

# SPXFLOW

## > Johnson Pump®



# Marine Catalogue

Pumps and Accessories  
for Marine Applications







# SPX<sup>®</sup>FLOW















SPX FLOW, Inc. (NYSE:FLOW) is a leading manufacturer of innovative flow technologies, many of which help define the industry standard in the market segments they serve. From its headquarters in Charlotte, North Carolina, it operates a sales and support network, centers of manufacturing excellence, and advanced engineering facilities, throughout the world. Its cutting-edge flow components and process equipment portfolio includes a wide range of pumps, valves, heat exchangers, mixers, homogenizers, separators, filters, UHT, and drying technology that meet many application needs. Its expert engineering capability also makes it a premium supplier of customized solutions and complete, turn-key packages to meet the most exacting of installation demands.

Incorporating many leading brands, SPX FLOW has a long history of serving the food and beverage, power and energy, and industrial market sectors. Its designs and engineered solutions help customers drive efficiency and productivity, increase quality and reliability, and meet the latest regulatory demands. In-depth understanding of applications and processes, state-of-the-art Innovation Centers, and advanced pilot/testing technology further assist in optimizing processes and reducing timescales to reliably meet production targets.





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# ➤ Johnson Pump®

SPX FLOW Johnson Pump marine brand is one of the world's leading manufacturers of pumps for marine use. With 50 years of pump experience, we know the industry well.



No matter whether you are an experienced boater looking for a replacement pump or a manufacturer specifying pumps for your marine application, we are prepared to provide you with the support you need.

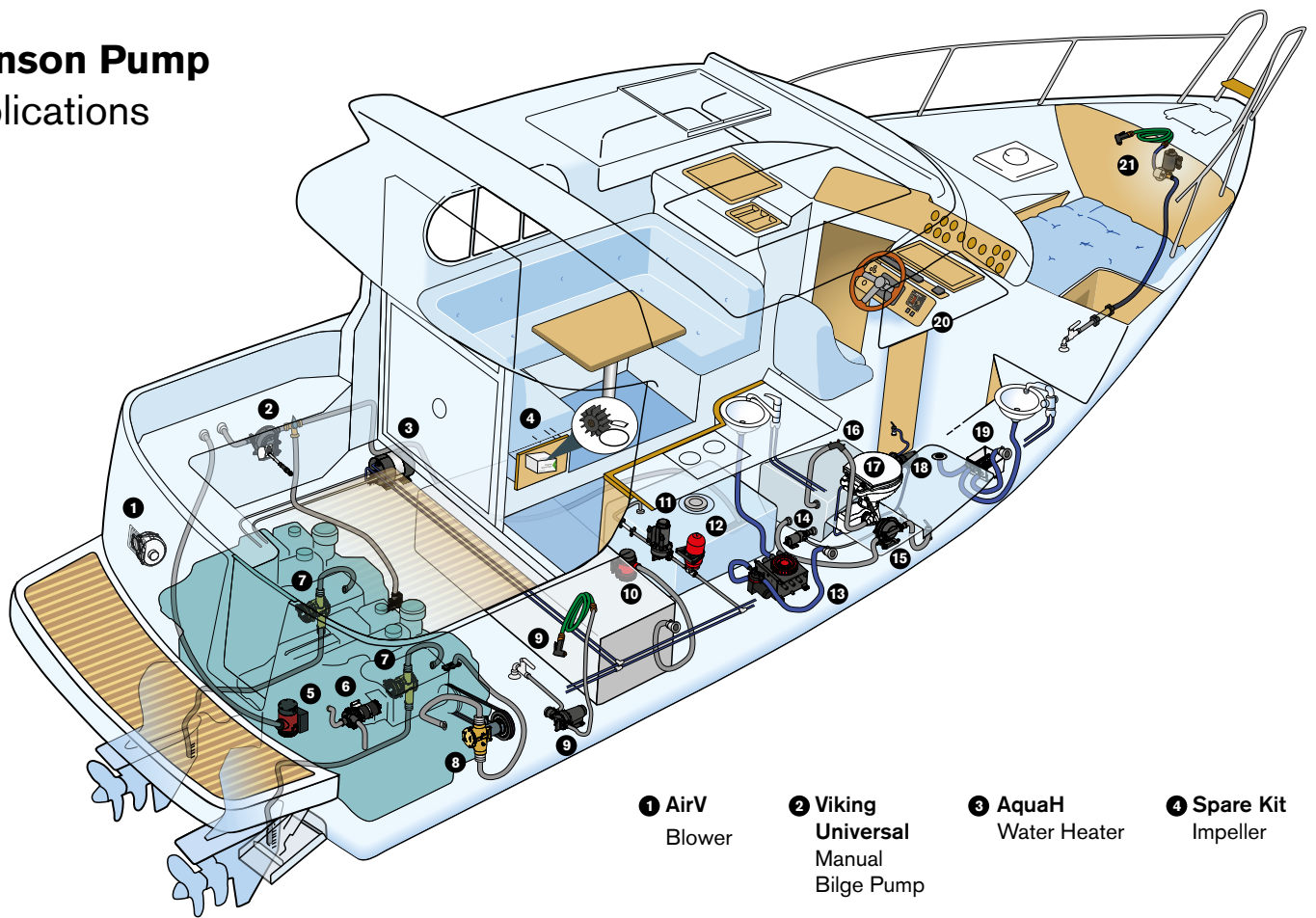
And no matter where you work or live, access to our products, services, spare parts and support are never far away. In fact, you will find SPX FLOW's Johnson Pump marine brand represented in every major industrial country of the world today and in more than sixty nations altogether.







## Johnson Pump Applications



- |   |  |  |  |
|---|--|--|--|
| <b>1</b> AirV Blower  | <b>2</b> Viking Universal Manual Bilge Pump                          | <b>3</b> AquaH Water Heater                            | <b>4</b> Spare Kit Impeller  |
| <b>5</b> 2200 GPH + Switch Heavy Duty Bilge Pump with Electro-Magnetic Float Switch | <b>6</b> CM90 Circulation Pump                                       | <b>7</b> Engine Cooling Customized Engine Cooling Pump | <b>8</b> F9B-5600 Extra Heavy Duty Electro-Magnetic Clutch Pump                              |
| <b>9</b> Aqua Jet Wash Down 5.2 Wash Down Pump Kit                                  | <b>10</b> 1600 GPH + Switch Heavy Duty Bilge Pump with Ultima Switch | <b>11</b> Aqua Jet WPS 4.0 Water Pressure System       | <b>12</b> Accumulator Tank   |
| <b>13</b> Grey Water Tank + Viking Power 16 Waste Water Tank & Pump Solution        | <b>14</b> TA3P10-19 Macerator  | <b>15</b> Viking Universal Manual Bilge Pump           | <b>16</b> Vented Loop  |
| <b>17</b> AquaT Silent Electric Comfort Marine Toilet                               | <b>18</b> Flush Pump 3.5 For Silent Electric Toilet                  | <b>19</b> Shower Sump MultiPorts Drain System          | <b>20</b> Bilge Pump Control + Bilge Alert Switch Panel for bilge pumping + High Water Alarm |
|   |  |  | <b>21</b> F3B-19 DC Driven Flexible Impeller Pump  |



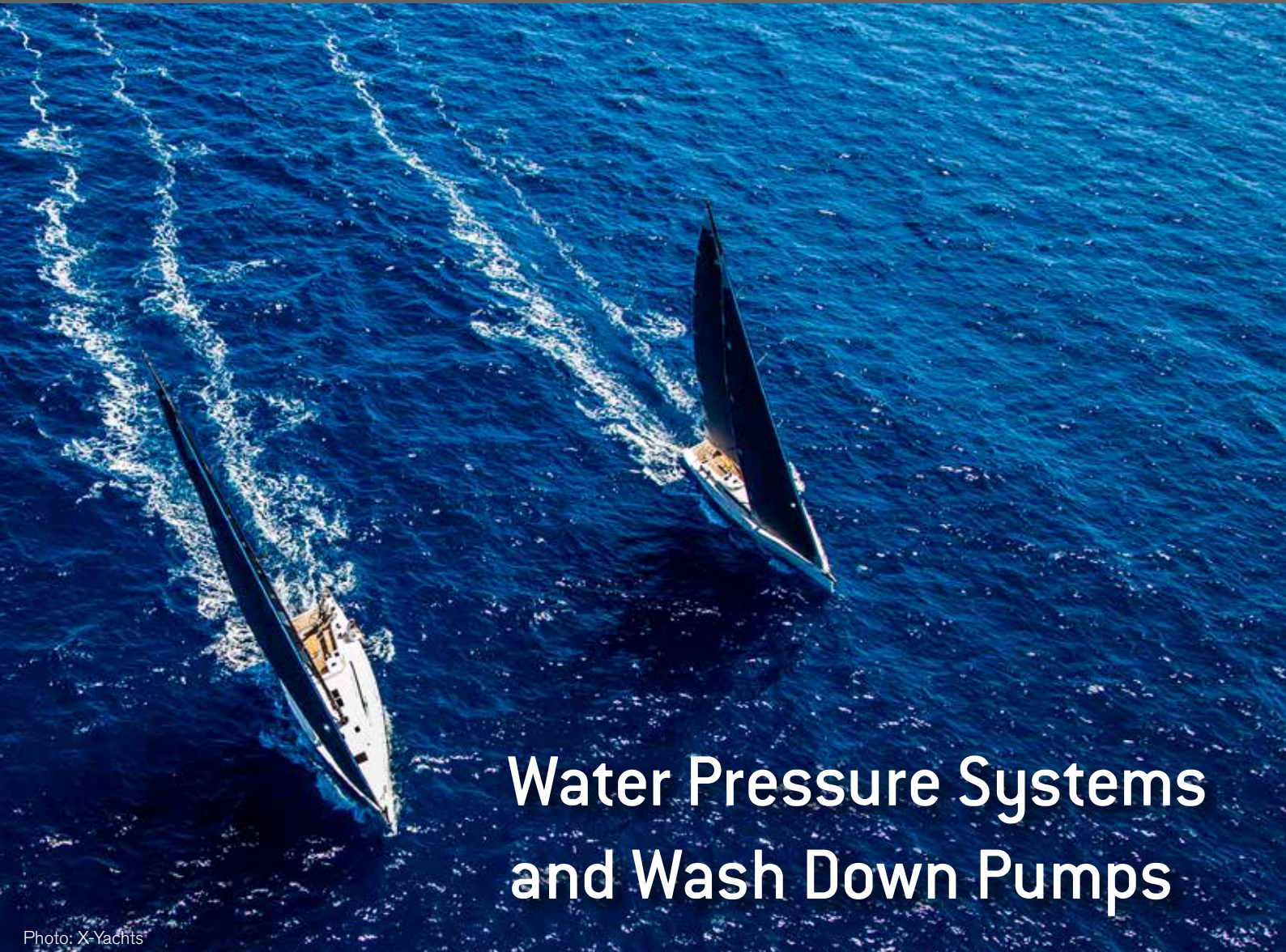


Photo: X-Yachts

# Water Pressure Systems and Wash Down Pumps



The Aqua Jet five chamber diaphragm pump provides the perfect water pressure or deck wash solution for both small and medium sized leisure and commercial boats as well as for mobile homes, campers and summer homes.

Quiet and pulsation-free even at low speeds. Efficient and compact, Aqua Jet pumps are particularly suitable where low amperage and sound levels in relation to water flow are placed at a premium - such as in shower and galley applications. Integrated pressure switch turns pump on and off automatically when tap is opened and closed.

Operates in fresh or sea water. Self-priming.



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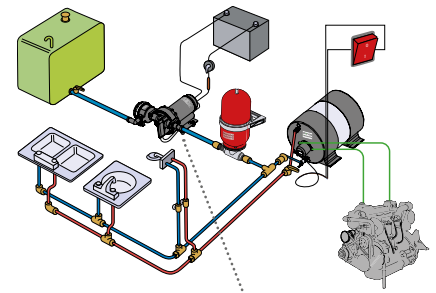
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ISO8846  
ISO10133



# Aqua Jet Water Pressure Systems

The five chamber Aqua Jet Water Pressure Pump (WPS) series provides a reliable heart for small boat and recreational vehicle water pressure systems. Compared to conventional three or four-chamber diaphragm pumps, the Aqua Jet demonstrates dramatically lower noise and water pulsation characteristics.

It is recommended to install the WPS-pumps with an accumulator tank. Always use a PUMProtector inlet strainer before the pump intake.



Aqua Jet WPS Water Pressure Pump

## AQUA JET WPS 2.4



Diaphragm	Santoprene
Valves	EPDM
Body	PP/PPA
Motor	85W
Weight	1.6 kg/3.5 lbs
Length	204 mm/8.02"
Width	197 mm/7.76"
Height	110 mm/4.33"

Part No.	Description	Capacity
10-24604-03	Aqua Jet WPS 2.4 12V	9 l/min – 2.4 GPM
10-24604-04	Aqua Jet WPS 2.4 24V	9 l/min – 2.4 GPM

Pressure Cut Off*	Fuse Size	Connection**
2.8 bar – 41 psi	10 A	3/8" BSP / hose 1/2", 1/2" BSP 3/4" hose
2.8 bar – 41 psi	5 A	3/8" BSP / hose 1/2", 1/2" BSP 3/4" hose

## AQUA JET WPS 2.9



Diaphragm	Santoprene
Valves	EPDM
Body	PP/PPA
Motor	85W
Weight	1.6 kg/3.5 lbs
Length	204 mm/8.02"
Width	197 mm/7.76"
Height	110 mm/4.33"

Part No.	Description	Capacity
10-13405-03	Aqua Jet WPS 2.9 12V	11 l/min – 2.9 GPM
10-13405-04	Aqua Jet WPS 2.9 24V	11 l/min – 2.9 GPM

Pressure Cut Off*	Fuse Size	Connection**
2.8 bar – 41 psi	10 A	3/8" BSP / hose 1/2", 1/2" BSP 3/4" hose
2.8 bar – 41 psi	5 A	3/8" BSP / hose 1/2", 1/2" BSP 3/4" hose

## AQUA JET WPS 3.5



Diaphragm	Santoprene
Valves	EPDM
Body	PP/PPA
Motor	85W
Weight	2 kg/4.5 lbs
Length	236,5 mm/9.31"
Width	210 mm/8.25"
Height	116 mm/4.575"

Part No.	Description	Capacity
10-13395-03	Aqua Jet WPS 3.5 12V	13 l/min / 3.5 GPM
10-13395-04	Aqua Jet WPS 3.5 24V	13 l/min / 3.5 GPM

Pressure Cut Off*	Fuse Size	Connection**
2.8 bar – 41 psi	10 A	3/8" BSP / hose 1/2", 1/2" BSP 3/4" hose
2.8 bar – 41 psi	5 A	3/8" BSP / hose 1/2", 1/2" BSP 3/4" hose

Aqua Jet 3.5 fitted with a built-in pulsation dampening by-pass valve

## AQUA JET WPS 4.0



Diaphragm	Santoprene
Valves	EPDM
Body	PP
Motor	100W
Weight	2 kg/4.5 lbs
Length	240 mm/9.46"
Width	214 mm/8.42"
Height	110 mm/4.33"

Part No.	Description	Capacity
10-13406-03	Aqua Jet WPS 4.0 12V	15 l/min / 4.0 GPM
10-13406-04	Aqua Jet WPS 4.0 24V	15 l/min / 4.0 GPM

Pressure Cut Off*	Fuse Size	Connection**
2.8 bar – 41 psi	10 A	3/8" BSP / hose 1/2", 1/2" BSP 3/4" hose
2.8 bar – 41 psi	5 A	3/8" BSP / hose 1/2", 1/2" BSP 3/4" hose

## AQUA JET WPS 5.2



Diaphragm	Santoprene
Valves	EPDM
Body	PP
Motor	150W
Weight	2 kg/4.5 lbs
Length	240 mm/9.46"
Width	214 mm/8.42"
Height	110 mm/4.33"

Part No.	Description	Capacity
10-13406-07	Aqua Jet WPS 5.2 12V	20 l/min/ 5.2 GPM
10-13406-08	Aqua Jet WPS 5.2 24V	20 l/min/ 5.2 GPM

Pressure Cut Off*	Fuse Size	Connection**
2.8 bar – 41 psi	15 A	3/8" BSP / hose 1/2", 1/2" BSP 3/4" hose
2.8 bar – 41 psi	8 A	3/8" BSP / hose 1/2", 1/2" BSP 3/4" hose

\*Cut off pressure 2.1 bar/30 psi and 1.4 bar/20 psi available on request

\*\* NPT-connection available on request

## ADDITIONAL ADD-ON'S FOR AQUA JET WPS



### •INLET STRAINER

Part No. 09-24653-01

### •ACCUMULATOR TANK

Part No. 09-46839-01 and 09-46839-02





### AQUA JET FLOW MASTER WPS 5.0 – VARIABLE FLOW

The whisper quiet self-priming Aqua Jet Flow Master WPS 5.0 pump incorporates state-of-the-art electronics to automatically control pump speed. The digital controller adjusts water flow as the demand is increased and decreased while maintaining a very smooth flow. The unique variable flow feature of the Aqua Jet Flow Master WPS 5.0 pump makes it a smart choice for better flow, lower noise and less amp draw. PUMProtector Inlet Strainer included. Recommended to install with an accumulator tank.



