4C-SM-1111-K000-R, black
4C-SM-1111-K008-R, blue

Part Number

See table

Thread Size	Part Number (Reel package shown)														Panel Preparation				
	Knurled Head				Smooth Head				H-1	H-2	P-1	P-2	Ø B	Ø J	Ø E	F*	Ø K	Ø N	Ø D
	Phillips	TORX® / Slotted	Phillips	TORX® / Slotted															
M3 x 0.5	4C-SM-3111-K000-R	4C-SM-3411-K000-R	4C-SM-3111-K000-R	4C-SM-3411-N000-R	10.8 (.43)	8.6 (.34)	1.5 (.06)	3.7 (.15)	9.7 (.38)	5.5 (.22)	7.6 (.30)	0.7 (.03)	5.6 (.22)	8.6 (.34)	5.6 +0.08/-0	(.220 +.003/-0.000)			
	4C-SM-3121-K000-R	4C-SM-3421-K000-R	4C-SM-3121-K000-R	4C-SM-3421-N000-R															
4-40	4C-SM-1111-K000-R	4C-SM-1411-K000-R	4C-SM-1111-N000-R	4C-SM-1411-N000-R	16.3 (.64)	11.7 (.46)	0.1 (.004)	4.6 (.18)	11.4 (.45)	6.2 (.244)	8.1 (.32)	0.8 (.03)	6.4 (.25)	10.2 (.40)	6.4 +0.08/-0	(.252 +.003/-0.000)			
	4C-SM-1121-K000-R	4C-SM-1421-K000-R	4C-SM-1121-N000-R	4C-SM-1421-N000-R															
	Phillips / Slotted	TORX® / Slotted	Phillips / Slotted	TORX® / Slotted															
6-32	4C-SM-2311-K000-R	4C-SM-2411-K000-R	4C-SM-2311-N000-R	4C-SM-2411-N000-R	16.3 (.64)	11.7 (.46)	0.1 (.004)	4.6 (.18)	11.4 (.45)	6.2 (.244)	8.1 (.32)	0.8 (.03)	6.4 (.25)	10.2 (.40)	6.4 +0.08/-0	(.252 +.003/-0.000)			
	4C-SM-2321-K000-R	4C-SM-2421-K000-R	4C-SM-2321-N000-R	4C-SM-2421-N000-R															



52-SM Captive Screws

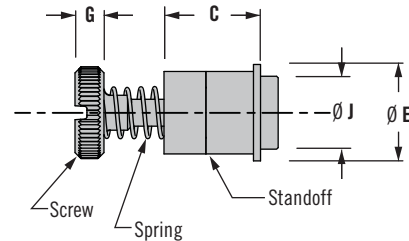
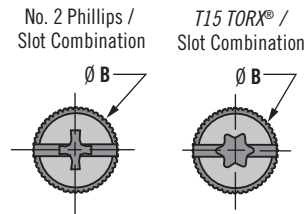
Miniature series · Surface Mount Technology (SMT) Style

- For installation to PC Board material utilizing surface mount technology
- Smaller footprint for limited space applications
- Heat treated steel screw for optimum strength

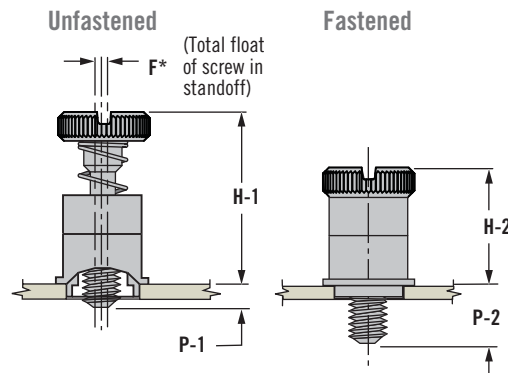
Material and Finish

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer
 Internal spring: 300 series stainless steel, passivated
 Standoff: Steel, Tin plated
 Plug: Silicone rubber

Recess Styles

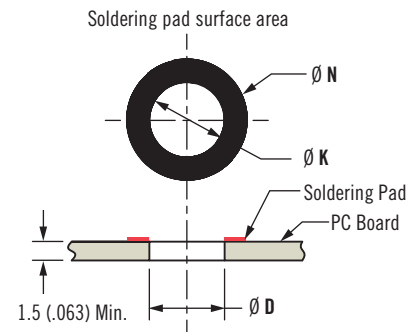


Screw Height and Screw Projection

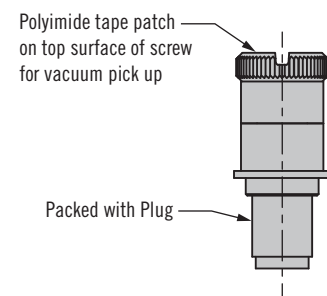


* Value represents float in unfastened position
 Notes: P-1, P-2 Screw Projection measured from the top side of panel

PC Board Preparation



Screw as Shipped in Reel Pack or Tray Pack



52 Captive Screws Miniature Series - SMT Style

Part Number
 Specify Package
 Indicate package option with last digit of the part number

Example
 52-SM-1311-K-R: Reel Package (as shown in table)
 52-SM-1311-K-T: Tray Package

Thread Size	Part Number (Reel package shown)				H-1	H-2	P-1	P-2	Ø B Knurled Head	Ø B Smooth Head	Ø J	Ø E	C	G	F*	Ø K	Ø N	Panel Preparation Ø D
	Knurled Head		Smooth Head															
	Phillips / Slotted	TORX®/Slotted	Phillips / Slotted	TORX®/Slotted														
M3 x 0.5	52-SM-3311-K-R	52-SM-3411-K-R	52-SM-3311-N-R	52-SM-3411-N-R	14	9.6	0.8 (.03)	5.3 (.21)	7	6.8	5.5	7.6	7	2.5	0.5	5.6	8.6	5.6+0.08/-0
	52-SM-3321-K-R	52-SM-3421-K-R	52-SM-3321-N-R	52-SM-3421-N-R	(.55)	(.38)	2.3 (.09)	6.8 (.27)	(.28)	(.27)	(.217)	(.30)	(.28)	(.1)	(.02)	(.22)	(.34)	(.220+0.03/-0.000)
4-40	52-SM-1311-K-R	52-SM-1411-K-R	52-SM-1311-N-R	52-SM-1411-N-R	14	9.6	0.8 (.03)	5.3 (.21)	7	6.8	5.5	7.6	7	2.5	0.5	5.6	8.6	5.6+0.08/-0
	52-SM-1321-K-R	52-SM-1421-K-R	52-SM-1321-N-R	52-SM-1421-N-R	(.55)	(.38)	2.3 (.09)	6.8 (.27)	(.28)	(.27)	(.217)	(.30)	(.28)	(.1)	(.02)	(.22)	(.34)	(.220+0.03/-0.000)
6-32	52-SM-2311-K-R	52-SM-2411-K-R	52-SM-2311-N-R	52-SM-2411-N-R	15.7	10.7	0.7 (.028)	5.8 (.23)	7.9	7.6	6.2	8.1	8.1	2.5	0.8	6.4	10.2	6.4+0.08/-0
	52-SM-2321-K-R	52-SM-2421-K-R	52-SM-2321-N-R	52-SM-2421-N-R	(.62)	(.42)	2.2 (.087)	7.4 (.29)	(.31)	(.30)	(.244)	(.32)	(.32)	(.1)	(.03)	(.25)	(.40)	(.252+0.03/-0.000)

TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

Installation Guidelines



Southco Surface Mounted Technology (SMT) Captive Screws include installation and packaging features for installation onto PC Boards during the Reflow Process as a surface mounted device (SMD).

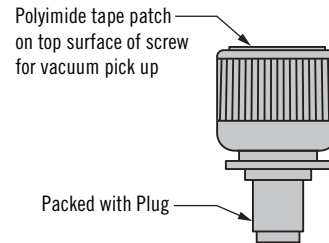
SMT product installation is offered on these Southco Captive Screws for 4-40, 6-32 and M3 thread sizes:

- 47 Styled Knob Series
- 4C Prism Series
- 52 Miniature Series

Installation Features

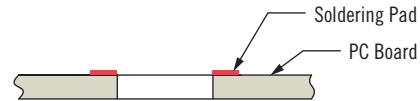
Each Southco SMT style captive screw includes a polyimide patch covering the screw head tool recess allowing for vacuum pick up during placement on the PC Board. The screw threads are protected from excess solder during the reflow process by a plug pre-assembled to the screw by Southco. The patch and plug are then removed after the final cool down phase.

Screw as Shipped in Reel or Tray Pack



Preparing the PC Board to accept SMT Captive Screws

- See literature for optimum soldering pad surface area for the specific Southco Captive Screw being utilized



Packaging Features/Options

- Tray Pack
- Reel Pack



Tray Pack



Reel Pack

Reflow Process

- Reflow of Solder
 - Pre-heat
 - Soak
 - Reflow
 - Cooling
- Cleaning
 - Remove excess solder paste



52 Captive Screws

Miniature series · Flare-in style

- Smaller footprint for limited space applications
- Heat treated steel screw for optimum strength

Material and Finish

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Spring: 300 series stainless steel, passivated

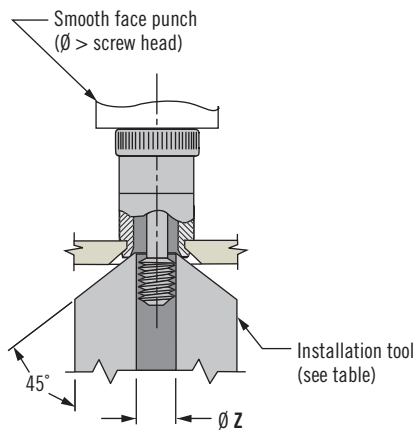
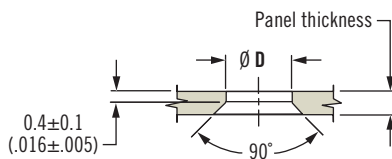
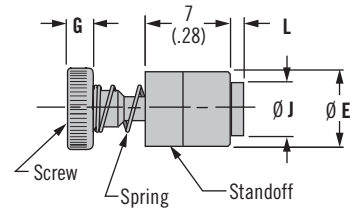
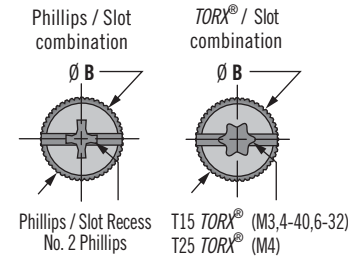
Standoff: Aluminum natural

Installation tool: Hardened carbon steel, zinc plated, chromate, plus sealer

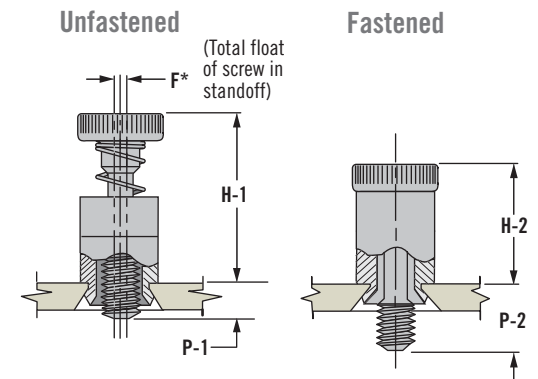
Installation Notes

1. Prepare panel as shown
2. Use light pressure to flare standoff, assuring parallel surfaces on the punch and installation tool

Recess Styles



Knob Height and Screw Projection



H* - Value represents float in unfastened position

Notes: P-1, P-2 measured from the top side of panel

Part Number

See table

Thread Size	Panel Thickness		Part Number				Ø B	Ø E	F	G	H-1	H-2	Ø J	L	P-1	P-2	Panel Preparation		Tool Part No.
			Knurled Head		Smooth Head												Ø D	Ø Z	
	Min.	Max.	Phillips / Slotted	TORX® / Slotted	Phillips / Slotted	TORX® / Slotted													
4-40	0.8 (.031)	2.4 (.094)	52-19-11-4	52-17-11-4	52-1A-11-4	52-18-11-4	7 (.28)	6.2 (.245)	0.5 (.018)	2.5 (.1)	14 (.55)	9.6 (.38)	4.6 (.183)	1 (.041)	0.8 (.031)	5.3 (.21)	4.75 ^{+0.08} ₋₀ (.187 ^{+0.003} ₋₀)	3 (.120)	47-104
6-32	1.5 (.058)	3.2 (.125)	52-29-21-4	52-27-21-4	52-2A-21-4	52-28-21-4	8 (.31)	7 (.28)	0.7 (.028)	2.5 (.1)	15 (.59)	9.6 (.38)	5.3 (.209)	1.8 (.07)	1.8 (.07)	6.8 (.27)	5.41 ^{+0.08} ₋₀ (.213 ^{+0.003} ₋₀)	3.6 (.141)	47-106
M3 x 0.5	0.8 (.031)	2.4 (.094)	52-39-11-4	52-37-11-4	52-3A-11-4	52-38-11-4	7 (.28)	6.2 (.245)	0.6 (.023)	2.5 (.1)	14 (.55)	9.6 (.38)	4.6 (.183)	1 (.041)	0.8 (.031)	5.3 (.21)	4.75 ^{+0.08} ₋₀ (.187 ^{+0.003} ₋₀)	3 (.120)	47-104
M4 x 0.7	1.5 (.058)	3.2 (.125)	52-49-21-4	52-47-21-4	52-4A-21-4	52-48-21-4	9.4 (.37)	8.7 (.34)	0.7 (.028)	3 (.12)	15.2 (.60)	10.1 (.40)	6.7 (.26)	1.8 (.07)	1.8 (.07)	6.8 (.27)	6.76 ^{+0.1} _{-0.04} (.266 ^{+0.005} ₋₀)	4.2 (.166)	47-108

Note: Subtract .25 (.01) from Ø B for smooth head style.

TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC

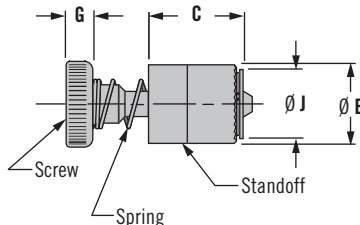
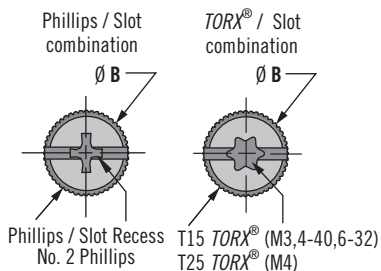
Dimensions in millimeters (inch) unless otherwise stated

52 Captive Screws

Miniature series · Press-in style



Recess Styles



- Smaller footprint for limited space applications
- Heat treated steel screw for optimum strength

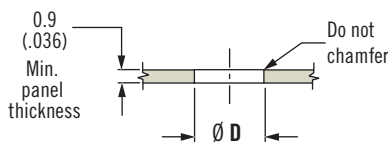
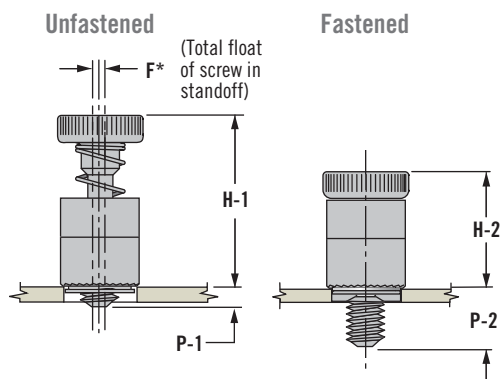
Material and Finish

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer
 Spring: 300 series stainless steel, passivated
 Standoff: Carbon steel, zinc plated, chromate, plus sealer

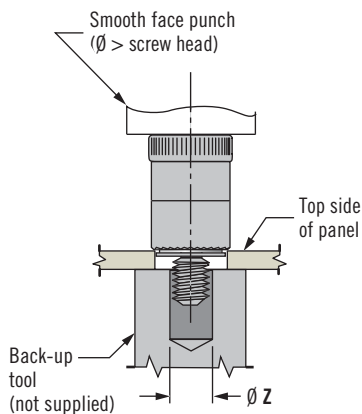
Installation Notes

For use in most aluminum or in low carbon steels that are 1/4 hard or softer

Knob Height and Screw Projection



Notes: Recommended minimum distance from edge of panel to centerline of hole is 1.5 x Ø D for press-in version.



* Value represents float in unfastened position
 Notes: P-1, P-2 measured from the top side of panel



See page 543 for additional installation guidelines

Part Number

See table

Thread Size	Part Number				Ø B	C	Ø E	F*	G	H-1	H-2	Ø J	P-1	P-2	Panel Preparation	
	Knurled Head		Smooth Head												Ø D	Ø Z
	Phillips / Slotted	TORX® / Slotted	Phillips / Slotted	TORX® / Slotted												
4-40	52-19-51-4	52-17-51-4	52-1A-51-4	52-18-51-4	7	7.9	6.4	0.5	2.5	14	9.6	5.5	0.9 (.036)	5.3 (.21)	5.56 ^{+0.08} ₋₀	3
	52-19-53-4	52-17-53-4	52-1A-53-4	52-18-53-4	(.28)	(.31)	(.25)	(.018)	(.1)	(.55)	(.38)	(.217)	2.5 (.1)	6.8 (.27)	(.219 ^{+0.003} ₋₀)	(.120)
6-32	52-29-51-4	52-27-51-4	52-2A-51-4	52-28-51-4	8	8.6	7	0.7	2.5	15.5	10.4	6.3	0.9 (.036)	6.1 (.24)	6.35 ^{+0.08} ₋₀	3.7
	52-29-53-4	52-27-53-4	52-2A-53-4	52-28-53-4	(.31)	(.34)	(.28)	(.028)	(.1)	(.61)	(.41)	(.247)	2.5 (.1)	7.6 (.30)	(.250 ^{+0.003} ₋₀)	(.144)
M3 X 0.5	52-39-51-4	52-37-51-4	52-3A-51-4	52-38-51-4	7	7.9	6.4	0.6	2.5	14	9.6	5.5	0.9 (.036)	5.3 (.21)	5.56 ^{+0.08} ₋₀	3.2
	52-39-53-4	52-37-53-4	52-3A-53-4	52-38-53-4	(.28)	(.31)	(.25)	(.023)	(.1)	(.55)	(.38)	(.217)	2.5 (.1)	6.8 (.27)	(.219 ^{+0.003} ₋₀)	(.126)
M4 X 0.7	52-49-51-4	52-47-51-4	52-4A-51-4	52-48-51-4	9.4	8.6	8.7	0.7	3	16	10.8	7.9	0.9 (.036)	6.1 (.24)	8 ⁺⁰ _{-0.08}	4.4
	52-49-53-4	52-47-53-4	52-4A-53-4	52-48-53-4	(.37)	(.34)	(.34)	(.028)	(.12)	(.63)	(.43)	(.31)	2.5 (.1)	7.6 (.30)	(.315 ⁺⁰ _{-0.003})	(.173)



52 Overmold Captive Screws

Miniature series · Flare-in style

- Smaller footprint for limited space applications
- Heat treated steel screw for optimum strength
- Designate access points with color
- Color match captive screws to your industrial design

Material and Finish

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer

Spring: 300 series stainless steel, passivated

Standoff: Aluminum natural

Knob: PC/ABS

Installation tool: Hardened carbon steel, zinc plated, chromate, plus sealer

Performance Details

Flamability Rating: UL94-V0

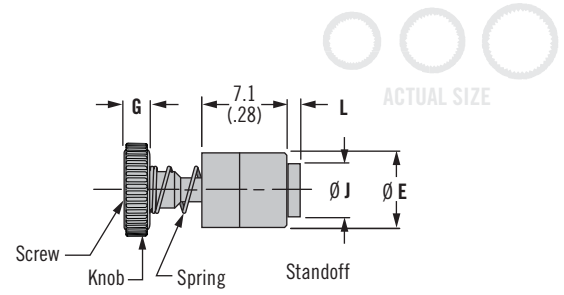
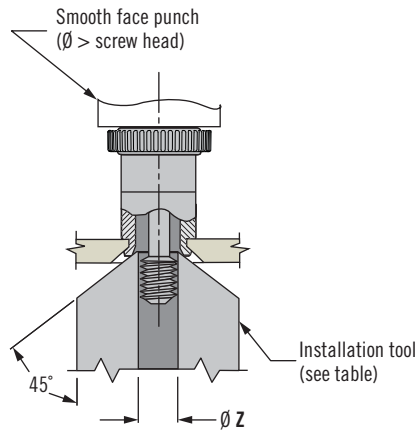
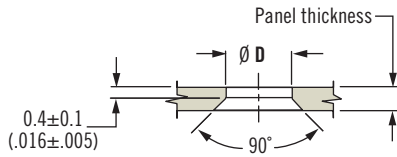
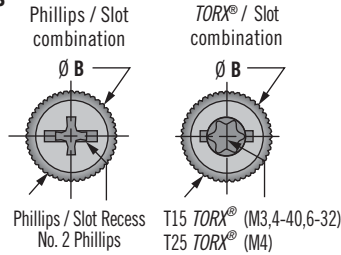
Installation Notes

1. Prepare panel as shown
2. Use light pressure to flare standoff, assuring parallel surfaces on the punch and installation tool

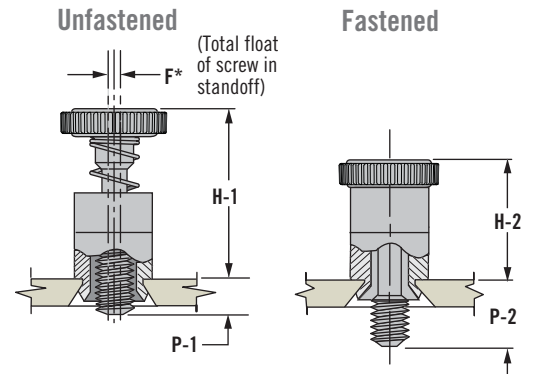
Part Number

See table

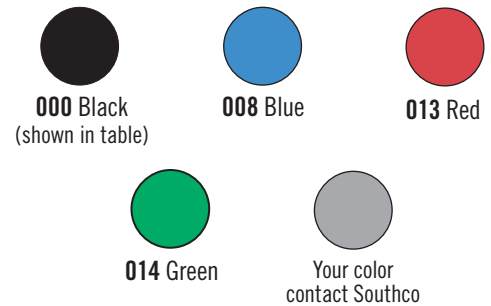
Recess Styles*



Knob Height and Screw Projection



F* - Value represents float in unfastened position
Notes: P-1, P-2 measured from the top side of panel



Specifying Color: To indicate color, change the last three digits of the part number

Example: 52-11-11-4-000 Black, 52-11-11-4-013 Red

Thread Size	Panel Thickness		Part Number														Panel Preparation		Tool Part No.			
			Knurled Head				Smooth Head				B Knurled Head	B Smooth Head	Ø E	F	G	H-1	H-2	Ø J		L	P-1	P-2
	Min.	Max.	Phillips / Slotted	TORX® / Slotted	Phillips / Slotted	TORX® / Slotted																
4-40	0.8 (.031)	2.4 (.094)	52-11-11-4-000 *	52-15-11-4-000 *	52-13-11-4-000 *	52-16-11-4-000 *	8.1 (.32)	7.8 (.31)	6.2 (.245)	0.5 (.018)	2.5 (.1)	14 (.55)	9.6 (.38)	4.6 (.183)	1 (.041)	0.8 (.031)	5.3 (.21)	4.75 ^{+0.08} ₋₀ (.187 ^{+0.03} ₋₀)	3 (.120)	47-104		
6-32	1.5 (.058)	3.2 (.125)	52-29-21-4-000	52-27-21-4-000	52-2A-21-4-000	52-28-21-4-000	8.8 (.35)	8.5 (.33)	7 (.28)	0.7 (.028)	2.5 (.1)	15 (.59)	9.6 (.38)	5.3 (.209)	1.8 (.07)	1.8 (.07)	6.8 (.27)	5.41 ^{+0.08} ₋₀ (.213 ^{+0.03} ₋₀)	3.6 (.141)	47-106		
M3 x 0.5	0.8 (.031)	2.4 (.094)	52-31-11-4-000 *	52-35-11-4-000*	52-33-11-4-000 *	52-36-11-4-000*	8.1 (.32)	7.8 (.31)	6.2 (.245)	0.6 (.023)	2.5 (.1)	14 (.55)	9.6 (.38)	4.6 (.183)	1 (.041)	0.8 (.031)	5.3 (.21)	4.75 ^{+0.08} ₋₀ (.187 ^{+0.03} ₋₀)	3 (.120)	47-104		
M4 x 0.7	1.5 (.058)	3.2 (.125)	52-49-21-4-000	52-45-21-4-000 *	52-4A-21-4-000	52-46-21-4-000 *	10.3 (.41)	10 (.39)	8.7 (.34)	0.7 (.028)	3 (.12)	15.2 (.60)	10 (.40)	6.7 (.26)	1.8 (.07)	1.8 (.07)	6.8 (.27)	6.76 ^{+0.1} ₋₀ (.266 ^{+0.05} ₋₀)	4.2 (.166)	47-108		

*Part Numbers not available with combination head styles; Phillips or TORX® only

TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC

Dimensions in millimeters (inch) unless otherwise stated

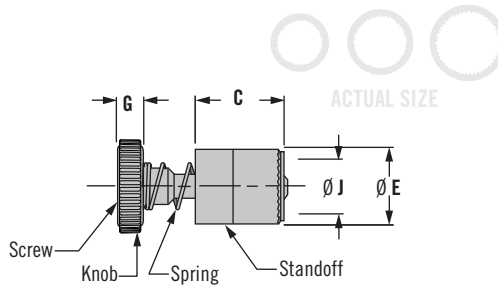
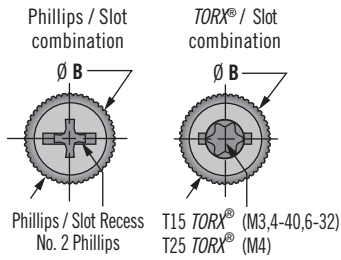


52 Overmold Captive Screws

Miniature series · Press-in style

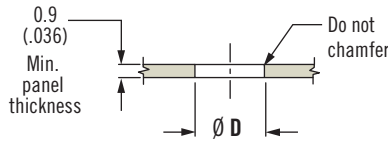
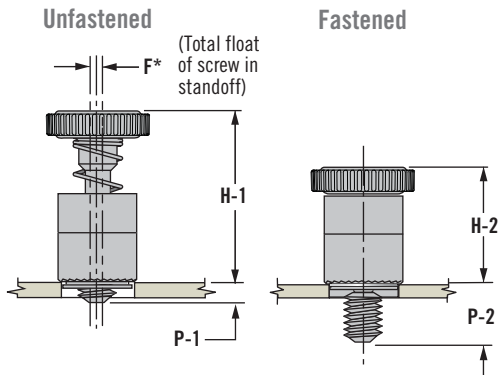


Recess Styles*

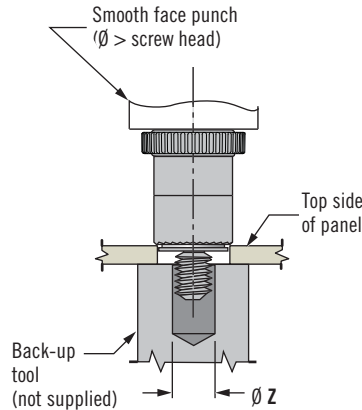


- Smaller footprint for limited space applications
- Heat treated steel screw for optimum strength
- Designate access points with color
- Color match captive screws to your industrial design

Knob Height and Screw Projection



Notes: Recommended minimum distance from edge of panel to centerline of hole is $1.5 \times \text{Ø D}$ for press-in version.



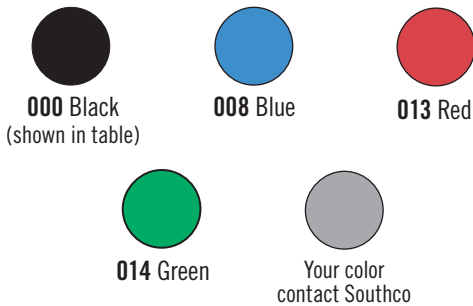
Material and Finish

Screw: Hardened carbon steel, zinc plated, chromate, plus sealer
 Spring: 300 series stainless steel, passivated
 Standoff: Carbon steel, zinc plated, chromate, plus sealer
 Knob: PC/ABS

Performance Details

Flamability Rating: UL94-V0

F* Value represents float in unfastened position
 Notes: P-1, P-2 measured from the top side of panel



Specifying Color: To indicate color, change the last three digits of the part number

Example: 52-11-11-4-000 Black, 52-11-11-4-013 Red

Thread Size	Part Number				B Knurled Head	B Smooth Head	C	Ø E	F*	G	H-1	H-2	Ø J	P-1	P-2	Panel Preparation	
	Knurled Head		Smooth Head													Ø D	Ø Z
	Phillips / Slotted	TORX® / Slotted	Phillips / Slotted	TORX® / Slotted													
4-40	52-11-51-4-000*	52-15-51-4-000*	52-13-51-4-000*	52-16-51-4-000*	8.1 (.32)	7.8 (.31)	7.9 (.31)	6.4 (.25)	0.5 (.018)	2.5 (.1)	14 (.55)	9.6 (.38)	5.5 (.217)	0.9 (.036) 2.5 (.1)	5.3 (.21) 6.8 (.27)	5.56 ^{+0.08} ₀ (.219 ⁺⁰ _{-.003})	3 (.120)
	52-11-53-4-000*	52-15-53-4-000*	52-13-53-4-000*	52-16-53-4-000*													
6-32	52-29-51-4-000	52-27-51-4-000	52-2A-51-4-000	52-28-51-4-000	8.8 (.35)	8.5 (.33)	8.6 (.34)	7 (.28)	0.7 (.028)	2.5 (.1)	15.5 (.61)	10.4 (.41)	6.3 (.247)	0.9 (.036) 2.5 (.1)	6.1 (.24) 7.6 (.30)	6.35 ^{+0.03} ₀ (.250 ⁺⁰ _{-.003})	3.7 (.144)
	52-29-53-4-000	52-27-53-4-000	52-2A-53-4-000	52-28-53-4-000													
M3 X 0.5	52-31-51-4-000*	52-35-51-4-000*	52-33-51-4-000*	52-36-51-4-000*	8.1 (.32)	7.8 (.31)	7.9 (.31)	6.4 (.25)	0.6 (.023)	2.5 (.1)	14 (.55)	9.6 (.38)	5.5 (.217)	0.9 (.036) 2.5 (.1)	5.3 (.21) 6.8 (.27)	5.56 ^{+0.08} ₀ (.219 ^{+0.003} _{-.003})	3.2 (.126)
	52-31-53-4-000*	52-35-53-4-000*	52-33-53-4-000*	52-36-53-4-000*													
M4 X 0.7	52-49-51-4-000	52-45-51-4-000*	52-4A-51-4-000	52-46-51-4-000*	10.3 (.41)	10 (.39)	8.6 (.34)	8.7 (.34)	0.7 (.028)	3 (.12)	16 (.63)	10.8 (.43)	7.9 (.31)	0.9 (.036) 2.5 (.1)	6.1 (.24) 7.7 (.30)	8 ⁺⁰ ₀ (.315 ⁺⁰ _{-.003})	4.4 (.173)
	52-49-53-4-000	52-45-53-4-000*	52-4A-53-4-000	52-46-53-4-000*													

Note: *Part Numbers not available with combination head styles; Phillips or TORX® only

TORX is a registered trademark of ACUMENT® Intellectual Properties, LLC



Dimensions in millimeters (inch) unless otherwise stated



47/4C Captive Screws

ATCA captive screws

- M3 thread
- No. 2 Phillips recess
- Color match available

Material and Finish

Screw, ferrule and internal spring stainless steel, knob aluminum or PC/ABS

Performance Details

Flammability rating: UL94-V0
ATCA R3.0 compliant screw

F* indicates maximum float in the unfastened position

Part Number

See table

Specifying Color:

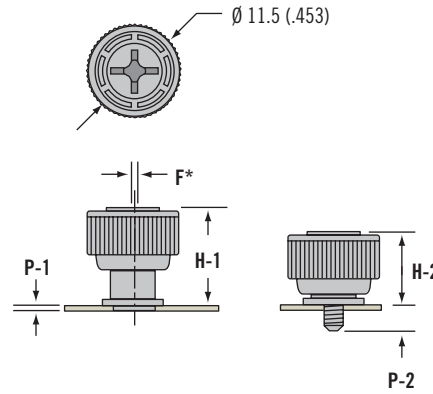
To indicate color, change the last three digits of the part number.