<b>Lenght</b>	239 mm/9.4"	<b>Motor</b>	WPS 5.0 – 150 W, 12/24V DC (with built-in thermal protection)
<b>Width</b>	209 mm/8.22"	<b>Body</b>	Nylon/Polypropylene
<b>Height</b>	113 mm/4.49"	<b>Valves</b>	Santoprene/EPDM
<b>Weight</b>	2 kg/4.5 lbs	<b>Diaphragm</b>	Santoprene

Part No.	Description	Capacity	Pressure Cut Off*	Fuse Size	Connection**
10-13329-03	Aqua Jet Flow Master WPS 5.0 12V	19 l/min – 5 GPM	3.5 bar – 50 psi	15 A	3/8" BSP / hose 1/2", 1/2" BSP / hose 3/4"
10-13329-04	Aqua Jet Flow Master WPS 5.0 24V	19 l/min – 5 GPM	3.5 bar – 50 psi	8 A	3/8" BSP / hose 1/2", 1/2" BSP / hose 3/4"

\*Cut off pressure 2.1 bar/30 psi and 1.4 bar/20 psi available on request

\*\* NPT-connection available on request



**Install Water Pressure Systems**  
for perfect water pressure in  
recreational vehicles, leisure boats,  
trains, buses and summer homes.



Aqua Jet Uno WPS

### AQUA JET UNO WPS 3.5 AND 5.2 – COMPACT ALL IN ONE UNIT

Medium capacity unit with a single Aqua Jet WPS capacity 13 l/min or 20 l/min fixed on a base with PUMProtector Inlet Strainer and a 2 litres pre-pressurized Accumulator Tank.

Part No.	Description	Capacity	Pressure Cut Off*	Fuse Size	Connection**
10-13408-01	Aqua Jet Uno WPS 3.5 GPM 12V	13 l/min – 3.5 GPM	2.8 bar – 41 psi	10 A	3/4" hose
10-13408-02	Aqua Jet Uno WPS 3.5 GPM 24V	13 l/min – 3.5 GPM	2.8 bar – 41 psi	5 A	3/4" hose
10-13408-03	Aqua Jet Uno WPS 5.2 GPM 12V	20 l/min – 5.2 GPM	2.8 bar – 41 psi	15 A	3/4" hose
10-13408-04	Aqua Jet Uno WPS 5.2 GPM 24V	20 l/min – 5.2 GPM	2.8 bar – 41 psi	8 A	3/4" hose
09-46781-01	Switch Complete WPS 41 psi		41 psi		



Aqua Jet Duo WPS

### AQUA JET DUO WPS 10.4 – COMPACT ALL IN ONE UNIT

High capacity unit with two parallel-connected Aqua Jet WPS capacity 40 l/min fixed on a base with PUMProtector Inlet Strainers and a 2 litres pre-pressurized Accumulator Tank.

Part No.	Description	Capacity	Pressure Cut Off*	Fuse Size	Connection**
10-13409-01	Aqua Jet Duo WPS 10.4 GPM 12V	40 l/min – 10.4 GPM	2.8 bar – 41 psi	25 A	3/4" hose
10-13409-02	Aqua Jet Duo WPS 10.4 GPM 24V	40 l/min – 10.4 GPM	2.8 bar – 41 psi	15 A	3/4" hose
09-46781-01	Switch Complete WPS 41 psi		41 psi		
09-46781-03	Switch Complete WPS 30 psi		30 psi		

### AQUA JET UNO MAX WPS 2.9 AND 3.5 – COMPACT ALL IN ONE UNIT

Medium capacity unit with a single Aqua Jet WPS with capacity 11 or 13 l/min fixed on a wooden panel for easy and efficient installation. The unit includes a PUMProtector inlet strainer and a 2 litres pre-pressurized accumulator tank.

Part No.	Description	Capacity	Pressure Cut Off*	Fuze Size	Connection**
10-13410-01	Aqua Jet Uno-Max WPS 2.9 12V	11 l/min – 2.9 GPM	2.8 bar – 41 psi	10 A	3/4" hose
10-13410-02	Aqua Jet Uno-Max WPS 2.9 24V	11 l/min – 2.9 GPM	2.8 bar – 41 psi	5 A	3/4" hose
10-13411-01	Aqua Jet Uno-Max WPS 3.5 12V	13 l/min – 3.5 GPM	2.8 bar – 41 psi	10 A	3/4" hose
10-13411-02	Aqua Jet Uno-Max WPS 3.5 24V	13 l/min – 3.5 GPM	2.8 bar – 41 psi	5 A	3/4" hose

\*Cut off pressure 2.1 bar/30 psi and 1.4 bar/20 psi available on request

\*\* NPT-connection available on request

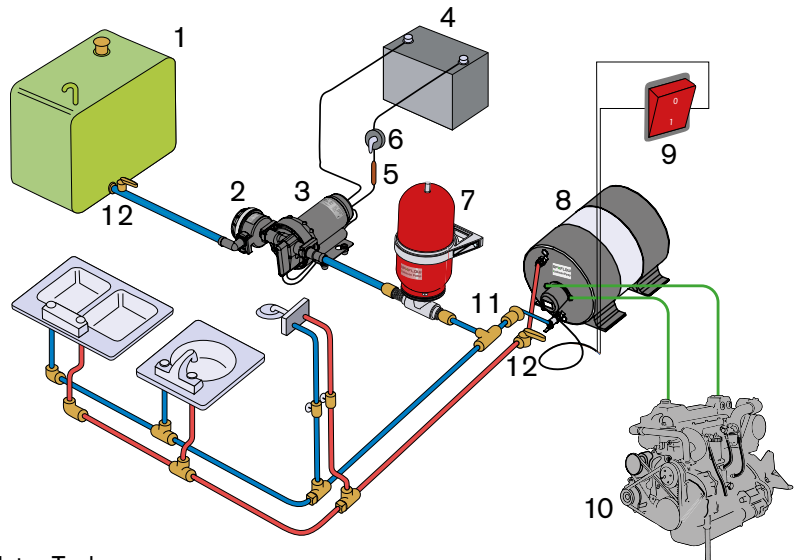


Aqua Jet Uno-Max WPS



# FRESH WATER HANDLING

Components included in a complete Water Pressure Systems:



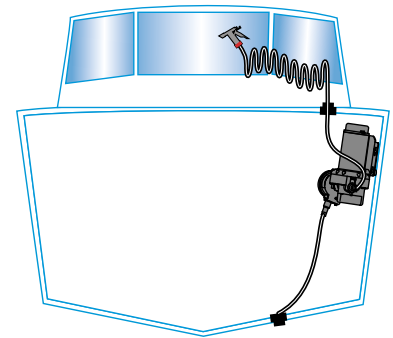
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|--|--------------------------|
| 1. Water Tank                          | 7. Accumulator Tank      |
| 2. PUMProtector Inlet Strainer         | 8. AquaH Water Heater    |
| 3. Aqua Jet Water Pressure System Pump | 9. ON/OFF Bipolar Switch |
| 4. Battery                             | 10. Motor                |
| 5. Fuse                                | 11. Check Valve          |
| 6. Switch                              | 12. Shut-off Valve       |

## Aqua Jet Wash Down (WD) Pump Systems

The quiet and pulsation-free Aqua Jet five-chamber diaphragm wash down pumps provide the perfect wash down solution for cleaning recreational equipment.

With a higher pressure of up to 5 bar, clean-up is faster and easier than ever before. Complete with spray pistol, PUMProtector inlet strainer and hose connections for 1/2" hose.

Both BSP and NPT connections included.



### AQUA JET WASH DOWN PUMP 2.9, 3.5 AND 5.2 GPM

Complete with spray pistol, PUMProtector inlet strainer and hose connections for 1/2" hose. Both BSP and NPT connections included in package.

<b>Dimensions</b>	See Aqua Jet WPS 2.9, 3.5 and 5.2	<b>Body</b>	PA/PPA
<b>Motor</b>	Aqua Jet WD 2.9 - 90 W, 12/24V DC	<b>Valves</b>	Nitrile
	Aqua Jet WD 3.5 - 120 W, 12/24V DC	<b>Diaphragm</b>	Santoprene
	Aqua Jet WD 5.2 - 185 W, 12/24V DC (with built-in thermal protection)		

**Body** PA/PPA  
**Valves** Nitrile  
**Diaphragm** Santoprene



Part No.	Description	Capacity	Pressure Cut Off	Fuse Size	Connection
10-24728-03	Aqua Jet WD 2.9 12V	11 l/min – 2.9 GPM	2.8 bar – 41 psi	10 A	3/8" BSP x 1/2" barb
10-24728-04	Aqua Jet WD 2.9 24V	11 l/min – 2.9 GPM	2.8 bar – 41 psi	5 A	3/8" BSP x 1/2" barb
10-13399-03	Aqua Jet WD 3.5 12V	13 l/min – 3.5 GPM	5 bar – 70 psi	15 A	3/8" BSP x 1/2" barb
10-13399-04	Aqua Jet WD 3.5 24V	13 l/min – 3.5 GPM	5 bar – 70 psi	8 A	3/8" BSP x 1/2" barb
10-13407-07	Aqua Jet WD 5.2 12V	20 l/min – 5.2 GPM	5 bar – 70 psi	20 A	3/8" BSP x 1/2" barb
10-13407-08	Aqua Jet WD 5.2 24V	20 l/min – 5.2 GPM	5 bar – 70 psi	10 A	3/8" BSP x 1/2" barb

### Accessories

for Water Pressure Systems and Wash Down Pumps, see page 12.







**Install Wash Down Pumps** for efficient cleaning of recreational equipment and boat decks.

## Aqua Jet Wash Down Pump Kits

Discover the different wash down kits from SPX FLOW Johnson Pump.

The kits are equipped with a high capacity Aqua Jet WPS (3.5 or 5.2), PUMProtector inlet strainer, spray nozzle and the relevant connections – all in one package.



### AQUA JET WASH DOWN 3.5 GPM PUMP KIT

13 l/min (35 GPM) wash down kit conveniently includes a high capacity Aqua Jet WD 3.5, 5 bar (70 psi), PUMProtector inlet strainer, spray nozzle, 7.5 meters (25') of coiled wash down hose – all in one package.

Part No.	Description
10-13558-01	Aqua Jet 3.5 Wash Down Pump Kit 12V
10-13558-02	Aqua Jet 3.5 Wash Down Pump Kit 24V



### AQUA JET WASH DOWN 5.2 GPM PUMP KIT

20 l/min (5.2 GPM) wash down kit conveniently includes a high capacity Aqua Jet WD 5.2, 5 bar (70 psi), PUMProtector inlet strainer, spray nozzle, bulk head fitting with valve, 7.5 meters (25') of coiled wash down hose and an illuminated panel switch – all in one package.

Part No.	Description
32-64534	Aqua Jet 5.2 Wash Down Pump Kit 12V
32-64534R-24	Aqua Jet 5.2 Wash Down Pump Kit 24V



### AQUA JET WASH DOWN 5.2 GPM / 500 GPH LIVEWELL PUMP KIT

A wash down kit including a high capacity Aqua Jet Wash Down 5.2 (5 bar/70 psi) pump, a 500 GPH Twin Port Livewell Pump, PUMProtector Inlet Strainer, spray nozzle, bulk head fitting with valve, 7.5 meters (25') of coiled wash down hose and two illuminated panel switches - all in one package. Aqua Jet wash down/livewell pump kit makes it easy to add a wash down and livewell pump to any boat.

Part No.	Description
32-64634	Aqua Jet WD 5.2 GPM/500 GPH 12V Livewell

# PUMProtector™ Strainer

The PUMProtector™ Universal and Inlet Strainers prevent debris and other particles from damaging the pump or passing through the system to the final outlet. Both of these strainers feature transparent covers for simple inspection, a wide variety of KlickTite™ port connectors for simple installation and removal, and high quality materials for simple maintenance.

The design and connectors make it possible to remove the entire unit for thorough cleaning wherever it is most convenient. It is recommended to use 40 mesh for water pressure and wash down pumps and 20 mesh for general purpose pumps.

## UNIVERSAL STRAINER

<b>Materials</b>	Strainer – Polyamide 66, black	<b>Diameter</b>	80 mm / 3.15"
	Strainer Cover – Acrylic, clear (Part No. 09-36012)	<b>Height</b>	60 mm / 2.35"
	Screen – Stainless steel, 20 and 40 mesh	<b>Weight</b>	0.15 kg / 0.33 lbs
	O-rings – Silicone and EPDM	<b>Mesh size</b>	20 or 40



Part No.	Description	Mesh	Max Liquid Temp.	Max Temp. for Drinking Water	KlickTite™ Connector
09-24652-01	PUMProtector™ Universal Strainer	40	+50°C – +120°F	+30°C – +85°F	2 x 1/2" hose / 3/8" BSP, 2 x 3/4" hose / 1/2" BSP
09-24652-03	PUMProtector™ Universal Strainer	20	+50°C – +120°F	+30°C – +85°F	2 x 1/2" hose / 3/8" BSP, 2 x 3/4" hose / 1/2" BSP
09-36012	Strainer Cover (O-ring not included)				

## INLET STRAINER

<b>Materials</b>	Strainer – Polyamide 66, black	<b>Diameter</b>	80 mm / 3.15"
	Strainer Cover – Acrylic, clear (Part No. 09-36012)	<b>Height</b>	60 mm / 2.35"
	Screen – Stainless steel, 20 and 40 mesh	<b>Weight</b>	0.15 kg / 0.33 lbs
	O-rings – Silicone and EPDM	<b>Mesh size</b>	20 or 40

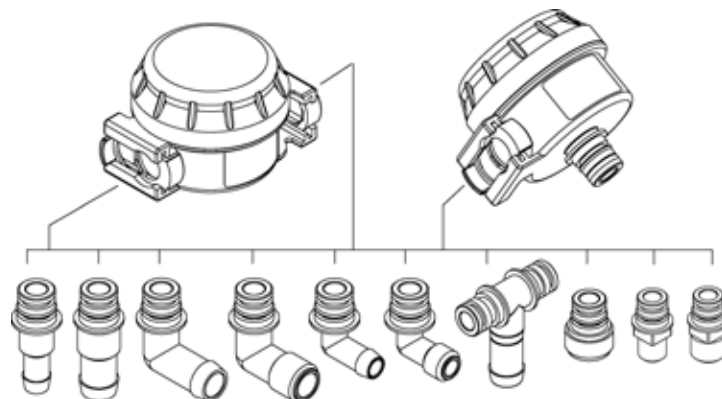


Part No.	Description	Mesh	Max Liquid Temp.	Max Temp. for Drinking Water	KlickTite™ Connector
09-24653-01	PUMProtector™ Inlet Strainer	40	+50°C – +120°F	+30°C – +85°F	1 x 1/2" hose / 3/8" BSP, 1 x 3/4" hose / 1/2" BSP
09-36012	Strainer Cover (O-ring not included)				

## KLICKTITE™ - PORT CONNECTORS

KlickTite™ port connectors are available for virtually any hose diameter and make it possible to remove the entire unit for thorough cleaning wherever it's most convenient. They also make it possible to drain the system quickly for effortless winterizing without the use of any tools.

Part No.	Ps/Package	KlickTite™ Connector
09-46783	2	2 x 1/2" hose and 3/8" BSP
09-46784	2	2 x 3/4" hose and 1/2" BSP
09-46939	2	2 x 90°, 3/4" hose
09-47087	2	2 x 90°, 1/2" BSP
09-46938	2	2 x 90°, 1/2" hose
09-47026	2	2 x 90°, 3/8" BSP
09-47096	2	2 x 3/8" BSP
09-47098	2	2 x 1/2" BSP
09-47092	1	1 x T-connection, 3/4" barb
09-47094	2	Garden Hose Adapter



## INLINE STRAINER

The Inline Strainer is recommended to be installed together with water pressure pumps to protect the pump from impurities. It is easy to disassemble for cleaning.

Part No.	Connection	Total Length	Diameter
48-80035	Inline strainer, 1/2" hose	230 mm / 9.05"	
48-80036	Inline strainer, 3/4" hose	32 mm / 1.25"	





## Accessories - Water Pressure Systems and Wash Down Pumps

### ACCUMULATOR TANK



The use of an accumulator tank is recommended to ensure effective and reliable system function. With an accumulator tank incorporated in the system, the intervals between cut-in and cut-out will be longer when only small amounts of water are drawn off. Less wear and tear on the pump with fewer starts and stops. Pre-pressurized at 0.8 bar / 12 psi.

<b>Volume</b>	2 l / 0.5 gal.
<b>Height</b>	315 mm / 12.4"
<b>Diameter</b>	160 mm / 6.3"
<b>Weight</b>	1,2 kg / 2.7 lbs

Part No.	Description	Connection
09-46839-01	Accumulator Tank 2 lit 15 mm.	1/2" hose connection
09-46839-02	Accumulator Tank 2 lit 19 mm	3/4" hose connection



09-10616

Part No.	Description
09-10616	Bulk head fitting 3/4" hose
09-60615	Black hose Bulk 7.5 m (25ft)
09-46781-01	Switch Complete 2.8 bar (40.6 psi)
09-46781-02	Switch Complete 5.0 bar (72.5 psi)
09-46781-03	Switch Complete 2.1 bar (30 psi)
34-82004	Wash Down Control Panel 12V 2-way ON OFF
34-82004-24V	Wash Down Control Panel 24V 2-way ON OFF



09-60615



09-46781-01



34-82004 / 34-82004-24V

### DECK WASH - QUICK CONNECT FITTING



32-61121BSP

- Flush Mount
- Connects and disconnects under full pressure
- Positive lock bayonet connector
- Double viton o-ring seals
- Large flow capacity
- 316 stainless steel
- Nylon 66 connections

Part No.	Description
32-61121BSP	Deck Wash Quick Connect



# Submersible Bilge Pumps and Switches

Photo: Linder Aluminium Boats



The submersible pumps from SPX FLOW Johnson Pump Marine can handle most bilge pump applications. Heavy duty motors with stainless steel (SS2343) shaft and tough thermoplastic bodies provide for a long pump life.

With an automatic switch installed, the pump automatically starts on when there is water in the bilge and shuts off when it is dry.



EN55014-1  
ISO8846  
ISO8849  
ISO10133

**Johnson Pump®**





# Heavy Duty Submersible Bilge Pumps

Designed to meet and exceed the tough demands of commercial and recreational duty. These pumps has a liquid cooled, 12-pole motor with double ball bearings for extended service life.

## HEAVY DUTY BILGE PUMP 1600-4000 GPH - SUBMERSIBLE BILGE PUMP

The 2200 GPH motor is sealed off by a mechanical seal design, while the 1600 GPH model has lipseal. The 4000 GPH features a robust motor design, mechanical shaft seal, high impact ABS plastic and unique threaded port design.

The impeller is carefully designed and tested to maximize head and flow. Universal base plate and a choice of two sized ports makes for a simple installation. Removable check valve included.

### 1600 GPH

**Shaft** SS2343  
**Wire size** 16 GA (1.3 mm<sup>2</sup>)  
**Wire length** 1.8 m – 6 ft  
**Max Ø** 108 mm – 4.25"  
**Max height** 149 mm – 5.86"  
**Weight** 1.3 kg – 2.75 lbs

### 2200 GPH

**Shaft** SS2343  
**Wire size** 16 GA (1.3 mm<sup>2</sup>)  
**Wire length** 1.8 m – 6 ft  
**Max Ø** 108 mm – 4.25"  
**Max height** 177 mm – 7"  
**Weight** 2.25 kg – 4.96 lbs

### 4000 GPH

**Shaft** SS2343  
**Wire size** 14 GA (2 mm<sup>2</sup>)  
**Wire length** 1.8 m – 6 ft  
**Max Ø** 121 mm – 4.8"  
**Max height** 216 mm – 8.5"  
**Weight** 2.45 kg – 5.40 lbs



1600 GPH



2200 GPH



4000 GPH

Part No.	Description	Capacity 1.0 m head (13.6V/27.2V)	Capacity straight (13.6V/27.2V)	Amp	Fuse Size	Connection
32-1600-01	Heavy Duty Bilge Pump 1600 GPH 12V	98 l/min – 1550 GPH	100 l/min – 1600 GPH	7 A	10 A	1 1/8" and 1 1/4"
32-1600-02	Heavy Duty Bilge Pump 1600 GPH 24V	98 l/min – 1550 GPH	100 l/min – 1600 GPH	3.5 A	6 A	1 1/8" and 1 1/4"
32-2200-01	Heavy Duty Bilge Pump 2200 GPH 12V	120 l/min – 1900 GPH	130 l/min – 2060 GPH	7.5 A	12 A	1 1/8" and 1 1/4"
32-2200-02	Heavy Duty Bilge Pump 2200 GPH 24V	120 l/min – 1900 GPH	130 l/min – 2060 GPH	4.5 A	6 A	1 1/8" and 1 1/4"
32-4000-01	Heavy Duty Bilge Pump 4000 GPH 12V	164 l/min – 2600 GPH	252 l/min – 4000 GPH	15 A	25 A	1 1/2" and 2"
32-4000-02	Heavy Duty Bilge Pump 4000 GPH 24V	164 l/min – 2600 GPH	252 l/min – 4000 GPH	7.5 A	15 A	1 1/2" and 2"

## DISCOVER OUR RANGE OF HEAVY DUTY BILGE PUMPS



### VIKING POWER 16

Part No. 10-13350-03  
 For more information see page 33.



### F3B-19

Part No. 10-24516-01  
 For more information see page 25.

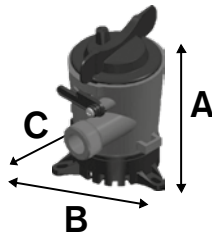
# Submersible Cartridge Bilge Pumps

Bilge pump cleaning and maintenance no longer call for complete disassembly. You can now leave the pump casing attached to both the boat and the hoses. The cartridge bilge pumps can be removed for cleaning or replacement without the use of a single tool. Lift a tab on the top, give the cartridge a twist and pull it out; that's all there is to it. The cartridge contains an all-in-one motor/impeller unit with no loose parts.

## CARTRIDGE - SUBMERSIBLE BILGE PUMP

Our Cartridge Pumps incorporate some of the most advanced features in the industry, features developed from service in a wide variety of uses including racing, cruising, sport fishing, and demanding commercial duties. The 500 GPH, 750 GPH, and 1000 GPH pumps comes with easy-to-install Dura-Port discharge ports to eliminate stress cracking caused by over-tightened hose clamps. The pumps are delivered including both a straight and a 90° smooth elbow Dura-Port as well as a removable check valve.

- Body** Thermoplastic
- Shaft seal** Lip seal
- Motor Shaft** Stainless steel
- Wire Size** 16 GA (1.3mm<sup>2</sup>)
- Height (A)** 4.41" (112 mm)
- Width (B)** 3.46" (88 mm)
- Width (C)** 3.15" (80 mm)



### 500 GPH - 1000 GPH

**Weight** 0.27 kg - 9.6 oz.

### 1250 GPH

**Weight** 0.32 kg - 10.4 oz.

Part No.	Description	Capacity 3 ft (0.9 m) head (13.6V/27.2V)	Capacity straight (13.6V/27.2V)	Amp	Fuse Size	Connection
32-1450-01	Cartridge Bilge Pump 500 GPH 12V	33 l/min - 525 GPH	40 l/min - 630 GPH	2.5 A	5 A	3/4"
32-1550-01	Cartridge Bilge Pump 750 GPH 12V	44 l/min - 700 GPH	50 l/min - 800 GPH	3 A	5 A	3/4"
32-1650-01	Cartridge Bilge Pump 1000 GPH 12V	50 l/min - 800 GPH	63 l/min - 1000 GPH	3.2 A	5 A	3/4"
32-1650-01-24	Cartridge Bilge Pump 1000 GPH 24V	50 l/min - 800 GPH	63 l/min - 1000 GPH	2 A	3 A	3/4"
32-1750-01*	Cartridge Bilge Pump 1250 GPH 12V	60 l/min - 952 GPH	73 l/min - 1150 GPH	3 A	5 A	1 1/8"
32-1750-01-24*	Cartridge Bilge Pump 1250 GPH 24V	60 l/min - 952 GPH	73 l/min - 1150 GPH	2 A	3 A	1 1/8"

\* Does not include Dura-Port connection



500 - 1000 GPH

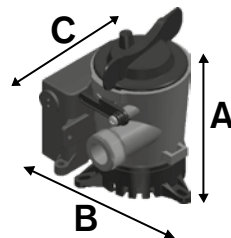


1250 GPH\*

## ULTIMA COMBO - AUTOMATIC SUBMERSIBLE BILGE PUMP

Ultima Combo bilge pump is equipped with the non-clogging electronic switch *Ultima Switch* for automatic operation. The 500 GPH -1000 GPH pumps has easy-to-install Dura-Port discharge ports to eliminate stress cracking caused by overtightened hose clamps. The pumps are delivered including both a straight and a 90° smooth elbow Dura-Port as well as a removable check valve.

- Body** Thermoplastic
- Shaft seal** Lip seal
- Motor Shaft** Stainless steel
- Wire size** 16 GA (1.3 mm<sup>2</sup>)
- Height (A)** 4.41" (112 mm)
- Width (B)** 4.25" (108 mm)
- Width (C)** 3.35" (85 mm)



### 500 GPH - 1000 GPH

**Weight** 0.40 kg - 14.4 oz.

### 1250 GPH

**Weight** 0.45 kg - 16 oz.

Part No.	Description	Capacity 3 ft (0.9 m) head (13.6V/27.2V)	Capacity straight (13.6V/27.2V)	Amp	Fuse Size	Connection
32-1450UC-01	Ultima Combo 500 GPH 12V	33 l/min - 525 GPH	40 l/min - 630 GPH	2.5 A	5 A	3/4"
32-1550UC-01	Ultima Combo 750 GPH 12V	44 l/min - 700 GPH	50 l/min - 800 GPH	3 A	5 A	3/4"
32-1650UC-01	Ultima Combo 1000 GPH 12V	50 l/min - 800 GPH	63 l/min - 1000 GPH	3.2 A	5 A	3/4"
32-1650UC-01-24	Ultima Combo 1000 GPH 24V	50 l/min - 800 GPH	63 l/min - 1000 GPH	2 A	3 A	3/4"
32-1750UC-01*	Ultima Combo 1250 GPH 12V	60 l/min - 952 GPH	73 l/min - 1150 GPH	3 A	5 A	1 1/8"
32-1750UC-01-24*	Ultima Combo 1250 GPH 24V	60 l/min - 952 GPH	73 l/min - 1150 GPH	2 A	3 A	1 1/8"

\* Does not include Dura-Port connection



500- 1000 GPH



1250 GPH\*



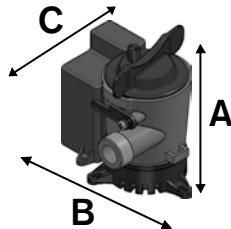


500- 1000 GPH

**CARTRIDGE COMBO - AUTOMATIC SUBMERSIBLE BILGE PUMP**

Cartridge Combo bilge pump is equipped with a non-clogging electro-magnetic float switch for automatic operation. The 500 GPH - 1000 GPH pumps has easy-to-install Dura-Port discharge ports to eliminate stress cracking caused by overtightened hose clamps. The pumps will be delivered including both a straight and a 90° smooth elbow Dura-Port as well as a removable check valve.

- Body** Thermoplastic
- Shaft Seal** Lip seal
- Motor Shaft** Stainless steel
- Wire Size** 16 GA (1.3mm<sup>2</sup>)
- Height (A)** 4.41" (112 mm)
- Width (B)** 4.72" (120 mm)
- Width (C)** 3.3" (84 mm)



**500 GPH – 1000 GPH**

Weight 0.40 kg – 14.4 oz.

**1250 GPH**

Weight 0.45 kg – 16 oz.



1250 GPH\*

Part No.	Description	Capacity 3 ft (0.9 m) head (13.6V)	Capacity straight (13.6V)	Amp	Fuse Size	Connection
32-05503-00	Cartridge Combo 500 GPH 12V	33 l/min - 525 GPH	40 l/min - 630 GPH	2.5 A	5 A	3/4"
32-05703-00	Cartridge Combo 750 GPH 12V	44 l/min - 700 GPH	50 l/min - 800 GPH	3 A	5 A	3/4"
32-05903-00	Cartridge Combo 1000 GPH 12V	50 l/min - 800 GPH	63 l/min - 1000 GPH	3.2 A	5 A	3/4"
32-06203-00*	Cartridge Combo 1250 GPH 12V	60 l/min - 952 GPH	73 l/min - 1150 GPH	3 A	5 A	1 1/8"

\* Does not include Dura-Port connection



750 GPH

**LOW BOY - SUBMERSIBLE BILGE PUMP**

Low Profile pump design for ease of mounting and removal in tight bilge areas. Perfect for vessels with bilge pumps mounted beneath inboard or I/O engines. Removable cartridge style.

The 750 GPH Low Boy Bilge pumps has easy-to-install Dura-Port discharge ports to eliminate stress cracking caused by over-tightened hose clamps. The pumps will be delivered including both a straight and a 90° smooth elbow. Use Electro-Magnetic Float Switch (Part No. 34-1900B-12V) only.