Example:

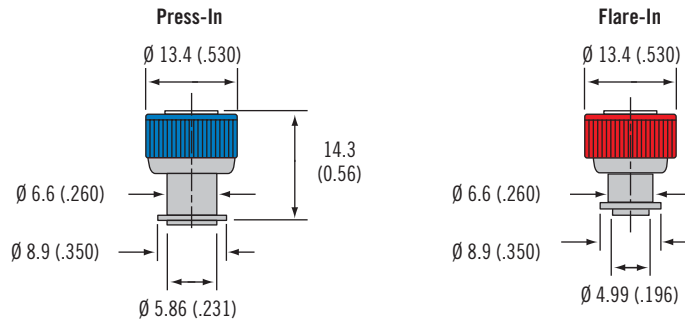
47-99-945-1P0-K000, black

47-99-945-1P0-K013, red

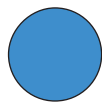
Metal Version



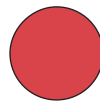
Overmolded Version



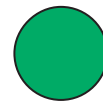
000 Black



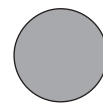
008 Blue



013 Red



014 Green



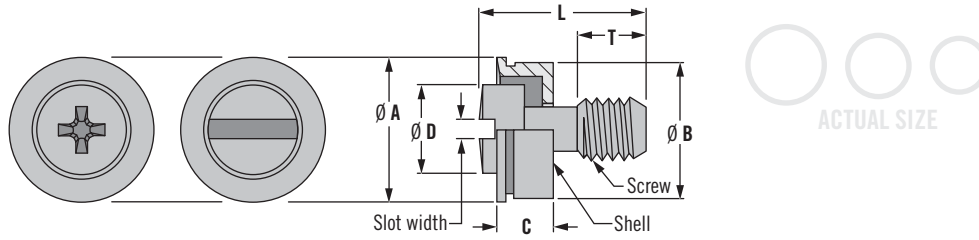
Your color
(contact Southco)

Series	Installation Method	Panel Thickness			Part Number No. 2 Phillips	H-1	H-2	P-1	P-2	F*	Panel Preparation	
		A Min.	A Max.	B*							Ø D*	Ø Z*
ATCA compliant (Metal Version)	Press-in	0.9 (.036)	~	~	47-99-945-1P0	14.3 (.56)	10.1 (.40)	1.0 (.39)	5.0 (.20)	1 (.039)	5.95 ± 0.04 (.234 ± .002)	3.2 ^{+0.2} _{-0.1} (.125 ^{+0.008} _{-.004})
	Flare-in	0.8 (.031)	1.5 (.060)	0.4 (.016)	47-99-944-1F1	14.3 (.56)	10.1 (.40)	1.0 (.39)	5.0 (.20)	1 (.039)	5.1 ^{+0.1} ₋₀ (.20 ^{+0.004} ₋₀)	3.0 ^{+0.1} ₋₀ (.118 ^{+0.004} _{-.000})
ATCA compliant (Overmolded Version)	Press-in	0.9 (.036)	~	~	47-99-945-1P0-K000	14.3 (.56)	10.1 (.40)	1.0 (.39)	5.0 (.20)	1 (.039)	5.95 ± 0.04 (.234 ± .002)	3.2 ^{+0.2} _{-0.1} (.125 ^{+0.008} _{-.004})
	Flare-in	0.8 (.031)	1.5 (.060)	0.4 (.016)	47-99-944-1F1-K000	14.3 (.56)	10.1 (.40)	1.0 (.039)	5.0 (.20)	1 (.039)	5.1 ^{+0.1} ₋₀ (.20 ^{+0.004} ₋₀)	3.0 ^{+0.1} ₋₀ (.118 ^{+0.004} _{-.000})

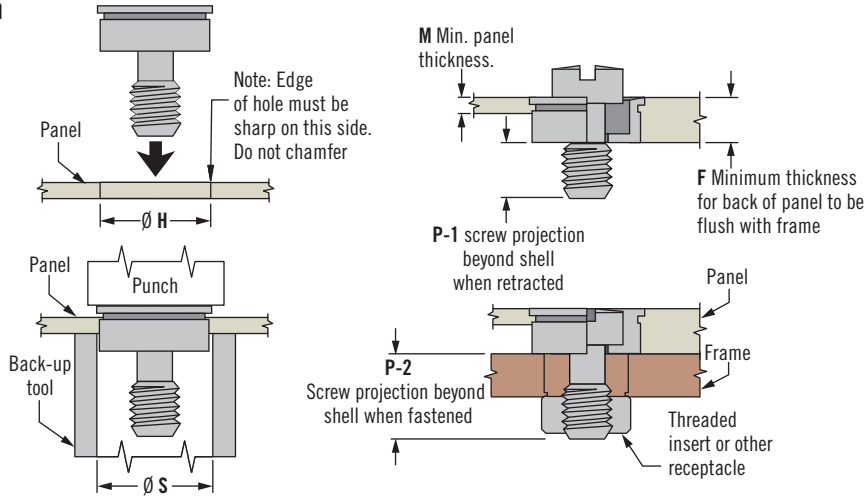
Dimensions in millimeters (inch) unless otherwise stated

F5 Captive Screws

Flush series



Installation



- Flush when fastened

Material and Finish

Shell: 303 Stainless steel, passivated

Screw:

Slotted: 303 stainless steel, passivated.

Phillips: 430 stainless steel, passivated

Notes

For use in most aluminums or in low carbon steels that are 1/4 hard or softer

Screws will float 0.5 (.02) total movement

Shipped assembled

Part Number

See table

Thread Size	Max. Recommended Tightening Torque
M3/ 4-40	0.6 N•m (5in•lbf)
6-32	1.6 N•m (14in•lbf)
M4/ 8-32	2.8 N•m (25in•lbf)

See page 543 for additional installation guidelines

Recess Style	Thread Size	Screw Dimensions					Slot Width	Screw Length L	Part Number		Screw Projection Beyond Outer Surface of Panel		Installation Dimensions			
		Ø A	Ø B	C	Ø D	T			Metric	Imperial	P-1	P-2	Ø H	M	F	Ø S
Phillips	M4 x 0.7 or UNC 8-32	10.1 (.40)	9.45 (.373)	3.1 (.122)	6.4 (.25)	4.3 (.17)	~	8.6 (.34)	F5-M4-P2	F5-832-P2	4.3 (.17)	5.6 (.22)	9.5 ^{+0.08} ₋₀ (.375 ^{+0.003} ₋₀)	1.5 (.060)	3.2 (.125)	9.6 ^{+0.1} _{-0.05} (.379 ^{+0.004} _{-0.002})
								9.6 (.38)	F5-M4-P4	F5-832-P4		6.6 (.26)				
								10.6 (.42)	F5-M4-P6	F5-832-P6		7.6 (.30)				
								11.6 (.46)	F5-M4-P8	F5-832-P8		8.6 (.34)				
Slotted	M3 x 0.5 or UNC 4-40	7.1 (.28)	6.45 (.254)	1.7 (.067)	4 (.16)	3.8 (.15)	0.9 (.035)	5.8 (.23)	F5-90-402-20	F5-60-402-20	3.8 (.15)	4.1 (.16)	6.5 ^{+0.08} ₋₀ (.257 ^{+0.002} _{-0.001})	1.3 (.050)	1.8 (.070)	6.6 ^{+0.1} _{-0.05} (.260 ^{+0.004} _{-0.002})
								7.9 (.31)	F5-90-406-20	F5-60-406-20		6.1 (.24)				
	UNC 6-32	8.1 (.32)	7.44 (.293)	2 (.082)	4.8 (.19)	3.8 (.15)	1 (.039)	6.4 (.25)	~	F5-60-602-20	3.8 (.15)	4.3 (.17)	7.5 ^{+0.08} ₋₀ (.295 ^{+0.003} ₋₀)	1.4 (.055)	2.2 (.085)	7.6 ^{+0.1} _{-0.05} (.299 ^{+0.004} _{-0.002})
								8.4 (.33)	~	F5-60-606-20		6.4 (.25)				
								9.4 (.37)	~	F5-60-608-20		7.4 (.29)				
	M4 x 0.7 or UNC 8-32	10.1 (.40)	9.45 (.373)	2.34 (.092)	6.4 (.25)	5.1 (.20)	1.1 (.045)	8.9 (.35)	F5-M40-14	F5-832-14	5.1 (.20)	6.6 (.26)	9.5 ^{+0.08} ₋₀ (.375 ^{+0.003} ₋₀)	1.5 (.060)	2.4 (.095)	9.6 ^{+0.1} _{-0.05} (.379 ^{+0.004} _{-0.002})
								9.9 (.39)	F5-M40-16	F5-832-16		7.6 (.30)				
								10.9 (.43)	F5-M40-18	F5-832-18		8.6 (.34)				



5T Captive Screws

Heat sink series

- Maximize heat transfer from components to heatsink
- Positive fastening under shock and vibration
- Fastener allows for thermal expansion of components under a set preload

Material and Finish

Screw: Hardened carbon steel, zinc plate, chromate plus sealer

Spring: 300 series stainless steel, passivated

Ferrule: Aluminum, natural

Performance Details

M3/4-40 Recommended Torque: 0.6 N•m (5.3 in•lbf)

M3.5/6-32 Recommended Torque: 1.08 N•m (9.6 in•lbf)

Installation Notes

1. Drill then countersink according to the required dimensions.
2. Insert screw assembly into prepared hole in panel. Place back-up tool as shown.
3. Place work under press, center tool over screw thread and flare ferrule into countersink in panel. Recommended load 2200 N.

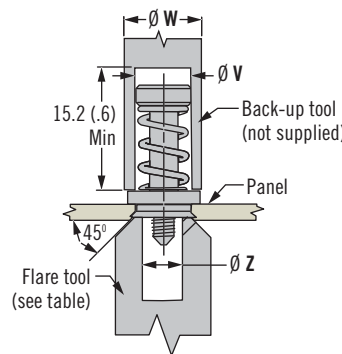
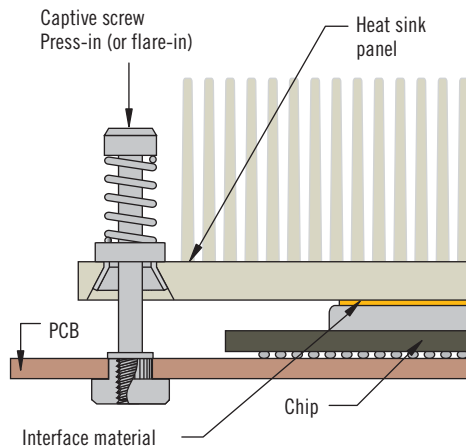
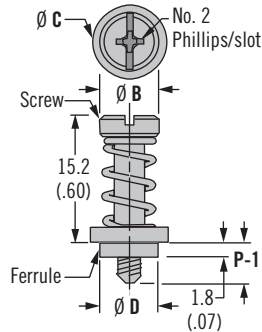
Notes

Load applied by each screw: $[3.4 (.13) * K] + 7.57 \text{ N (1.7 lb)}$
 Standard K value shown in the table. Load at given deflection *shown in the fastened position above.

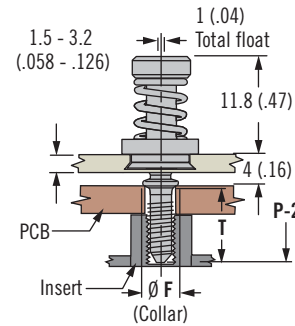
Part Number

See table

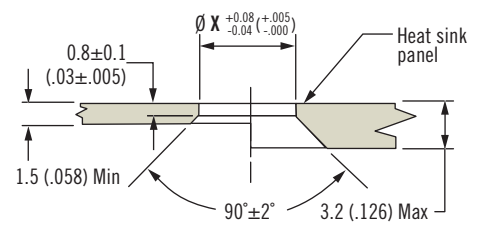
Unfastened



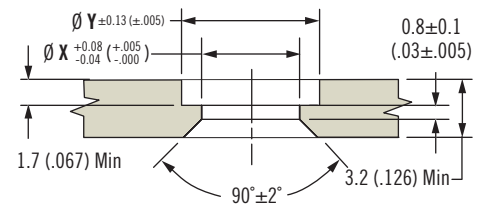
Fastened



Standard



Alternate



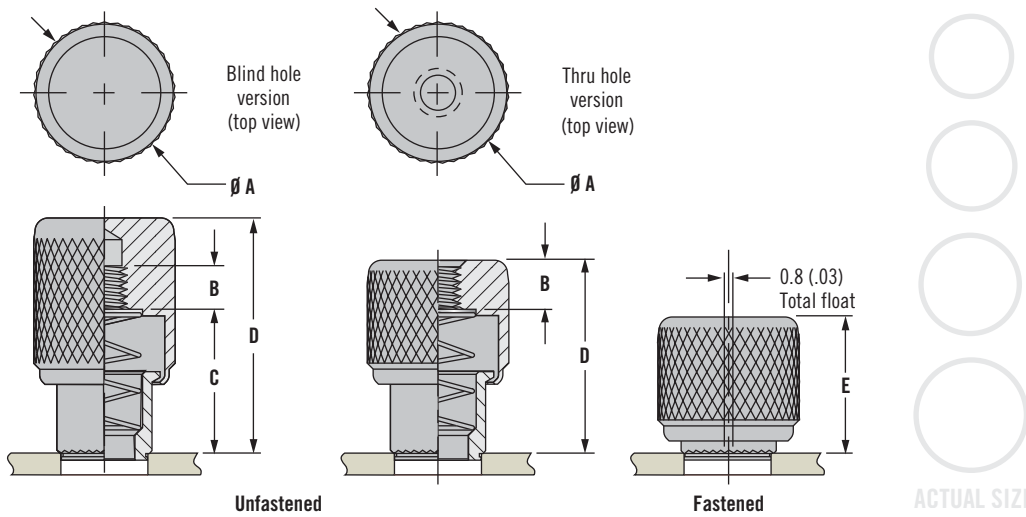
Thread Size	Ø V	Ø X	Ø Y	Ø W Min.	Ø Z	Tool Part Number
M3 or 4-40	7.1 (.28)	6.8 (.27)	9.5 (.37)	9.5 (.37)	5.1 (.2)	47-115
M3.5 or 6-32	7.9 (.31)	7.1 (.28)	10.7 (.46)	10.7 (.42)	5.6 (.22)	5T-06-Tool

Thread Size	Part Number	Panel Thickness		Screw Projection		T	Ø B	Ø C	Ø D	Ø F	Spring Rate K N/mm (lbf/in)	Load Max.* N (lbf)
		Min.	Max.	P1	P-2							
M3	5T-11-M3-222-5	1.5 (.058)	3.2 (.126)	5.9 (.232)	8.4 (331)	5 (.197)	6.8 (.27)	9 (.35)	6.7 (.294)	4.7 (.185)	4.45 (25.4)	22.5 (5)
4-40	5T-11-04-222-5			6.6 (.26)	9.9 (.39)	5.7 (.224)	7.6 (.30)	10.4 (.41)	7 (.275)	5 (.2)		
M3.5	5T-11-M35-222-5			6.6 (.26)	9.9 (.39)	5.7 (.224)	7.6 (.30)	10.4 (.41)	7 (.275)	5 (.2)		
6-32	5T-11-06-222-5											

Dimensions in millimeters (inch) unless otherwise stated

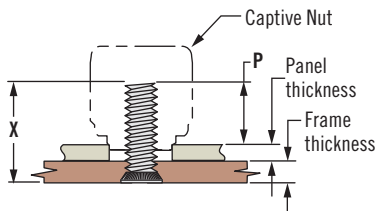
N7 Captive Nut

Thru hole and blind styles

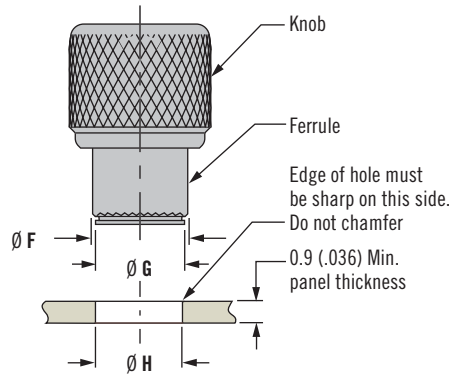


ACTUAL SIZE

Notes: For use in material hardnesses RB85 or less, such as low carbon steels that are half hard or softer, stainless steels in the annealed condition and aluminum.



Thread Size	P Min.	P Max.
M3	7.1 (.28)	9.5 (.37)
M4	10 (.40)	12.1 (.47)
M5	10.2 (.41)	12.2 (.48)
M6	12.4 (.49)	16.7 (.66)
4-40	7.3 (.29)	9.4 (.37)
6-32	9.9 (.39)	13.1 (.51)
8-32	10.1 (.40)	13.3 (.52)
10-32	10.3 (.41)	13.5 (.53)
1/4-20	13 (.51)	16.5 (.65)



See page 543 for additional installation guidelines

Notes: Recommended minimum distance from edge of panel to centerline of hole is $1.5 \times \phi H$.

- Spring ejected
- Knurled knob provides solid grip
- Fastens to externally threaded studs
- Helps speed panel replacement

Material and Finish

Knob: Aluminum, natural

Ferrule: Hardened steel, zinc plate, chromate plus sealer

Spring: 302 Stainless steel, passivated

Installation Notes

1. Prepare hole in panel as shown
2. Provide a solid back-up surface behind the panel
3. Press the assembly into the panel until only the top of the knurl on the ferrule is visible

Threadstud insert selection for blind hole applications

Frame thickness + panel thickness + P Minimum = X Minimum

Frame thickness + panel thickness + P Maximum = X Maximum

Threadstud insert length (L): X Minimum < "L" > X Maximum

"L" values greater than X Maximum must use the thru hole version

If a weld stud is used, omit the frame thickness from the calculations (see the table and diagram to the right)

*The above dimensions are for blind hole captive nuts

Thread Size	Knob Style	Part Number		ø A	B (Thread Length)	C	D	E	ø F	ø G	ø H
		Metric	Inch								
	Min.	Natural	Natural								
M3 or 4-40	Thru hole	N7-02-10	N7-52-10	10.6 (.42)	3.6 (.14)	~	12.8 (.50)	9.3 (.37)	6.4 (.25)	5.5 (.22)	5.6±0.04 (.220±.002)
	Blind hole	N7-02-11	N7-52-11		4 (.16)	9.2 (.36)	16.8 (.66)	13.3 (.52)			
6-32 UNC	Thru hole	~	N7-62-10	11.4 (.45)	4.7 (.19)	~	17.7 (.70)	12.5 (.49)	7.1 (.28)	6.3 (.25)	6.4 ^{+0.03} _{-0.05} (.252 ^{+0.01} _{-.002})
	Blind hole	~	N7-62-11		5.4 (.21)	13 (.51)	23 (.91)	17.9 (.70)			
M4 or 8-32	Thru hole	N7-22-10	N7-72-10	13 (.51)	4.5 (.180)	~	17.7 (.70)	12.5 (.49)	8.7 (.34)	7.9 (.31)	8 ⁺⁰ _{-0.08} (.315 ⁺⁰ _{-.003})
	Blind hole	N7-22-11	N7-72-11		5.4 (.21)	13.2 (.52)	23 (.91)	17.9 (.70)			
M5 or 10-32	Thru hole	N7-32-10	N7-82-10	13 (.51)	4.5 (.180)	~	17.7 (.70)	12.5 (.49)	9 (.35)	7.9 (.31)	8 ⁺⁰ _{-0.08} (.315 ⁺⁰ _{-.003})
	Blind hole	N7-32-11	N7-82-11		5.4 (.21)	13.2 (.52)	23 (.91)	17.9 (.70)			
M6 or 1/4-20	Thru hole	N7-42-10	N7-92-10	14.6 (.58)	6.4 (.25)	~	22.8 (.90)	16 (.63)	10 (.39)	9.4 (.37)	9.5 ^{+0.1} ₋₀ (.374 ^{+0.004} ₋₀)
	Blind hole	N7-42-11	N7-92-11		7 (.28)	16.4 (.65)	29.5 (1.16)	23 (.91)			



09 Series Fast-Lead Screws

Studs · Small

Material and Finish

Low carbon steel, case hardened, zinc plated, chromate plus sealer or stainless steel

How to Specify:

- Determine your outer panel and frame thicknesses:
Outer panel P =
Frame thickness F =
- Choose your receptacle
- Choose the retainer style
- Find the correct constant in table opposite using the receptacle and retainer selected
- Add outer panel thickness (P), frame thickness (F), and the constant found in step 4 to determine your total material thickness (TMT)
 $TMT = P + F + \text{Constant}$
- Find the TMT value in the ranges given in Column 1 in the part number table
- Confirm that the outer panel thickness P does not exceed the value given in Column 2. This will confirm that your retainer will install properly beyond the last thread and retain your screw to the outer panel
- Going across the row in the part number table, find the part number that matches your desired head style

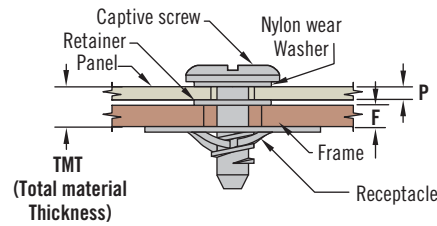
Part Number

See table

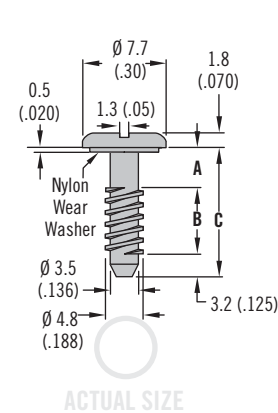
Notes

For full screw retraction, B must be less than frame thickness plus receptacle height

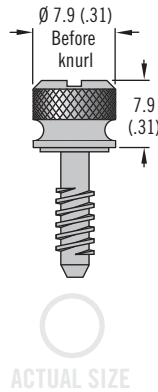
For stainless steel screw (slotted, and knurled ONLY) replace last 2 digits of part number with "26".
Example: 09-11-102-26



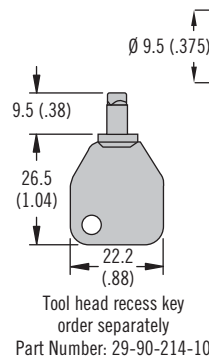
Slot



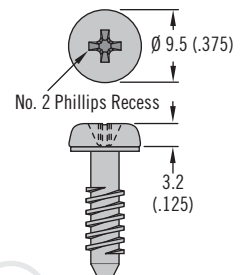
Knurled Head



Tool head Recess



Phillips Recess



ACTUAL SIZE

ACTUAL SIZE

ACTUAL SIZE

Constant Table				
Retainer Type	Receptacle Type			
	Flat Rivet or Weld	Clip	Saddle	Press-In
Stainless steel	0.3 (.012)	1.0 (.032)	4.5 (.177)	-1.3 (-.050)
Nylon	1.1 (.043)	1.6 (.063)	5.3 (.208)	-0.5 (-.020)

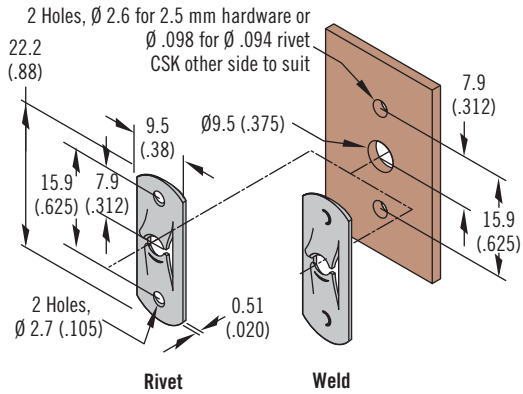
Column 1		Column 2	Screw Assembly Part Number				Dimensions		
TMT		Outer Panel P	Slotted	Knurled	Tool Head Recess	Phillips Recess	A	B	C
Min.	Max.								
1.3 (.050)	3.2 (.125)	0.9 (.035)	09-11-102-11	09-13-102-11	09-T-102	09-P-102	2.5 (.100)	5.0 (.197)	10.7 (.422)
2.5 (.100)	3.2 (.125)	2.2 (.085)	09-11-103-11	09-13-103-11	09-T-103	09-P-103	3.8 (.150)	3.7 (.147)	
1.3 (.050)	6.4 (.250)	0.9 (.035)	09-11-202-11	09-13-202-11	09-T-202	09-P-202	2.5 (.100)	8.2 (.322)	13.9 (.547)
2.5 (.100)	6.4 (.250)	2.2 (.085)	09-11-203-11	09-13-203-11	09-T-203	09-P-203	3.8 (.150)	6.9 (.272)	
3.8 (.150)	6.4 (.250)	3.4 (.135)	09-11-204-11	09-13-204-11	09-T-204	09-P-204	5.1 (.200)	5.6 (.222)	
5.1 (.200)	6.4 (.250)	4.7 (.185)	09-11-205-11	09-13-205-11	09-T-205	09-P-205	6.4 (.250)	4.4 (.172)	
1.3 (.050)	9.5 (.375)	0.9 (.035)	09-11-302-11	09-13-302-11	09-T-302	09-P-302	2.5 (.100)	11.4 (.447)	17.1 (.672)
2.5 (.100)	9.5 (.375)	2.2 (.085)	09-11-303-11	09-13-303-11	09-T-303	09-P-303	3.8 (.150)	10.1 (.397)	
3.8 (.150)	9.5 (.375)	3.4 (.135)	09-11-304-11	09-13-304-11	09-T-304	09-P-304	5.1 (.200)	8.8 (.347)	
5.1 (.200)	9.5 (.375)	4.7 (.185)	09-11-305-11	09-13-305-11	09-T-305	09-P-305	6.4 (.250)	7.3 (.297)	
7.6 (.300)	9.5 (.375)	7.2 (.285)	09-11-307-11	09-13-307-11	09-T-307	09-P-307	8.9 (.350)	5.0 (.197)	

Dimensions in millimeters (inch) unless otherwise stated

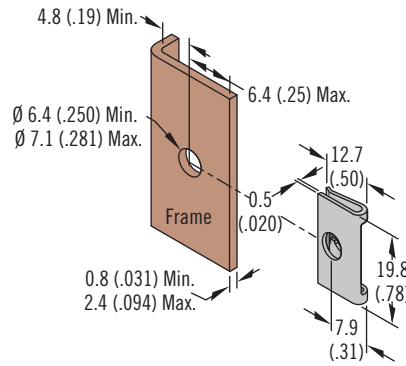
09 Series Fast-Lead Screws Receptacles / retainers · Small



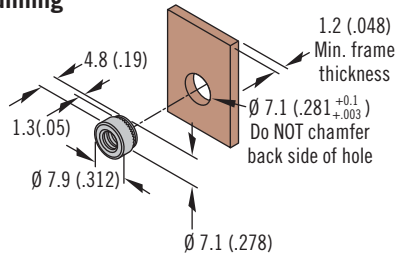
Flat Type Receptacle



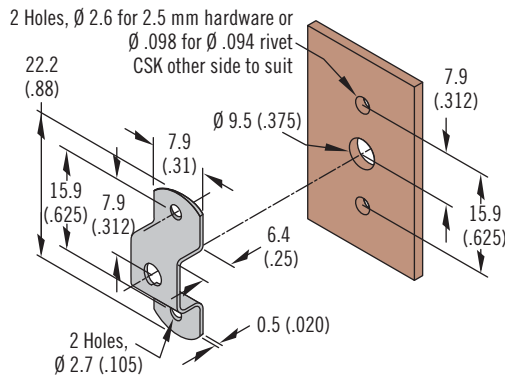
Clip-On Type Receptacle



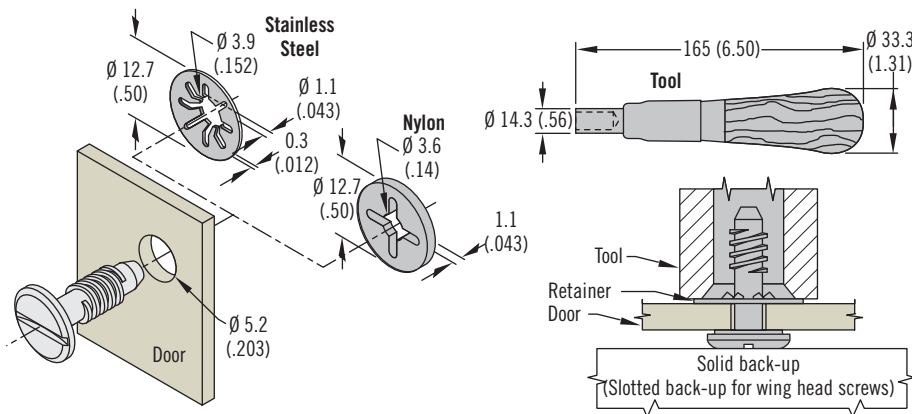
Self-Clinching Receptacle Free Running



Saddle Type Receptacle



Retainers



Material and Finish

Steel, zinc immersion coating or stainless steel

Installation Notes

See page 543 for self-clinching installation guidelines

Type	Receptacle Part Number	
	Steel	Stainless steel
Flat receptacle rivet-on	09-41-101-11	09-41-101-24
Flat receptacle weld-on	~	09-41-103-24
Clip-on receptacle	09-43-101-11	09-43-101-24
Press-in receptacle	09-44-101-11	~
Saddle type receptacle	09-42-101-11	09-42-101-24

Retainer Style	Retainer Part Number	Tool Part Number
302 Stainless steel, passivated	09-6-1	12-0-20980-11
Nylon, black	09-49-102-42	

Part Number

See table



12 Series Fast-Lead Screws

Studs · Medium

Material and Finish

Low carbon steel, case hardened, zinc plate, chromate plus sealer or stainless steel

How to Specify:

1. Determine your outer panel and frame thicknesses:

Outer panel P =

Frame thickness F =

2. Choose your receptacle

3. Choose the retainer style

4. Find the correct constant in table opposite using the receptacle and retainer selected

5. Add outer panel thickness (P), frame thickness (F), and the constant found in step 4 to determine your total material thickness (TMT)

$TMT = P + F + \text{Constant}$

6. Find the TMT value in the ranges given in Column 1 in the part number table

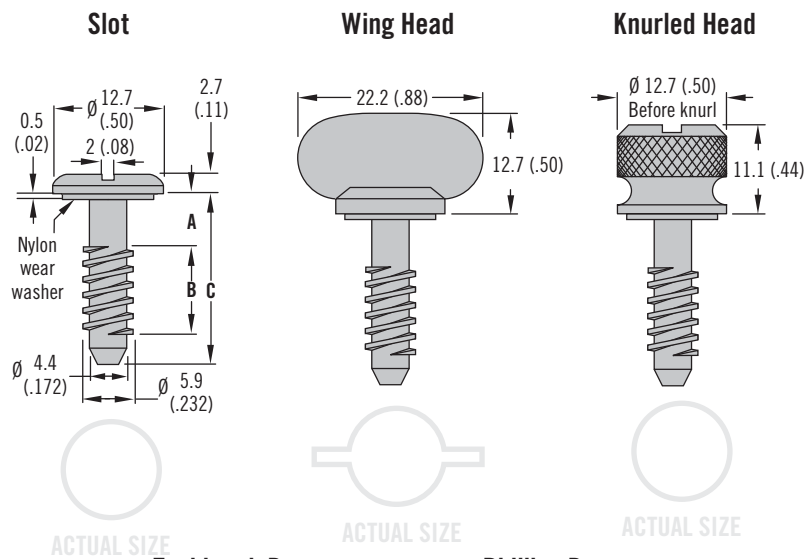
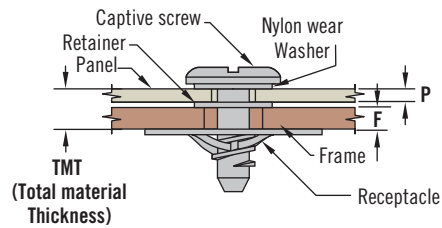
7. Confirm that the outer panel thickness P does not exceed the value given in Column 2. This will confirm that your retainer will install properly beyond the last thread and retain your screw to the outer panel

8. Going across the row in the part number table, find the part number that matches your desired head style

Notes

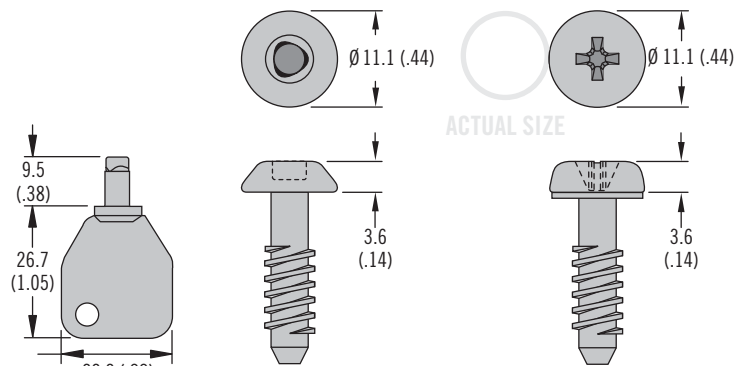
For full screw retraction, **B** must be less than inner panel thickness plus receptacle height

For stainless steel screw (slot, wing and knurled ONLY) replace last 2 digits of part number with "12".
Example: 12-11-102-12



Tool head Recess

Phillips Recess



Tool head recess key
order separately
Part number 29-90-214-10

Constant Table					
Retainer type	Receptacle Type				
	Flat	Clip	Saddle	Side	Press-In
Stainless steel	0.38 (.015)	1.1 (.045)	4.0 (.156)	1.5 (.060)	-1.3 (-.050)
Nylon	1.4 (.054)	2.0 (.079)	5.31 (.210)	1.5 (.060)	-0.5 (-.020)

Part Number

See table

Column 1		Column 2	Screw Assembly Part Number					Dimensions		
TMT to be Fastened		Max. Thickness of Outer Panel P	Slotted	Wing	Knurled	Tool Head Recess	Phillips Recess	A	B	C
Min.	Max.									
1.3 (.050)	3.2 (.125)	0.6 (.025)	12-11-102-11	12-12-102-11	12-13-102-11	12-T-102	12-P-102	2.5 (.100)	5.8 (.228)	12.3 (.486)
2.5 (.100)		1.9 (.075)	12-11-103-11	12-12-103-11	12-13-103-11	12-T-103	12-P-103	3.8 (.150)	4.5 (.178)	
1.3 (.050)	6.4 (.250)	0.6 (.025)	12-11-202-11	12-12-202-11	12-13-202-11	12-T-202	12-P-202	2.5 (.100)	9.0 (.353)	15.5 (.611)
2.5 (.100)		1.9 (.075)	12-11-203-11	12-12-203-11	12-13-203-11	12-T-203	12-P-203	3.8 (.150)	7.7 (.303)	
3.8 (.150)		3.2 (.125)	12-11-204-11	12-12-204-11	12-13-204-11	12-T-204	12-P-204	5.1 (.200)	6.4 (.253)	
5.1 (.200)		4.5 (.175)	12-11-205-11	12-12-205-11	12-13-205-11	12-T-205	12-P-205	6.4 (.250)	5.2 (.203)	
1.3 (.050)	9.5 (.375)	0.6 (.025)	12-11-302-11	12-12-302-11	12-13-302-11	12-T-302	12-P-302	2.5 (.100)	12.1 (.478)	18.7 (.736)
2.5 (.100)		1.9 (.075)	12-11-303-11	12-12-303-11	12-13-303-11	12-T-303	12-P-303	3.8 (.150)	10.9 (.428)	
3.8 (.150)		3.2 (.125)	12-11-304-11	12-12-304-11	12-13-304-11	12-T-304	12-P-304	5.1 (.200)	9.6 (.378)	
5.1 (.200)		4.5 (.175)	12-11-305-11	12-12-305-11	12-13-305-11	12-T-305	12-P-305	6.4 (.250)	8.3 (.328)	
7.6 (.300)		7.0 (.275)	12-11-307-11	12-12-307-11	12-13-307-11	12-T-307	12-P-307	8.9 (.350)	5.8 (.228)	
2.5 (.100)	12.7 (.500)	1.9 (.075)	12-11-403-11	12-12-403-11	12-13-403-11	12-T-403	12-P-403	3.8 (.150)	14.1 (.553)	21.9 (.861)
3.8 (.150)		3.2 (.125)	12-11-404-11	12-12-404-11	12-13-404-11	12-T-404	12-P-404	5.1 (.200)	12.8 (.503)	
5.1 (.200)		4.5 (.175)	12-11-405-11	12-12-405-11	12-13-405-11	12-T-405	12-P-405	6.4 (.250)	11.5 (.453)	
7.6 (.300)		7.0 (.275)	12-11-407-11	12-12-407-11	12-13-407-11	12-T-407	12-P-407	8.9 (.350)	9.0 (.353)	
10.2 (.400)		9.5 (.375)	12-11-409-11	12-12-409-11	12-13-409-11	12-T-409	12-P-409	11.4 (.450)	6.4 (.253)	
2.5 (.100)	15.9 (.625)	1.9 (.075)	12-11-503-11	12-12-503-11	12-13-503-11	12-T-503	12-P-503	3.8 (.150)	17.2 (.678)	25 (.986)
3.8 (.150)		3.2 (.125)	12-11-504-11	12-12-504-11	12-13-504-11	12-T-504	12-P-504	5.1 (.200)	16.0 (.628)	
5.1 (.200)		4.5 (.175)	12-11-505-11	12-12-505-11	12-13-505-11	12-T-505	12-P-505	6.4 (.250)	14.7 (.578)	
7.6 (.300)		7.0 (.275)	12-11-507-11	12-12-507-11	12-13-507-11	12-T-507	12-P-507	8.9 (.350)	12.1 (.478)	
10.2 (.400)		9.5 (.375)	12-11-509-11	12-12-509-11	12-13-509-11	12-T-509	12-P-509	11.4 (.450)	9.6 (.378)	
12.7 (.500)		12.1 (.475)	12-11-511-11	12-12-511-11	12-13-511-11	12-T-511	12-P-511	14 (.550)	7.1 (.278)	
2.5 (.100)	19.1 (.750)	1.9 (.075)	12-11-603-11	12-12-603-11	12-13-603-11	12-T-603	12-P-603	3.8 (.150)	20.4 (.803)	28.2 (1.111)
3.8 (.150)		3.2 (.125)	12-11-604-11	12-12-604-11	12-13-604-11	12-T-604	12-P-604	5.1 (.200)	19.1 (.753)	
5.1 (.200)		4.5 (.175)	12-11-605-11	12-12-605-11	12-13-605-11	12-T-605	12-P-605	6.4 (.250)	17.9 (.703)	
7.6 (.300)		7.0 (.275)	12-11-607-11	12-12-607-11	12-13-607-11	12-T-607	12-P-607	8.9 (.350)	15.3 (.603)	
10.2 (.400)		9.5 (.375)	12-11-609-11	12-12-609-11	12-13-609-11	12-T-609	12-P-609	11.4 (.450)	12.8 (.503)	
12.7 (.500)		12.1 (.475)	12-11-611-11	12-12-611-11	12-13-611-11	12-T-611	12-P-611	14 (.550)	10.2 (.403)	
15.3 (.600)		14.6 (.575)	12-11-613-11	12-12-613-11	12-13-613-11	12-T-613	12-P-613	16.5 (.650)	7.7 (.303)	
17.8 (.700)		17.2 (.675)	12-11-615-11	12-12-615-11	12-13-615-11	12-T-615	12-P-615	19.1 (.750)	5.2 (.203)	