- Max length** 146 mm – 5.75"
- Width** 81 mm – 3.2"
- Height** 72 mm – 2.82"
- Wire size** 16 GA (1.3 mm<sup>2</sup>)



1250 GPH\*

Part No.	Description	Capacity 3 ft (0.9 m) head (13.6V)	Capacity straight (13.6V)	Amp	Fuse Size	Connection
32-33703LB-01	Low Boy Bilge Pump 750 GPH 12V	44 l/min - 700 GPH	50 l/min - 800 GPH	3 A	5 A	3/4"
32-33103LB-01*	Low Boy Bilge Pump 1250 GPH 12V	60 l/min - 952 GPH	73 l/min - 1150 GPH	3 A	5 A	1 1/8"

\* Does not include Dura-Port connection



**SHOWER SUMP MULTIPORTS**

This compact shower sump system is designed to meet the higher demands from today's boating industry where more equipment is used. Includes the fresh water system onboard and involves showers, dishwashing machines, galley sinks, etc. The shower sump, equipped with electronic automatic switch Ultima Switch™ turns on/off automatically using the Ultima switch technology and has multiple inlet ports for handling waste water from more than one tapping point. The check valve on the outlet stops water from flowing back into the tank. The tank has a tight-fitting lid to minimize splashing and odors. To further aid in cleaning, the system includes an easily removable mesh filter.

Part No.	Description	Capacity 1.0 m head (13.6V/27.2V)	Capacity straight (13.6V/27.2V)	Amp	Fuse Size	Intake connection	Discharge connection
32-57151-01	Shower Sump Multiports 1000 GPH 12V	53 l/min - 844 GPH	61 l/min - 972 GPH	3.4 A	5 A	1x 3/4", 1x 3/4" or 1x 1"	3/4"
32-57151-02	Shower Sump Multiports 1000 GPH 24V	53 l/min - 844 GPH	61 l/min - 972 GPH	2 A	3 A	1x 1 1/8" or 1x 1 1/2"	3/4"

- Length x Width** 280x210 mm – 11.42x8.26"
- Max Height** 140 mm – 5.7"
- Weight** 0.9 kg – 2 lbs

Part No.	Spare Parts Shower Sump
32-54304	Clear Sump Cover for Shower Sump
34-28512	Cartridge Motor 1000 GPH 12V
34-36303	Electronic Automatic Switch - Ultima Switch, 12/24V

**ULTIMA BILGE™ – AUTOMATIC SUBMERSIBLE BILGE PUMP WITH INTEGRATED SWITCH**

Sleek, reliable and compact unit with integrated switch ready to install and run for years and years of unerring service. Available in 600, 800, 1000 and 1250 GPH versions. The Ultima Bilge™ 600 GPH to 1000 GPH, has easy-to-install Dura-Port discharge ports to eliminate stress cracking caused by over-tightened hose clamps. The pumps are delivered including both a straight and a 90° smooth elbow Dura-Port and a removable check valve.



600 -1000 GPH

**600, 800 AND 1000 GPH**

**Length** 142 mm – 6"  
**Width** 82 mm – 3.2"  
**Height** 105 mm – 4.1"  
**Weight** 0.66 kg – 23.3 oz.

**1250 GPH**

**Length** 142 mm – 6"  
**Width** 82 mm – 3.2"  
**Height** 117 mm – 4.6"  
**Weight** 0.66 kg – 23.3 oz.

Part No.	Description	Capacity 3 ft (0.9 m) head (13.6V)	Capacity straight (13.6V)	Amp	Fuse Size	Connection
32-47258-008	Ultima Bilge 600 GPH 12V with integrated switch	32 l/min - 500 GPH	38 l/min - 600 GPH	2.5 A	5 A	3/4"
32-47259-008	Ultima Bilge 800 GPH 12V with integrated switch	38 l/min - 600 GPH	51 l/min - 800 GPH	3 A	5 A	3/4"
32-47260-008	Ultima Bilge 1000 GPH 12V with integrated switch	44 l/min - 700 GPH	64 l/min - 1000 GPH	3.2 A	5 A	3/4"
32-47261-005*	Ultima Bilge 1250 GPH 12V with integrated switch	51 l/min - 800 GPH	79 l/min - 1250 GPH	3 A	5 A	1 1/8" and 1 1/4"

\*) Does not include 1250 GPH Dura-Port connection



1250 GPH\*

**FIRST MATE - SUBMERSIBLE BILGE PUMP**

A low budget alternative designed for long life and high performance capacity. The low cost choice for boat owners who still look for quality.

**Max Ø** 115 mm – 4.5"  
**Max Height** 100 mm – 4"  
**Weight** 0.35 kg – 12 oz.

Part No.	Description	Capacity straight (13.6V)	Amp	Fuse Size	Connection
32-1015-01	First Mate 400 GPH 12V	30 l/min - 400 GPH	2.5 A	5 A	3/4"



**Accessories and Spare Parts - Bilge Pumps**

**CARTRIDGE MOTOR - REPLACEMENT PUMP**

Upgrade the output of your bilge pump in a matter of a few minutes by replacing the cartridge. Cleaning debris from the impeller has never been simpler or easier.

Part No.	Description
34-28552	Cartridge Motor 500 GPH 12V
34-28572	Cartridge Motor 750 GPH 12V
34-28512	Cartridge Motor 1000 GPH 12V
34-42522	Cartridge Motor 1250 GPH 12V



**BILGE PUMP COUNTER**

Easy to read and resettable bilge pump counter. Check frequency of bilge pump operation to head off potential issues down the road.

Part No.	Description
34-83000	Bilge Pump Counter



**BILGE PUMP CONTROL**

Switch panel that gives full control of your equipment. Just push the button for manual or automatic bilge pumping. The automatic feature operates in combination with the automatic bilge switches or the electronic float switch. The three-position switch panel has an integrated fuse holder and operating light. *Note! Fuses are not included.*

Part No.	Description
34-1224	Bilge Pump Control 12V 3-Way ON AUTO OFF
34-1225	Bilge Pump Control 24V 3-Way ON AUTO OFF



3 Way Bilge Pump Control



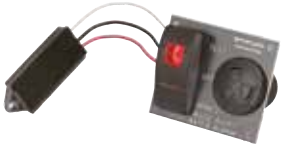


Bilge Alert with *Ultima Switch*  
34-72303-001/ -002

**BILGE ALERT™ - HIGH WATER ALARM WITH ULTIMA SWITCH**

High water alarm with Ultima Switch featuring digital technology using the patented Mirus field effect. Totally sealed fluid detector are never in contact with water, will not corrode and are not affected by oil or debris. Bilge Alert detects water and sends a signal (3 seconds delay) to the alarm and switch conveniently mounted on a panel. Three way rocker switch allows alarm to be tested, turned off and armed (Test-Off-Armed).

Part No.	Description
34-72303-001	Bilge Alert, High Water Alarm with Ultima Switch 12V
34-72303-002	Bilge Alert, High Water Alarm with Ultima Switch 24V



Bilge Alert with sensor  
34-72303

**BILGE ALERT™ - HIGH WATER ALARM WITH SENSOR**

The Bilge Alert high water detection alarm utilizes field effect technology to detect presence of liquid. The detector is highly reliable, durable and takes advantage of advanced sensor technology. The detector activates an alarm of 100 db after a delay of 8 seconds after being exposed to water.

Part No.	Description
34-72303	Bilge Alert, High Water Alarm with sensor 12V



34-900

**SIDE MOUNT BRACKET**

Part No.	Description
34-900	90° Side Mount Bracket



**STRAINER/ VALVE/ Y-CONNECTION**

**IN-LINE NON-RETURN VALVE**

Part No.	Description	Connection
09-24792	In-Line Non-Return Valve	25/38 mm (1" / 1½")
09-24818	In-Line Non-Return Valve	19/32 mm (¾" / 1¼")

- Designed to install in-line.
- Maintains prime in a suction or discharge line.
- Easy to maintain and clean without any tools.

**BILGE STRAINER WITH NON-RETURN VALVE**

Part No.	Description	Connection
09-24794	Strainer	19/32 mm (¾" / 1¼"), 25/38 mm (1" / 1½")

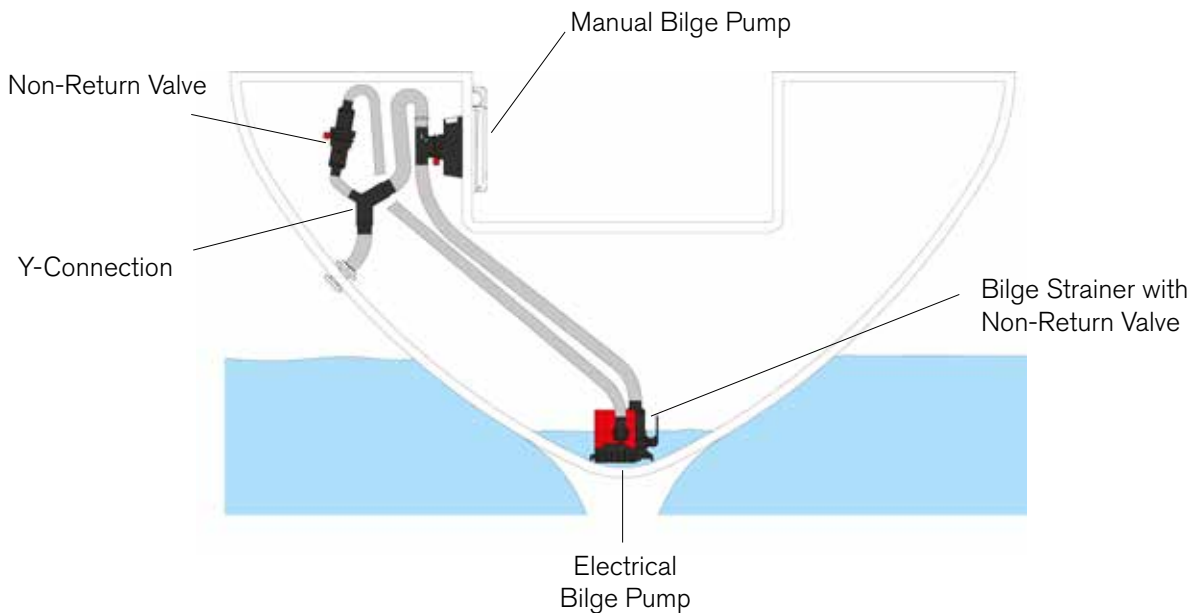
- Designed to prevent bilge debris blocking the inlet suction line.
- Reduce the risk of debris entering and blocking the pump.
- Maintain prime in the suction line.
- Easy to maintain and clean without any tools.

**Y-CONNECTION**

Part No.	Description
01-24814	Y-connection 38X38X25
01-24815	Y-connection 29/32X29/32X19

- Y-connections enable two pumps to discharge through a single line.
- Diverter valve is not required.

**Bilge Pump Systems - Manual and electrical bilge pumps in combination**



# Manual Bilge Pumps

## VIKING COMPACT - MANUAL HAND-POWERED BILGE PUMP

Full-capacity, hand-powered bilge pump perfect for installation in tight spaces. This rugged, yet sleekly designed, single-chamber diaphragm pump provides first-rate performance and is a snap to install. It can be fitted in minutes from one side of the bulkhead with just four screws, self-sealing against the surface with a durable, watertight gasket. With the pump house recessed behind the bulkhead, only the handle is visible from the cabin or cockpit.

The Viking Compact's inlet and outlet ports can be swiveled 360° and are delivered in two sizes with every pump, Ø 25mm (1") and Ø 38mm (1 1/2"). Naturally, the Viking Compact has KlickTite™ connectors fitted as standard, literally making hose connections a snap!

<b>Body</b>	Polypropylene	<b>Maximum head</b>	1.2 meters (4 feet)
<b>Cover</b>	ABS	<b>Combined head/lift</b>	3.3 meters (10.8 feet)
<b>Diaphragm</b>	Nitrile rubber	<b>Connections included</b>	KlickTite™ connectors for 1" (25 mm) or 1 1/2" (38 mm) hose
<b>Valves</b>	Nitrile rubber (1 leaf and 1 tricuspid valve)	<b>Max. liquid temp</b>	+60°C (140°F)
<b>Wetted parts</b>	Polypropylene, PA66GF30 plastics and nitrile rubber	<b>Weight</b>	0.675 kg (1.5 pounds)
<b>Maximum lift</b>	2.1 meters (7 feet)		

### Viking Compact - Flow at 10 kPa head and 45 strokes/min

Ø 25 mm connections	34,5 liters/minute (9.1 US gallons/minute)
Ø 38 mm connections	45 liters/minute (11.9 US gallons/minute)

Part No.	Description	Connection
10-24800-01	Viking Compact Manual Bilge Pump	Ø25 mm (1") and Ø38 mm (1 1/2") ports



## VIKING UNIVERSAL - MANUAL HAND-POWERED BILGE PUMP

Heavy duty, self-priming, hand-powered bilge pump for nearly any type of installation. Viking Universal's mounting bracket allows for vertical or horizontal surface mounting. With the optional Through Deck Kit the pump can be installed behind bulkheads or below the deck.

To minimize required space the Viking Universal excels at adaption. The simple switching of the valves together with the connections allows you to choose flow direction. The included KlickTite™ straight and 90° hose connections can be used in combination. The hose connections and even the pump housing can easily be rotated for optimal positioning.

While designed as a powerful bilge pump, the Viking Universal's large Ø38 mm (1 1/2") valves enable the pump to also be used for pumping toilet waste. Fasteners are included for stowing the handle and the safety clasp ensures that the handle cannot be lost while not in use or during an emergency situation.

At 45 strokes/min and a 1 m (3.28') head (10 kPa (1.45 psi) pressure). The Viking Universal has a flow of 60 l/min - 16 GPM.

<b>Body and cover</b>	Polypropylene plastic reinforced with 30% fiberglass
<b>Diaphragm and valves</b>	Nitrile rubber
<b>Wetted parts</b>	PP30GF, PA66 GF30, POM, stainless steel, nitrile rubber
<b>Maximum suction</b>	3 m (10')
<b>Maximum head</b>	4 m (13')
<b>Combined suction/head</b>	7 m (23')
<b>Connection</b>	KlickTite™ Connectors 38mm (1 1/2") hose. Both straight and 90° bends included.
<b>Max. liquid temp</b>	+60°C (140°F)
<b>Weight</b>	1.5 kg (3.3 lbs)

Part No.	Description	Connection
10-13530-01	Viking Universal Manual Bilge Pump	Ø38 mm (1 1/2")
09-36250	Viking Universal, Through Deck Kit	

## Accessories

Part No.	Description	Connection
09-47493	Connection, 90° In/Out	Ø38 mm
09-47495	Connection, 90° In/Out	Ø25 mm
09-47543	Connection, straight In/Out	Ø38 mm
09-47544	Connection, straight In/Out	Ø25 mm



09-36250







**VIKING HAND PUMP THRUDECK AND BULKHEAD  
- HAND POWERED DIAPHRAGM BILGE PUMP**

When the power is out you can always depend on the hand operated diaphragm bilge pump. The pump is available in two models for various installation alternatives. It can be mounted behind walls, through deck and under bulkheads. Viking Thru Deck for installation behind vertical wall or under deck with sealing boot, complete with a cover plate. Viking Bulkhead for surface installation with horizontal lever. The Viking pump can also be used for pumping toilet waste due to the large valve openings.

<b>Capacity data</b> (At 1 m/3.28' suction height: 0.9 l/stroke)	<b>Diameter</b>	164 mm – 6.45"
60 strokes/min      54 l/min – 14.5 GPM	<b>Handle length</b>	285 mm – 11.22"
80 strokes/min      72 l/min – 19 GPM	<b>Width</b>	253 mm – 9.96"
100 strokes/min     90 l/min – 24 GPM	<b>Height</b>	133 mm – 5.23"
<b>Max suction height</b>	<b>Weight</b>	2 kg – 4.5 lbs
4 m – 13 ft		

Part No.	Description
70-50005	Viking Hand Pump Thru Deck 1 1/2"
70-50025	Viking Hand Pump Thru Deck 1"
70-50007	Viking Hand Pump Bulkhead 1 1/2"
70-50027	Viking Hand Pump Bulkhead 1"

**Bilge Pump Switches**

**ULTIMA SWITCH™ - ELECTRONIC AUTOMATIC SWITCH**



The electronic automatic switch Ultima Switch™ uses the patented Mirus field effect detector cells producing micro-electrical fields that detect disruptions caused by water and fluids. Detector cells are totally sealed and are never in contact with the water, will not corrode and are not affected by oil or foreign debris.

No moving parts, totally sealed solid state electronics and field detectors, no mercury and no exposed sensors eliminate corrosion possibilities and makes the Ultima Switch™ environmentally sensitive.

Ultima Switch™ activates at a 50 mm (2") fluid level and deactivates at a 20 mm (3/4") fluid level. A three second delay prevents false starts.

Ultima Switch™ is rated to handle pumps up to 20A at 12V or 24V.

Part No.	Description	Max Amp.
34-36303	Ultima Switch™ Electronic Automatic Switch 12/24V (incl. base)	20 A

**ELECTRO-MAGNETIC FLOAT SWITCH**



Compact mechanical switch offers a combination of reliable solid state electronics and a sealed float switch. False start prevention, no mercury, high impact plastic and encapsulated electronics adds up to dependability.

Activates pump at 2" water level, deactivates pump at 3/4" water level.

The switch is designed to attach to the SPX FLOW Johnson Pump Cartridge bilge pumps. When attaching to other SPX FLOW Johnson Pump bilge pumps, use the adapter provided.

Part No.	Description	Max Amp.
34-1900B-12V	Electro-Magnetic Float Switch, 12V	15 A
34-1900B-24V	Electro-Magnetic Float Switch, 24V	10 A

**AS888 - AUTOMATIC FLOAT SWITCH**



The AS888 automatic switch has a time-proven micro switch without mercury. When water exceeds the acceptable level, the pump is turned on by a rolling steel ball, which changes the pressure on the micro switch. For full automatic bilge pumping operation, connect the automatic switch to your bilge pump. The AS888 attaches to any SPX FLOW Johnson Pump bilge pump through the clip on "T-slot" and can be used with 6, 12, 24 or 32V systems.

Part No.	Description	Max Amp.
34-888	AS888 Automatic Float Switch	15 A



# Fishing Livewell Pumps and Accessories

Photo: Arronet



Leading the way, SPX FLOW Johnson Pump has a full assortment of Livewell and Aerator pumps to meet the demanding needs of recreational and professional fisherman worldwide.

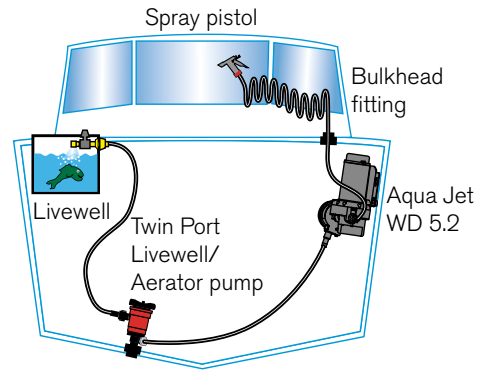
Easy to clean and maintain replaceable motor cartridges. Pump styles in straight, 90 degree and sea cock installations available in flow rates from 500 GPH to 1600 GPH.



EN55014  
ISO8846  
ISO10133



## Fishing Livewell Pumps and Accessories



500 GPH

### TWIN PORT - AERATOR PUMP

Offer the convenience of using only one intake for both the livewell and raw water wash down pump. The 3/4" tapered inlet connects directly to the sea cock and the upper outlet port provides a continuous flow of water through the 3/4" discharge to the livewell while the lower outlet port connects to the wash down pump through either a 1/2" or 3/4" ports. High pressure inlet seal easily handles the higher pressures created by high speed pickups commonly used.

Part No.	Description
32-48503	Twin Port Aerator Pump 500 GPH 12V
32-48703	Twin Port Aerator Pump 750 GPH 12V

### CARTRIDGE - AERATOR PUMP

Livewell pumps in 500 GPH and 750 GPH capacities with two different intake configurations of straight and 90°. Smaller profiles to fit in more confined spaces. Easy to change motor cartridge.

Part No.	Description
32-2850	Cartridge Aerator Pump 500 GPH 12V Straight
32-3850	Cartridge Aerator Pump 500 GPH 12V 90°
32-2870	Cartridge Aerator Pump 750 GPH 12V Straight
32-3870	Cartridge Aerator Pump 750 GPH 12V 90°

### AQUA JET WASH DOWN 5.2 GPM/ 500 GPH LIVEWELL PUMP KIT

A wash down kit including a high capacity Aqua Jet Wash Down 5.2 (5 bar/70 psi) pump, a 500 GPH Twin Port Livewell Pump, PUMProtector Inlet Strainer, spray nozzle, bulk head fitting with valve, 7.5 meters (25') of coiled wash down hose and two illuminated panel switches - all in one package. Aqua Jet wash down/livewell pump kit makes it easy to add a wash down and livewell pump to any boat.

Part No.	Description
32-64634	Aqua Jet WD 5.2 500 GPH 12V Livewell



**PRO SERIES LIVWELL/BAITWELL - AERATOR PUMP**

Features heavy duty bronze bottom inlet, 1600 GPH of pumping power, dual port capability, mega torque motor, double ball bearings, quiet running design, 1" NPT female intake. Built for the serious fisherman.

Part No.	Description	Capacity straight (13.6V/27.2V)	Capacity 3 ft (0.9 m) head (13.6V/27.2V)	Amp	Fuse Size	Connection
32-16004B	Pro Series Aerator Pump 1600 GPH 12 V	1600 GPH	1550 GPH	7 A	10 A	1 1/8" and 1 1/4"
32-16004B-24	Pro Series Aerator Pump 1600 GPH 24 V	1600 GPH	1550 GPH	3.5 A	6 A	1 1/8" and 1 1/4"



**ICE CHEST - AERATOR KIT**

Converts any good sized ice chest (Esky) into your own portable live bait tank. The Ice Chest Aerator will keep your live bait alive, or catch fresh, even during the heat of the day. Includes a sturdy First Mate bilge pump, hose, spray bar, press on clamp, battery clamps and clear-cut instructions. Since there are no holes to drill the chest can always be returned to its original purpose.

Part No.	Description
32-24052	Ice Chest Aerator kit



**IN-WELL - AERATOR KIT**

The easiest way to add oxygen to your live bait well. Use it as your primary aerator, or to recirculate while you are making a long run across the bay, or if you are trailing the boat, you can stop for fuel and be aerating your catch while the boat is on the trailer. A dependable 500 GPH Cartidge pump forces water through the aerating head to provide vital oxygen for respiration ensuring your bait stays fresh longer. To empty the well at the end of the day, merely open the valve, activate the pump and water passes through a discharge fitting.

Part No.	Description
32-24014	In-well Aerator kit



Photo: Volvo Penta Next Generation 6.2L Engine





# Flexible Impeller Pumps (FIP) DC - Bilge, Deckwash and Refueling



Photo: Cranchi



With their high level of flexibility, these pumps are ideally suited for use in boats as bilge and deckwash pumps, fresh water pumps, refuelling pumps for oil and diesel. These pumps may be combined with a vacuum switch for automatic operation.

Capacities vary from max 15 l/min to 55 l/min, allowing the proper matching of the pump to the application.

All motors are heavy duty to provide long service life even under heavy use. Available in 12 or 24 volts.



F2P10-19, F3B-19, F4B-19, F4B-11  
EN50082-1  
EN55014-1  
IEC801-2  
IEC801-3  
ISO8846  
ISO8849  
ISO10133  
F5B-19 12/24 V  
EN55014  
ISO8846

## DC driven Flexible Impeller Pumps

### F2P10-19 – CAPACITY 15 L/MIN 4 GPM

Fully equipped, self-priming multipurpose pump operating on a simple and uncomplicated principle. Ideal for pumping water, oils and chemicals.

Part No.	Description	Body	Impeller*	Seal	Connection	Length	Width	Height	Weight
10-24886-01	F2P10-19 12V	PA	09-1077B-9	Lip seal	½" hose	172 mm – 6.8"	117 mm – 4.6"	78 mm	1,6 kg – 3.5 lbs
10-24886-02	F2P10-19 24V	PA	09-1077B-9	Lip seal	½" hose	172 mm – 6.8"	117 mm – 4.6"	78 mm	1,6 kg – 3.5 lbs

\*Includes Nitrile impeller



### F3B-19 – CAPACITY 21 L/MIN 5.5 GPM

Perfect for bilge pumping, deckwash, water circulation, oil and diesel refuelling at dockside service, etc.

Part No.	Description	Body	Impeller*	Seal	Connection	Length	Width	Height	Weight
10-24516-01	F3B-19 12V	Bronze	09-843S-9	Lip seal	⅜" BSP	170 mm – 6.7"	113 mm – 4.4"	82 mm – 3.22"	2 kg – 4.5 lbs
10-24516-02	F3B-19 24V	Bronze	09-843S-9	Lip seal	⅜" BSP	170 mm – 6.7"	113 mm – 4.4"	82 mm – 3.22"	2 kg – 4.5 lbs

\*Includes Nitrile impeller



### F3B-19 OIL CHANGE – CAPACITY 21 L/MIN 5.5 GPM

Reversible rubber impeller pump with integrated quick reversing switch. Designed to remove old oil from the engine/fill new oil back into the engine.

Part No.	Description	Body	Impeller*	Seal	Connection	Length	Width	Height	Weight
10-24760-01	F3B-19 Oil Change 12V	Bronze	09-843S-9	Lip seal	⅜" BSP	70 mm – 6.7"	113 mm – 4.4"	115 mm – 4.5"	2,1 kg – 4.5 lbs
10-24760-02	F3B-19 Oil Change 24V	Bronze	09-843S-9	Lip seal	⅜" BSP	70 mm – 6.7"	113 mm – 4.4"	115 mm – 4.5"	2,1 kg – 4.5 lbs

\*Includes Nitrile impeller



### F38B-19 – CAPACITY 35 L/MIN 9 GPM

Perfect for bilge pumping, deckwash, water circulation, oil and diesel refuelling at dockside service, etc.

Part No.	Description	Body	Impeller*	Seal	Connection	Length	Width	Height	Weight
10-24727-01	F38B-19 12V	Bronze	09-824P-9	Lip seal	Hose 1" / ½" BSP	180 mm – 7"	120 mm – 4.72"	90 mm – 3.54"	3 kg – 6.6 lbs
10-24727-02	F38B-19 24V	Bronze	09-824P-9	Lip seal	Hose 1" / ½" BSP	180 mm – 7"	120 mm – 4.72"	90 mm – 3.54"	3 kg – 6.6 lbs

\*Includes Nitrile impeller



### F4B-19 – CAPACITY 48 L/MIN 12.5 GPM

Perfect for bilge pumping, deckwash, water circulation, oil and diesel refuelling at dockside service, etc.

Part No.	Description	Body	Impeller*	Seal	Connection	Length	Width	Height	Weight
10-24689-01	F4B-19 12V	Bronze	09-824P-9	Lip seal	Hose 1" / ½" BSP	202 mm – 8"	120 mm – 4.72"	90 mm – 3.54"	3 kg – 6.6 lbs
10-24689-02	F4B-19 24V	Bronze	09-824P-9	Lip seal	Hose 1" / ½" BSP	202 mm – 8"	120 mm – 4.72"	90 mm – 3.54"	3 kg – 6.6 lbs

\*Includes Nitrile impeller



### F4B-11 ULTRA BALLAST – CAPACITY 52 L/MIN 13.5 GPM SKI/WAKEBOARD

Designed to quickly fill or, when reversed, drain a ballast tank at a rate of more than 45 l/min (12 GPM). Capable of pumping fresh or sea water the pump's robust design can handle the rigors of continuous duty usage, is reversible, and has a built in thermal overload for added protection. Polarity reversing switch kit (Part No. 09-47196) available as accessory. *Note! Only for waterhandling.*

Part No.	Description	Body	Impeller	Seal	Connection	Length	Width	Height	Weight
10-24690-01	F4B-11 Ultra Ballast 12V	Bronze	09-824P-1*	Lip seal	Hose 1" / ½" BSP	202 mm – 8"	120 mm – 4.72"	90 mm – 3.54"	3 kg – 6.6 lbs
10-24690-02	F4B-11 Ultra Ballast 24V	Bronze	09-824P-1*	Lip seal	Hose 1" / ½" BSP	202 mm – 8"	120 mm – 4.72"	90 mm – 3.54"	3 kg – 6.6 lbs
10-24690-09	F4B-12 Ultra Ballast 12V	Bronze	09-824P-2**	Lip seal	Hose 1" / ½" BSP	202 mm – 8"	120 mm – 4.72"	90 mm – 3.54"	3 kg – 6.6 lbs
10-24690-10	F4B-12 Ultra Ballast 24V	Bronze	09-824P-2**	Lip seal	Hose 1" / ½" BSP	202 mm – 8"	120 mm – 4.72"	90 mm – 3.54"	3 kg – 6.6 lbs
09-824P-2	Impeller Kit F4 Polyurethane Ballast Pump								

\*Includes EPDM-impeller. \*\*Includes Polyurethane Impeller (orange)





**F5B-19 – CAPACITY 55 L/MIN 14.5 GPM**

For bilge pumping, deckwash, water circulation, oil and diesel refuelling at dockside service, etc.