12 Series Fast-Lead Screws

Receptacles · Medium

Material and Finish

Steel, zinc immersion coating or stainless steel

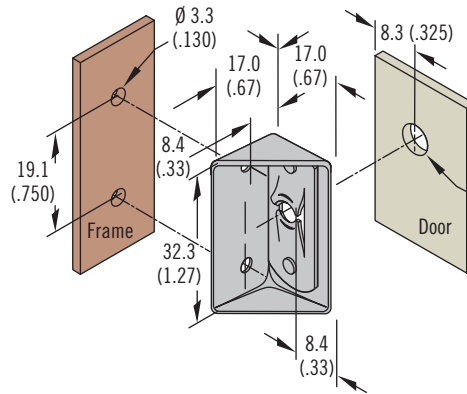
Side mount receptacle: 1064 steel, zinc immersion coating

Press-in receptacle: low carbon steel, case hardened and zinc plate, chromate plus sealer

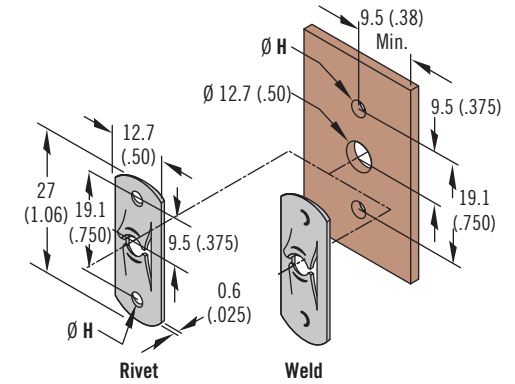
Installation Notes

See page 543 for self-clinching installation guidelines

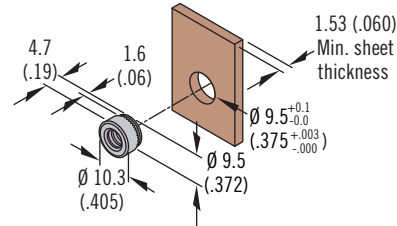
Side Mount Receptacle



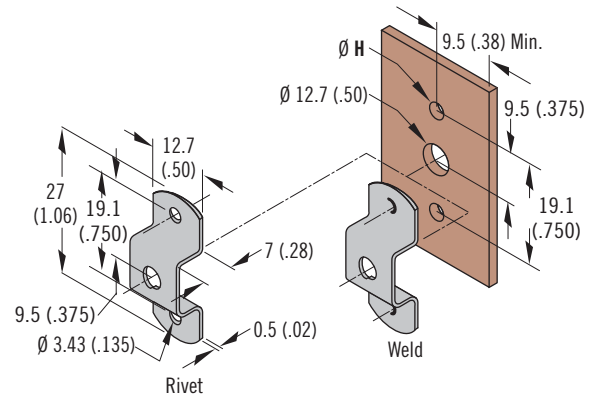
Flat Type Receptacle



Self-Clinching Receptacle Free Running



Saddle Type Receptacle



Part Number

See table

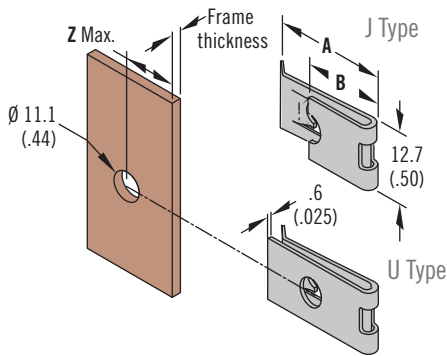
Type	Ø H	Receptacle Part Number	
		Steel	Stainless steel
Side mount receptacle	~	12-90-101-10	~
Flat receptacle rivet	2.7 (.105)	12-11015-13	12-11015-14
	3.4 (.135)	12-11020-11	12-11020-13
Flat receptacle weld-on	~	~	12-11016-11
Press-in receptacle	~	12-44-101-11	~
Saddle receptacle rivet	3.4 (.135)	12-11043-11	12-11043-12
Saddle receptacle weld-on	~	~	12-11044-12

Dimensions in millimeters (inch) unless otherwise stated

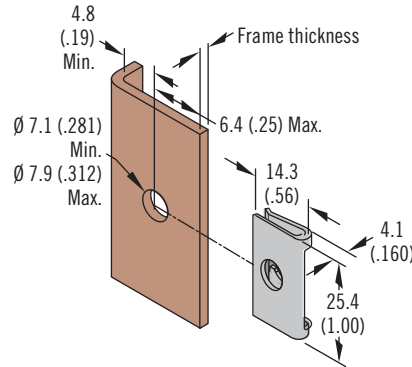
12 Series Fast-Lead Screws Receptacles / retainers · Medium



Clip-On Type Receptacle



Narrow Flange



Type	Frame Thickness	A	B	Z Max.	Receptacle Part Number	
					Steel	Stainless steel
Clip-on receptacle - J	0.8 (.031) to 2.8 (.109)	24.8 (.98)	14.2 (.56)	12.7 (.50)	12-11025-11	~
Clip-on receptacle - U	0.8 (.031) to 2.8 (.109)	25.9 (1.02)		11.9 (.47)	12-11017-11	12-11017-12
	2.8 (.109)- 4.1 (.161)		~	12-11027-11	~	
	2.8 (.109)- 4.1 (.161)	~	12-11027-12	~		
	4.1 (.161)- 5.5 (.213)	24.8 (.98)	13.5 (.53)	12-11029-11	~	
	5.4 (.213)- 6.7 (.265)	24.5 (.97)	13.01 (.51)	12-11031-11	~	
Clip-on receptacle - Narrow flange	0.8 (.031)- 2.8 (.109)	~	~	~	12-11050-27	~

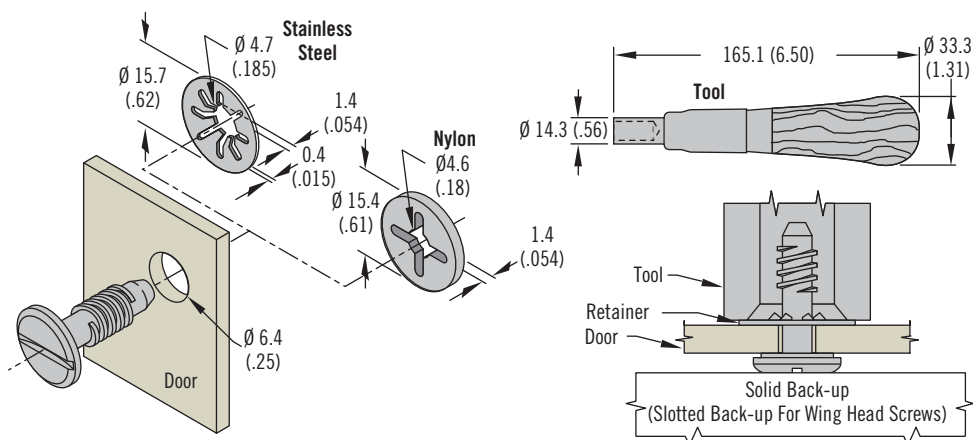
Material and Finish

Steel, zinc immersion coating or stainless steel

Part Number

See table

Retainers



Retainer Style	Retainer Part Number	Tool Part Number
304 Stainless steel, passivated	12-6-1	12-0-20980-11
Nylon, black	12-11064-42	

Part Number

See table



17 Series Fast-Lead Screws

Studs · Large

Material and Finish

Low carbon steel, case hardened, zinc plated, chromate plus sealer or stainless steel

- Determine your outer panel and frame thicknesses:
Outer panel P =
Frame thickness F =
- Choose your receptacle
- Choose the retainer style
- Find the correct constant in table opposite using the receptacle and retainer selected
- Add outer panel thickness (P), frame thickness (F), and the constant found in step 4 to determine your total material thickness (TMT)
 $TMT = P + F + \text{Constant}$
- Find the TMT value in the ranges given in Column 1 in the part number table
- Confirm that the outer panel thickness P does not exceed the value given in Column 2. This will confirm that your retainer will install properly beyond the last thread and retain your screw to the outer panel
- Going across the row in the part number table, find the part number that matches your desired head style

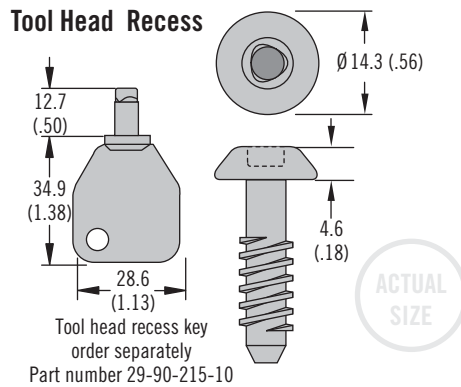
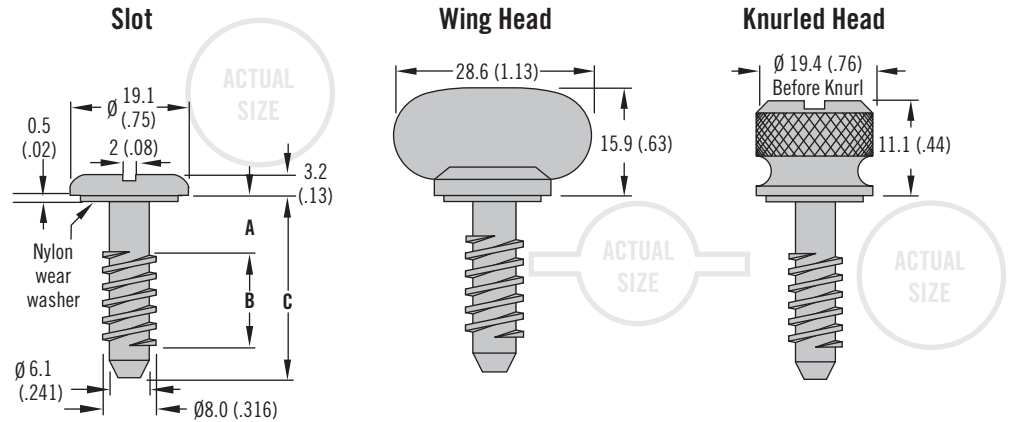
Notes

For full screw retraction, **B** must be less than inner panel thickness plus receptacle height

For stainless steel screw (slotted, wing and knurled ONLY) replace last 2 digits of part number with "12".
Example: 17-11-104-12

Part Number

See table



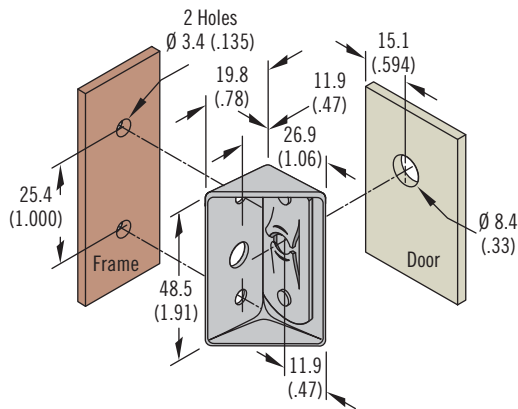
Constant Table			
Retainer type	Receptacle Type		
	Flat	Clip	Side
Stainless steel	0.38 (.015)	2.2 (.086)	1.5 (.060)
Nylon	1.9 (.076)	3.5 (.137)	1.5 (.060)

Column 1		Column 2	Screw Assembly Part Number				Dimensions		
TMT to be Fastened		Max. Thickness Of Outer Panel P	Slotted	Wing	Knurled	Tool Head Recess	A	B	C
Min.	Max.								
2.5 (.100)	6.4 (.250)	3.1 (.120)	17-11-104-11	17-12-104-11	17-13-104-11	17-T-104	5.1 (.200)	9.1 (.360)	19.1 (.751)
5.1 (.200)		5.6 (.220)	17-11-106-11	17-12-106-11	17-13-106-11	17-T-106	7.6 (.300)	6.6 (.260)	
2.5 (.100)	9.5 (.375)	3.1 (.120)	17-11-204-11	17-12-204-11	17-13-204-11	17-T-204	5.1 (.200)	12.3 (.485)	22.3 (.876)
5.1 (.200)		5.6 (.220)	17-11-206-11	17-12-206-11	17-13-206-11	17-T-206	7.6 (.300)	9.8 (.385)	
7.6 (.300)		8.1 (.320)	17-11-208-11	17-12-208-11	17-13-208-11	17-T-208	10.2 (.400)	7.2 (.285)	
2.5 (.100)	12.7 (.500)	3.1 (.120)	17-11-304-11	17-12-304-11	17-13-304-11	17-T-304	5.1 (.200)	15.5 (.610)	25.4 (1.001)
5.1 (.200)		5.6 (.220)	17-11-306-11	17-12-306-11	17-13-306-11	17-T-306	7.6 (.300)	13 (.510)	
7.6 (.300)		8.1 (.320)	17-11-308-11	17-12-308-11	17-13-308-11	17-T-308	10.2 (.400)	10.4 (.410)	
10.2 (.400)		10.7 (.420)	17-11-310-11	17-12-310-11	17-13-310-11	17-T-310	12.7 (.500)	7.9 (.310)	
2.5 (.100)	15.9 (.625)	3.1 (.120)	17-11-404-11	17-12-404-11	17-13-404-11	17-T-404	5.1 (.200)	18.7 (.735)	28.6 (1.126)
5.1 (.200)		5.6 (.220)	17-11-406-11	17-12-406-11	17-13-406-11	17-T-406	7.6 (.300)	16.1 (.635)	
7.6 (.300)		8.1 (.320)	17-11-408-11	17-12-408-11	17-13-408-11	17-T-408	10.2 (.400)	13.6 (.535)	
10.2 (.400)		10.7 (.420)	17-11-410-11	17-12-410-11	17-13-410-11	17-T-410	12.7 (.500)	11.1 (.435)	
12.7 (.500)		13.2 (.520)	17-11-412-11	17-12-412-11	17-13-412-11	17-T-412	15.2 (.600)	8.5 (.335)	
15.2 (.600)		15.8 (.620)	17-11-414-11	17-12-414-11	17-13-414-11	17-T-414	17.8 (.700)	6.0 (.235)	

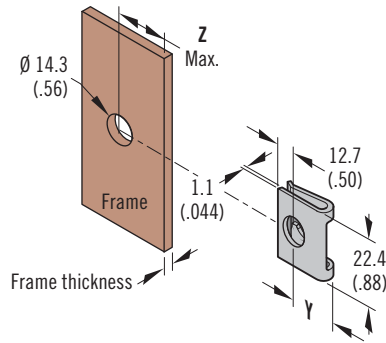
17 Series Fast-Lead Screws Receptacles / retainers · Large



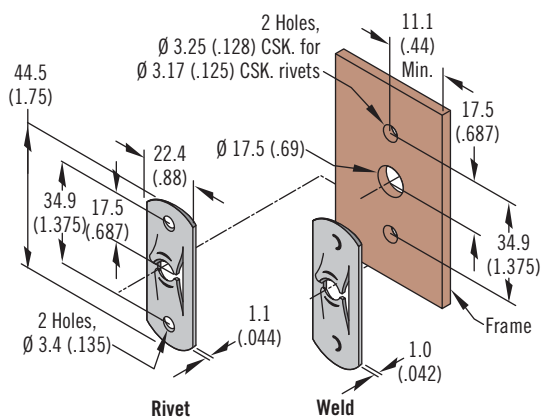
Side Mount Receptacle



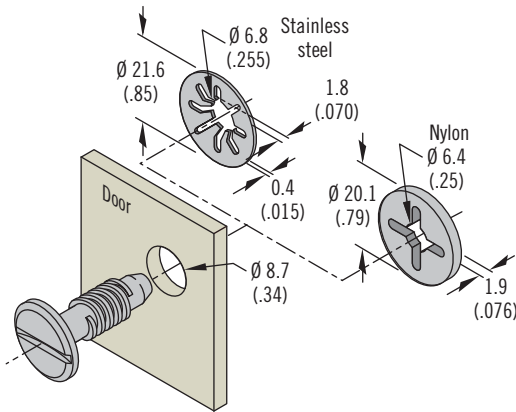
Clip-On Type Receptacle



Flat Type Receptacle



Retainers



Material and Finish

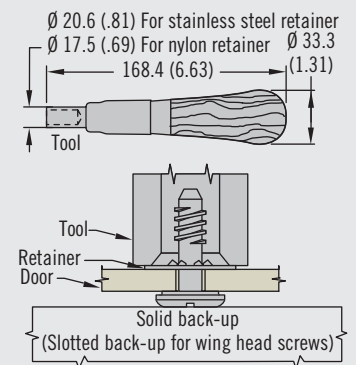
Steel, zinc immersion coating or stainless steel

Type	Frame Thickness	Y	Z Max.	Receptacle Part Number	
				Steel	Stainless steel
Side mount receptacle	~	~	~	17-90-101-10	~
Clip-on type receptacle	1.1 - 2.4 (.045 - .093)	15.7 (.62)	15.0 (.59)	17-10017-11	~
	2.4 - 3.6 (.093 - .142)	14.7 (.58)	14.2 (.56)	17-10027-11	~
	3.6 - 4.9 (.142 - .191)	13.7 (.54)	13.5 (.53)	17-10029-11	~
	4.9 - 6.1 (.191 - .240)	13.5 (.53)	13.5 (.53)	17-10031-11	~
6.1 - 7.3 (.240 - .289)	13.0 (.51)	12.7 (.50)	17-10033-11	~	~
Flat type receptacle - Rivet	~	~	~	17-10015-13	17-10015-14
Flat type receptacle - Weld	~	~	~	~	17-10016-11

Retainer Style	Retainer Part Number	Tool Part Number
302 Stainless steel, passivated	17-6-1	17-0-24585-11
Nylon, black	17-10054-42	17-0-21333-11

Part Number

See table





DM Inserts

Monosert rack attach

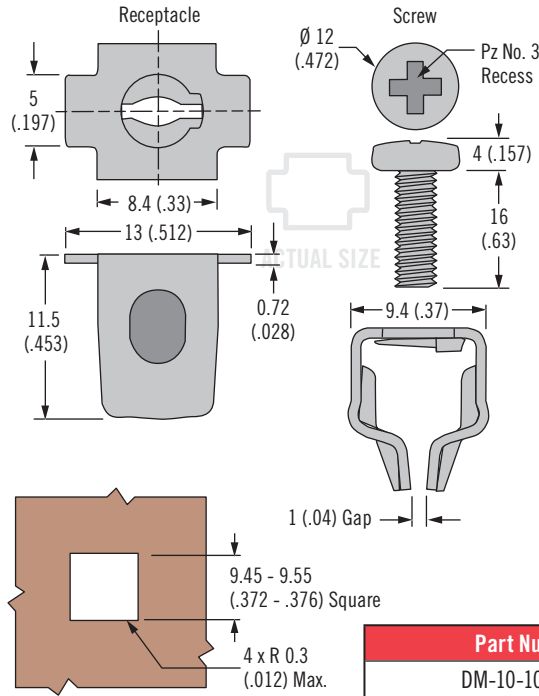
- Front install insert for rack attach applications

Material and Finish

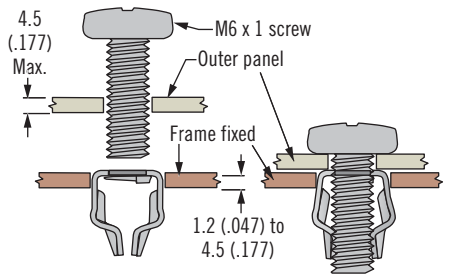
Steel, zinc plated

Installation Notes

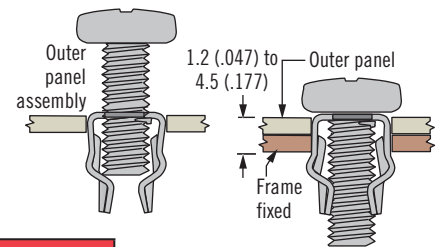
Max. tightening torque:
2 N•m (17.7 in•lbf)



Standard Installation



Alternative Installation



DM Inserts

Duosert rack attach

- Front install insert for rack attach applications

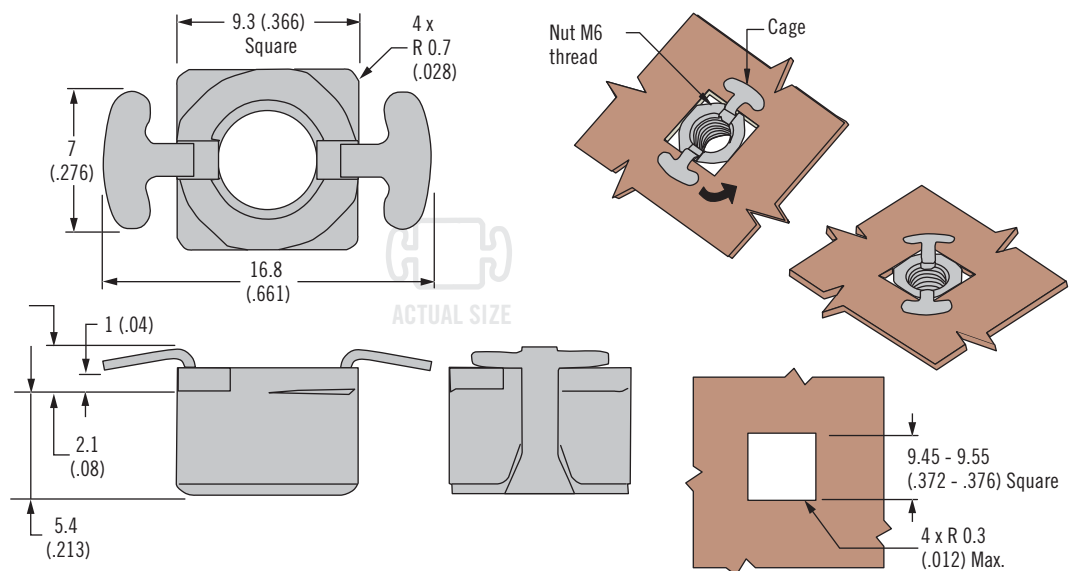
Material and Finish

Zinc alloy and stainless steel, natural

Installation Notes

Max. tightening torque:
10 N•m (88.5 in•lbf)
Max. panel thickness:
1 - 1.2 (.039 - .047)

Recommended installation tool
requires a flat blade screwdriver



Receptacle only. (Screw not supplied)

Dimensions in millimeters (inch) unless otherwise stated

Inject / eject mechanisms provide hardware necessary for the insertion and extraction of PC boards, modules and faceplates. In addition, they provide microswitch activation for hot swap.

The **PICMG®** (PCI Industrial Computer Manufacturer's Group) organization has developed several standards for commercial-off-the-shelf solutions including, **ATCA®**, **AdvancedMC®**, **µTCA®** and **CompactPCI®** to regulate the format and interconnection of telecommunication server equipment.

Southco offers many inject / eject mechanisms that are **PICMG®**-compliant.

Our technical design team has also developed custom solutions for many of the top global OEM's. If one of these standard solutions does not meet your needs, a custom solution can.

PICMG, ATCA, AdvancedMC, µTCA and CompactPCI are registered trademarks of PICMG® - PCI Industrial Computer Manufacturers Group, Inc.

Industry Standard Ejectors

Pages 496-507



Inject/Eject device designs are largely driven by customer needs in the following areas:

- Hot swap capability
- Greater pin tension
- More weight on PC board
- Ever-increasing demands for smaller profiles and less protrusion on boards and faceplates
- Higher pin density interconnects
- Higher insertion / extraction forces
- Secondary locking devices
- Proper grounding and alignment

Inject / Eject Solutions

Pages 508-509





Inject / Eject Mechanisms

Selection guide

Use this selection guide to choose the right inject / eject mechanism for your application

		Product Class	MATERIAL			
			Plated Steel and Plastic	Zinc Alloy	Zinc Alloy and Plastic	Plastic
ATCA® PAGES 496-501		P7-A-513-11	✓			
		P7-A-523-11	✓			
		P7-A-533-11	✓			
		P7-A-543-11	✓			
AdvancedMC® PAGES 504-507		P7-M-811-000		✓		
		P7-M-812-000		✓		
		P7-M-813-000		✓		
		P7-M-822-000		✓		
		P7-M-823-000		✓		
CompactPCI® PAGES 502-503		P7-1-981-10			✓	
		P7-1-991-10			✓	
OTHER PAGES 508-509		CN-10-3-A			✓	
		CN-10-9-A				✓
		CN-11			✓	
		P7-99-103-53		✓		
		P7-1-30X-X5	✓			

CompactPCI, AdvancedMC and ATCA are registered trademarks of PICMG® - PCI Industrial Computer Manufacturers Group, Inc.

PERFORMANCE						ENVELOPE SIZE	
Maximum Insertion Load per Ejector	250 Cycles Minimum	VO Flammability Rating	Secondary Catch	Activates Microswitch	Compliant with PICMG Standard	Outside of Faceplate (L x W x H)	Inside of Faceplate (L x W x H)
320 N (72 lbf)	✓	✓	✓	✓	✓	58.20 x 4.80 x 17.50 (2.29 x 0.19 x 0.69)	39.92 x 2.50 x 13.00 (1.57 x 0.10 x 0.51)
320 N (72 lbf)	✓	✓	✓	✓	✓	58.20 x 4.80 x 17.50 (2.29 x 0.19 x 0.69)	39.92 x 2.50 x 13.00 (1.57 x 0.10 x 0.51)
320 N (72 lbf)	✓	✓	✓	✓	✓	58.20 x 4.80 x 17.50 (2.29 x 0.19 x 0.69)	38.62 x 2.50 x 13.00 (1.52 x 0.10 x 0.51)
320 N (72 lbf)	✓	✓	✓	✓	✓	58.20 x 4.80 x 17.50 (2.29 x 0.19 x 0.69)	38.62 x 2.50 x 13.00 (1.52 x 0.10 x 0.51)
N/A	✓	✓	✓	✓	✓	19.55 x 5.65 x 8.86 (0.77 x 0.22 x 0.35)	33.85 x 5.65 x 12.50 (1.33 x 0.22 x 0.49)
N/A	✓	✓	✓	✓	✓	19.55 x 5.65 x 8.86 (0.77 x 0.22 x 0.35)	33.85 x 5.65 x 12.50 (1.33 x 0.22 x 0.49)
N/A	✓	✓	✓	✓	✓	19.55 x 5.65 x 8.86 (0.77 x 0.22 x 0.35)	33.85 x 5.65 x 12.50 (1.33 x 0.22 x 0.49)
N/A	✓	✓	✓	✓	✓	5.05 x 5.65 x 14.50 (0.20 x 0.22 x 0.57)	39.70 x 6.18 x 17.55 (1.56 x 0.24 x 0.69)
N/A	✓	✓	✓	✓	✓	5.05 x 5.65 x 14.50 (0.20 x 0.22 x 0.57)	39.70 x 6.18 x 17.55 (1.56 x 0.24 x 0.69)
117 N (26 lbf)	✓	✓	✓	✓	✓	36.00 x 25.00 x 19.90 (1.42 x 0.98 x 0.78)	25.25 x 25.00 x 19.90 (0.99 x 0.98 x 0.78)
117 N (26 lbf)	✓	✓	✓	✓	✓	25.00 x 19.90 x 36.00 (0.98 x 0.78 x 1.42)	25.25 x 25.00 x 19.90 (0.99 x 0.98 x 0.78)
220 N (50 lbf)	✓	✓	✓	✓		62 x 18 x 18 (2.44 x .71 x .71)	14 x 10 x 18 (.55 x .39 x .71)
110 N (24.7 lbf)	✓	✓	✓	✓		62 x 18 x 18 (2.44 x .71 x .71)	Flush
200 N (45 lbf)	✓	✓	✓			35 x 15 x 30 (1.38 x .59 x 1.18)	19 x 5 x 15 (.75 x .20 x .59)
400 N (90 lbf)	✓	✓	✓			52 x 23 x 3 (2.05 x .91 x .12)	52 x 23 x 21 (2.05 x .91 x .83)
325 N (72 lbf)	✓	✓	✓			54 x 17 x 22.5 (2.13 x .67 x .89)	15.5 x 10.35 x 7 (.61 x .41 x .28)



P7 ATCA® Inject / Eject Mechanism

Ejectors

- Ergonomic inject / eject lever designed for easy operation
- Secondary catch on inject / eject operates microswitch to permit hot-swapping

Material and Finish

Steel plated and glass-filled nylon, black

Washers: Stainless steel

Performance Details

Flammability rating: UL94-V0

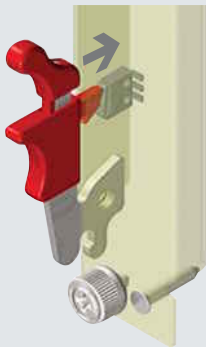
Installation Notes

See page 499

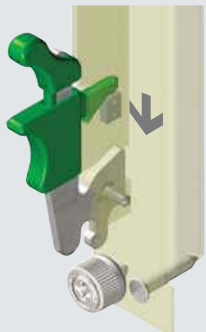
Notes

Custom colors available, please contact Southco

Lever Style Switch Operation



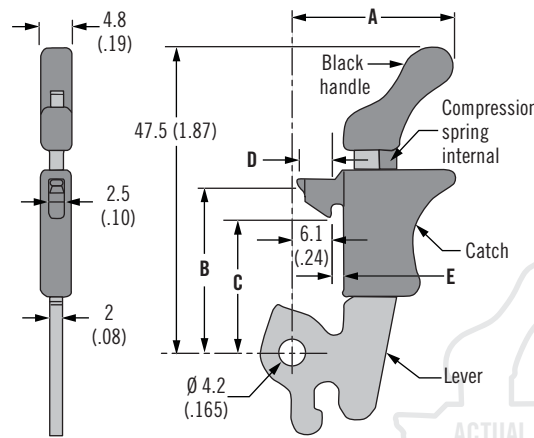
Plunger Style Switch Operation



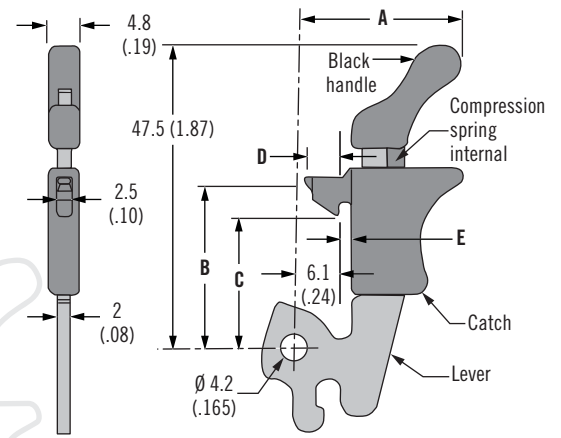
ATCA is a registered trademark of PICMG® - PCI Industrial Computer Manufacturers Group, Inc.

Lever Style Switch

Panel thickness 0.8 - 1.5 (.031 - .059)

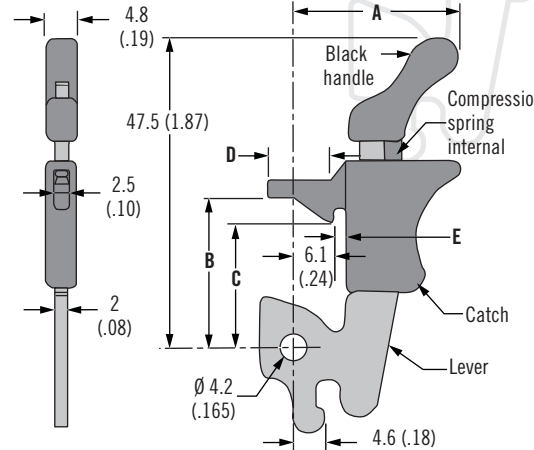


Panel thickness 2 - 2.5 (.078 - .098)

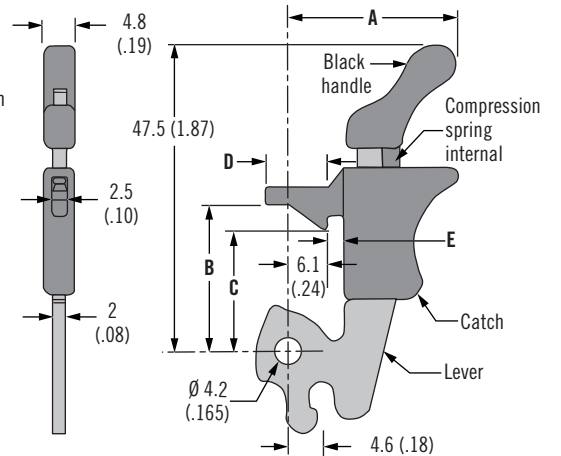


Plunger Style Switch

Panel thickness 0.8 - 1.5 (.031 - .059)

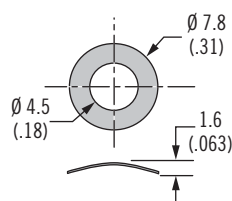


Panel thickness 2 - 2.5 (.078 - .098)

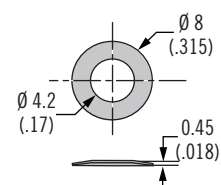


Style	Panel Thickness	Part Number	A	B	C	D	E
Lever style complete with u-bent washer	0.8 - 1.5 (.031 - .059)	P7-A-513-11	25.2 (.99)	26.1 (1.03)	20.8 (.82)	5.4 (.21)	1.9 (.07)
	2 - 2.5 (.078 - .098)	P7-A-523-11	26.2 (1.03)	26.1 (1.03)	20.8 (.82)	5.4 (.21)	2.9 (.11)
Plunger style complete with belleville washer	0.8 - 1.5 (.031 - .059)	P7-A-533-11	25.2 (.99)	23 (.90)	19 (.75)	9.6 (.38)	1.9 (.07)
	2 - 2.5 (.078 - .098)	P7-A-543-11	25.2 (.99)	23 (.90)	19 (.75)	9.6 (.38)	2.9 (.11)

U-Bent Washer (supplied)



Belleville Washer (supplied)



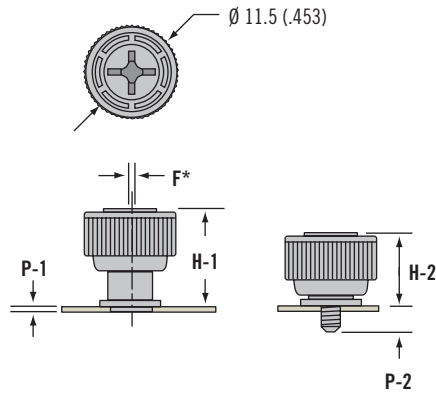
Dimensions in millimeters (inch) unless otherwise stated

P7 ATCA® Inject / Eject Mechanism

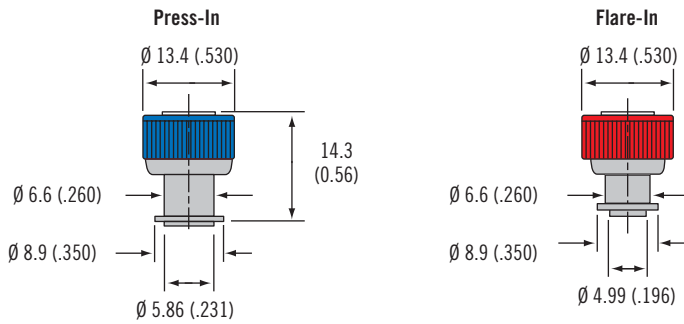
Captive screws



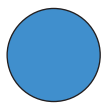
Metal Version



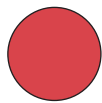
Overmolded Version



000 Black



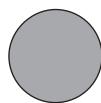
008 Blue



013 Red



014 Green



Your color
(contact Southco)

- M3 thread
- No. 2 Phillips recess
- Color match available

Material and Finish

Screw, ferrule and internal spring stainless steel, knob aluminum or PC/ABS

Performance Details

Flammability rating: UL94-V0
ATCA® R3.0 compliant screw

F* indicates maximum float in the unfastened position

Part Number

See table

Specifying Color:

To indicate color, change the last three digits of the part number.

Example:

47-99-945-1P0-K000, black

47-99-945-1P0-K013, red

ATCA is a registered trademark of PICMG® - PCI Industrial Computer Manufacturers Group, Inc.

Series	Installation Method	Panel Thickness			Part Number No. 2 Phillips	H-1	H-2	P-1	P-2	F*	Panel Preparation	
		A Min.	A Max.	B*							Ø D*	Ø Z*
ATCA compliant (Metal Version)	Press-in	0.9 (.036)	~	~	47-99-945-1P0	14.3 (.56)	10.1 (.40)	1.0 (.39)	5.0 (.20)	1 (.039)	5.95 ±0.04 (.234±.002)	3.2 ^{+0.2} _{-0.1} (.125 ^{+0.008} _{-.004})
	Flare-in	0.8 (.031)	1.5 (.060)	0.4 (.016)	47-99-944-1F1	14.3 (.56)	10.1 (.40)	1.0 (.39)	5.0 (.20)	1 (.039)	5.1 ^{+0.1} ₋₀ (.20 ^{+0.004} ₀)	3.0 ^{+0.1} ₋₀ (.118 ^{+0.004} _{-.000})
ATCA compliant (Overmolded Version)	Press-in	0.9 (.036)	~	~	47-99-945-1P0-K000	14.3 (.56)	10.1 (.40)	1.0 (.39)	5.0 (.20)	1 (.039)	5.95 ±0.04 (.234±.002)	3.2 ^{+0.2} _{-0.1} (.125 ^{+0.008} _{-.004})
	Flare-in	0.8 (.031)	1.5 (.060)	0.4 (.016)	47-99-944-1F1-K000	14.3 (.56)	10.1 (.40)	1.0 (.39)	5.0 (.20)	1 (.039)	5.1 ^{+0.1} ₋₀ (.20 ^{+0.004} ₀)	3.0 ^{+0.1} ₋₀ (.118 ^{+0.004} _{-.000})



P7 ATCA® Inject / Eject Mechanism

Guide pin

- **Bullet tip for better engagement**
- **Self-clinching style for easy installation**

Material and Finish

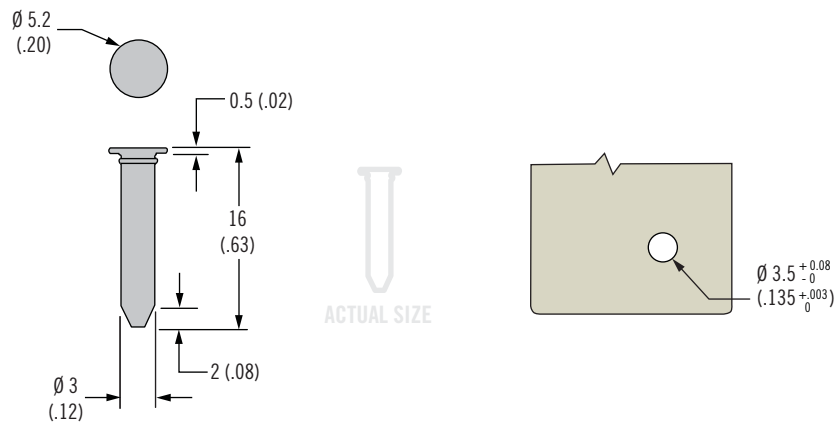
Stainless steel

Installation Notes

Edge of hole must be sharp do not chamfer.

See page 499 for reference on usage of guide pin.

Self-clinching install details see page 545



Part Number

77-0-40552



P7 ATCA® Inject/Eject Mechanism

Mounting screws M 2.5

- **Accommodates all standard ATCA® PC board thicknesses**
- **Vibration-resistant nylon patch**

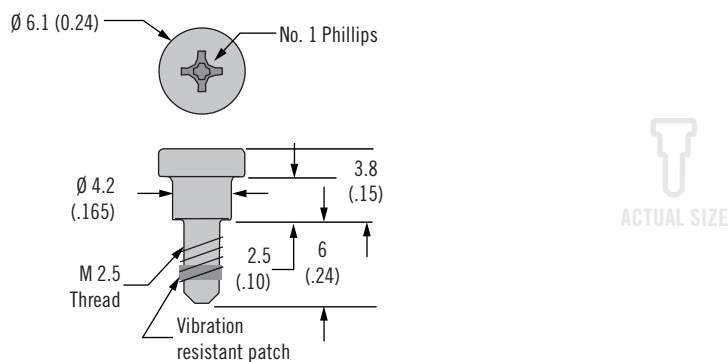
Material and Finish

Steel zinc plated

Installation Notes

Please refer to installation drawings on page 499 for reference on usage of mounting screws

ATCA is a registered trademark of PICMG® - PCI Industrial Computer Manufacturers Group, Inc.

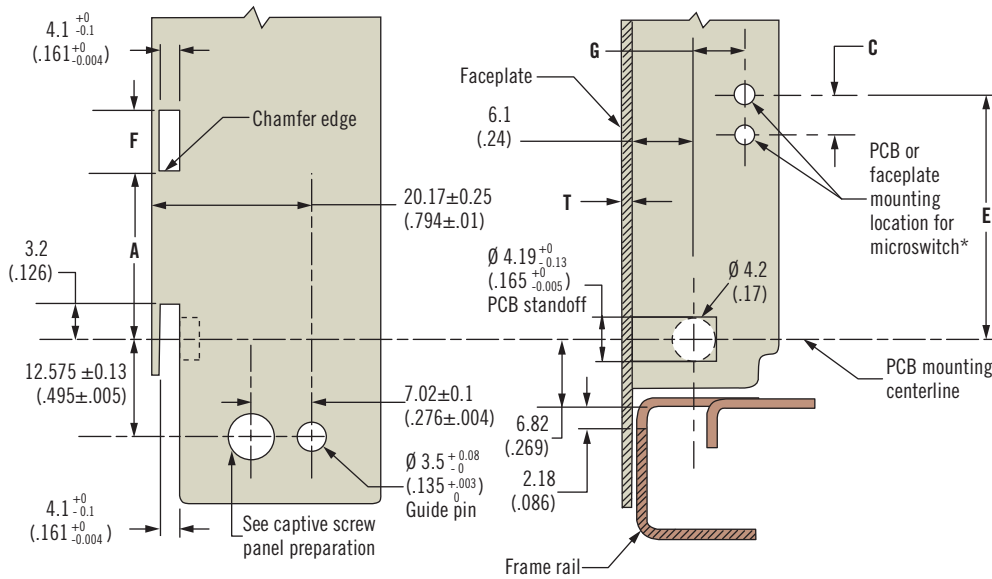


Part Number

P7-0-41665-1

P7 ATCA® Inject / Eject Mechanism

Faceplate panel preparation (with PCB mounting tab fabrication)



Installation Notes

Select ejector, guide pin and mounting screw part number.

Select captive screw best suited to your application.

Notes

Faceplates generally require two ejectors, two captive screws, two mounting screws and two guide pins.

*Microswitch lever style operation ITT MD002 or plunger style operation ITT SD002

See page 496 for ejector selection

Installation Notes

See page 496 for B, Ø D and Ø Z dimensions.

Press-in:

1. Prepare panel as shown, do not chamfer edge.
2. Place standoff into installation hole.
3. Provide solid back-up behind hole with clearance hole for screw.
4. Press part into panel. Punch must not touch plastic knob during installation.

Recommended minimum distance from the panel edge to the centerline of the installation hole is 1.5 x Ø D. * For panels thinner than 0.9 (.036) contact Southco.

Flare-in

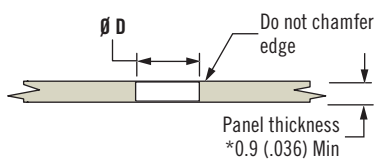
1. Prepare panel as shown.
2. Use light pressure to flare standoff, assuring parallel surfaces on the punch and installation tool. Installation force depends on screw size.
3. Punch cannot touch plastic during installation.

ATCA is a registered trademark of PICMG® - PCI Industrial Computer Manufacturers Group, Inc.

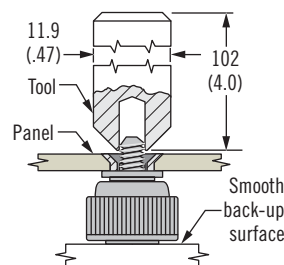
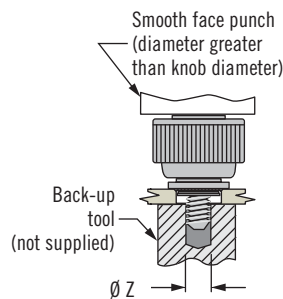
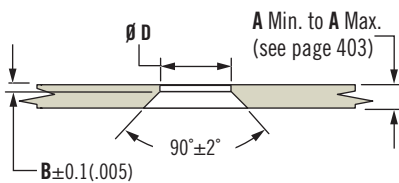
Switch Styles	Part Number	A	F	C	G	E	T
Lever	P7-A-513-11	22 (.866)	7.5 (.296)	4 (.16)	25.4 (1.0)	5.2 (.2)	0.8 - 1.5 (.031 - .059)
	P7-A-523-11	21.7 (.85)	7.8 (.31)				2 - 2.5 (.078 - .098)
Plunger	P7-A-533-11	20.2 (.795)	9 (.354)	3 (.12)	20.4 (.8)	1.9 (.07)	0.8 - 1.5 (.031 - .059)
	P7-A-543-11						2 - 2.5 (.078 - .098)

Captive Screw Panel Preparation and Installation (see page 497 for selection of captive screws)

Press-In



Flare-In



Flare-In Tool Part Number (M3 Thread Size)
47-104



CN ATCA® Inject / Eject Mechanism

Alignment keying modules

- CN-80 robust design passes the NEBS drop test
- Multiple pin positions ensure proper board mating

Material and Finish

Dual pin CN68 and CN78:
Zinc alloy, nickel plated

Dual pin CN80:
Zinc alloy, hardened steel,

nickel plated

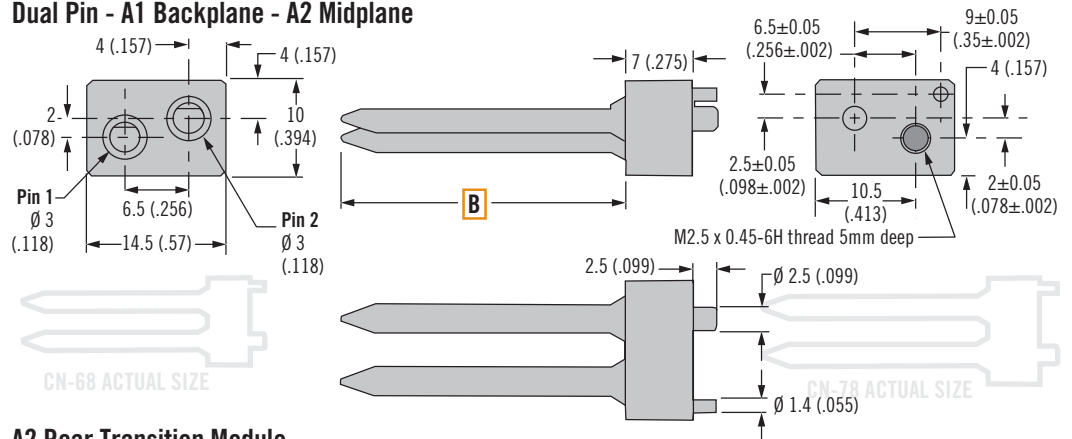
Single pin:
Brass, nickel plated

Notes

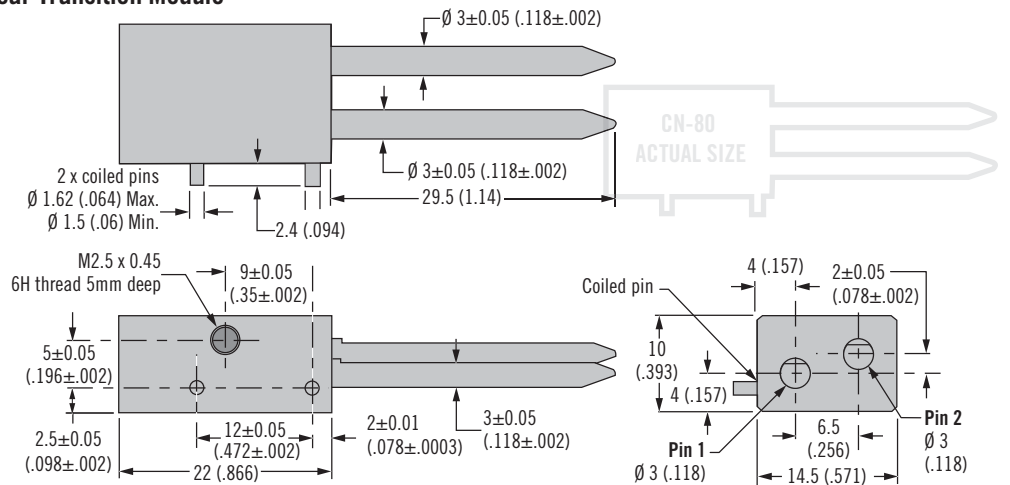
Keying module rotation position must mate with receptacle module rotation position

ATCA is a registered trademark of PICMG® - PCI Industrial Computer Manufacturers Group, Inc.

Dual Pin - A1 Backplane - A2 Midplane



A2 Rear Transition Module



Dual Pin Part Number

CN - **B** - **X** - **Y**

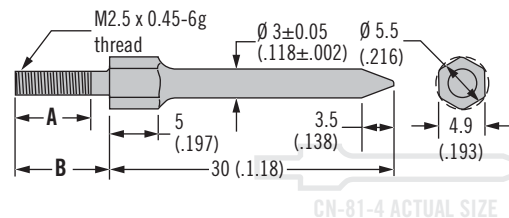
B Pin length
68 A1 backplane 22.5 (.885)
78 A2 midplane 29.5 (1.16)

A2 Rear Transition Module Part Number

CN - 80 - **X** - **Y**

	X Pin 1 Position	Rotation	Keying Position
1		0°	
2		45°	
3		90°	
4		135°	
5		180°	
6		225°	
7		270°	
8		315°	

Single Pin - A1 Backplane



Single Pin Part Number	A	B
CN-81-4	4 (.157)	6 (.236)
CN-81-6	6 (.236)	8 (.315)
CN-81-8	8 (.315)	10 (.394)

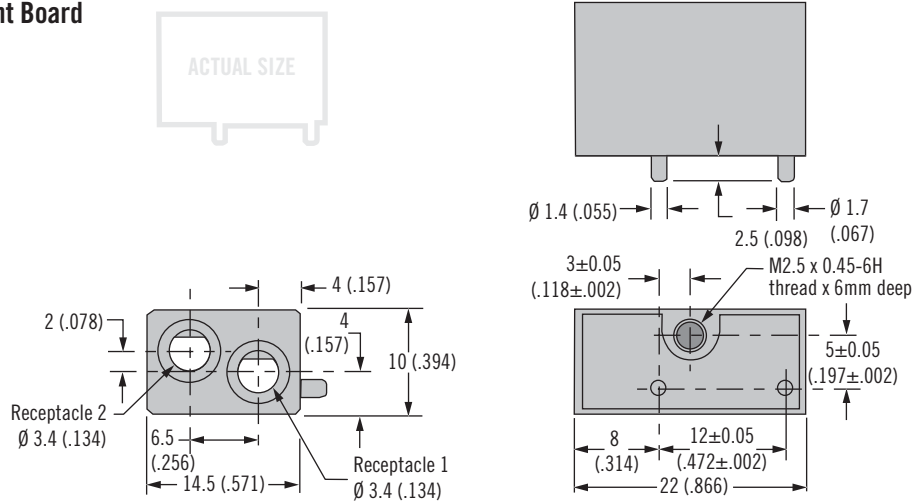
Dimensions in millimeters (inch) unless otherwise stated

CN ATCA® Inject / Eject Mechanism

Alignment receptacle modules



K1 - K2 Front Board



CN - 69 - X - Y

X	Receptacle 1 Position	Rotation	Receptacle Position
1	Y	0°	
2	Y	45°	
3	Y	90°	
4	Y	135°	
5	Y	180°	
6	Y	225°	
7	Y	270°	
8	Y	315°	
9	X	N/A	
0	X	N/A	

- Mates with pins

Material and Finish

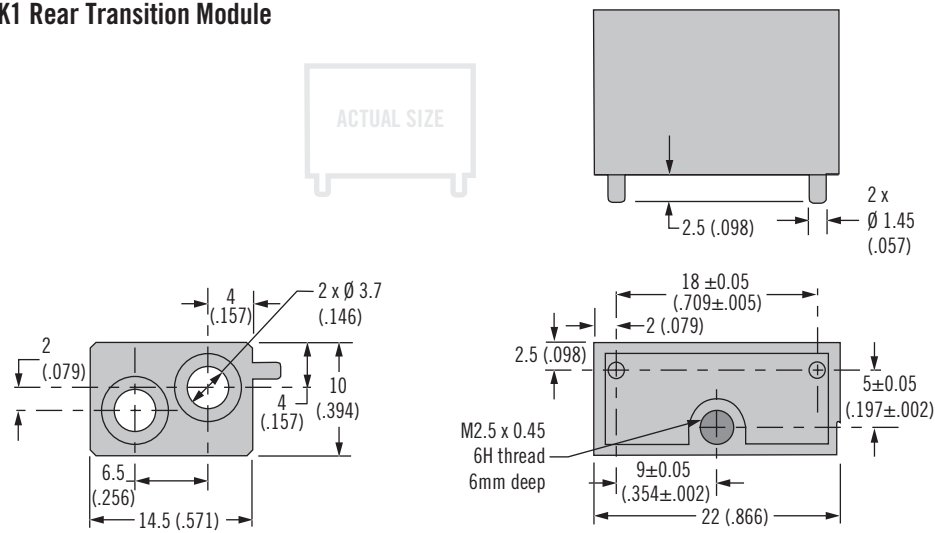
Zinc alloy, nickel plated

Notes

Receptacle module rotation position must mate with keying module rotation position

ATCA is a registered trademark of PICMG® - PCI Industrial Computer Manufacturers Group, Inc.

rK1 Rear Transition Module



Part Number
CN-79



P7 CompactPCI® Inject / Eject Mechanism

Ejectors

- Ergonomic design for easy operation
- Button protected to prevent accidental operation
- Button disengages microswitch prior to rotation of ejector handle
- Optional integrated microswitch

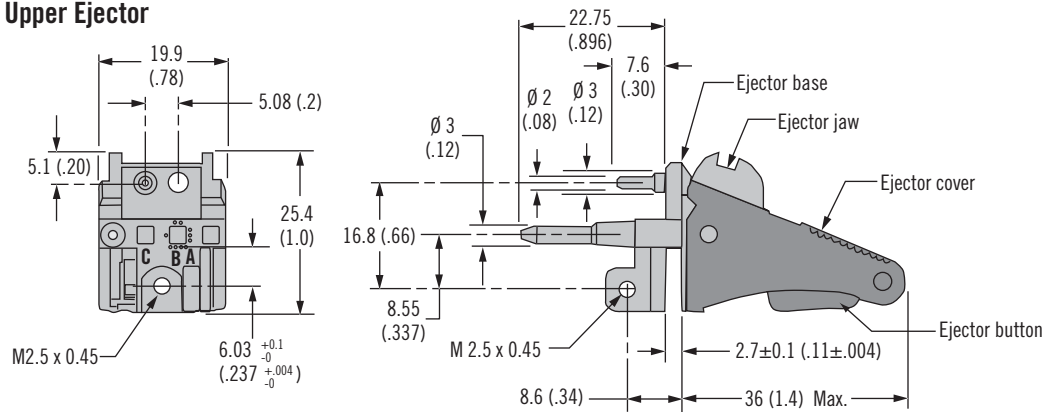
Material and Finish

Ejector base and jaws:
Zinc alloy, nickel plated
Ejector cover: PC/ABS black
Ejector button: PC/ABS red
Torsion spring: Stainless steel
Pin and faceplate mounting screws:
Steel, zinc plated

Performance Details

Flammability rating: UL94-V0
CompactPCI is a registered trademark of PICMG® - PCI Industrial Computer Manufacturers Group, Inc.

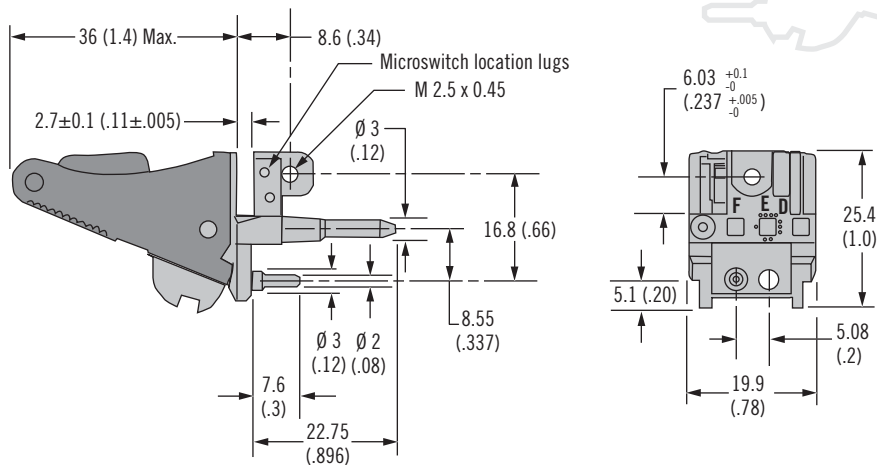
Upper Ejector



Part Number

P7-1-981-10

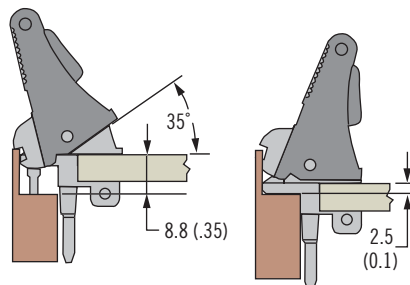
Lower Ejector (for use with microswitch)



Part Number

P7-1-991-10

Faceplate Travel



Note: 6.3 (0.24) total travel

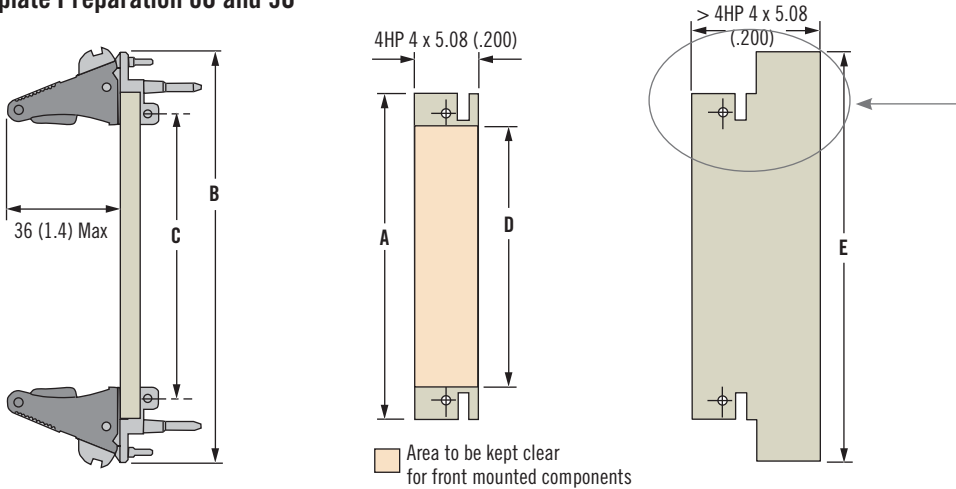
Dimensions in millimeters (inch) unless otherwise stated

P7 CompactPCI® Inject / Eject Mechanism

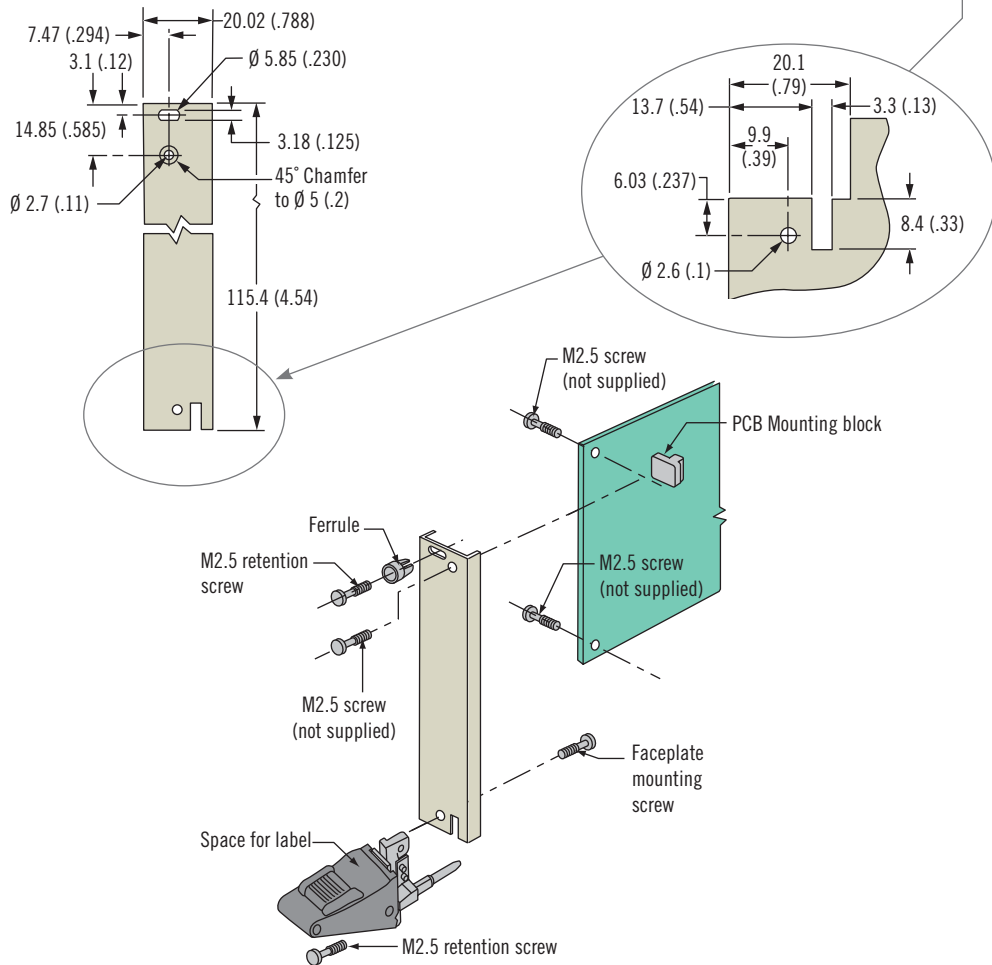
Faceplate mounting hardware accessories



Faceplate Preparation 6U and 9U



3U



Microswitch assembly:

Attaches to ejector, allows for hot swap

Part number: P7-0-46720



M2.5 Retention screw:

Used with ferrules and ejectors

Material and finish: Steel, plated

Part number: P7-0-45297



3U Hardware

Captivates M2.5 screw on faceplate

Snap-in ferrule:

Faceplate thickness

1.6 - 2.5 (.063 - .098)

Material and finish: ABS

Part number: P7-0-45227



Press-in ferrule:

Faceplate thickness

1.5 - 2.4 (.059 - .094)

Material and finish: Steel, plated

Part number: P7-0-45302



Press-in ferrule flush:

Minimum panel thickness 0.9 (.035)

Material and finish: Steel, plated

Part number: P7-0-45244



PCB Mounting block:

Used to mount PCB in place of ejector

Material and finish: Zinc alloy, plated

Part number: P7-0-45234



Notes

All panel preparation tolerances ±0.1 (.004)

Style	A	B	C	D	E
6U	235.4 (9.27)	255.85 (10.073)	222.25 (8.750)	214.65 (8.451)	262.05 (10.317)
9U	368.75 (14.518)	389.2 (15.323)	355.6 (14.00)	348 (13.701)	395.4 (15.567)

CompactPCI is a registered trademark of PICMG® - PCI Industrial Computer Manufacturers Group, Inc.

Dimensions in millimeters (inch) unless otherwise stated



P7 AdvancedMC[®] Inject / Eject Mechanism

Pull module handle

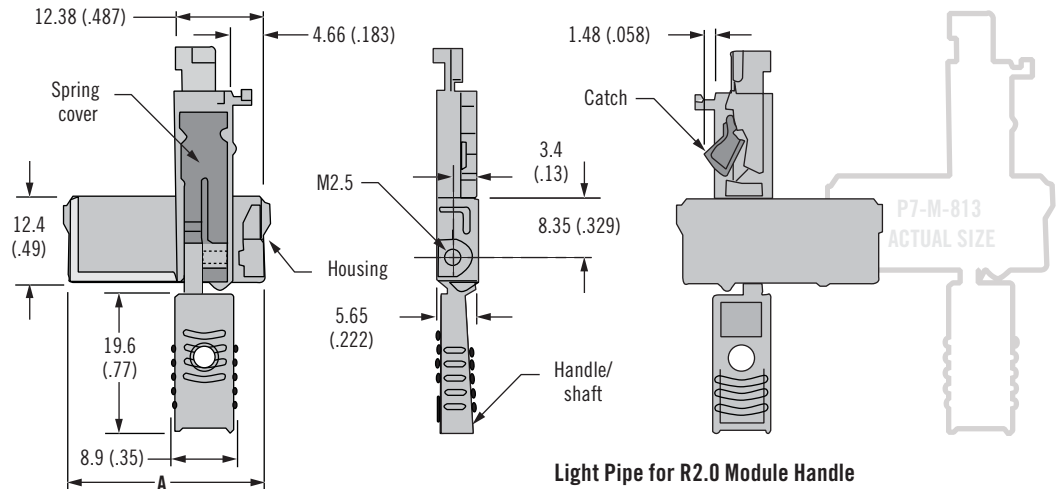
- Die-cast construction for robust performance
- Positive detent at three distinct positions
- Fits all current microswitch locations
- Custom colors available

Material and Finish

Handle/shaft, housing and catch:
Zinc alloy, bright chromate

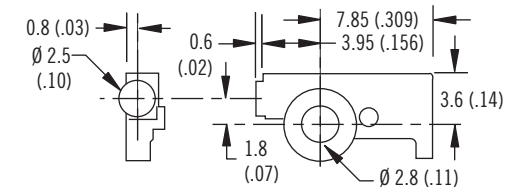
Notes

*Order light pipes separately



Light Pipe for R2.0 Module Handle

Part Number		Handle Size	A
Module handle	R2.0 Light pipe*		
P7-M-811-000	P7-10-812	Compact 3HP	12.50 (.492)
P7-M-812-000	P7-10-812	Mid size 4HP	17.55 (.691)
P7-M-813-000	P7-10-812	Full size 6HP	27.55 (1.085)



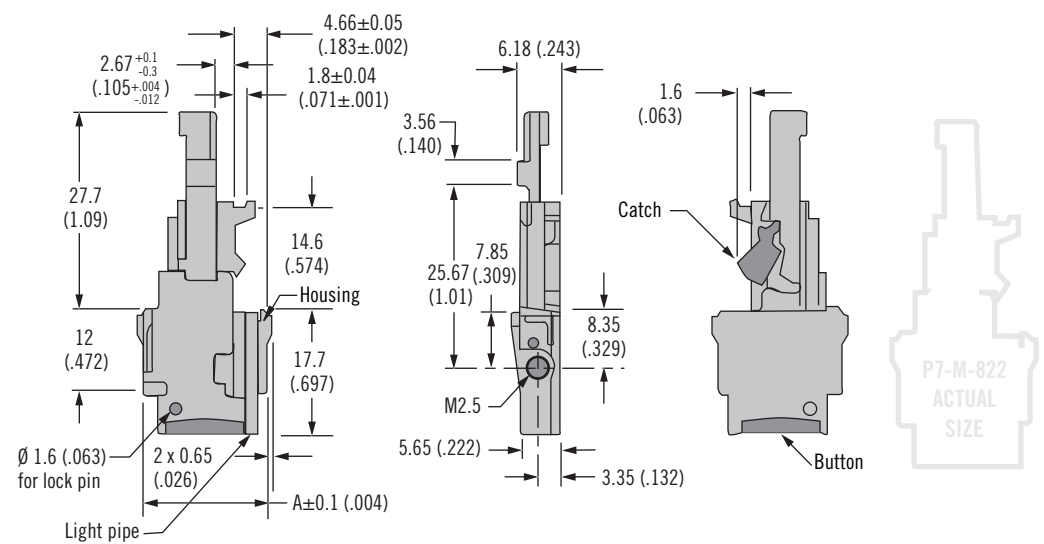
P7 AdvancedMC[®] Inject / Eject Mechanism

Flush module handle

- Flush button prevents snagging of handle
- Flush button allows for better aesthetics
- Locking pin feature

Material and Finish

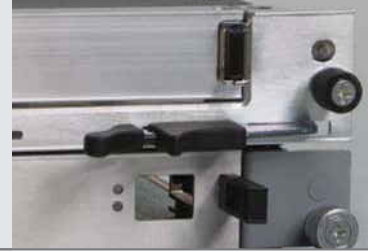
Handle/shaft: Zinc alloy, black epoxy coat
Housing, cover and catch: Zinc alloy, bright nickel plate
Light pipe: Polycarbonate clear
AdvancedMC is a registered trademark of PICMG[®] - PCI Industrial Computer Manufacturers Group, Inc.