Part No.	Description	Body	Impeller*	Seal	Connection	Length	Width	Height	Weight
10-24188-1	F5B-19 12V	Bronze	09-1027B-9	Mechanical seal	3/4" BSP	258 mm – 10.15"	131 mm – 5.15"	120 mm – 4.72"	8kg/17.5lbs
10-24188-2	F5B-19 24V	Bronze	09-1027B-9	Mechanical seal	3/4" BSP	258 mm – 10.15"	131 mm – 5.15"	120 mm – 4.72"	8kg/17.5lbs

\*Includes Nitrile impeller

**PRESSURE AND CAPACITY DATA (BASED ON WATER AT 20 °C/68 °F)**

F2P10-19					Ampere Draw	
Bar	kPa	psi	l/min	GPM	12 V	24 V
<b>Count. Duty</b>						
0	0	0	15.0	4.0	5.6	4.0
0.1	10	1.45	14.5	3.8	5.7	4.0
0.2	20	2.90	14.0	3.7	5.8	4.1
0.3	30	4.35	13.5	3.6	5.9	4.1
0.6	60	8.7	11.0	2.9	6.1	4.2
<b>Intermittent Duty</b>						
0.75	75	10.8	9.6	2.5	6.5	4.3
0.9	90	13.0	7.0	1.8	6.5	4.8
<b>Fuse Required</b>					15 A	8 A

F3B-19					Ampere Draw	
Bar	kPa	psi	l/min	GPM	12 V	24 V
<b>Count. Duty</b>						
0	0	0	21.0	5.5	8.4	4.0
0.1	10	1.45	20.5	5.4	8.5	4.0
0.2	20	2.9	20.0	5.3	8.6	4.1
0.3	30	4.35	19.5	5.2	8.8	4.1
0.6	60	8.7	17.8	4.7	9.0	4.2
<b>Intermittent Duty</b>						
0.9	90	13.0	15.6	4.1	9.6	4.3
1.2	120	17.4	12	3.2	10.3	4.8
<b>Fuse Required</b>					15 A	8 A

F38B-19					Ampere Draw	
Bar	kPa	psi	l/min	GPM	12 V	24 V
<b>Count. Duty</b>						
0	0	0	35.0	9.2	10.9	5.0
0.1	10	1.45	33.8	8.9	11.0	5.1
0.2	20	2.9	32.2	8.5	11.0	5.1
0.3	30	4.35	31.0	8.2	11.1	5.2
0.6	60	8.7	25.5	6.7	11.9	5.4
<b>Intermittent Duty</b>						
0.9	90	13.0	15.3	4.0	13.6	6.0
1.2	120	17.4	2.0	0.5	15.8	7.1
<b>Fuse Required</b>					15 A	8 A

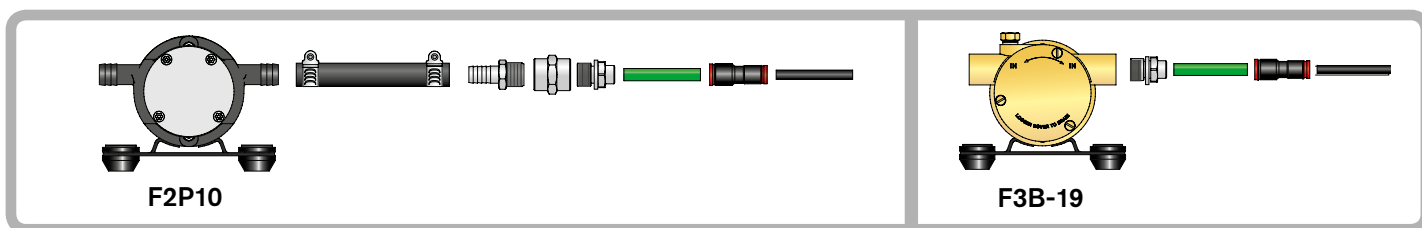
F4B-19					Ampere Draw	
Bar	kPa	psi	l/min	GPM	12 V	24 V
<b>Count. Duty</b>						
0	0	0	48.0	12.7	12.2	6.5
0.1	10	1.45	45.0	11.9	12.3	6.7
0.2	20	2.9	44.5	11.7	12.2	6.8
0.3	30	4.35	41.0	10.8	13.1	7.1
0.6	60	8.7	34.0	9.0	14.9	7.5
<b>Intermittent Duty</b>						
0.9	90	13.0	25.0	6.6	16.5	7.8
1.2	120	17.4	11.0	2.9	18.3	8.8
<b>Fuse Required</b>					15 A	8 A

F5B-19					Ampere Draw	
Bar	kPa	psi	l/min	GPM	12 V	24 V
<b>Count. Duty</b>						
0	0	0	55.0	14.5	23.2	11.9
0.3	30	1.45	49.4	13.1	24.2	12.8
0.6	60	8.7	39.9	10.5	25.1	13.3
0.9	90	13.0	30.1	8.0	26.2	14.0
1.2	120	17.4	19.3	5.1	28.0	14.7
1.5	150	21.76	9.3	2.4	29.8	15.3
<b>Fuse Required</b>					50 A	25 A
<b>Recommended wire size</b>					16 mm <sup>2</sup>	6 mm <sup>2</sup>

**OIL CHANGE KIT**

Suitable for both F2P10-19 (connection 1/2" hose) and F3B-19 (connection 3/8", BSP). Complete with oil dip stick extraction tube 6 and 8 mm. Total hose length 240 cm (120 cm + 120 cm).

Part No.	Description
09-47616	Oil Change Kit



**Accessories**

**POLARITY REVERSING SWITCH KIT FOR ULTRA BALLAST PUMP F4B-11**

Part No.	Description
09-47196	Polarity Reversing Switch Kit



**VACUUM SWITCH**

Part No.	Description
09-45053	Vacuum Switch



**DECKWASH KIT F4B-19**

Part No.	Description
09-46553	Deckwash Kit for F4B-19 (incl. pressure switch, check valve and trigger nozzle)

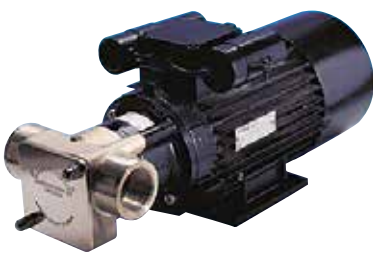




# Flexible Impeller Pumps (FIP) AC

## - Wash Down, Fire Fighting, Septic Handling and Circulation Pump

Photo: Marinarmatur



### FIP-series

Machine directive 2006/42/EG, Annex IIA / I  
FIP-series SH; FIP 20SH, FIP 25SH, FIP 40SH,  
FIP 50SH, FIP 65SH  
Regulation (EC) No 1935/2004 of 27 October  
2004 on materials and articles intended to come  
into contact with food and repealing Directives  
80/590/EEC and 89/109/EEC.

Through their versatility and flexible design, these AC-powered Flexible Impeller Pumps can be customized uniquely for each area of application. The pumps handle most liquids and slurries. In the marine environment the pumps are specially suitable for bilge, wash down, fire fighting, septic handling and water circulation duties.

The capacities range from 20 l/min to 490 l/min. The pumps are characterized by their ease of service and maintenance. For 3-phase power source we offer the FIP20, FIP25, FIP40, FIP40, FIP50 and the FIP65. Additionally, the FIP20, FIP25 and the FIP40 are available for single-phase power.



### ADVANTAGES OF FIP

Excellent self-priming capacity	A dry pump has a suction lift up to 5 meters within a few seconds.
Pulsation free and reversible flow	The FIP-pump gives a uniform flow without pulsation.
Compact design	The FIP has minimal outer dimensions compared to its capacity, which simplifies space and installation requirements.
Easy maintenance and fast to clean	Unique 3 piece design reduces maintenance and cleaning time to a minimum.

# The FIP stainless steel Industrial version

316 stainless steel pump with BSP threads suitable for non hygienic applications. Available in either close coupled flange or conventional pedestal mount.



## FIP40SI

Suitable for discharge of septic tank. Motor sold separately.\*

Part No.	Description	Body	Connection	Impeller	Shaft	Shaft seal	Shaft end
10-13214-000	FIP40SI-BSP02M01F90	Stainless steel	BSP	Neoprene	Double flat	Mechanical	Flange

## THE FIP BRONZE VERSION

Bronze pump with BSP threads for liquids such as saltwater, mineral oils, slurries, additives or abrasive products.

## FIP25B

Suitable for wash down, bilge, water circulation, etc. Motor sold separately.\*

Part No.	Description	Body	Connection	Impeller	Shaft	Shaft seal	Shaft end
10-45874-01	FIP25B-BSP00M01F80	Bronze	BSP	Neoprene	Double flat	Mechanical	Flange

## FIP40B

Suitable for wash down, bilge, water circulation, fire fighting reserve, etc. Motor sold separately.\*

Part No.	Description	Body	Connection	Impeller	Shaft	Shaft seal	Shaft end
10-45880-01	FIP40B-BSP00M01F90	Bronze	BSP	Neoprene	Double flat	Mechanical	Flange

\* Motors for the FIP pumps are available as 4-, 6- or 8-pole with speeds between 700-1450 rpm.

## FIP MODEL SPECIFICATIONS

Example: FIP 20 SH - DIN 4 2 M01 P80  
 1 2 3 4 5 6 7 8

### 1. Family name

FIP = Flexible Impeller Pump

### 2. Pump size

20 25 40 50 65

Average inlet and outlet port diameter, mm

### 3. Material of pump body and cover

SH = Stainless steel, hygienic version  
 SI = Stainless steel, industrial version  
 B = Bronze

### 4. Port/connection

FIP 20/25SI, FIP 25/40B  
 BSP = BSP thread/hose combination  
 NPTF = NPTF thread/hose combination\*

FIP 40/50/65SI

BSP = BSP thread  
 NPTF = NPTF thread\*  
 \* NPTF available on request.

FIP 20/25/40/50/65SH

DIN = DIN 11851  
 SMS = SMS 1145  
 PLN = Plain without threaded ports  
 CLP = Clamp according to SMS 3017 (TriClamp)

### 5. Impeller code\*

0 = Neoprene industrial version – standard pressure  
 3 = EPDM, FDA, food grade – high pressure  
 4 = Neoprene, FDA, milk grade  
 6 = Neoprene, industrial version – high/intermediate pressure  
 7 = EPDM, FDA, food grade – standard pressure  
 9 = Nitrile, splined drive – standard pressure

\* Impeller options are dependent on pump.

### 6. Shaft

Bronze  
 0 = Splines – Stainless steel

### Stainless steel pumps

0 = Splines – Stainless steel  
 2 = Double flat – Stainless steel

### 7. Shaft seals

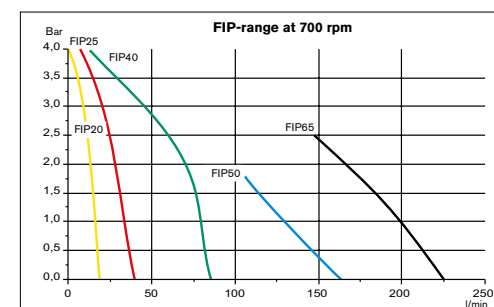
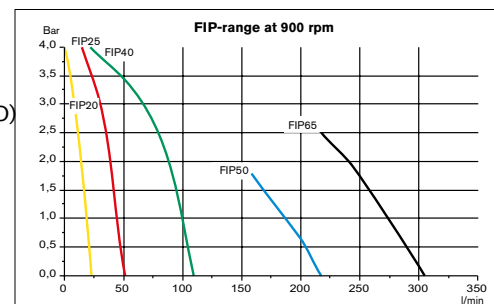
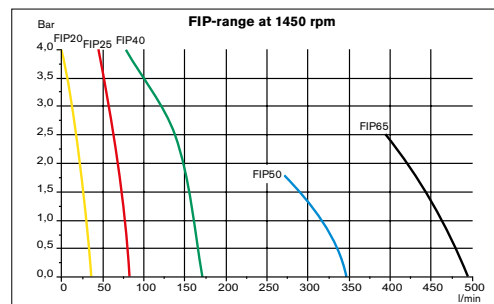
M = Single mechanical seal  
 L = Lip seal

### Material of single mechanical seals

01 = Carbon/ceramic/nitrile  
 03 = Silicon carbide/silicon carbide/FPM (DIN/ISO) / FKM (ASTM) (on request only)  
 06 = FDA Approved mechanical seal

### 8. Shaft end

P = Pedestal  
 F = Flange for IEC motor  
 80 = FIP 20/25 – Pedestal; shaft height, mm  
 Flange; IEC motor size  
 90 = FIP 40 – Pedestal; shaft height, mm  
 Flange; IEC motor size  
 100 = FIP 50 – Pedestal; shaft height, mm  
 Flange; IEC motor size  
 112 = FIP 65 – Pedestal only; shaft height, mm







# Circulation Pumps

Photo: Nord West

Discover the Circulation Pumps from Johnson Pump to meet the demands for heating and cooling systems on boats, trains, buses, commercial vehicles, recreational vehicles and motorhomes.



Contact us for information about latest standards for Circulation pumps.

Type	Key Features	Benefits and Advantages
CM100, CM90BL	Brushless Motor	<ul style="list-style-type: none"> <li>Offers long life expectancy of 20 000+ hours.</li> <li>Potted electronics (electronics submerged in compound)</li> <li>Conformal coating on electric components</li> </ul>
CM100, CM90BL, CM90, CM30, CM10	Magnetically driven	<ul style="list-style-type: none"> <li>No leakage, which is common from mechanical seal pumps</li> <li>Long life expectancy</li> <li>Withstands dry running for up to 30 minutes (25 minutes CM100)</li> </ul>
CM100	Higher IP classification (IP6K9K)	<ul style="list-style-type: none"> <li>Reliable function in toughest environments</li> <li>Water-proof as well as dust-proof</li> <li>Withstands high pressure/steam jet cleaning</li> </ul>
CM90BL, CM90, CM30, CM10	Higher IP classification (IP67)	<ul style="list-style-type: none"> <li>Reliable function in toughest environments</li> <li>Water-proof as well as dust-proof</li> <li>Withstands powerful water jets used during maintenance and even submersion up to 30 minutes</li> </ul>
CM100, CM90BL, CM90, CM30, CM10	UN R10 - EMC	<ul style="list-style-type: none"> <li>Reliable function in toughest environments</li> <li>Complies with relevant EMC regulations and directive(s)</li> <li>Increased reliability, reduced warranty issues and service costs</li> </ul>
CM100, CM90BL, CM90, CM30, CM10	Superior permanently lubricated bearings	<ul style="list-style-type: none"> <li>Allows continual operation of 20 000+ hours (CM100, CM90BL)</li> <li>Allows continual operation up to 10 000 hours (CM90)</li> <li>Allows continual operation up to 5 000 hours (CM10/CM30)</li> </ul>
CM30, CM10	Small footprint	<ul style="list-style-type: none"> <li>Direct replacement for OE intercooler circulation pump</li> <li>Perfect for Turbocharged or Supercharged Intercooler applications</li> </ul>



## DC driven Circulation Pumps

Johnson Pump offers a high quality range of circulation pumps to meet the demands for heating and cooling systems on boats, trains, buses, commercial vehicles, recreational vehicles and motorhomes.



Ø 25 mm

**Ø 25 mm**  
**Length** 186 mm - 7.3"  
**Width** 135 mm - 5.3"  
**Height** 179 mm - 7"  
**Weight** 3.9 kg (8.6 lbs)

**Ø 38 mm**  
**Length** 191 mm - 7.5"  
**Width** 135 mm - 5.3"  
**Height** 179 mm - 7"  
**Weight** 3.9 kg (8.6 lbs)

### CM100HP - CIRCULATION PUMP HIGH PRESSURE WITH BRUSHLESS MOTOR

<b>Pump Body</b>	Aluminium, black anodized	<b>System pressure</b>	Max 2,5 bar
<b>Impeller</b>	PPS GF	<b>Port size</b>	Ø25 and Ø38
<b>Shaft</b>	Stainless Steel, hardened	<b>Dry running</b>	Max. 25 minutes
<b>Motor</b>	Permanent magnet brushless motor with ball bearings and electronics included (IP6K9K)	<b>Input Power</b>	Max. 475W
<b>Liquid</b>	Water/glycol mixture; max. 60% glycol, fresh water	<b>Mounting</b>	Separate universal bracket for flat surfaces
<b>Liquid temp.</b>	Min. -40°C to Max. +102°C (Min. -40°F to Max. +216°F)		

#### Ø25 mm (1")

Part No.	Description	Capacity 1 bar (33.5 ftH <sub>2</sub> O)*
10-13576-02	CM100HP AL-1BL 27.2V D25	85 l/min at 1 bar (22.5 GPM)

#### Ø38 mm (1 1/2")

Part No.	Description	Capacity 1 bar (33.5 ftH <sub>2</sub> O)*
10-13577-02	CM100HP AL-1BL 27.2V D38	85 l/min at 1 bar (22.5 GPM)

\*Further information on flow and capacities are available upon request.



Ø 38 mm

**Ø 38 mm**  
**Length** 191 mm - 7.5"  
**Width** 135 mm - 5.3"  
**Height** 176 mm - 6.9"  
**Weight** 3.9 kg (8.6 lbs)

### CM100HF - CIRCULATION PUMP HIGH FLOW WITH BRUSHLESS MOTOR

<b>Pump Body</b>	Aluminium, black anodized	<b>System Pressure</b>	Max 2,5 bar
<b>Impeller</b>	PPS GF	<b>Port Size</b>	Ø38
<b>Shaft</b>	Stainless Steel, hardened	<b>Dry running</b>	Max. 25 minutes
<b>Motor</b>	Permanent magnet brushless motor with ball bearings and electronics included (IP6K9K)	<b>Input Power</b>	Max. 410W
<b>Liquid</b>	Water/glycol mixture; max. 60% glycol, fresh water	<b>Mounting</b>	Separate universal bracket for flat surfaces
<b>Liquid temp.</b>	Min. -40°C to Max. +102°C (Min. -40°F to Max. +216°F)		

#### Ø38 mm (1 1/2")

Part No.	Description	Capacity 0.4 bar (13.38 ftH <sub>2</sub> O)*
10-13578-02	CM100HF AL-1BL 27.2V D38	135 l/min at 0.4 bar (35.6 GPM)

\*Further information on flow and capacities are available upon request.