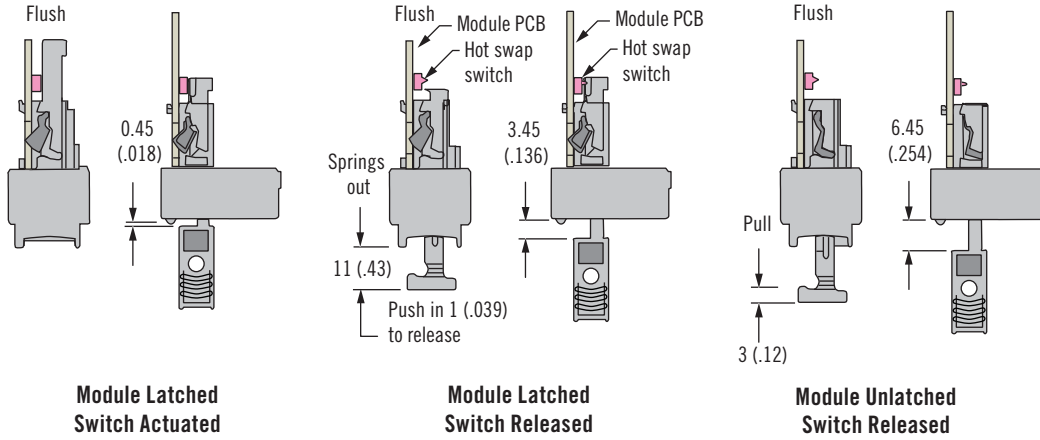
Part Number	Handle Size	A
P7-M-822	Mid size 4HP	17.55 (.691)
P7-M-823	Full size 6HP	27.55 (1.085)

Dimensions in millimeters (inch) unless otherwise stated

P7 AdvancedMC[®] Inject / Eject Mechanism Operation



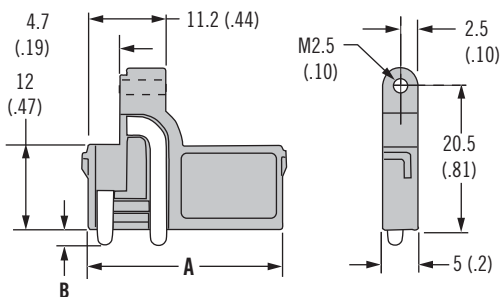
Operation



P7 AdvancedMC[®] Light Pipe Bracket



R2.0



Part Number	Bracket Size	A	B
P7-L-811	Compact	12.50 (.492)	2.1 (.08)
P7-L-812	Mid size	17.55 (.691)	
P7-L-813	Full size	27.55 (1.085)	
P7-L-811-11	Compact flush	12.50 (.492)	0.3 (.012)
P7-L-812-11	Mid size flush	17.55 (.691)	
P7-L-813-11	Full size flush	27.55 (1.085)	

- Easily snaps into faceplate
- Bracket includes light pipe and housing
- Compatibility with all standard Advanced MC[®] faceplates

Material and Finish

Light pipe housing: Zinc alloy, bright chromate
 Light pipe: Polycarbonate, clear

AdvancedMC is a registered trademark of PICMG[®] - PCI Industrial Computer Manufacturers Group, Inc.

P7 AdvancedMC[®] Inject / Eject Mechanism

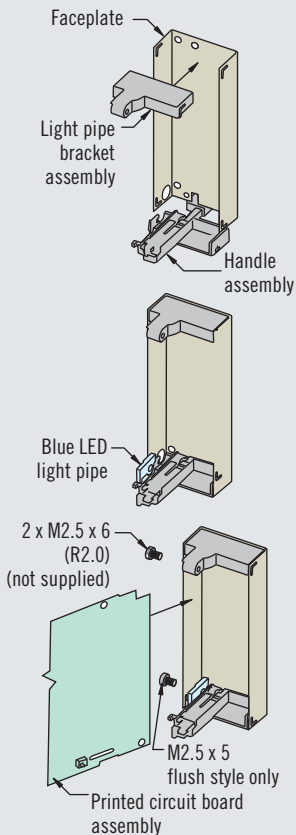
Module handle & light pipe bracket panel preparation

Installation Notes

1. Snap handle assembly and light pipe bracket into faceplate.
2. For R2.0, position blue LED light pipe into handle assembly and faceplate. Light pipe should be positioned against outside wall of handle assembly.
3. Slide PCB in place and secure with screws. Blue LED light pipe is located on component side 2 of the PCB.

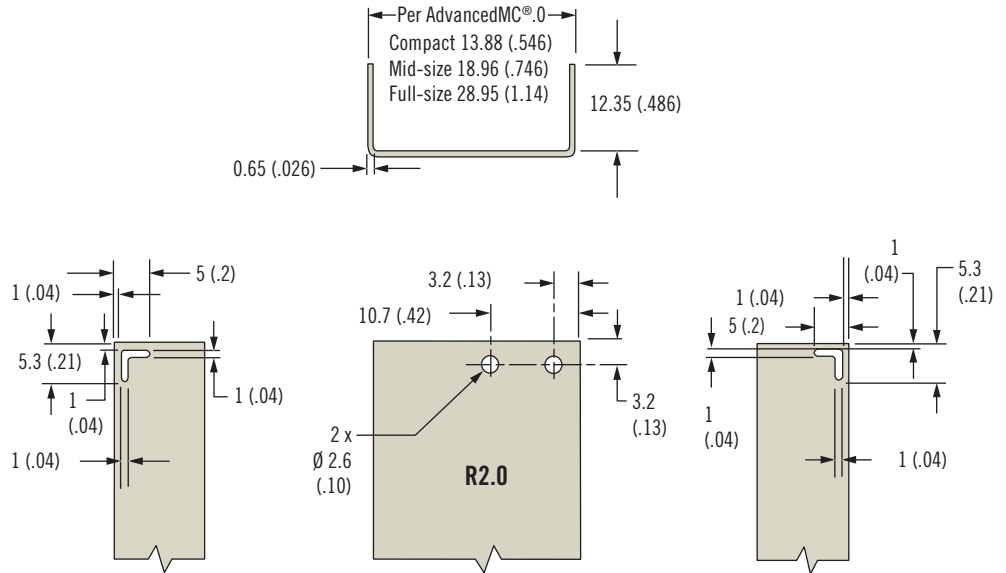
Notes

All panel preparation tolerances ± 0.1 (.004)

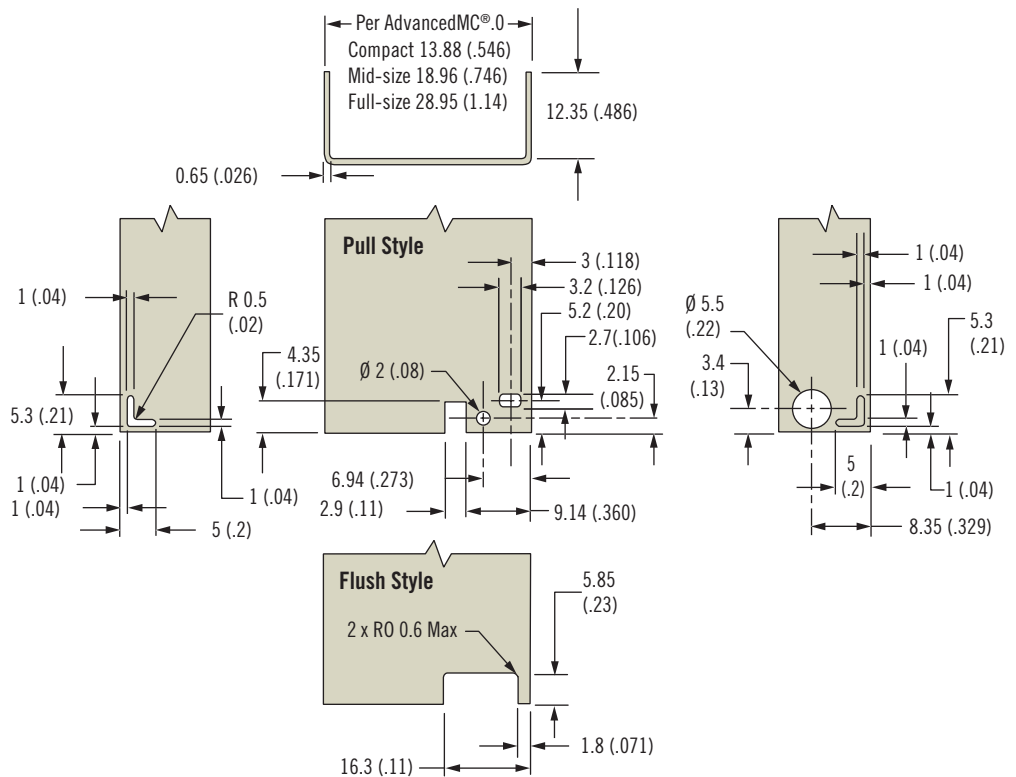


AdvancedMC is a registered trademark of PICMG[®] - PCI Industrial Computer Manufacturers Group, Inc.

Panel Preparation Light Pipe Brackets



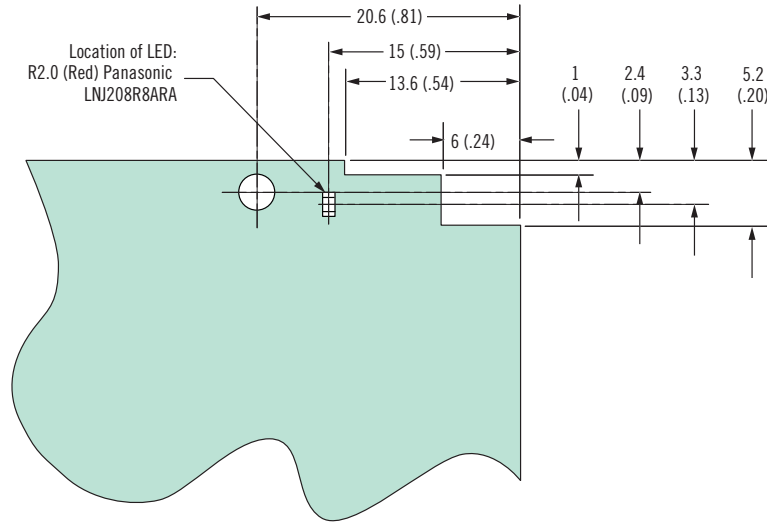
Panel Preparation Module Handles



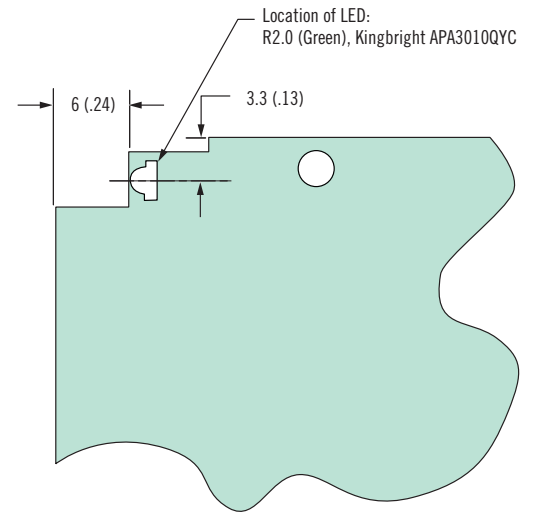
Dimensions in millimeters (inch) unless otherwise stated

PCB Preparation

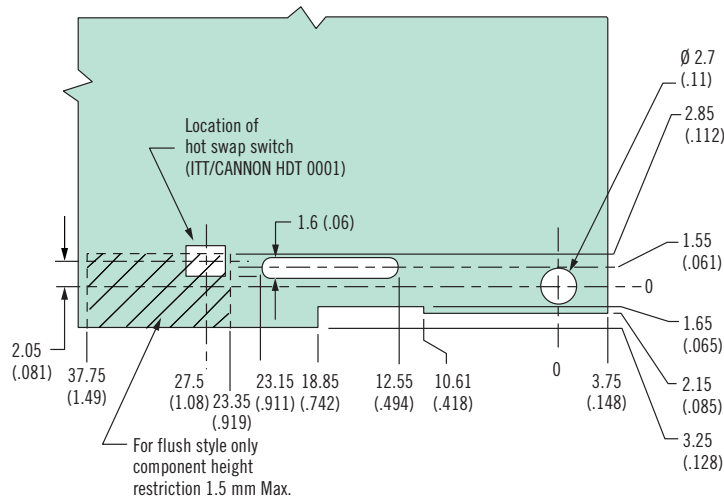
Printed Circuit Board Component Side 1



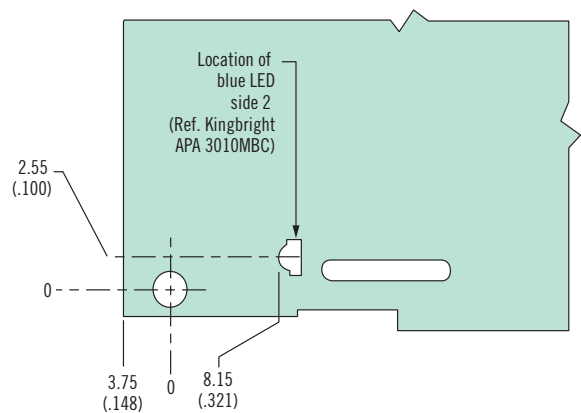
Printed Circuit Board Component Side 2



Printed Circuit Board Component Side 1



Printed Circuit Board Component Side 2





CN Inject / Eject Mechanism

Ejectors

Material and Finish

Module ejector:

Lever and slide:

Glass-filled nylon, white

Base: Die-cast zinc, nickel plated

Pin and spring: Stainless steel, passivated

Blanking panel ejector:

Lever: Glass-filled nylon, white

Base: Polycarbonate, white

Pin: Stainless steel, passivated

Mini module ejector:

Lever and catch:

Polycarbonate, gray

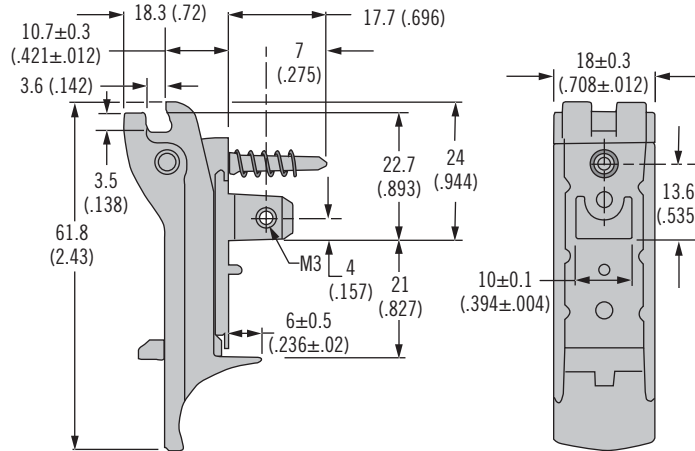
Base: Die-cast zinc, natural

Pin: Stainless steel, passivated

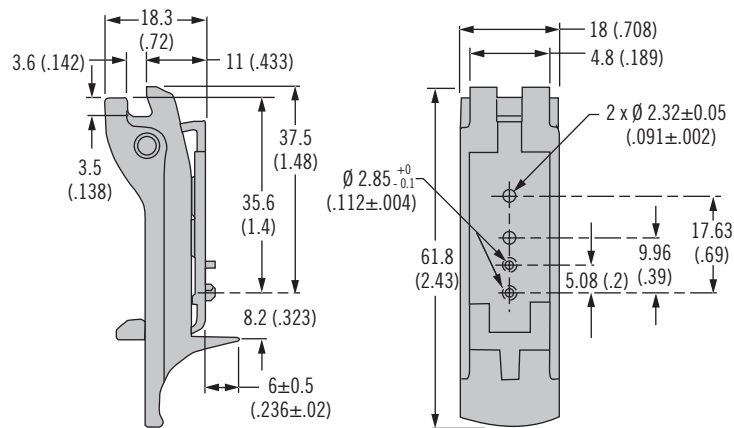
Performance Details

Flammability rating: UL94-V0 rated plastic components

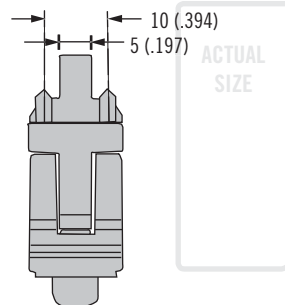
Module Ejector



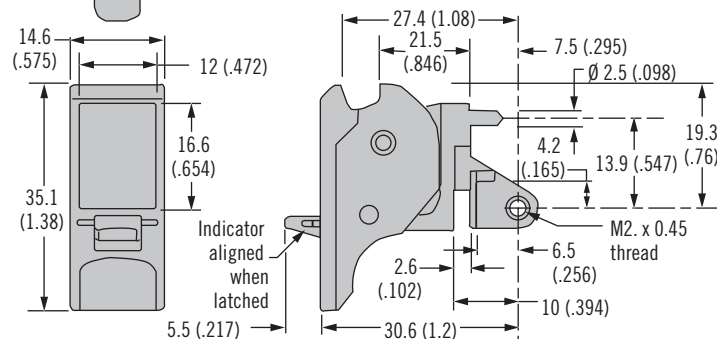
Blanking Panel Ejector



Mini Module Ejector



Ejector	Part Number
Module ejector	CN-10-3-A
Blanking panel ejector	CN-10-9-A
Mini module ejector	CN-11



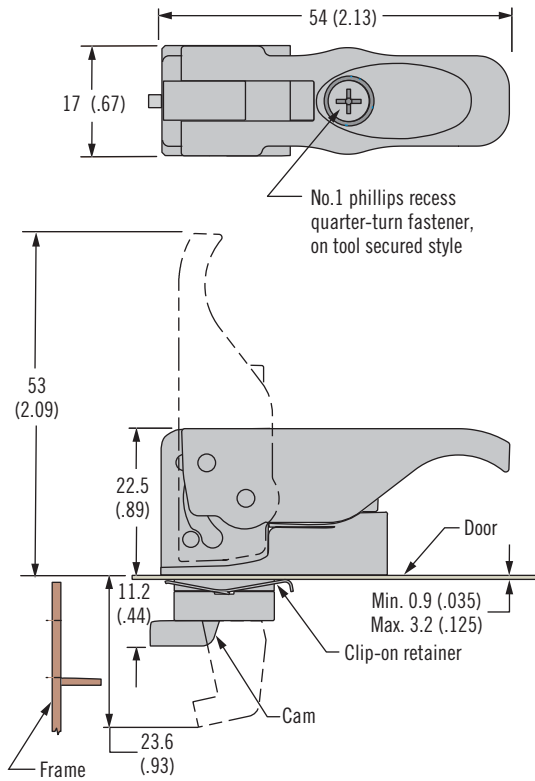
Dimensions in millimeters (inch) unless otherwise stated

P7 Inject / Eject Mechanism

Ejectors

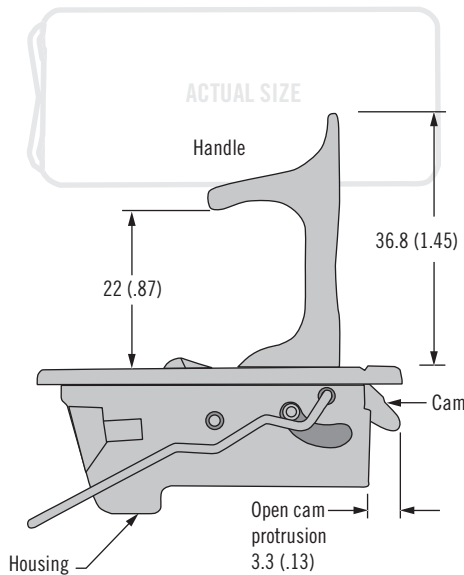
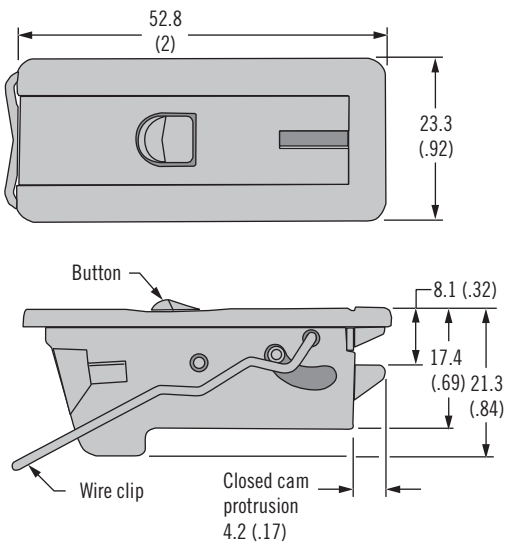


Handle



Part Number			
Panel Thickness	Non Tool Secured	Tool Secured	Secondary Catch
0.9 - 1.6 (.035 - .063)	P7-1-301-15	P7-1-302-15	P7-1-303-15
1.7 - 2.4 (.067 - .094)	P7-1-301-25	P7-1-302-25	P7-1-303-25
2.5 - 3.2 (.098 - .125)	P7-1-301-35	P7-1-302-35	P7-1-303-35

Flush



Part Number
P7-99-103-53

Material and Finish

Handle

Housing, lever: Polyester, black

Cam: Low carbon steel, zinc plated, chromate plus sealer

Pins: 302 Stainless steel, passivated

Clip-on retainer: 301 Stainless steel, passivated

Flush:

Housing, button and handle: Die-cast zinc, black powder coated

Cam: Steel, black zinc phosphate

Wire clip, torsion springs and pins:

Stainless steel, natural

HANDLES AND PULLS

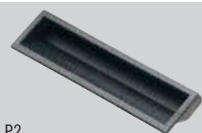
Pulls

Pages 512-517



Flush mount pull designs provide ergonomic grip without protruding hardware disrupting door, drawer, or panel surfaces.

- ➔ Concealed styles rotate outward to provide a fully accessible handgrip.
- ➔ All styles install easily in a single mounting hole



P2



P1



67



67



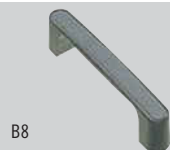
MP

SOUTHCO® handles install quickly and easily to provide comfortable ergonomic grip points for opening enclosure doors or drawers, and for removing mounted panels.

- Available in a variety of styles and strength options
- A variety of standard lengths to provide the appropriate grip required for the size of the door, drawer, or rack

Handles

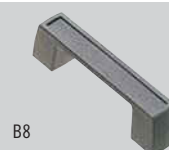
Page 518-522



B8



P9



B8



B4



P8



P2 Flush Pull

Low profile · Lift or pull · Single hole mount

- Snap-in installation
- 2 sizes

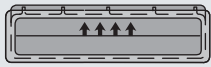
Material and Finish

ABS plastic, black

Performance Details

Maximum static load:

Lifting / pulling: 1300 N (300 lbf)



Pushing / sliding: 450 N (100 lbf)



Flammability rating:

UL94-HB or UL94-V0

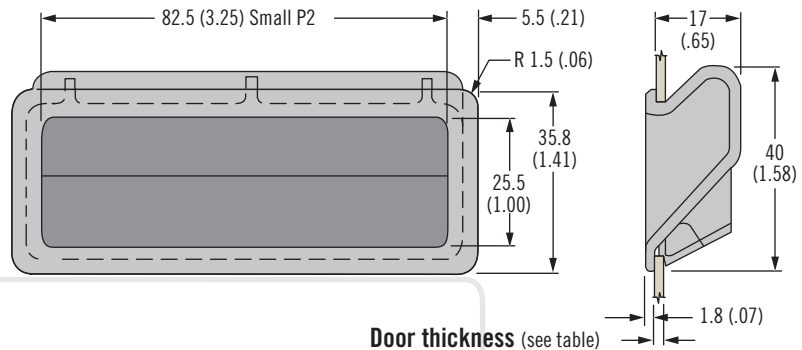
Operating temperature range:

-50°C (-60°F) to 60°C (140°F)

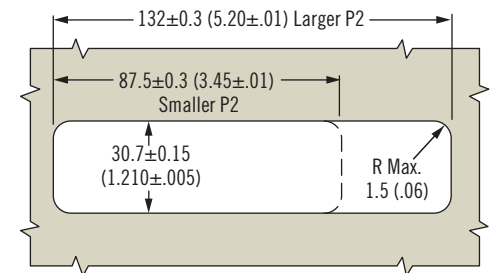
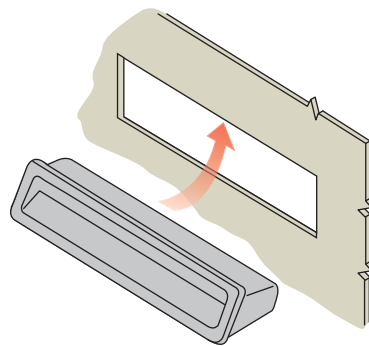
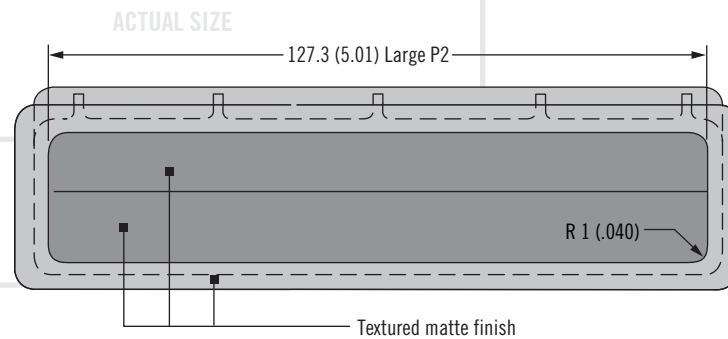
Notes

Performance details are based on installation in a 1.2 (.048) thick steel door. Maximum loads are limited by door strength.

Small



Large



Part Number Selection

Door Thickness Range		Part Number			
		Small		Large	
Min.	Max.	UL94-HB	UL94-V0	UL94-HB	UL94-V0
1.0 (.040)	1.4 (.055)	P2-41	P2-41-1	P2-51	P2-51-1
1.4 (.055)	1.8 (.070)	P2-42	P2-42-1	P2-52	P2-52-1
1.8 (.070)	2.1 (.085)	P2-43	P2-43-1	P2-53	P2-53-1
2.1 (.085)	2.5 (.100)	P2-44	P2-44-1	P2-54	P2-54-1

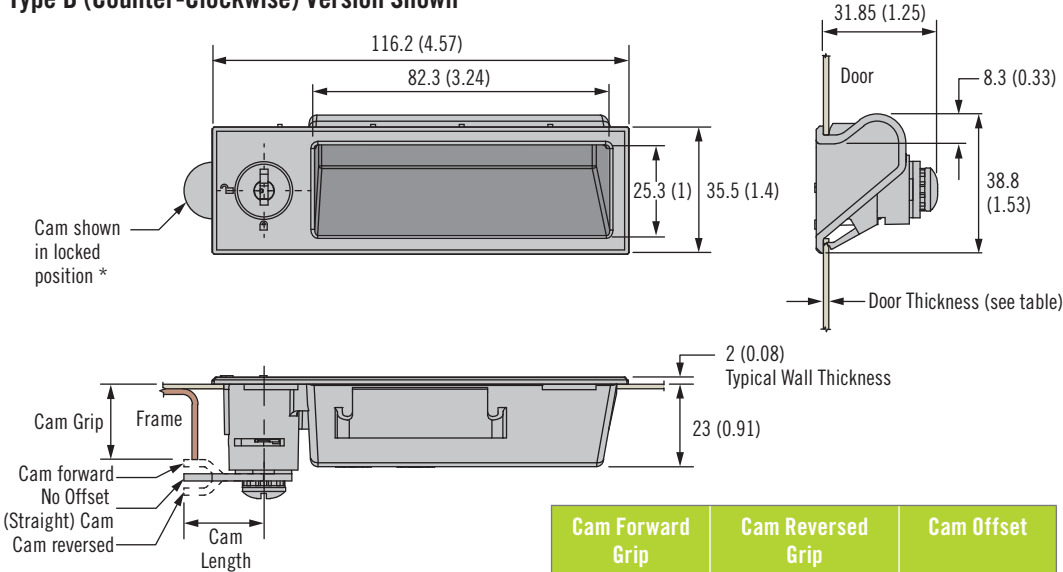
Dimensions in millimeters (inch) unless otherwise stated

P2 Flush Pull - Lockable

Low profile · Lift or pull · Single hole mount

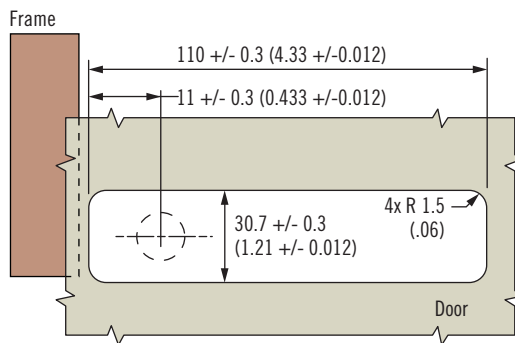
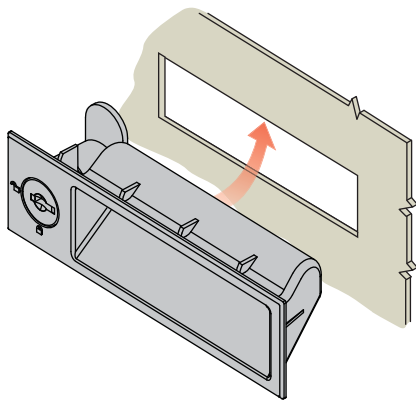


Type B (Counter-Clockwise) Version Shown



* Cam Ordered Separately
For Cam Part Numbers and options see our Handbook page 167

Cam Forward Grip	Cam Reversed Grip	Cam Offset
25 (0.98)	25 (0.98)	No Offset
21.8 (0.86)	28.2 (1.11)	3.2 (1.25)
18.6 (0.73)	31.4 (1.24)	6.4 (.250)
15.5 (0.61)	34.5 (1.36)	9.5 (.375)



- Snap-in installation
- Lockable
- Lock core included or sold separately
- Cam sold separately

Material and Finish

Pull: ABS plastic, black

Lock parts:

Zinc alloy, powder coated. Brass.

Steel, zinc plated. Buna-N

Flammability Rating

UL94-HB or UL94-V0 (See table)

Notes

For pulls without lock core, lock core sold separately, see page 158.

Cam sold separately. See page 167.

Part Number Selection

D Door Thickness Range

- 1.0 (.040) - 1.4 (.055)
- 1.4 (.055) - 1.8 (.070)
- 1.8 (.070) - 2.1 (.085)
- 2.1 (.085) - 2.5 (.100)

M Material

- 1 UL94-V0 PC/ABS
- 2 UL94-HB ABS

R Rotation

- 1 Type A (Clockwise to lock)
- 2 Type B (Counter-Clockwise to lock)

L Lock Style

- 2 With lock core, keyed alike CH751

P2 - 4 D M - R L



P1 Flush Pull

Low profile · Lift or pull · Single hole mount

- Easy installation
- Deep pocket

Material and Finish

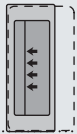
Pull and cup: ABS plastic, black
Screws: Steel, zinc plated

Performance Details

Maximum static load:
Lifting / pulling: 1300 N (300 lbf)



Pushing / sliding: 450 N (100 lbf)



Flammability rating:
UL94-HB or UL94-V0 (See table)

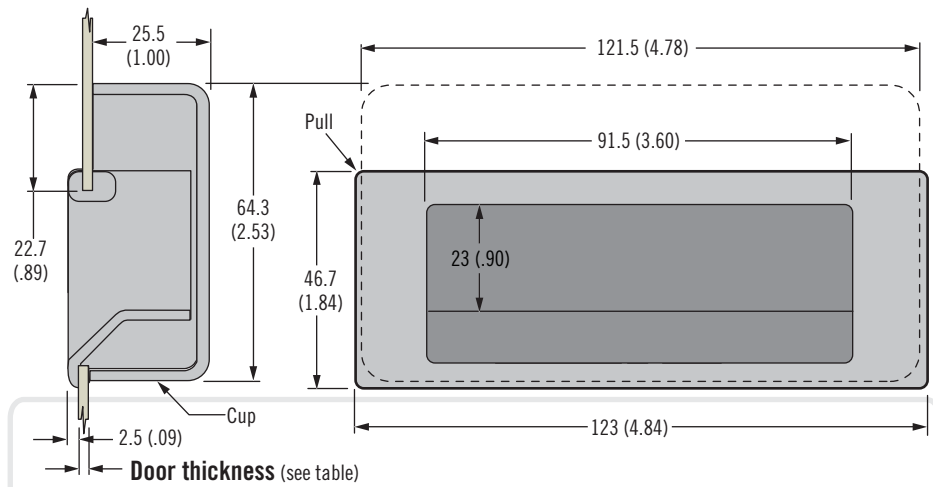
Operating temperature range:
-50°C (-60°F) to 60°C (140°F)

Installation Notes

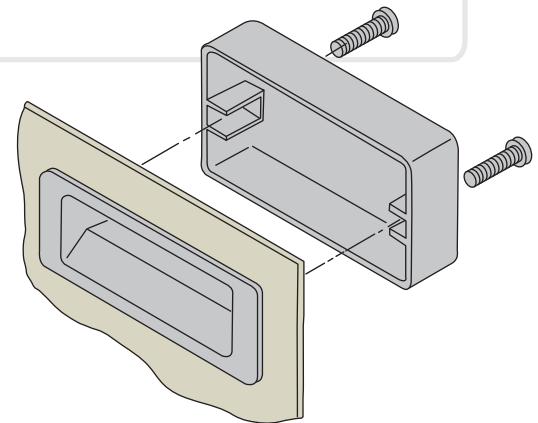
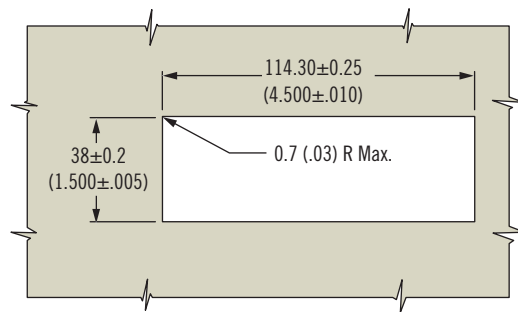
Mounting screws supplied.
Door thickness less than the minimum for each range allows some movement of the pull.
Maximum torque for mounting screws is 0.5 N·m (5 in·lbf)

Part Number

See table



Two No. 6 BT thread forming screws (supplied)



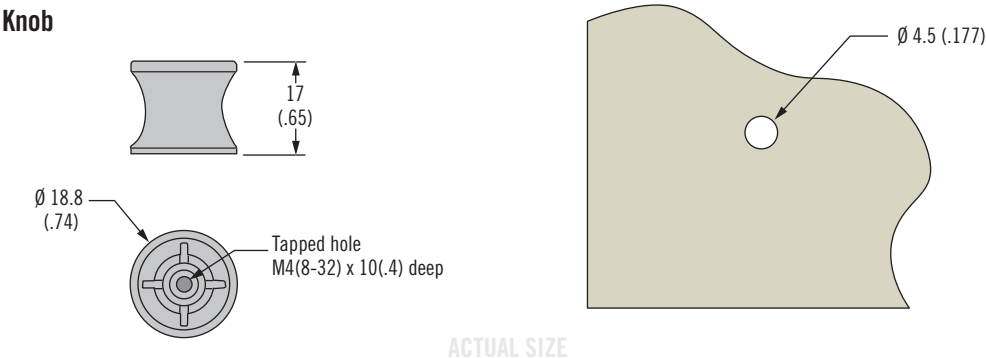
Door Thickness Range		Part Number	
Min.	Max.	UL94-HB	UL94-V0
1.0 (.040)	1.8 (.070)	P1-30-101-11	P1-31
1.8 (.070)	3.3 (.130)	P1-30-103-11	P1-33
3.3 (.130)	4.8 (.190)	P1-30-105-11	P1-35
4.8 (.190)	6.3 (.250)	P1-30-107-11	P1-37

MP Point Pull

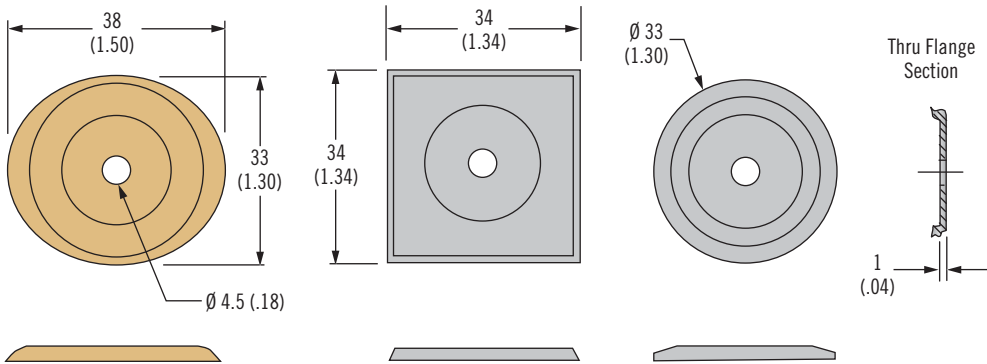
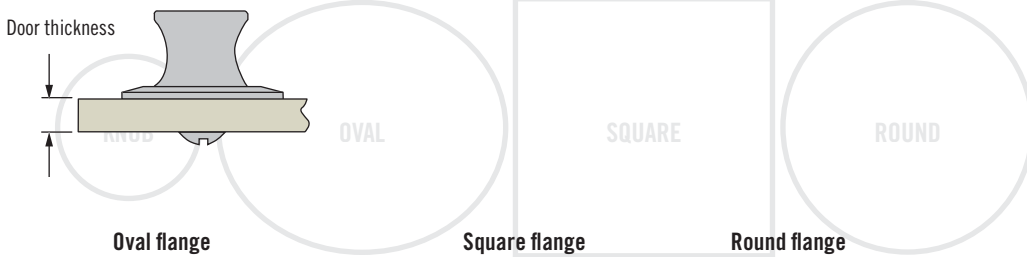
Surface mount



Knob



ACTUAL SIZE



- Stylish knob design
- Finish and flange shape flexibility

Material and Finish

Zinc alloy, plated or powder coated

Installation Notes

Screws not supplied.

Calculate screw length using the following formula:

Door thickness + 6 (.25)

Maximum tightening torque of mounting screws: 1.7 N•m (15 in•lbf)

Style matches MP push-to-close latch on page 228

S Style

- 00 Imperial 8-32 mounting hole
- 40 Metric M4 mounting hole

F Finish

- 10 Chrome, polished
- 20 Chrome, satin
- 30 Nickel, brushed
- 40 Diamond brass
- 50 Powder coated, black

Knob Part Number

MP - 06 - 1 **S** - **F**

Part Number Selection

Choose knob separately

S Style

- 10 Oval flange
- 20 Square flange
- 30 Round flange

F Finish

- 10 Chrome, polished
- 20 Chrome, satin
- 30 Nickel, brushed
- 40 Diamond brass
- 50 Powder coated, black

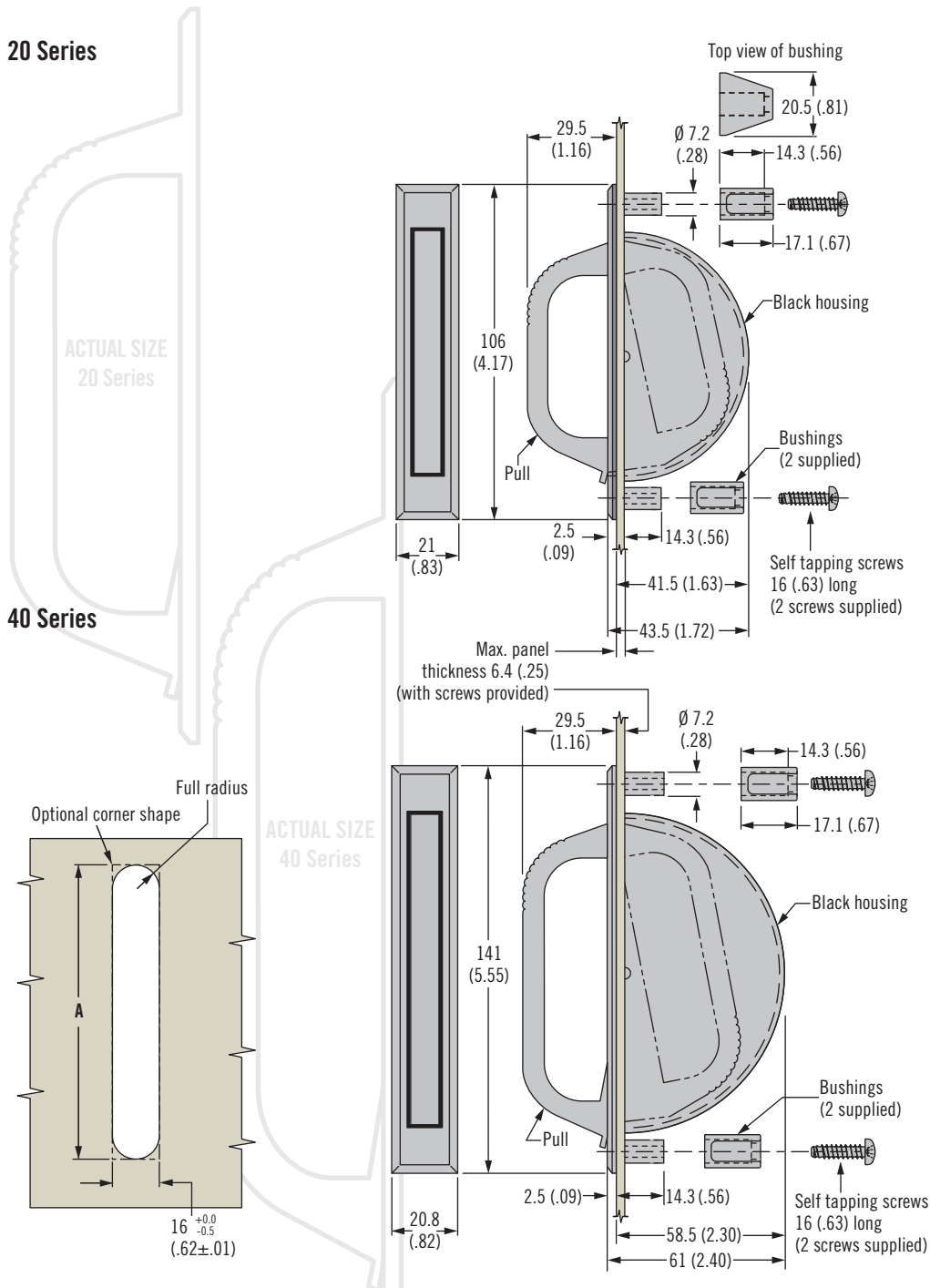
Flange Part Number

MP - 06 - 1 **S** - **F**

Part Number Selection

20 Series

40 Series



Series	Part Number		Installation
	Silver Handle	Black Handle	A
10-Plastic	~	67-10	76 ^{+1.0} _{-.00} (3.00 ⁺⁰⁴ _{-.00})
10-Metal	67-14	67-12	77.5 ^{+1.0} _{-.00} (3.05 ⁺⁰⁴ _{-.00})
20	67-27	67-25	102 ^{+1.0} _{-.00} (4.00 ⁺⁰⁴ _{-.00})
40	67-47	67-45	136 ^{+1.0} _{-.00} (5.35 ⁺⁰⁴ _{-.00})

Part Number

See table



B8 Grab Handle

Large · Surface mount

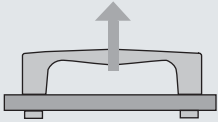
- Front or rear concealed installation
- Ergonomic, comfortable grip
- High strength, light-weight solution

Material and Finish

Handle: ABS plastic, black
Screws: Steel, zinc plated

Performance Details

Maximum static load: 775 N
(175 lbf)



Flammability rating: UL94-HB

Operating temperature range:
-40°C (-40°F) to 60°C (140°F)

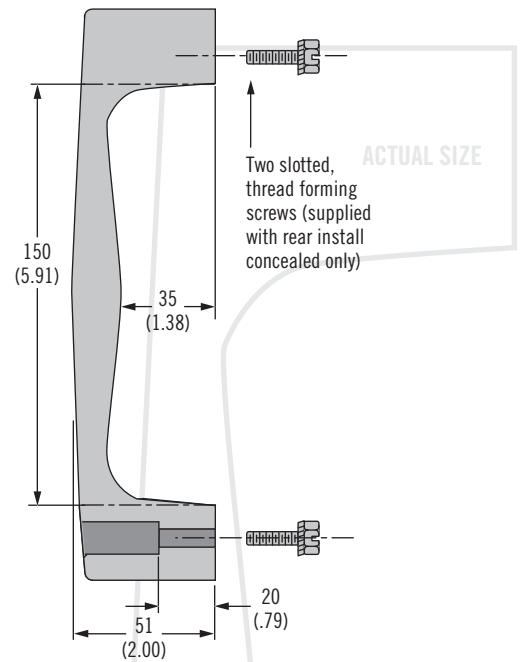
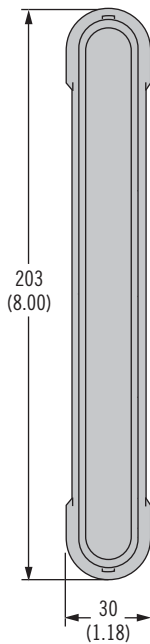
Installation Notes

Maximum tightening torque of screws:

Rear install concealed only
4.0 N·m (35 in·lbf)

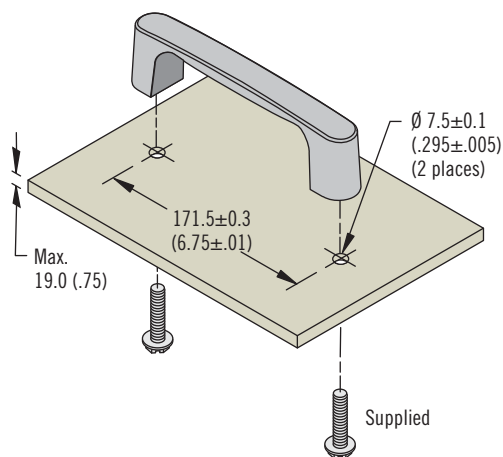
Notes

Bulk packaged

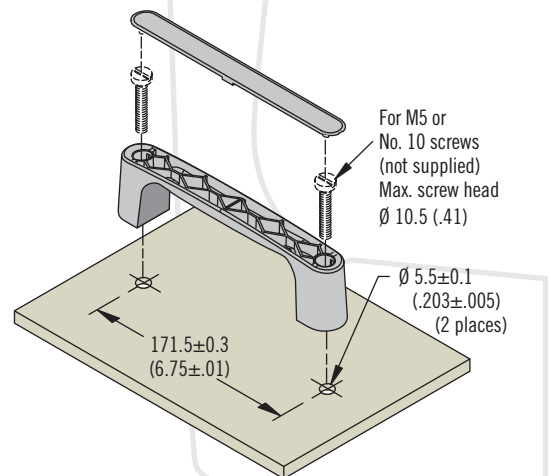


Part Number	
Rear Install Concealed	Front Install Concealed
B8-66-3	B8-63-3

Rear Install Concealed

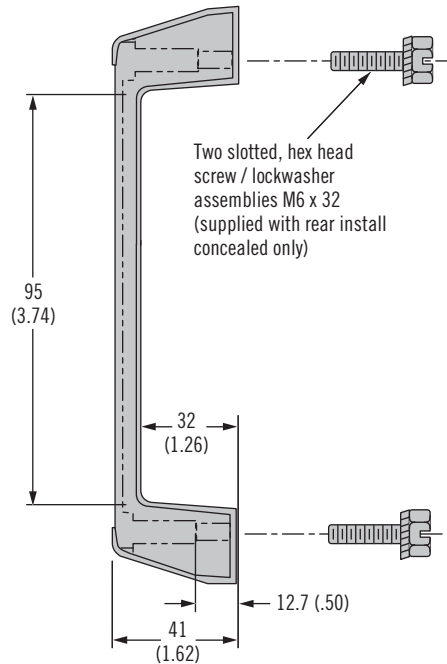
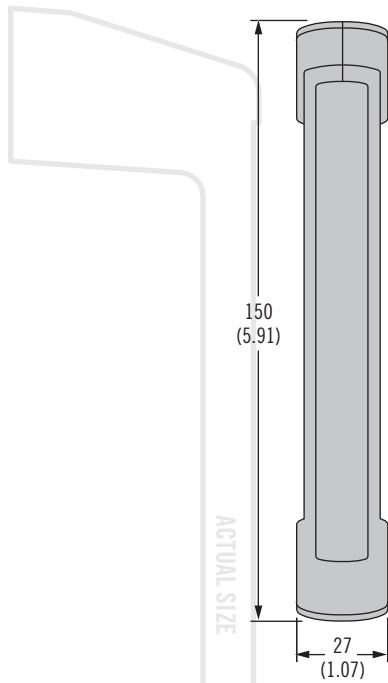


Front Install Concealed



B8 Grab Handle

Small · Surface mount



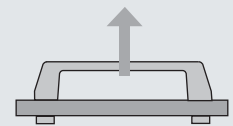
- Front or rear concealed installation
- Light-weight

Material and Finish

Handle: ABS plastic, black
Screws: Steel, zinc plated

Performance Details

Maximum static load: 550 N (125 lbf)



Flammability rating: UL94-HB

Operating temperature range:
-50°C (-60°F) to 60°C (140°F)

Installation Notes

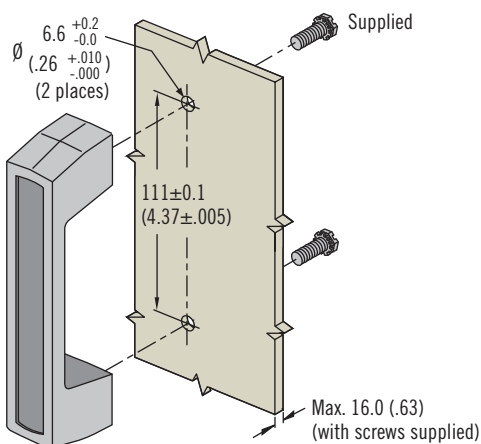
Rear install concealed:
M6 x 32 screw assembly supplied.
Maximum tightening torque of screws: 4.0 N·m (35 in·lbf).
For door thickness greater than 16 (.63) calculate screw length using the following formula:
Door thickness + 16 (.63)

Notes

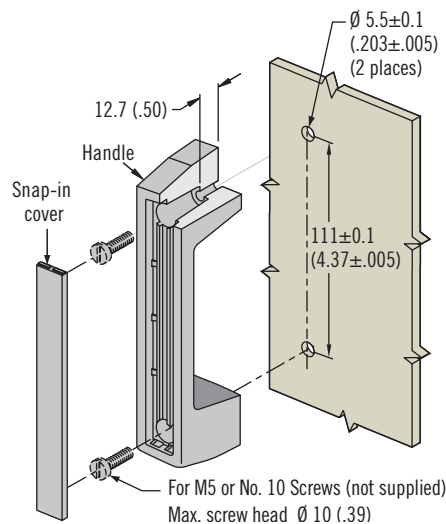
Bulk packaged

Part Number	
Rear Install Concealed	Front Install Concealed
B8-45-3	B8-43-3

Rear Install Concealed



Front Install Concealed





P8 Grab Handle

Surface mount

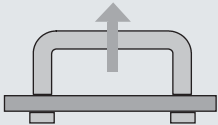
- Two styles and color options available
- Concealed installation
- Four standard lengths

Material and Finish

Aluminum, anodized, clear or black

Performance Details

Maximum working load: 1500 N (335 lbf)



Installation Notes

Screws not supplied.

Calculate screw length using the following formula:

Door thickness + 5 (.20)

Maximum tightening torque of mounting screws: 1.7 N·m (15 in·lbf)

Part Number Selection

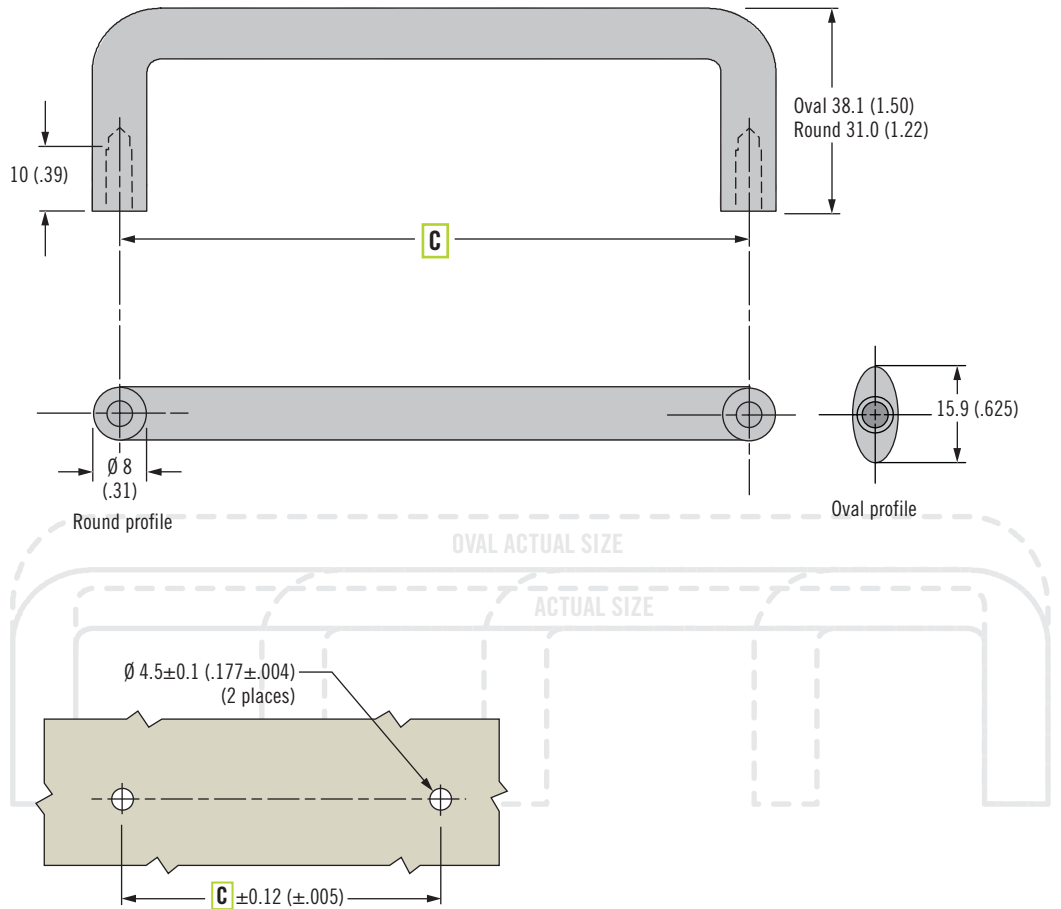
For visual identification:

M4 products have a counterbored hole.

8-32 products have a countersunk hole

Part Number

Oval profile handles are currently offered in a 10-32 thread only.



Round Profile

P8 - C - 31 - T - 1 F - P

- C** Centers
- 030 30 (1.18) Hole centers
 - 064 64 (2.52) Hole centers
 - 096 96 (3.78) Hole centers
 - 128 128 (5.04) Hole centers

- T** Tapped mounting hole
- 08 Imperial 8-32
 - M4 Metric M4 x 0.7

- P** Packing option
- Omit for individual packaging (1 per bag)
 - 3 Layer packaging contact Southco

- F** Finish
- 1 Clear anodized
 - 5 Black anodized

Oval Profile

Finish	Part Number		C
	Bulk Packaged	Individually Packaged (1 per bag)	
Clear anodized	P8-128-38-10V-11-3	P8-128-38-10V-11	128 (5.04)
Black anodized	P8-128-38-10V-15-3	P8-128-38-10V-15	

Dimensions in millimeters (inch) unless otherwise stated

P9 Grab Handle

Folding · Surface mount



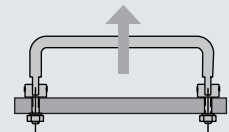
- Low profile folding style
- Concealed installation
- Anti-rattle friction feature

Material and Finish

Handle and base:
Aluminum, anodized, clear or black
Roll pin, mounting nuts and lockwashers:
Stainless steel passivated
Bushing: Nylon

Performance Details

Maximum static load:
Internal threaded version
600 N (135 lbf)
External thread version
400 N (90 lbf)

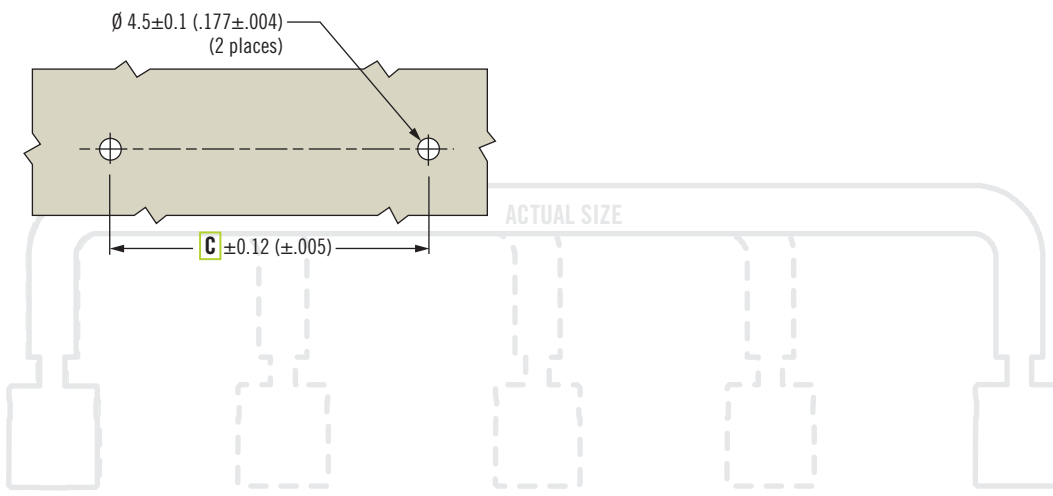
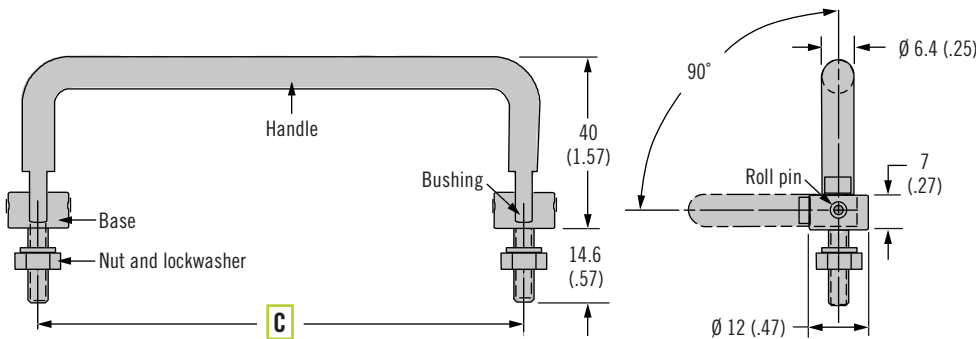
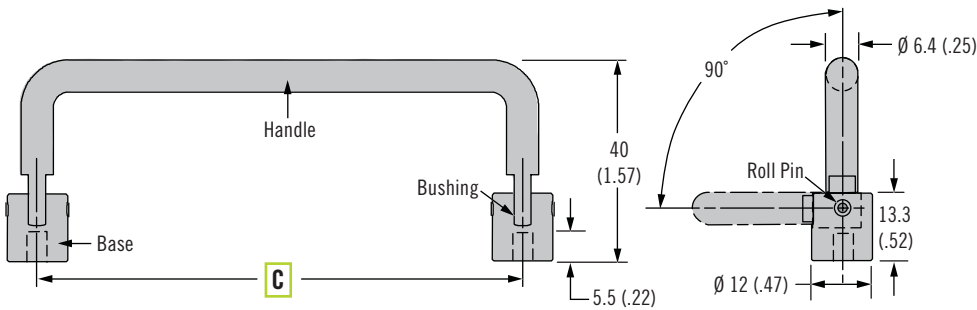


Installation Notes

Internal thread:
Screws not supplied.
Calculate screw length using the following formula:
Door thickness + 5 (.20)
Maximum tightening torque of mounting screws: 1.7 N·m (15 in·lbf)
External thread:
Maximum door thickness 8.4 (.33)
Mounting nuts supplied.
Maximum tightening torque of nuts: 11.5 N·m (10 in·lbf)

Part Number Selection

For visual identification:
M4 products have a counterbored hole.
8-32 products have a countersunk hole



P9 - C - 40 - T B - 1 F - P

C Centers

- 040 40 (1.57) Hole centers
- 064 64 (2.52) Hole centers
- 096 96 (3.78) Hole centers
- 128 128 (5.04) Hole centers

T Thread

- 08 Imperial 8-32
- M4 Metric M4 x 0.7

B Base type

- N Internal thread
- X External thread

P Packing option

- Omit for individual packaging (1 per bag)
- 3 Layer packaging contact Southco

F Finish

- 1 Clear anodized
- 5 Black anodized



B4 Handle

Surface mount

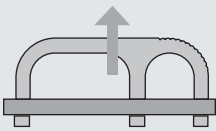
- Easy concealed installation
- Light-weight

Material and Finish

Aluminum, anodized, clear or black

Performance Details

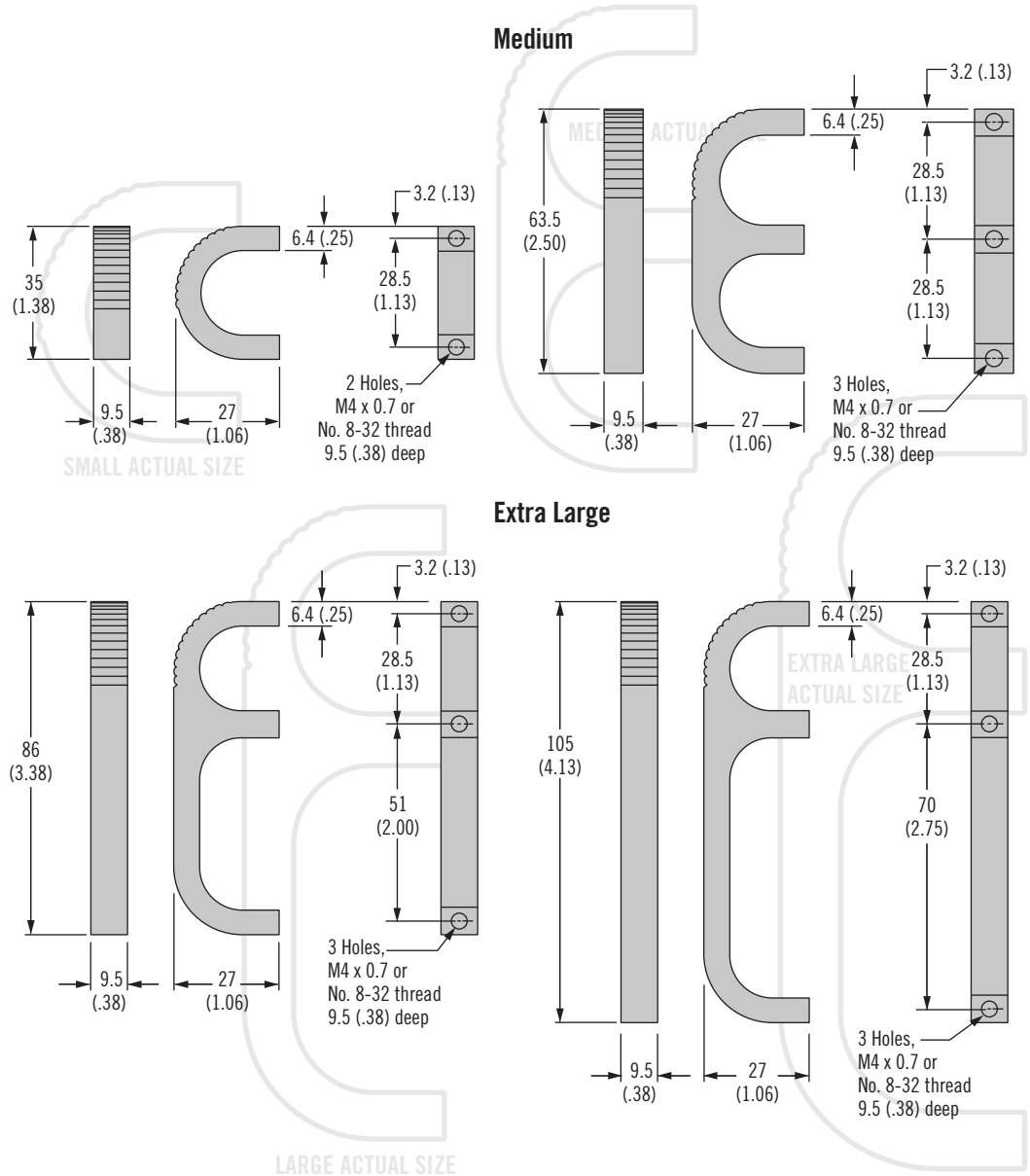
Maximum static load:
5560 N (1250 lbf)



Installation Notes

Screws not supplied.
Calculate screw length using the following formula:
Door thickness + 9.5 (.38)
Center screw may be eliminated if desired (Medium, Large, and Extra Large sizes only)
Maximum recommended tightening torque of mounting screws:
2.3 N·m (20 in·lbf) (not supplied)

Part Number Selection



B4 - T - S 03 - 1 F - P

- T** Tapped mounting hole
 10 Imperial 8-32
 50 Metric M4 x 0.7
- S** Size
 1 Small
 2 Medium
 3 Large
 4 Extra large

- P** Packing option
 Omit for individual packaging
 3 Layer packaged contact Southco

- F** Finish
 1 Clear anodized
 5 Black anodized

Dimensions in millimeters (inch) unless otherwise stated

Entry Door Hardware

Southco offers a broad range of door hardware to suit a wide variety of access door configurations. Aesthetically pleasing, innovative designs allow for an integrated, yet distinctive look and feel for cabin and entry doors. Constructed from marine grade materials, these products offer long-lasting durability and performance.