Ø 38 mm

**Ø 20 mm**  
**Length** 273.5 mm - 10.8"  
**Width** 121 mm - 4.8"  
**Height** 141 mm - 5.6"  
**Weight** 3.0 kg (6.6 lbs)

**Ø 38 mm**  
**Length** 272 mm - 10.7"  
**Width** 121 mm - 4.8"  
**Height** 150 mm - 5.9"  
**Weight** 3.0 kg (6.6 lbs)

### CM90BL - CIRCULATION PUMP WITH BRUSHLESS MOTOR

<b>Pump Body</b>	PPA	<b>System pressure</b>	Max. 2,5 bar
<b>Impeller</b>	PA12	<b>Port size</b>	Ø20 mm (3/4") and Ø 38 mm (1 1/4")
<b>Shaft</b>	Stainless Steel	<b>Dry running</b>	Max. 30 minutes
<b>Motor</b>	Brushless 12/24 V DC enclosed (as per IP67) permanent magnet, ball bearing mounted motor	<b>Input Power</b>	Max. 125W
<b>Liquid</b>	Water/glycol mixture; max. 60% glycol, fresh water	<b>Mounting</b>	Separate universal bracket for flat surfaces
<b>Liquid temp.</b>	Min. -40°C to Max. +100°C (Min. -40°F to Max. +212°F)		

#### Ø20 mm (3/4")

Part No.	Description	Capacity 0,1 bar (3.4 ftH <sub>2</sub> O)	Capacity 0.25 bar (8.4 ftH <sub>2</sub> O)
10-24901-01	CM90P7-1 BL 13.6V D20	55 l/min at 0.1 bar (14.5 GPM)	50 l/min at 0.25 bar (13.2 GPM)
10-24901-02	CM90P7-1 BL 27.2V D20	55 l/min at 0.1 bar (14.5 GPM)	50 l/min at 0.25 bar (13.2 GPM)

#### Ø38 mm (1 1/2")

Part No.	Description	Capacity 0,1 bar (3.4 ftH <sub>2</sub> O)	Capacity 0.25 bar (8.4 ftH <sub>2</sub> O)
10-24898-01	CM90P7-1 BL 13.6V D38	115 l/min at 0.1 bar (30.4 GPM)	90 l/min at 0.25 bar (23.8 GPM)
10-24898-02	CM90P7-1 BL 27.2V D38	115 l/min at 0.1 bar (30.4 GPM)	90 l/min at 0.25 bar (23.8 GPM)

### CM90 - CIRCULATION PUMP

**Pump Body** PPA, glass-fiber reinforced  
**Impeller** PA12  
**Shaft** Stainless steel  
**Motor** 12/24 V DC enclosed (as per IP67) permanent magnet, ball bearing mounted motor, designed for continuous operation  
**Liquid** Water/glycol mixture; max. 60% glycol, fresh  
**Liquid temp.** Min. -40°C to Max. +100°C (Min. -40°F to Max. + 212°F)

**System pressure** Max 2,5 bar  
**Port Size** Ø20 mm and Ø38 mm  
**Dry running** 30 minutes  
**Input power** Max. 125W  
**Mounting** Separate universal bracket for flat surfaces



Ø 38 mm

#### Ø20 mm (¾")

Part No.	Description	Capacity 0,1 bar (3.4 ftH <sub>2</sub> O)	Capacity 0.25 bar (8.4 ftH <sub>2</sub> O)
10-24750-09	CM90P7-1 13.6V D20	65 l/min (17.2 GPM)	50 l/min (13.2 GPM)
10-24750-10	CM90P7-1 27.2V D20	65 l/min (17.2 GPM)	50 l/min (13.2 GPM)

**Length** Ø 20 mm  
**Width** 255 mm  
**Height** 120 mm  
**Weight** 140.5 mm  
 3.0 kg (6.6 lbs)

#### Ø38 mm (1½")

Part No.	Description	Capacity 0,1 bar (3.4 ftH <sub>2</sub> O)	Capacity 0.25 bar (8.4 ftH <sub>2</sub> O)
10-24664-09	CM90P7-1 13.6V D38	65 l/min (17.2 GPM)	90 l/min (23.7 GPM)
10-24664-10	CM90P7-1 27.2V D38	65 l/min (17.2 GPM)	90 l/min (23.7 GPM)

**Length** Ø 38 mm  
**Width** 253 mm  
**Height** 120 mm  
**Weight** 149.5 mm  
 3.9 kg (8.6 lbs)

### C090 - CIRCULATION PUMP WITH MECANICAL SEAL

**Pump Body** PA66 thermoplastic  
**Impeller** PA66 thermoplastic  
**Motor** 12/24 V DC enclosed (as per IP31) permanent magnet, ball bearing mounted motor, designed for continuous operation  
**Shaft** Stainless steel

**Shaft seal** Mechanical seal  
**Liquid** Water/glycol mixture; max. 60% glycol, fresh water  
**Liquid temp.** Min. -30°C, Max. +100°C  
**System Pressure** Max 2,0 bar  
**Port size** Ø38 mm (1½") hose



#### Ø38 mm (1½")

Part No.	Description	Capacity 0.1 bar (3.4 ftH <sub>2</sub> O)
10-24190-1	C090P5-1 12V	100 l/min at 0.1 bar (26.4 GPM)
10-24190-2	C090P5-1 24V	100 l/min at 0.1 bar (26.4 GPM)

**Length** 211 mm – 8.3"  
**Width** 117 mm – 4.6"  
**Height** 110 mm – 4.56" from baseplate (totally 116 mm – 4.8")  
**Weight** 1.75 kg – 3.8 lbs

### CM10 & CM30 - CIRCULATION PUMP

**Pump Body** PPA, Thermoplastic  
**Impeller** PPA, Thermoplastic  
**Shaft** Stainless Steel  
**Motor** 12/24V DC enclosed (as per IP67) permanent magnet, ball bearing mounted motor, designed for continuous operation  
**Liquid** Water/glycol mixture; max. 60% glycol, fresh water  
**Liquid temp.** Min. -40°C Max. +100°C  
**System pressure** Max 2,5 bar

**Port size** Ø16 mm (⅝") or Ø20 mm (¾") hose  
**Dry running** Max. 30 minutes  
**Input Power** Max. 14W (CM10) 27W (CM30)  
**Mounting** Separate universal bracket for flat surfaces



#### CM10

Part No.	Voltage	Description	Port Size	Capacity 0.1 bar (3.4 ftH <sub>2</sub> O)
10-24501-03	12V	CM10P7-1	Ø 16 mm (⅝")	15 l/min (4 GPM)
10-24501-04	24V			
10-24502-03	12V	CM10P7-1	Ø 20 mm (¾")	18,5 l/min (5 GPM)
10-24502-04	24V			

**Length** CM10P7-1 177 mm – 6.97"  
**Width** 177 mm – 6.97"  
**Height** 68 mm – 2.68" 68 mm – 2.68"  
 85 mm – 3.35" 85 mm – 3.35"  
**Weight** 0.53 kg – 1.2 lbs 0.6 kg – 1.3 lbs

#### CM30

Part No.	Voltage	Description	Port Size	Capacity 0.1 bar (3.4 ftH <sub>2</sub> O)
10-24503-03	12V	CM30P7-1	Ø 16 mm (⅝")	20 l/min (5.3 GPM)
10-24503-04	24V			
10-24504-03	12V	CM30P7-1	Ø 20 mm (¾")	26 l/min (6.9 GPM)
10-24504-04	24V			



# Waste Water Handling and Marine Toilets

Photos: Delta Powerboats



From a name you can trust, the AquaT™ toilet provides the comfort and convenience of a land-based lavatory at sea — a marine toilet that flushes as quietly as a toilet on land.

Equip your boat with the combination Viking Power 16 and a Grey Water Tank for or complete waste water handling system.



**Viking Power**  
ISO8846  
ISO10133  
ISO8849  
EN55014

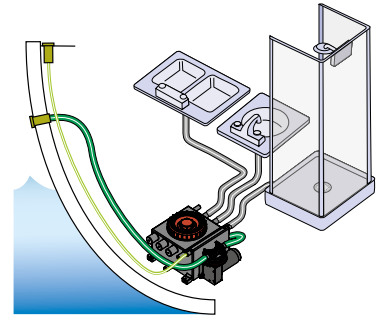
**AquaT Silent Electric and Standard Electric**  
ISO8846  
EN55014





# Waste Water Pumps Solutions

SPX FLOW Johnson Pump offers waste water pump solution, designed to meet the rigorous demands of the leading manufacturers of boats, recreational vehicles and buses.



Grey Water Tank with Viking Power 16

## VIKING POWER 16 - COMPACT SHOWER DRAIN, BILGE AND WASTE WATER PUMP

A modern, single-chamber, self-priming diaphragm pump that can be set up in several different pump/motor configurations. It is easy to install anywhere after the drain outlet in the wastewater system or as a bilge pump in any leisure craft – new or used.

The Viking Power 16 is self-priming up to a height of three meters. With its low pulse and muffled rubber bracket, this pump offers quiet operation. Specifically designed to pump waste water, with double check valves for improved pumping action, the Viking Power 16 has been built to last, and engineered for easy maintenance. When it comes time to replace the premium grade reinforced nitrile rubber diaphragm, you can put in a spare without even removing the pump from the system.

Its non-choke valves mean that no in-line filters are necessary. The pump can be run dry, and it can also handle a mixture of air and water without difficulty. Delivered with 1" hose and 3/4" hose 1/2" BSP KlickTite™ XL connectors. 90° KlickTite™ XL connectors available as extra accessory.

<b>Motor</b>	2.3 amp (12V), 1.2 amp (24V) at 0.1 bar 12/24V DC (with built-in thermal protection)	<b>Length</b>	186 mm – 7.3"
<b>Body</b>	Nylon, glass-fiber reinforced	<b>Width</b>	235/181 mm – 9.3"/7.1"
<b>Valves</b>	Nitrile rubber	<b>Height</b>	118/204 mm – 4.6/8"
<b>Diaphragm</b>	Reinforced nitrile rubber	<b>Weight</b>	2.6 kg – 5.7 lbs



Part No.	Description	Capacity, open flow	Capacity at 0.1 bar	Max lift	Max head	Connection
10-13350-03	Viking Power 16 12V	16 l/min – 4.2 GPM	15 l/min – 4.0 GPM	3 m – 9.8 ft	3 m – 9.8 ft	KlickTite™ XL connectors for 1" hose or 3/4" hose and 1/2" BSP threads; straight and 90° (optional)
10-13350-04	Viking Power 16 24V	16 l/min – 4.2 GPM	15 l/min – 4.0 GPM	3 m – 9.8 ft	3 m – 9.8 ft	
09-47491	Fittings 3/4" barb with outlet non-return valve					
09-47492	Fittings 1" barb with outlet non-return valve					



## VIKING POWER 32 - COMPACT SHOWER DRAIN, BILGE AND WASTE WATER PUMP

This pump has been engineered with a ball-bearing supported transmission for long service life. The pump cannot only be run dry, it can also handle a mixture of air and water without difficulty. The Viking Power 32 provides maximum flow of 32 l/min and is self-priming up to a height of 2.5 m. Although powered by an electric motor, this pump can also be cranked by hand in case of an emergency. Naturally, pumping ordinary shower or sink drain water or bilge water is no problem for this pump.

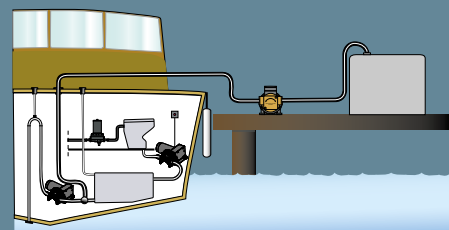
<b>Motor</b>	3.3 amp (12V), 1.6 amp (24V) at 0.1 bar 12/24V DC (with built-in thermal protection)	<b>Length</b>	277 mm – 10.9"
<b>Body</b>	Nylon	<b>Width</b>	264 mm – 10.4"
<b>Valves</b>	Nitrile rubber	<b>Height</b>	192 mm – 7.6"
<b>Diaphragm</b>	Reinforced nitrile rubber	<b>Weight</b>	5.0 kg – 11.0 lbs



Crank for manual handling

Part No.	Description	Capacity, open flow	Capacity at 0.1 bar	Max lift	Max head	Connection
10-13373-03	Viking Power 32 12V	32 l/min – 8.5 GPM	30 l/min – 7.9 GPM	2.5 m – 8.2 ft	4 m – 13.1 ft	38 mm / 1 1/2"
10-13373-04	Viking Power 32 24V	32 l/min – 8.5 GPM	30 l/min – 7.9 GPM	2.5 m – 8.2 ft	4 m – 13.1 ft	38 mm / 1 1/2"

The Viking Power 32 and Viking Power Vacuum diaphragm pumps have been designed to meet the rigorous demands of the world's leading manufacturers of boats, recreational vehicles and buses. Thanks to its single-chamber design and non-choke valves, the Viking Power 32 can be used to pump un-macerated sewage to a holding tank or transfer it onwards to a septic tank.



### VIKING POWER VACUUM

Engineered with a ball-bearing supported transmission for long service life. The Viking Power Vacuum pump cannot only be run dry, it can also handle a mixture of air and water without difficulty.

The Viking Power Vacuum provides maximum flow of 32 l/min and is self-priming up to a height of 5 m. Although powered by an electric motor, this pump can also be cranked by hand in case of an emergency. The Viking Power Vacuum has double check-valves and can therefore also be used in vacuum toilet systems. Naturally, pumping ordinary shower or sink drain water or bilge water is no problem for this pump.



<b>Motor</b>	3.3 amp (12V), 1.6 amp (24V) at 0.1 bar 12/24V DC (with built-in thermal protection)	<b>Length</b>	357 mm – 14"
<b>Body</b>	Nylon	<b>Width</b>	271 mm – 10.7"
<b>Valves</b>	Nitrile rubber	<b>Height</b>	192 mm – 7.6"
<b>Diaphragm</b>	Reinforced nitrile rubber	<b>Weight</b>	5.1 kg – 11.2 lbs



Crank for manual handling

Part No.	Description	Capacity, open flow	Capacity at 0.1 bar	Max lift	Max head	Connection
10-13373-07	Viking Power Vacuum 12V	24 l/min – 6.3 GPM	22 l/min – 5.8 GPM	5 m – 16.4 ft	4 m – 13.1 ft	38 mm / 1½"
10-13373-08	Viking Power Vacuum 24V	24 l/min – 6.3 GPM	22 l/min – 5.8 GPM	5 m – 16.4 ft	4 m – 13.1 ft	38 mm / 1½"

### GREY WATER TANK

The Grey Water Tank is designed to be used as collection tank for waste water from showers, sinks, dishwashing machines, etc with 19 mm, 25 mm and 38 mm inlet ports, and 19 mm and 25 mm outlet ports. The tank includes an Ultima Switch, for automatic operation and is easy to connect to any 12V/24V pump up to 20 amp. The tank is prepared for Viking Power 16, with pre-drilled holes for the pump.