MA



MA



MM



MG



MF



MR





MA McCoy Swing Door Latch Privacy Knob

- Marine-grade materials to prevent corrosion
- Double springs keep handle from sagging
- Emergency lock override
- Privacy lock option

Material and Finish

Lock engine: Brass
 Handles, escutcheons, accents and privacy knob: Brass
 See Finish Table

Appearance:

Combine handles, escutcheon plates, and accent plates to customize the latch for your application. For unique styling combine the McCoy with a wide range of stylish Olivari handles. See page 527

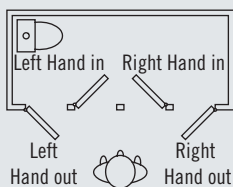
Handle Types:



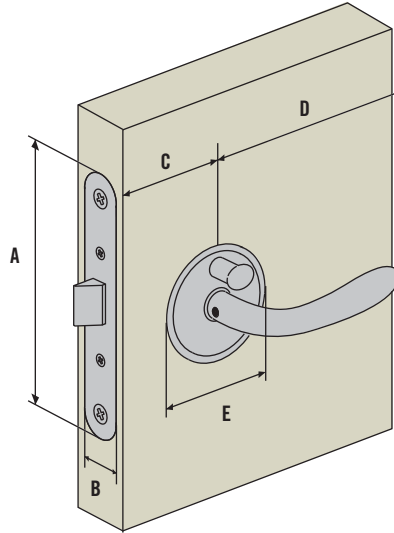
Part Number Selection

(For Strikers please see page 531)

D Directional Door Swing:

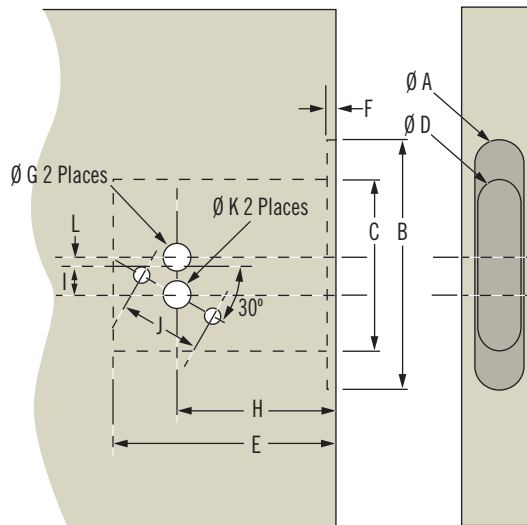


Door Latch



	Imperial		Metric
	Nominal	Decimal	
A	3 29/32	3.91	99
B	41/64	.64	16
C	1 23/32	1.71	43.5
D	3 15/16	3.94	100
E	2 3/16	2.17	55

Panel Preparation



	Imperial		Metric
	Nominal	Decimal	
A	5/8	.64	8.2
B	3 29/32	3.91	99
C	2 31/64	2.48	63
D	1/2	.50	13
E	2 15/32	2.46	62.5
F	5/64	.08	2
G	5/8	.63	16
H	1 25/32	1.77	45
I	1/2	.50	12.5
J	1 3/32	1.09	27.7
K	1/4	.25	6.5

MA - BB - D L T - HH - FF

BB Latch Mechanism
 01 Standard Springbolt
 08 Double Springbolt

FF Finish
 10 Chrome
 12 Chrome + Satin Accent
 14 Chrome + Brass Accent
 20 Satin
 21 Satin + Chrome Accent
 40 Diamond Brass

HH Handle
 01 Nova
 02 Portofino

D Directional
 2 Right Out
 3 Right In
 4 Left Out
 5 Left In
 6 Right Out - Left In
 7 Left Out - Right In

T Door Thickness
 0 22-30mm (7/8" - 1 3/16")
 1 28-37mm (1 1/8" - 1 1/2")

L Locking Option
 0 Non Locking **D** = 6 or 7
 2 Privacy **D** = 2 or 5

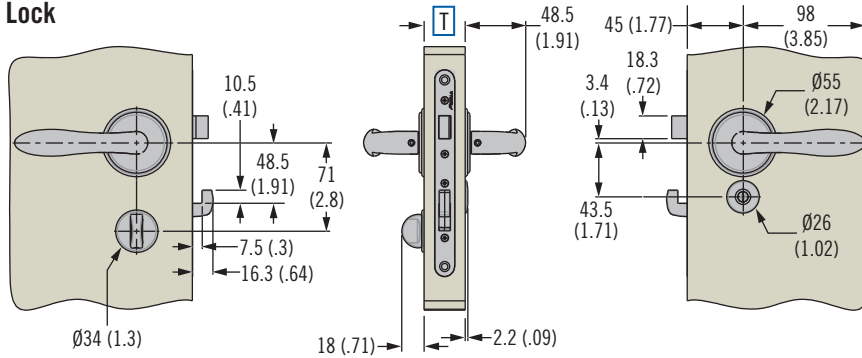
Dimensions in millimeters (inch) unless otherwise stated

MA McCoy Star Swing Door Latch

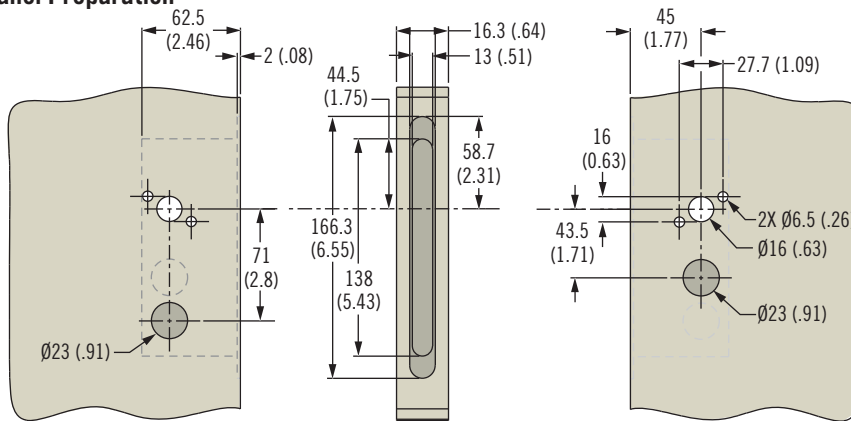
Key Locking Round Trim



Lock



Panel Preparation



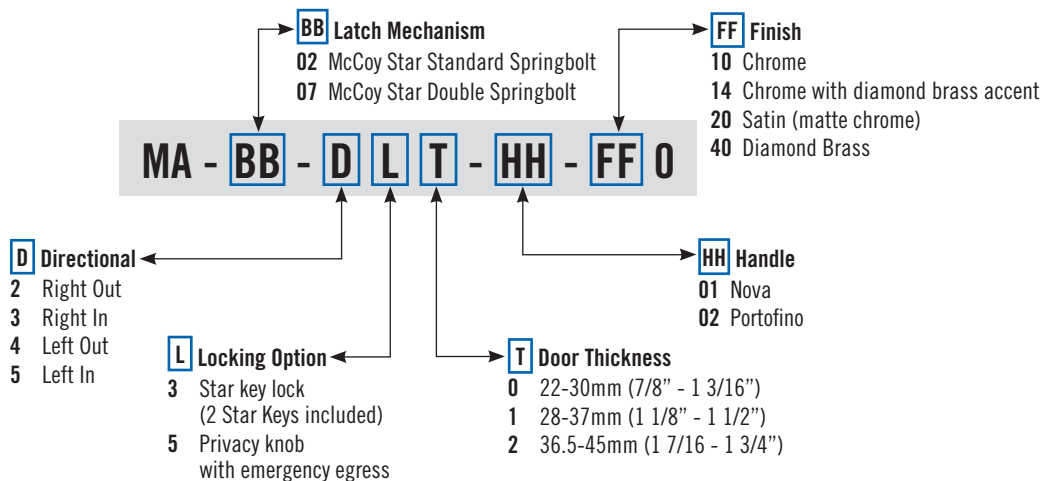
- Marine-grade materials to prevent corrosion
- Provide high-end security with the Star Key Lock system's three-axis six-pin tumbler design
- Prevent door lift-off with the Star Key Lock hooked locking mechanism that features an active locking deadbolt facing up
- Offer the option of an interior privacy knob with exterior override for non-locking applications

Material and Finish

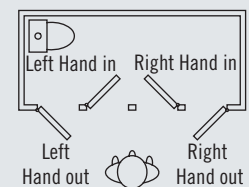
Lock engine: Brass
 Handles, escutcheons, accents and privacy knob: Brass
 See Finish Table

Part Number Selection

(For Strikers please see page 525)



D Directional Door Swing:



MA McCoy Swing Door Latch

Olivari handles



Olivari Handles

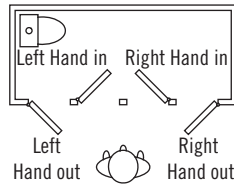
Let Southco Marine provide the perfect accent to your interior design. Award winning Olivari handles can be teamed with the world class McCoy lockset to provide the look and feel that set your design apart.

Part Number Selection

Please refer to McCoy Swing Door Latch for Base part number.

MA - BB - D L T - HHH - FF

HHH Handle
 Refer to Olivari website and literature for 3-digit handle code for example
 Aster = 174
 Sector = 186



167 Emilia



174 Aster



134 Torino



186 Sector



108 Uovo

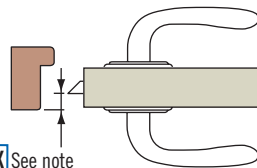


MA McCoy Swing Door Latch

Striker



Striker



XX See note

Note:
 Distance **XX** is measured from the edge of the frame to the spring bolt

Material and Finish

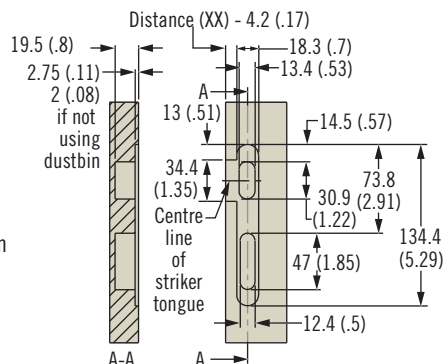
Striker: Brass, chrome plated

Part Number Selection

MC - 90 - 4 XX - Y - Z - 10

- XX** Position
 - 05 5mm (3/16")
 - 07 7mm (1/4")
 - 09 9mm (3/8")
 - 13 13mm (1/2")
 - 16 16mm (5/8")
 - 21 21mm (7/8")
- Y** Swing
 - 1 Right In/Left Out
 - 2 Left In/Right Out
- Z** Dustbin Option
 - 0 No Dustbin
 - 1 With Dustbin

Panel Preparation



Dimensions in millimeters (inch) unless otherwise stated



ME Offshore Swing Door Latch

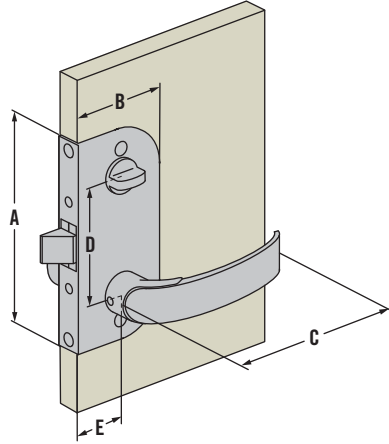
Flush, key locking and privacy

- Offshore is available for both mortise- and flush-mount installations.
- All marine-grade materials for corrosion resistance
- Offshore flush-mount is designed to fit thinner doors (from 12.7mm / 1/2")
- Interior Privacy Lock with exterior override

Material and Finish

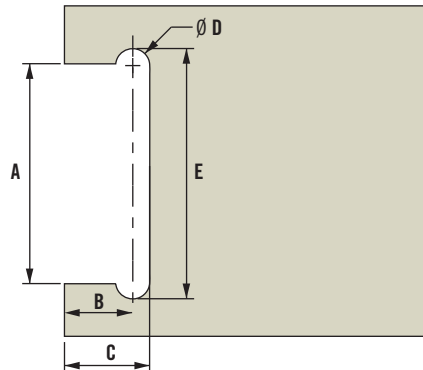
Lock engine: Aluminum
 Handles, escutcheons finish: chrome, aluminum and black
 Privacy: Acetal

Flush Privacy Locking



	Imperial		Metric
	Nominal	Decimal	
A	4 37/64	4.59	116.5
B	2 5/32	2.17	55
C	3 15/16	3.94	100
D	2 7/16	2.44	62
E	1 3/16	1.18	30

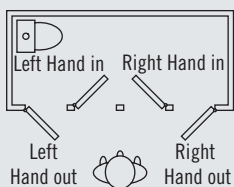
Panel Preparation



	Imperial		Metric
	Nominal	Decimal	
A	3 21/32	3.65	93
B	1 3/32	1.09	28
C	1 21/32	1.65	42
D	1 3/32	1.09	28
E	4 1/32	4.00	102

Part Number Selection

D Directional Door Swing:



- D** Directional
- 2 Right Out
 - 3 Right In
 - 4 Left Out
 - 5 Left In

- L** Locking Option
- 0 Privacy
 - 1 Key Locking

- FF** Finish
- 10 Chrome
 - 50 Black
 - 60 Aluminum

- T** Door Thickness
- 0 12.5 - 15mm (1/2" - 5/8")
 - 1 14.5 - 17mm (9/16" - 11/16")
 - 2 17 - 19mm (11/16" - 3/4")
 - 3 19 - 21mm (3/4" - 7/8")

For strikers see page 531



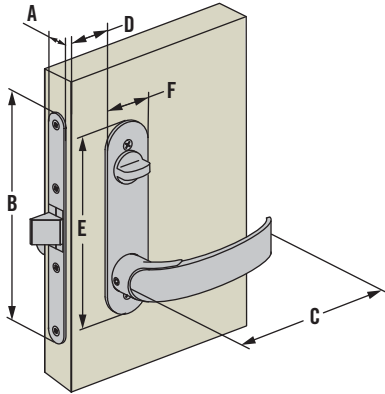
Dimensions in millimeters (inch) unless otherwise stated

ME Offshore Swing Door Latch

Mortise locking



Mortise Privacy Locking



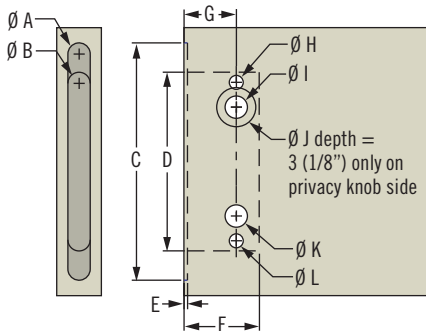
	Imperial		Metric
	Nominal	Decimal	
A	31/64	.492	12.5
B	5 5/16	5.31	135
C	3 15/16	3.94	100
D	39/64	.61	15.5
E	4 37/64	4.59	116
F	1 3/16	1.18	30

- All marine-grade materials for corrosion resistance
- Mortise mount installation
- Interior privacy lock with exterior override

Material and Finish

Lock engine: Aluminum
 Handles, escutcheons finish: chrome, aluminum and black
 Privacy: Acetal

Panel Preparation



	Imperial		Metric
	Nominal	Decimal	
A	1/2	.50	12.5
B	1/2	.50	12.5
C	5 5/16	5.31	135
D	4	4	102
E	1/16	.06	1.5
F	1 11/16	1.69	43
G	1 11/64	1.17	30
H	5/16	.31	8
I	1/2	.50	12
J	7/8	.88	22
K	1/2	.50	12
L	5/16	.31	8

Part Number Selection

ME - 02 - D L T - FF

D Directional
 2 Right Out
 3 Right In
 4 Left Out
 5 Left In

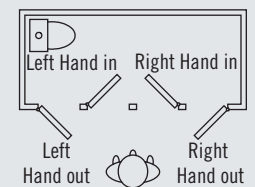
L Locking Option
 0 Privacy
 1 Key Locking

T Door Thickness
 4 18-22mm (11/16" - 7/8")
 5 22-27mm (7/8" - 1 1/16")
 6 27-32mm (1 1/6" - 1 1/4")
 7 32-37mm (1 1/4" - 1 1/2")

FF Finish
 10 Chrome
 50 Black
 60 Aluminum

For strikers see page 531

D Directional Door Swing:





ME Offshore Swing Door Latch

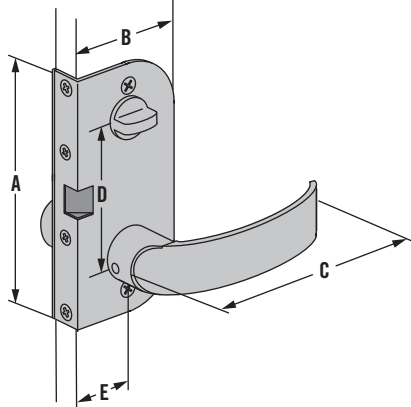
Curved locking

- All marine-grade materials for corrosion resistance
- Flush mount installations
- Interior privacy lock with exterior override

Material and Finish

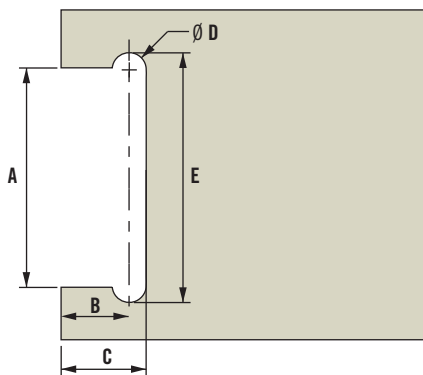
Lock engine: Aluminum
 Handles, escutcheons finish: chrome, aluminum and black
 Privacy: Acetal

Flush Curved Offshore



	Imperial		Metric
	Nominal	Decimal	
A	4 37/64	4.589	116.5
B	2 5/32	2.17	55
C	3 15/16	3.94	100
D	2 7/16	2.44	62
E	1 3/16	1.18	30

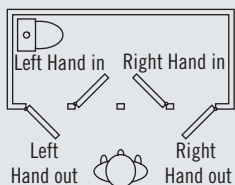
Panel Preparation



	Imperial		Metric
	Nominal	Decimal	
A	3 21/32	3.65	93
B	1 3/32	1.09	28
C	1 21/32	1.65	42
D	1 3/32	1.09	28
E	4 1/32	4.00	102

Part Number Selection

D Directional Door Swing:



ME - 03 - D L T - FF

D Directional

6 Right Out/Left In
 7 Left Out/Right In

L Locking Option

0 Privacy
 1 Key Locking

FF Finish

10 Chrome
 60 Aluminum

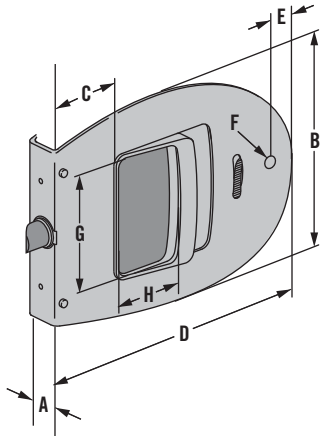
T Door Thickness

For thinner doors please add below spacer

1 12.7mm (1/2")
 2 19mm (3/4")
 3 25.4mm (1")

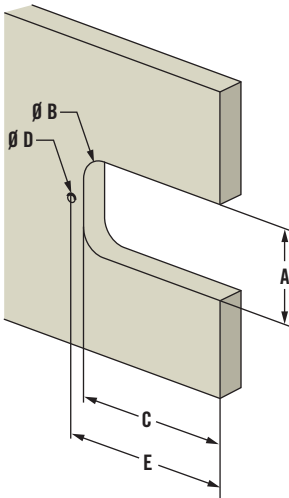
For strikers see page 531 

MR Omni Cabin & Cockpit Door Lock

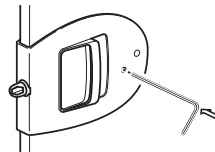


	Imperial		Metric
	Nominal	Decimal	
A	Panel Thickness		
B	6 7/16	6.42	163
C	1 9/64	1.14	29
D	4 9/16	4.57	116
E	3/8	.37	9.5
F	15/64	.24	6
G	1 13/16	1.81	46
H	1 1/32	1.02	26

Panel Preparation



How to override a locked Omni door lock from the outside



		Imperial		Metric
		Nominal	Decimal	
A	min.	2 3/16	2.19	55.6
	max.	2 1/4	2.27	57.9
B	min.	1/4	.25	6.4
	max.	9/16	.56	14
C	min.	3 13/16	3.813	96.8
	max.	3 7/8	3.875	98.4
D		1/4	.25	6.4
E		4 3/16	4.19	106.3

Omni Part Numbers						
Door thickness (A)	Spring bolt		Flat		2 step	
	Privacy	No privacy	Privacy	No privacy	Privacy	No privacy
12.7 mm (1/2)	MR-01-120-24	MR-01-100-24	MR-02-120-24	MR-02-100-24	MR-03-120-24	MR-03-100-24
16 mm (5/8)	MR-01-121-24	MR-01-101-24	MR-02-121-24	MR-02-101-24	MR-03-121-24	MR-03-101-24
19 mm (3/4)	MR-01-122-24	MR-01-102-24	MR-02-122-24	MR-02-102-24	MR-03-122-24	MR-03-102-24
Features						
Privacy	X		X	-	X	-
Adjust Spring Bolt	X	X	-	-	X	X
Bumpers (both sides)	X	X	X	X	X	X
Left and Right swing	X	X	X	X	X	X

Options

Striker Part Number	
Omni Flat	MR-90-100-10

Doorkeeper Part Numbers		
Type	White	Black
1	MR-91-101-70	MR-91-101-50
2	MR-91-102-70	MR-91-102-50

- All marine-grade materials for corrosion resistance
- Flush outer surface
- Privacy button option
- Optional doorkeeper holds door in open position

Material and Finish

Handle, housing: Acetal, black
Escutcheon: Stainless steel, polished



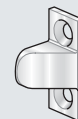
Omni 2-Step



Omni Flat



Omni Spring Bolt



Omni Flat Striker

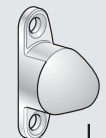
Doorkeepers

Type 1



12 (1/2")

Type 2



18 (11/16")



MR Omni Bob Transom Door Latch

- Easily-adjustable springbolts for left- or right-swing are included for fast conversion
- Nylon bumpers reduce vibration and prevent door rattle
- Optional doorkeeper holds door in open position

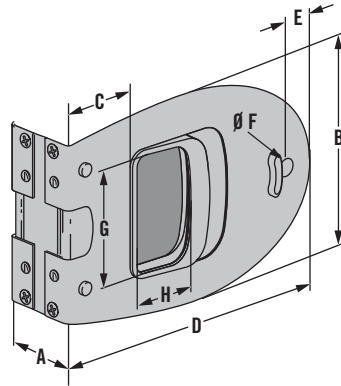
Material and Finish

Lock engine: Aluminum

Handles, escutcheons finish: chrome, aluminum and black

Privacy: Acetal

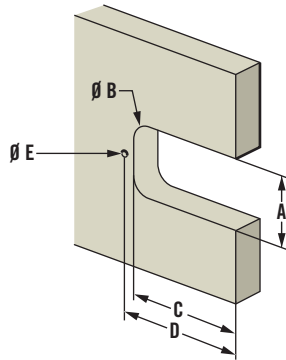
Omni Bob



	Imperial		Metric
	Nominal	Decimal	
A	Panel Thickness		
B	3 15/16	3.90	99
C	1 3/8	1.38	35
D	5 5/16	5.32	135
E	15/64	.24	6
F	15/64	.24	6
G	2 5/32	2.17	55
H	1 3/16	1.18	30

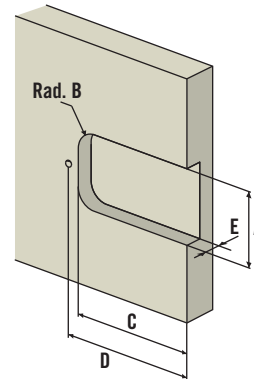
Panel Preparations

Omni Bob



	Imperial		Metric
	Nominal	Decimal	
A	2 11/16	2.67	68
B	5/8	.63	16
C	4 11/16	4.69	119
D	5 3/64	5.04	128
E	15/64	.24	6

Omni Bob Single



	Imperial		Metric
	Nominal	Decimal	
A	2 11/16	2.67	68
B	5/16	.32	8
C	4 11/16	4.69	119
D	5 3/64	5.04	128
E	25/32	.787	20

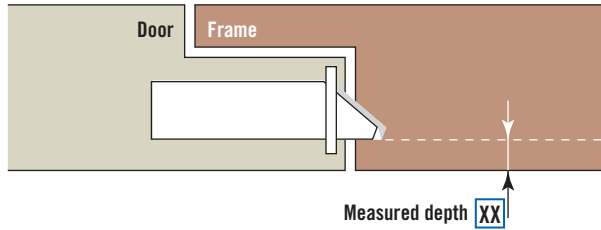
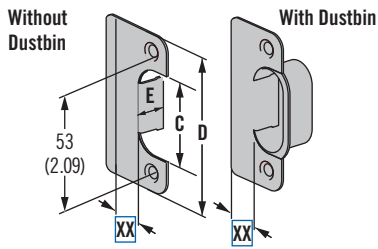
Part Number Selection

Omni Bob Part Numbers	
Door thickness range	
25 - 31 mm (1 - 1-1/4")	MR-04-106-24
30 - 36 mm (1-3/16 - 1-7/16")	MR-04-107-24
35 - 41 mm (1-3/8 - 1-5/8")	MR-04-108-24
40 - 46 mm (1-9/16 - 1-13/16")	MR-04-109-24
45 - 51 mm (1-3/4 - 2")	MR-04-1010-24

Omni Bob Single Part Numbers		
Door thickness range	Door Swing	
25 mm (1")	right out/left in	MR-05-603-24
25 mm (1")	left out/right in	MR-05-703-24

Dimensions in millimeters (inch) unless otherwise stated

MC Striker



To find the right striker for your application, measure the distance from the door face to the edge of the springbolt of the latch.

C		D		E	
Metric	Imperial	Metric	Imperial	Metric	Imperial
36	1 7/16	68	2 11/16	13	1/2

- Available in seven different sizes
- Suitable for Offshore, McCoy, Compact, and Omni swing door latches and many door and frame configurations and door thicknesses
- Striker tongue prevents wear from boat vibration
- Optional dustbin hides sawdust in the cut out hole and provides an elegant finish to the frame edge

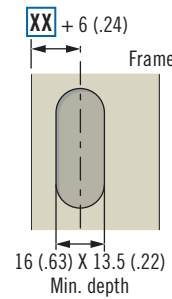
Part Number Selection

MC - 90 - Z XX - FF

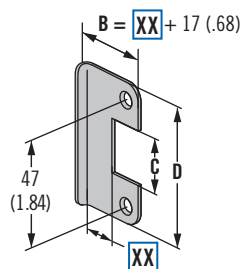
Z Dustbin Option
 1 No Dustbin
 2 With Dustbin

XX Position
 03 3mm (7/64") 13 13mm (1/2")
 05 5mm (3/16") 16 16mm (5/8")
 07 7mm (1/4") 21 21mm (7/8")
 09 9mm (3/8")

FF Finish
 10 Brass, nickel plated
 24 Stainless steel
 40 Brass



MC Whale Striker



C		D	
Metric	Imperial	Metric	Imperial
60	2 3/8	22	7/8

- Suitable for Offshore, McCoy and Compact swing door latches.
- Quick and easy installation

Part Number Selection

MC - 90 - 3 XX - FF

XX Position
 03 3mm (7/64") 13 13mm (1/2")
 05 5mm (3/16") 16 16mm (5/8")
 07 7mm (1/4") 21 21mm (7/8")
 09 9mm (3/8")

FF Finish
 10 Brass, nickel plated
 40 Brass



MM Talon Sliding Entry Door Latch

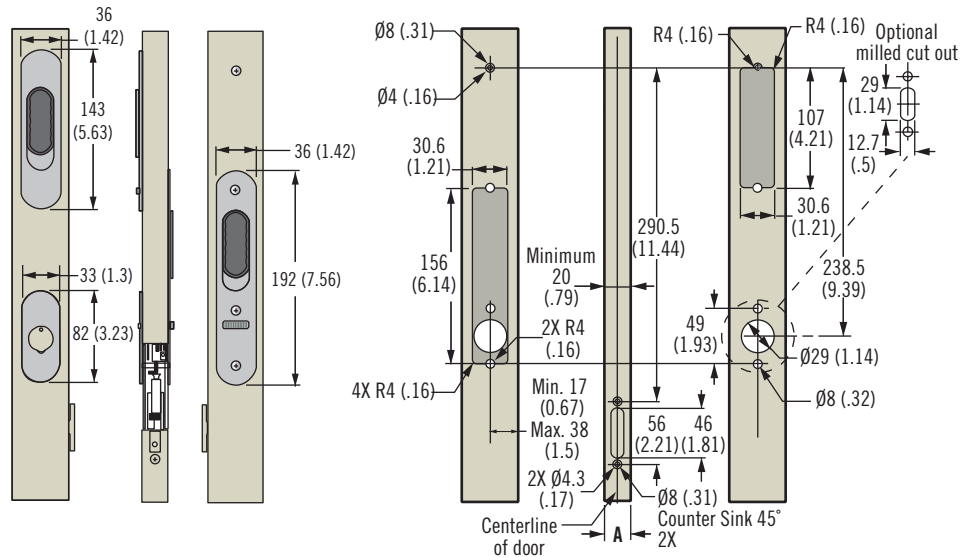
Flush style, star and standard

- New superior Star Key Lock capability provides enhanced, three-axis pin tumbler security
- Top-stop latching feature provides option to secure door in the full open, full closed, or partially open positions, prevents accidental closing even in rough seas
- Attractive flush face design provides sleek look that complements a wide range of boats
- Optional high-seas handle provides sturdy grip for both latch and door operation
- Designed for doors in stainless steel and aluminum extrusions

Material and Finish

Escutcheons, outside plate: Brass, chrome plated and aluminum, black powder coat
 Privacy knob: Brass, chrome plated

Panel Preparation



		Star Part Numbers			
Finish	Style	Door Thickness (A)			
		20.5 (0.81) - 23 (0.91)	23 (0.91) - 28.5 (1.12)	28.5 (1.12) - 33.5 (1.32)	33.5 (1.32) - 38 (1.50)
Chrome	Standard	MM-01-130-10	MM-01-131-10	MM-01-132-10	MM-01-133-10
	Standard Top Stop feature	MM-01-430-10	MM-01-431-10	MM-01-432-10	MM-01-433-10
Black Powder Coated	Standard	MM-01-130-50	MM-01-131-50	MM-01-132-50	MM-01-133-50
	Standard Top Stop feature	MM-01-430-50	MM-01-431-50	MM-01-432-50	MM-01-433-50

		Talon Part Numbers			
Without Key locking* (egress opening from outside)		Door Thickness Range			
		20.5 (.81) - 23 (.91)	22.5 (.87) - 27 (1.06)	27 (1.06) - 34.5 (1.38)	28.5 (1.13) - 38 (1.5)
Anodized aluminum		MM-01-100-60	MM-01-101-60	MM-01-102-60	MM-01-103-60
Powder coated black aluminum		MM-01-100-50	MM-01-101-50	MM-01-102-50	MM-01-103-50
Chrome		MM-01-100-10	MM-01-101-10	MM-01-102-10	MM-01-103-10
Diamond brass		MM-01-100-40	MM-01-101-40	MM-01-102-40	MM-01-103-40
Key locking					
Anodized aluminum		MM-01-110-60	MM-01-111-60	MM-01-112-60	MM-01-113-60
Powder coated black aluminum		MM-01-110-50	MM-01-111-50	MM-01-112-50	MM-01-113-50
Chrome		MM-01-110-10	MM-01-111-10	MM-01-112-10	MM-01-113-10
Diamond brass		MM-01-110-40	MM-01-111-40	MM-01-112-40	MM-01-113-40

Talon Accessories	
Mounting tool for striker	MM-90-103-41
Top Stop	MM-7521
High-seas handles for chrome Talon	MM-7660
High-seas handles for black Talon	MM-7683
Ramp for Top Stop	MM-90-201-60

For top stop installation please refer to website.
 For high seas handle installation please refer to website.

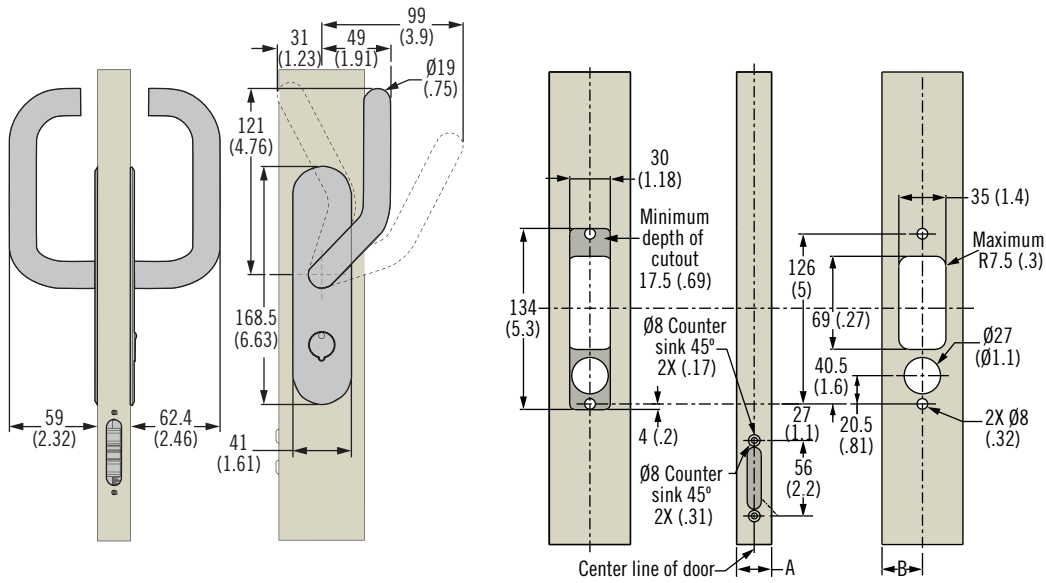
Dimensions in millimeters (inch) unless otherwise stated

MM Star Slider Entry Door Latch

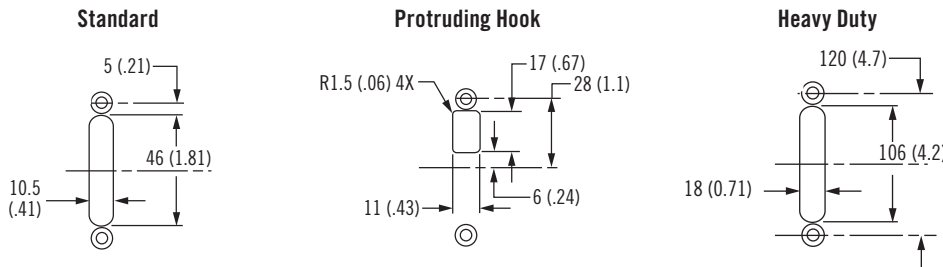
Handle style



Panel Preparation



Latch Module Options



Star Slider Part Numbers

Latch Module	Door thickness (A)		
	23 (0.93) - 28.5 (1.12)	28.5 (1.12) - 33.5 (1.32)	33.5 (1.32) - 38 (1.50)
Standard	MM-03-131-14-10	MM-03-132-14-10	MM-03-133-14-10
Protruding hook	MM-03-331-14-10	MM-03-332-14-10	MM-03-333-14-10
Standard top stop feature	MM-03-431-14-10	MM-03-432-14-10	MM-03-433-14-10
Heavy Duty	MM-03-531-14-10	MM-03-532-14-10	MM-03-533-14-10
Protruding hook, top stop feature	MM-03-631-14-10	MM-03-632-14-10	MM-03-633-14-10

Star Slider Accessories

Mounting tool for striker	MM-90-103-41
Top Stop	MM-7521
Ramp for top stop	MM-90-201-60

- Superior Star Key Lock™ capability provides enhanced three-axis pin tumbler security
- A one-piece pivot actuation latch with integrated lock mechanism provides reliable performance and a smooth, ergonomic feel in use
- Pivot handle on both sides
- Top-stop latching feature provides option to secure door in the full open, full closed, or partially open positions, prevents accidental closing even in rough seas
- Designed for doors in stainless steel and aluminium extrusions

Material and Finish

Handle: Stainless steel, highly polished
 Eschutcheon, privacy knob: Brass, chrome plated



MM Star Slider Entry Door Latch

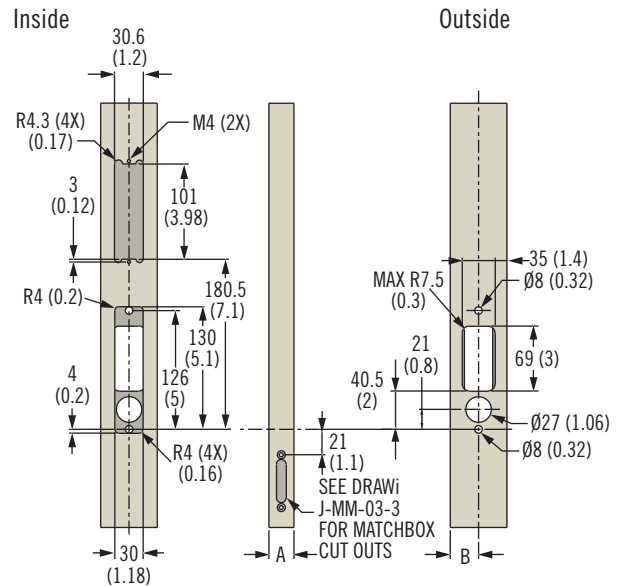
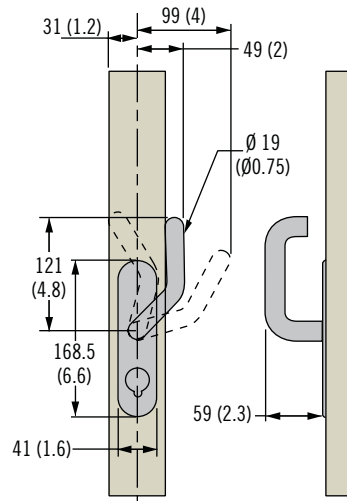
Flush inside style

- Superior Star Key Lock™ capability provides enhanced three-axis pin tumbler security
- A one-piece pivot actuation latch with integrated lock mechanism provides reliable performance and a smooth, ergonomic feel in use
- Flush version with pivot handle on the outside and flush handle on the inside
- Top-stop latching feature provides option to secure door in the full open, full closed, or partially open positions, prevents accidental closing even in rough seas
- Designed for doors in stainless steel and aluminium extrusions

Material and Finish

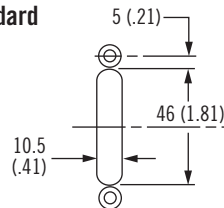
Escutcheons, outside plate: Brass, chrome plated
Privacy knob: Brass, chrome plated

Panel Preparation

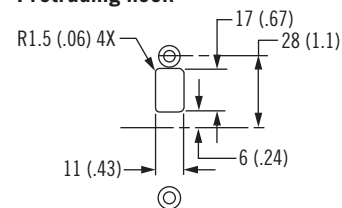


Latch Module Options

Standard



Protruding hook



Slider Part Numbers - Flush inside version			
Latch Module Locking Mechanism	Door Thickness (A)		
	23 (.9) - 28.5 (1.12)	28.5 (1.12) - 33.5 (1.32)	33.5 (1.32) - 38 (1.50)
Standard. Star Slider chrome. Offset handle and flushed inside handle.	MM-03-131-XX-10	MM-03-132-XX-10	MM-03-133-XX-10
Star Slider chrome. Offset handle and flushed inside handle. Protruding hook.	MM-03-331-XX-10	MM-03-332-XX-10	MM-03-333-XX-10

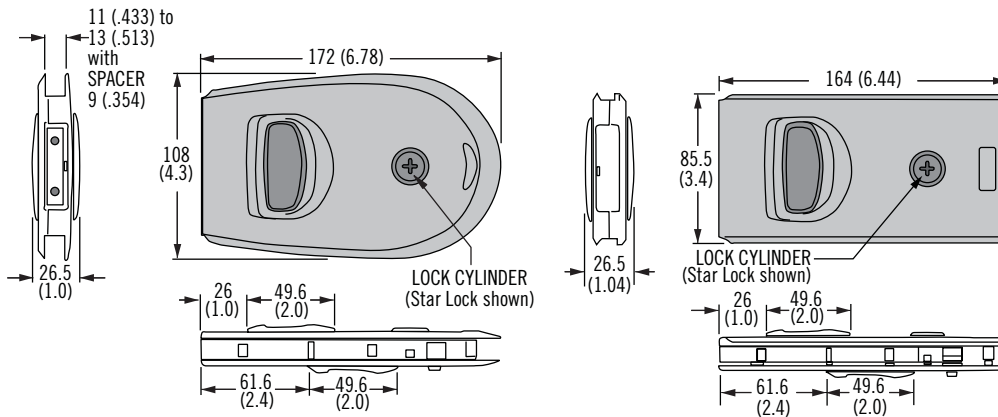
XX = 15 for port closing door
XX = 16 for starboard closing door

Star Slider Accessories

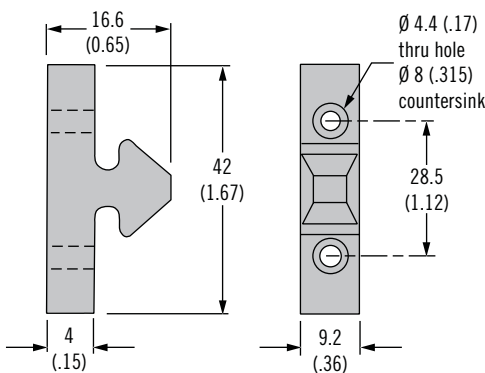
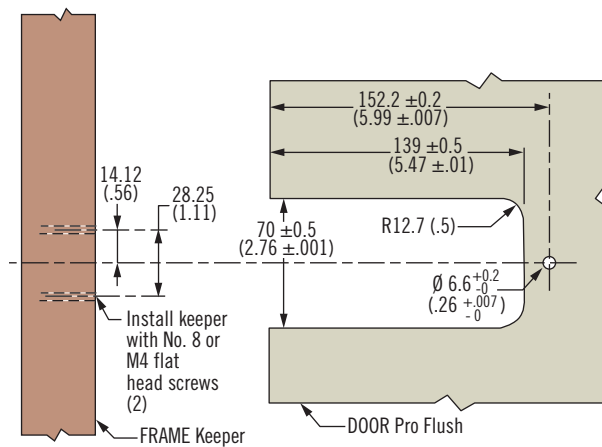
Mounting tool for striker	MM-90-103-41
Top Stop	MM-7521
Ramp for top stop	MM-90-201-60

Dimensions in millimeters (inch) unless otherwise stated

MF ProFlush Entry Door Lock



Panel Preparation



	Part Number	
Pro Flush Latch*	Oval	Square
Star Lock	MF-05-430-24	MF-05-530-24
Disc Tumbler Lock	MF-05-450-24	MF-05-550-24

Accessories	Part Number
Oval Spacer	MF-92-400-24
Square Spacer	MF-92-500-24
Mounting Tool	MF-90-400-10

* Two grip friendly overmolded keys and a keeper supplied.

For spare keys please contact Southco

- Marine grade materials to prevent corrosion
- Sealed to help prevent water intrusion
- Available with two types of lock plugs
 - Star lock system, provides high security with a pin tumbler lock plug
 - 3 wafer flat key (MIM) lock, provides security with a stainless steel plug and has a reversible key
- Oval and square variant available

Material and Finish

Escutcheon: Stainless steel, highly polished

Handles: Polycarbonate/polyester, black

Privacy knob: Nylon, black



MF Flush Entry Door Lock

- Allows for 100 - 150mm (4" - 6") more door travel than traditional sliding-door lock styles
- Safety lock prevents the door from being locked from the inside.
To activate: turn key clockwise and remove
- Shipped with striker and two keys
- Locks can be matched to other **SOUTHCO®** deck latches.
Contact Southco for more information

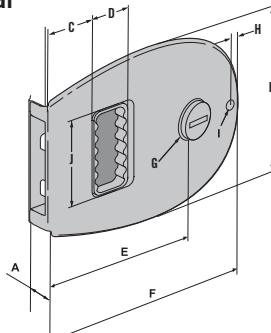
Material and Finish:

Stainless Steel, Aluminum anodized, Black anodized or White powdercoat.
Shape: Oval or rectangular design.

Available Options:

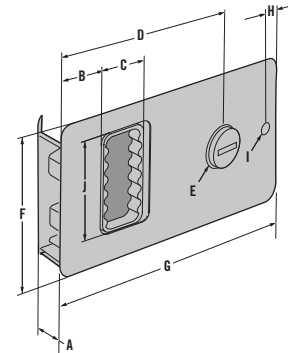
Sealing: Weatherproof and watertight seals.

Flush Oval



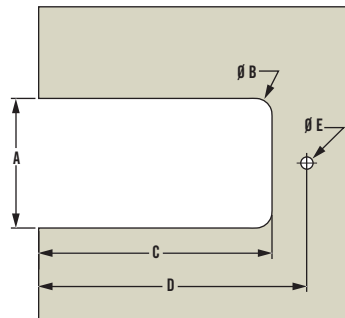
	Imperial		Metric
	Nominal	Decimal	
A	1/2	.50	12.7
B	3 7/8	3.88	98.5
C	49/64	.77	19.5
D	49/64	.77	19.6
E	3 3/4	3.74	95
F	5 53/64	5.83	148
G	53/64	.83	21
H	33/64	.51	13
I	13/64	.2	5
J	1 3/4	1.75	44.5

Flush



	Imperial		Metric
	Nominal	Decimal	
A	1/2	.50	12.7
B	1 1/8	1.12	28.5
C	25/32	.77	20
D	3 49/64	3.76	95.5
E	53/64	.83	21
F	2 7/8	2.88	73
G	5 9/32	5.28	134
H	21/64	.34	8.5
I	15/64	.24	6
J	1 3/4	1.75	44.5

Panel Preparation



Flush Square

	Imperial		Metric
	Nominal	Decimal	
A	2 1/2	2.5	63.5
B	5/8	.63	16
C	4 1/2	4.5	114
D	4 61/64	4.95	125.7
E	1/4	.25	6.4

Flush Oval

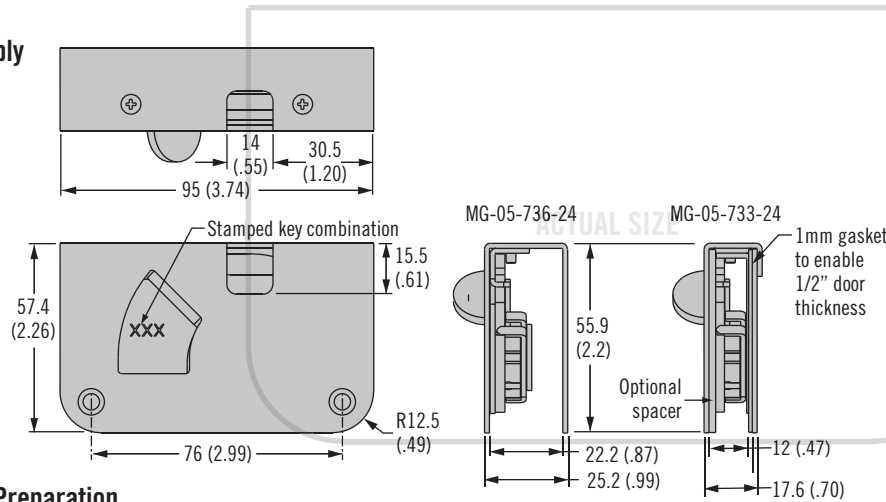
	Imperial		Metric
	Nominal	Decimal	
A	2 1/2	2.5	63.5
B	5/8	.63	16
C	4 1/2	4.5	114
D	5 5/16	5.31	135
E	1/4	.25	6.35

Flush Part Numbers					
Style	Aluminum	Stainless steel	Black	White	Oval
	Standard	MF-01-110-60	MF-01-110-24	MF-01-110-50	MF-01-110-70
Weather Proof	MF-02-110-60	MF-02-110-24	MF-02-110-50	MF-02-110-70	MF-02-310-24
Watertight	MF-03-110-60	MF-03-110-24	MF-03-110-50	MF-03-110-70	MF-03-310-24

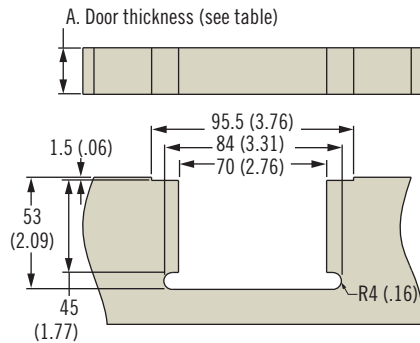
MG Star Sailor Entry Door Lock



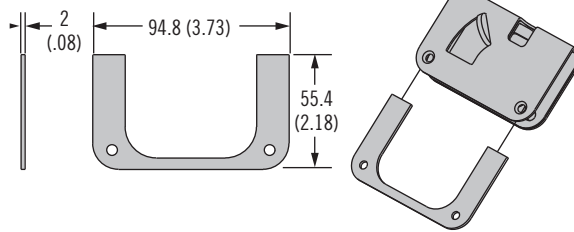
Assembly



Panel Preparation



Optional Spacer (2mm)



- Suitable for 12mm and 22mm entry door thicknesses
- Provide high-end security with the Star Key Lock system's three-axis six-pin tumbler design

Material and Finish

Lock Case: Stainless Steel
 Star Plug: Brass
 Spring: 316 Stainless Steel
 Screws: 316 Stainless Steel

Part Number: MG-05-115

Use with MG-05-733-24 to enable 10mm Door thickness
 Use with MG-05-736-24 to enable 20mm Door thickness

Strikers - Accessories

Day key, black (for secure only)		MF-96-XXX-41
Striker, anodized aluminum		MG-90-102-60
Striker, anodized black		MG-90-102-50
Eyelet striker, stainless steel		MG-90-103-24
Eyelet striker, offcenter, stainless steel		MG-90-104-24
Spacer for 10mm (3/8") door thickness		MG-92-100-50
P-striker, anodized aluminum		MG-90-105-50
P-striker, anodized, black		MG-90-105-61

Assembly

MG - 05 - 73 C - 24

C Door Thickness (A) ←
 3 12mm (.5)
 6 22mm (.86)

Part Number Selection

Notes

Latch and striker are ordered separately. Please see Striker - Accessories table for options



MG Secure Entry Door Lock

- Offered in all corrosion-resistant materials, including Polyamide, Stainless Steel, and Brass
- Outside keylocking with interior sliding privacy lock
- Supplied with striker and two keys

Material and Finish:

Finish: White or black polyamide case

Accessories:

Locking: Optional black day key available.

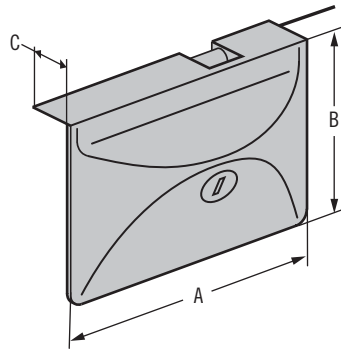
Spacer: Optional spacer available to accept a 10mm (3/8") door thickness.

Striker: Numerous strikers available in clear or black anodized aluminum or stainless steel.

For spare keys please contact Southco

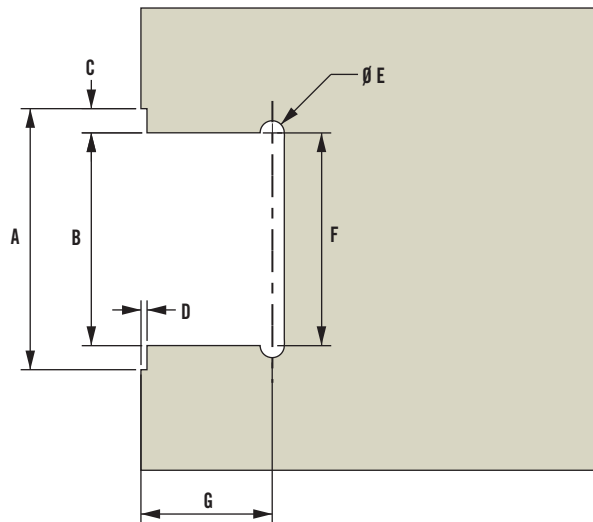
Notes

For additional striker options and accessories please see page 537



	Imperial		Metric
	Nominal	Decimal	
A	3 27/64	3.43	87
B	2 11/64	2.17	55
C	15/32	.47	12

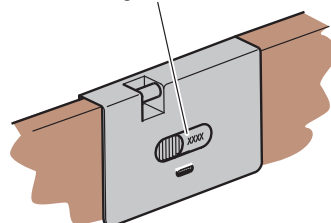
Panel Preparations



	Imperial		Metric
	Nominal	Decimal	
A	3 13/32	3.41	86.5
B	2 25/32	2.78	70.5
C	15/16	.32	8
D	5/64	.08	2
E	5/16	.31	8
F	2 27/32	2.84	72
G	1 23/32	1.71	43.5

How to determine your key combination

Key # for ordering sparekey starting with 8__ or 9__



Secure Part Numbers

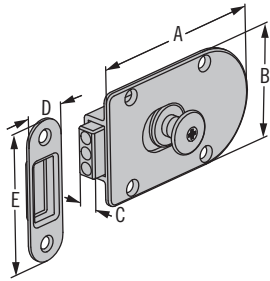
	Black	White
With P-striker and two keys	MG-01-110-50	MG-01-110-70

M5 Transom Door Latches

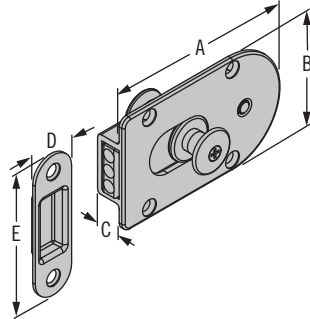
Stainless Steel



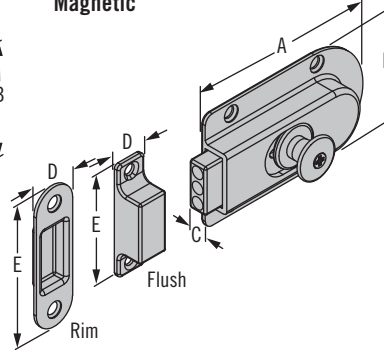
Transom Door Latch Magnetic



Double Knob Transom Door Latch Magnetic (with lock)



Oval Single Side Transom Door Latch Magnetic



All latches feature:

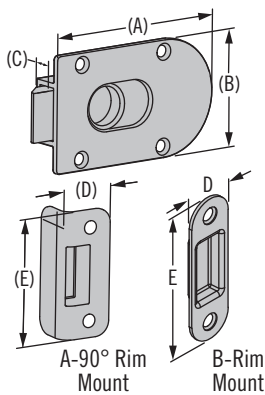
- Designed for 12mm (1/2") doors
- Features an adjustable slide bolt
- Comes with striker (magnetic)
- Screws not included
- Locking and Non-locking versions

Material and Finish

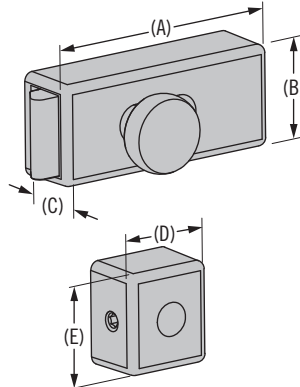
Housing: 316 Stainless steel

Name	Part Number	Striker Part Number	(A) mm (inch)	(B) mm (inch)	(C) mm (inch)	(D) mm (inch)	(E) mm (inch)
Transom door latch magnetic	M5-60-101-8 (non-locking)	M5-C-305-8	90 (3.50)	55 (2.19)	9.3 (.38)	21 (.88)	70 (2.75)
	M5-60-111-8 (locking)						
Double knob transom door latch - magnetic (with lock)	M5-60-152-8	M5-C-305-8	91 (3.56)	56 (2.22)	9 (.34)	21 (.88)	70 (2.75)
Oval single side transom door latch - magnetic	M5-60-201-8	M5-C-801-8 (Flush striker)	91 (3.56)	56 (2.22)	9 (.34)	15 (.63)	70 (2.75)
	M5-60-305-8	M5-C-305-8 (Rim striker)				21 (.88)	

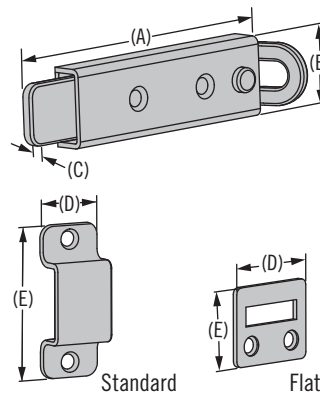
Transom Latch Spring Bolt (flush)



Transom Latch Spring Bolt (surface)



Transom Latch Spring Bolt - Heavy Duty



	Part Number	Model	A	B	C	D	E
Transom Latch Spring Bolt (flush)	M5-60-302-8	Single side	91 (3.63)	56 (2.25)	9 (.38)	x	x
	M5-60-309-8	Double side	91 (3.63)	56 (2.25)	9 (.38)	x	x
Strikers	M5-C-301-8	A	x	x	x	22 (.87)	56 (2.25)
	M5-C-304-8	B				22 (.87)	70 (2.25)
Transom Latch Spring Bolt (surface)	M5-60-451-8	Striker included	72 (2.75)	30 (1.19)	20 (.75)	27 (1.06)	30 (1.19)
Transom Latch Spring Bolt Heavy Duty	M5-60-205-24	Flat	137 (5.41)	32 (1.25)	5 (.19)	38 (1.5)	32 (1.25)
	M5-60-206-24	Standard				25 (.98)	60 (2.36)

Glossary of *SOUTHCO*[®] Standard Terms

Average Ultimate Load:

The average load that causes failure or excessive deformation which renders the product inoperable.

Clamping Force:

The force exerted on the panels when drawn together at the nominal mounting dimensions.

Detent:

A pre-set, internal positioning feature that allows a fastener or hinge to rotate into fractional positions and/or to hold panel(s) or door(s) in a full/partially opened position. Also used to indicate the full-opened or closed position of some latching mechanisms. In hinges, also called Door Positioning or Hold-open feature.

EMI / RFI:

Electromagnetic interference or radio frequency interference is a (usually undesirable) disturbance that affects an electrical circuit due to electromagnetic radiation emitted from an external source.

EMI / RFI Shielding:

The capability to reduce the transmission of electromagnetic or radio energy into or out of an enclosure

Ferrule:

The component of a Captive Fastener/Quarter-Turn Fastener that is captivated to the panel.

Frame:

The surface or "inner panel" against which a door closes. Consideration of frame thickness / geometry is an important part of the latch selection process.

Fully-Retractable:

The ability of a Captive Fastener to be withdrawn so that no portion of the screw threads protrude beyond the inner surface of the outer panel when disengaged.

Grip:

Generally, the total thickness being fastened. Usually defined as the dimension from the outer surface of the door or outer panel to the inside surface of the frame or inner panel. For DZUS[®] Quarter Turn Fasteners, grip is denoted as "Total Material Thickness" (TMT) which is defined as the thickness of outer panel, frame and accessory items.

Grip Range:

The Minimum to Maximum allowable total material thickness for a given product that provides for proper operation.

Keeper/Keeper Plate:

A component used to engage with the primary latch mechanism.

Key-Choice System:

The *SOUTHCO*[®] Key-Choice System features a common lock core that fits a wide range of latches. This system allows for the independent selection of the latch and the lock core required to manage the security of the end product (see page 158).

Machinery Directive:

The EU Machinery Directive 2006/42/EC, in effect from 29 December 2009, is the regulatory basis for essential health and safety requirements for machinery at European Union level. Southco recommends a range of access hardware solutions to comply with the requirements of this law. (see page 544).

Material and Finish:

The base (primary) material used in the product and any supplementary coating applied to provide protection and to enhance the product appearance.

Maximum Dynamic Working Load:

The maximum recommended load at which the product continues to function properly throughout its intended cycle life.

Maximum Static Load:

The maximum recommended load after one time application and removal of which the product continues to function properly.

Multi-Point System:

A multi-point latching system requiring the actuator, rods and guide to be ordered from the same product family.

NEMA/IP:

Refers to standards for an enclosure's resistance to dust, rain, hose-directed water, and/or ice damage. Individual components (latches, etc.) are not certified to NEMA or IP, but can help the entire enclosure achieve certification. All latches and other components should always be tested in the individual application.

Over-Center/Under-Center:

Two types of *SOUTHCO*[®] draw latches, described on page 276.

Over-center: During actuation, the moving pin rotates above the stationary pin.

Under-center: During actuation, the moving pin rotates below the stationary pin.

Receptacle:

The component that accepts a Quarter-turn stud or Fast-lead Thread screw and provides for positive fastening. Receptacle selection is a critical feature when designing in a Quarter-turn Fastener or Fast-lead Thread screw.

Secondary Catch:

An optional component of draw latches that provides added resistance to vibration, accidental opening, and shock load.

Spring Loaded:

A latch assembly in which the latching force is provided by an integral spring component which allows for vibration and gasket relaxation.

Tightening Torque:

The maximum recommended torque to be applied to the mounting hardware or to the latch itself. Tightening torque should not exceed recommended values, or latch damage/failure may occur.

Type A/Type B:

Generally describes right- or left-handed operation and/or installation of latches or hinges. Also described as clockwise/counterclockwise latch operation.

Rod System:

A multi-point accessory that can be added to a range of standard single point Southco latches.

Two / Three Point Latching:

A latching arrangement having latching and or compression capabilities in two or three areas of a door and frame (see overview on page 174-175).

Standard Finishes

The following information is intended to provide general guidelines regarding performance characteristics of Southco's standard finishes. Southco is committed to protecting the environment and promoting the use of environmentally friendly finishes that meet the requirements of the industries we serve. All standard **SOUTHCO®** finishes are compliant with environmental regulations and directives such as REACH, RoHS, POHS, ELV and WEEE.

ZINC PLATING WITH TRIVALENT CHROMATE AND SEALER - This is currently Southco's standard finish of choice for steel base metal. A metallic (inorganic) sacrificial finish, which primarily provides excellent corrosion protection. Available in bright metallic and black.

ZINC-ALLOY PLATING - A metallic (inorganic) sacrificial finish, which primarily provides excellent corrosion protection to steel base metal. This finish is recommended where superior corrosion resistance over zinc plating is desired. Small additions of nickel or iron to zinc result in greatly enhanced corrosion performance of zinc-alloy plating over zinc plating. Additional improvement in corrosion performance can be imparted by treating with chromate and sealer. Available in bright metallic and black. Zinc alloy plating to meet automotive or other industry specific corrosion resistance is available on special order.

ZINC PLATING - A metallic (inorganic) sacrificial finish, which provides good corrosion protection. It secondarily provides an attractive, bright, metallic finish to steel components. Zinc plating is available with various chromate and phosphate passivates in bright metallic and black colors.

ZINC IMMERSION COATING - A zinc and aluminum flake dispersion in polymer or inorganic binder. The flakes align in multiple layers, forming a metallic silver-gray coating over ferrous metal parts for very good corrosion protection. Top coats of various colors further enhance color choices for this finish.

CHROMIUM PLATING - Offers excellent appearance along with corrosion resistance for steel, zinc, aluminum and polymer base materials. A hard, durable finish that is preferred when cosmetic appearance is the primary determinant for finish selection. Available in bright and satin appearance.

NICKEL PLATING - Offers both functional and cosmetic characteristics at a relatively low cost. Nickel plating is available both via electro- and electroless deposition processes. The finish is highly tailorable and can be produced at different hardness levels, friction characteristics and colors. Available in bright metallic, satin, black on steel, zinc aluminum and polymer base materials.

BLACK OXIDE COATINGS - An inorganic finish for steel and stainless steel base metal. Primarily a cosmetic finish that can be supplemented with an oil, wax or polymer top coat.

PHYSICAL VAPOR DEPOSITION (PVD) COATINGS - Hard, corrosion resistant and attractive finishes that mimic the appearance of metal but have properties of ceramics. Applied over chromium plating, nickel plating or bare metal, the coatings can have appearance of gold, brass, bronze or chromium, depending on the chemistry of the PVD ceramic. A very popular finish for marine hardware.

POWDER COATINGS - An organic finish, which provides an attractive finish in a wide variety of colors and glosses. This finish can be applied over various pre-treatments, such as zinc plating, zinc-alloy plating, chromating and phosphating, for additional corrosion protection.

ELECTROPHORETIC (E-COAT) COATINGS - Environmentally friendly finish with a wide variety of color and gloss choices for steel, stainless steel, zinc and aluminum base materials. The coating offers excellent coverage, a very uniform thickness, excellent adhesion to the base metal and superior abrasion resistance.

ANODIZED COATINGS - Formed on aluminum base metal, these coatings impart corrosion and wear resistance to the base metal. Thickness can be varied from a few nanometers (soft) to several microns (hard). Corrosion resistance can be further enhanced by treating with various passivates.

ELECTROPOLISHING AND PASSIVATION - Applied to stainless steels to enhance appearance and corrosion resistance.

PAINTS AND BAKED FLUOROPOLYMER COATINGS - Applied to various base materials, paints offer an attractive appearance and corrosion resistance. Can be applied on various painted primers or treatments such as chromate and phosphate dip. A wide selection of colors is available upon request. Baked fluoropolymer offer a more durable, hard coating in a variety of colors. These finishes are preferred by food and medical industry due to their inertness.

Not all finishes can be applied to all base materials or substrates. Other treatments and finishes are available. Contact a Southco Application Engineer to discuss finishing options.

Conversion Charts

To Convert	Into	Multiply By
Feet	Inches	12
Feet	Millimeters	304.8
Feet	Meters	0.3048
Foot-Pounds	Newton-Meters	1.356
Inches	Millimeters	25.4
Inches	Meters	0.0254
Inches	Feet	0.08333
Inch-Pounds	Newton-Meters	0.113
Kilograms (force)	Newtons	9.807
Kilograms (mass)	Pounds (mass)	2.205
Meters	Millimeters	1000

To Convert	Into	Multiply By
Meters	Inches	39.37
Meters	Feet	3.281
Millimeters	Meters	0.001
Millimeters	Inches	0.03937
Millimeters	Feet	0.003281
Newtons	Kilograms (force)	0.102
Newtons	Pounds (force)	0.2248
Newton-Meters	Inch-Pounds	8.851
Newton-Meters	Foot-Pounds	0.7376
Pounds (mass)	Kilograms (mass)	0.4536
Pounds (force)	Newtons	4.448

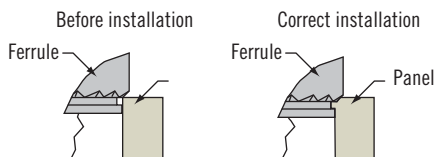
Installation Guidelines

for *SOUTHCO*[®] Self-Clinching products

Self-clinching product installation is offered on these *SOUTHCO*[®] products, making them easy-to-use captive panel fasteners:

- Captive Screws
- Receptacles for Quarter-turn Fasteners
- Receptacles for Fast-lead Thread Screws

When pressed into a properly prepared hole, self-clinching captive fasteners cold-flow (move) the panel material into the retaining groove of the fastener. This material then retains the fastener in the panel.



Successful press-in installations depend on:

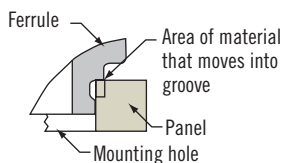
Material:

The hardness of the panel material must not exceed *SOUTHCO*[®] recommendations. If the panel is too hard, the fastener will not install correctly.

Installation Holes:

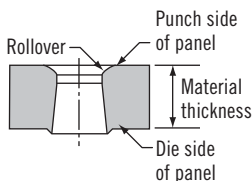
Mounting holes may be drilled, punched, or cast.

- Hole edge: the top hole edge must be sharp but with no broken edges.



Do not chamfer or debur edge.

- Punched holes: use a punch and die with a small clearance to minimize the rollover and fracture angle.
- Hole diameter: measure the hole diameter at the panel surface on the side on which the fastener will be installed. The diameter must be within *SOUTHCO*[®] specifications for that product.



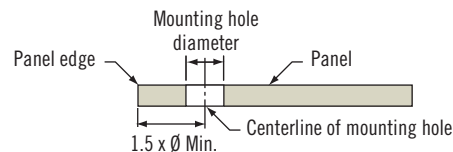
- If the hole is too large, not enough material will flow into the

retaining groove and the fastener may not be retained adequately.

- If the hole is too small, the fastener will not fit and installation may become difficult and unsafe.
- Hole distance from the edge of panel: the minimum recommended distance is 1.5 x the diameter of the mounting hole, unless otherwise indicated.

- Spring-loaded Plungers
- Captive Nuts
- Threaded Inserts

- Installing too close to the edge will cause the material to flow in the opposite direction, deforming the edge of the panel. To install closer to the edge, you may need to restrain the panel edge.



Panel Thickness:

The thickness of the panel at the mounting hole location must meet or exceed Southco's stated minimum recommendations.

If the material is too thin, panel deformation and/or damage to the fastener may result.

Installation is fast and easy if you follow these tips:

How to install: Use the recommended force where noted and a proper back-up tool.

- use any parallel-acting press
- use a punch whose diameter is larger than the head of the fastener

Installation Force: Proper installation requires an even distribution of adequate force. It does not depend on the distance the fastener is pressed into the panel.

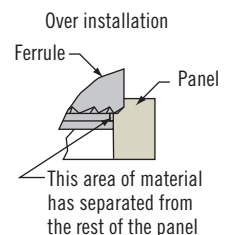
- Southco does not recommend using a hammer. The impact force does not provide an even distribution of force to allow the panel material to completely flow into the fastener's retaining groove.
- Installation force varies from application to application, depending on the criteria noted above.
- On parts without a collar to provide a hard stop, press-in until the edge of the knurl is just barely visible.

When to Install:

Installation is recommended after plating or finishing has been applied to the panel.

The hole diameter must meet specifications before finish or plating is applied.

- Do not over-install parts. This interrupts the material and will reduce the retention strength.



PRODUCT CLASS INDEX

This page lists all standard *SOUTHCO*® latching solutions by PRODUCT CLASS. The first two characters of every part number refer to the PRODUCT CLASS. All products within a given PRODUCT CLASS have similar characteristics and are grouped together.

Product class	Page
AC	264-275
AV	56-71
A1	292-294
A3	230-233
A4	211
A5	195, 198-201
A7	107
B4	520
B8	516-517
CM	162-169
CN	498-499, 506
CR	184-187
C2	106
C3	208-210
C5	104-105
C6	345
C7	311
DM	490
D1	410-413
D4	414-427
D5	428-429
D7	430-432
D8	392-409
EA	44-51
EH	358-359
EM	40-41
E2	220-221
E3	76-93
E4	212-213

Product class	Page
E5	116-133
E6	326-329, 342-343
F2	188-191
F5	479
F6	364-368
F7	313
GA	111
G6	344
G7	346
H3	144-145, 192-194, 197
H3-EM	38-39
KH	362-363
K2	300
K3	301-302
K4	303
K5	304-305
MA	522-525
MC	531
ME	526-528
MF	535-536
MG	537-538
MM	532-534
MP	225, 228-229, 513
MR	529-530
MT	218-219
M1	102-103, 222-224, 226-227, 242-243
M3	178-183
M5	539
NY	154-155, 433

Product class	Page
N2	94-95
N6	360-361
N7	481
PK	158-159
PT	170-171
P1	512
P2	510-511
P7	494-497, 500-505, 507
P8	518
P9	519
R2	306-309
R3	238-240
R4	241, 256-263
R4-EM	23-37
R5	310
R6	369-371
SC	20-22
ST	330-341
TL	149, 288-291
V2	286
V4	287
V7	280-281
O1	140-141
O2	214-217
O7	295
O9	482-483
12	484
14	109
17	488-489

Product class	Page
19	150-153
24	142
27	108
37	312, 314-317
43	109
44	109
47	440-459, 464-470, 478, 495
48	108
4C	460-463, 471
5T	480
52	472, 474-477
56	146-148
57	110
60	219
61	143
62	96-101
64	244-251
67	514-515
68	136-139
69	142
80	243
82	378-385
85	386-391
91	296-299
92	134-135, 143
93	234-237
96	347-357
97	282-285

Look through our comprehensive collection of boat cabin & galley hardware right away.