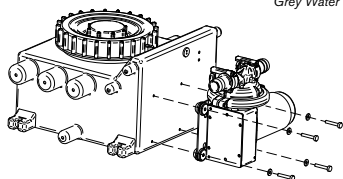
*The Viking Power 16 pump is to be ordered separately.*

**Dimensions** 185 x 280 x 340 mm

Part No.	Description
09-13384	Grey Water Tank (excl. Viking Power 16)



Image showing with Viking Power 16 attached to a Grey Water Tank.



### TA3P10-19 - MACERATOR PUMP

The TA3P10-19 macerator pump takes care of toilet waste. A rotary cutter shreds waste before it is pumped into or out from the holding tank. The pump should be connected as close as possible to the holding tank discharge outlet or the bowl discharge outlet. *Note! Use unbleached lavatory paper only.*

<b>Motor</b>	12/24V DC (with built-in thermal protection)	<b>Length</b>	230 mm – 9.06"
<b>Body</b>	Phenol Plastic (PF)	<b>Width</b>	108 mm – 4.25"
<b>Impeller</b>	Nitrile 09-1052S-9	<b>Height</b>	82 mm – 3.23"
<b>Housing</b>	Thermoplastic Polyester (PET)	<b>Weight</b>	1.9 kg – 4.2 lbs
<b>Shaft</b>	Stainless Steel		
<b>Seal</b>	Lip Seal		

### SPARE PARTS

Part No.	Description
09-45595	Service Kit TA3P10

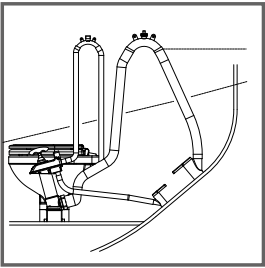


Part No.	Description	Capacity at 0.2 bar (6.7 ft)	Inlet Connection	Amp	Fuse size	Outlet Connection
10-24453-04	TA3P10-19 12V Macerator	37 l/min – 10 GPM	1½" (Ø38 mm) hose or 1½" BSP	15 A	20 A	1" (25.4 mm) hose
10-24453-05	TA3P10-19 24V Macerator	37 l/min – 10 GPM	1½" (Ø38 mm) hose or 1½" BSP	7 A	12 A	1" (25.4 mm) hose

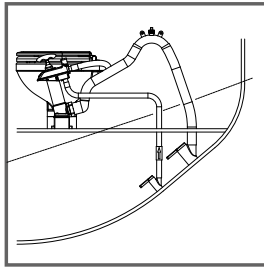


09-1052S-9

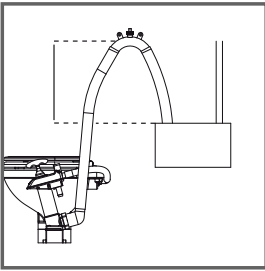
# Marine Toilets



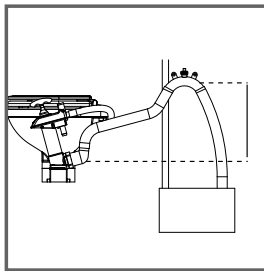
Toilet mounted below the waterline and discharging overboard.



Toilet mounted above the waterline and discharging overboard.



Toilet waste discharging into holding tank, discharging elbow below top of the holding tank at any time.



Toilet waste discharging into holding tank, discharging elbow always above top of the holding tank.

Available in a selected variety of versions marketed under three basic models — manual, standard electric and silent electric - with the choice of electric powered or manual - the AquaT™ marine toilet has been designed to meet virtually every conceivable lavatory installation situation onboard.

Priced competitively, the fine finish and well thought-through design of these toilets is remarkable. Made from white vitreous porcelain, and with corrosion resistant parts out, the AquaT™ marine toilet is quiet, robust and easy to clean.

It is probably fair to think of most toilets as commonplace products, but look at the features and you are sure to see that the AquaT™ is far from ordinary.

Quiet, hygienic and reliable, the AquaT™ marine toilet is perfect for almost any marine toilet room.

- The AquaT™ bowls are available in three executions:
  - Comfort bowl with a larger comfortable oval seat
  - Compact bowl with a round seat - when installation space is limited
  - Super Compact bowl - smaller and lighter bowl, requiring even less packaging space
- All models of AquaT™ toilets are equipped with soft closing, durable and hygienic plastic seats



AquaT™ Manual Super Compact  
80-47625-01



AquaT™ Manual Compact  
80-47229-01



AquaT™ Manual Comfort  
80-47230-01

### AquaT™ Manual

Incorporates an ergonomically designed, hand-powered piston pump that can be mounted for either left-hand or right-hand use. Available in three models: Super Compact, Compact and Comfort.



AquaT™ Standard Electric Super Compact  
80-47626-01, 12V



AquaT™ Standard Electric Compact  
80-47435-01, 12V  
80-47435-02, 24V



AquaT™ Standard Electric Comfort  
80-47436-01, 12V  
80-47436-02, 24V

### AquaT™ Standard Electric

Equipped with a combined pump, 12V or 24V, unit for disposal and flushing. Centrifugal pump with macerator function for disposal and an impeller pump for filling water. Available in three models: Super Compact, Compact and Comfort.



AquaT™ Silent Electric Compact  
80-47231-01, 12V  
80-47231-02, 24V



AquaT™ Silent Electric Comfort  
80-47232-01, 12V  
80-47232-02, 24V

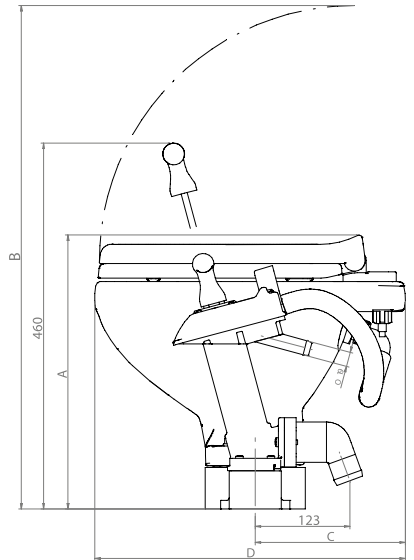
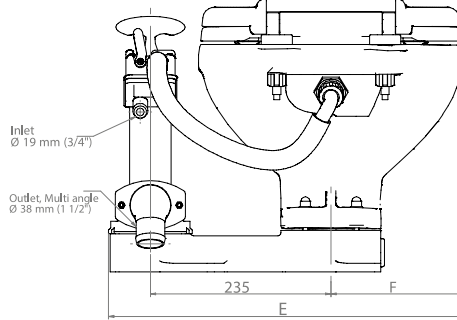
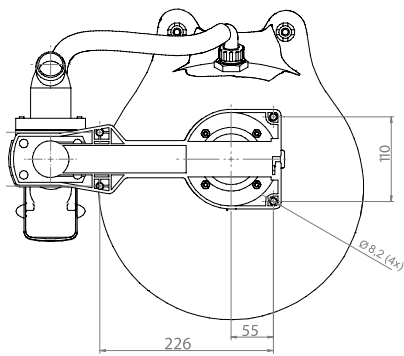
### AquaT™ Silent Electric

Designed for silent flush and built-in pump for disposal. Centrifugal pump with macerator function and a well-proven diaphragm pump. Controlled with a three-way control panel. Available in 12V/24V and two models: Compact and Comfort.



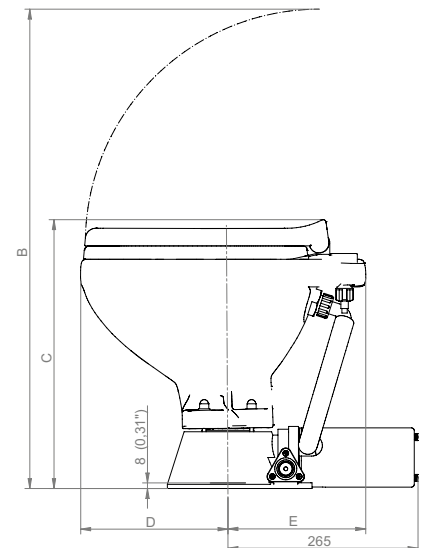
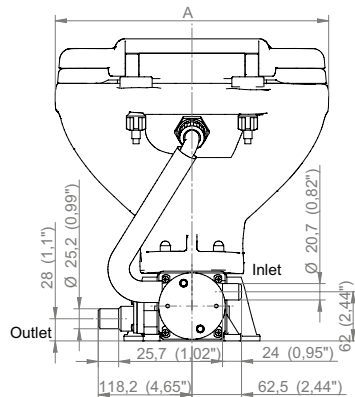
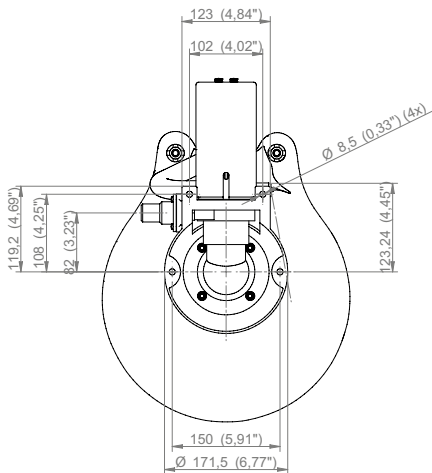
**AquaT™ MANUAL - TOILET**

Part. nr.	Description	Net weight		A	B	C	D	E	F	mm/ inch
		kg	lbs							
80-47625-01	AquaT™ Toilet Manual Super Compact	8,5	19	310	610	215	410	460	170	mm
				12,2	24,0	8,5	16,1	18,1	6,7	inch
80-47229-01	AquaT™ Toilet Manual Compact	8,3	18	355	650	215	410	455	170	mm
				14,0	25,6	8,5	16,1	17,9	6,7	inch
80-47230-01	AquaT™ Toilet Manual Comfort	11	24	345	730	250	470	465	175	mm
				13,6	28,7	9,8	18,5	18,3	6,9	inch



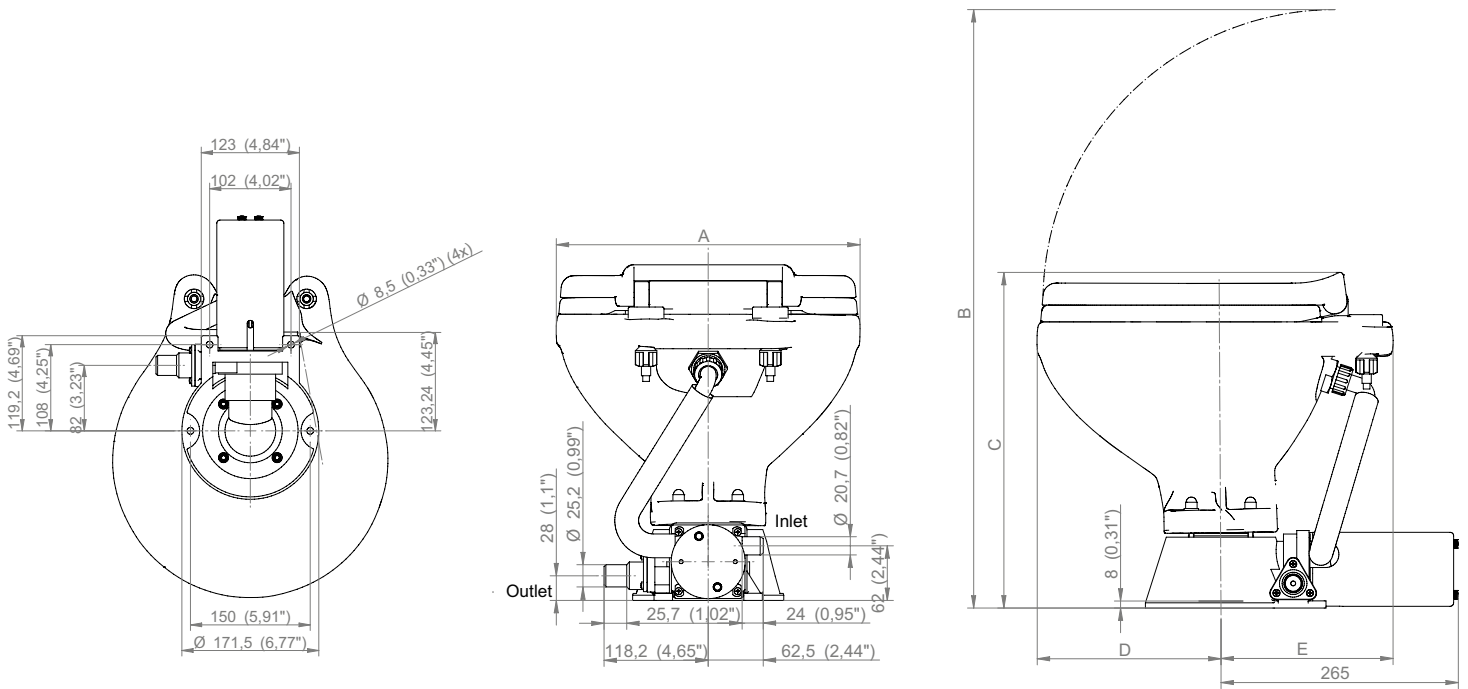
**AquaT™ STANDARD ELECTRIC - TOILET**

Part No.	Description	Net weight		A	B	C	D	E	mm/ inch
		kg	lbs						
80-47626-01	AquaT™ Standard Electric Super Compact, 12V	9,2	20	345	645	340	215	215	mm
				13,6	25,4	13,4	8,5	8,5	inch
80-47435-01	AquaT™ Standard Electric Compact, 12V	9,5	21	345	690	390	215	215	mm
80-47435-02	AquaT™ Standard Electric Compact, 24V			13,6	27,2	15,4	8,5	8,5	inch
80-47436-01	AquaT™ Standard Electric Comfort, 12V	11	24	370	765	375	235	265	mm
80-47436-02	AquaT™ Standard Electric Comfort, 24V			14,6	30,1	14,8	9,3	10,4	inch



**AquaT™ SILENT ELECTRIC - TOILET**

Part nr.	Description	Weight		A	B	C	D	E	F	mm/ inch
80-47231-01	AquaT™ Silent Electric Compact, 12V	9,2	kg	130	400	340	450	205	695	mm
80-47231-02	AquaT™ Silent Electric Compact, 24V	20	lbs	5,1	15,7	13,4	17,7	8,1	27,4	inch
80-47232-01	AquaT™ Silent Electric Comfort, 12V	10,8	kg	145	400	370	480	250	780	mm
80-47232-02	AquaT™ Silent Electric Comfort, 24V	24	lbs	5,7	15,7	14,6	18,9	9,8	30,7	inch



**Spare Parts - AquaT™ Toilets**

Part No.	Description
81-47241-04	Soft Close Plastic Seat Compact Toilet
81-47241-07	Soft Close Plastic Seat Comfort Toilet
81-47242-01	Gasket Kit (all gaskets for Manual)
81-47243-01	Plastic Base with Tap and Ring (Manual)
81-47244-01	Plastic handle kit (Manual)
81-47246-01	Intake elbow - inlet pipe complete (Manual and Silent Electric)
81-47246-02	Outlet elbow - outlet pipe complete (Manual and Silent Electric)
81-47247-01	Base group (Silent Electric)
81-47248-01	Motor group 12V (Silent Electric)
81-47248-02	Motor group 24V (Silent Electric)

Part No.	Description
81-47268-01	Base Gasket Kit (Manual)
81-47269-01	Flush Handle kit (Manual)
81-47273-01	Outlet elbow (Silent Electric)
81-47274-01	Bowl gasket (Silent Electric)
81-47519	Impeller kit (Silent Electric)
81-47612	Intake Elbow Flush 90°



81-47246-02



81-47248-01



81-47268-01

# Accessories - Waste Water Handling and Marine Toilets

## VENTED LOOP

Part No.	Description
81-47237-01	Vented Loop, ¾" (19,05 mm)
81-47237-02	Vented Loop, 1" (25,4 mm)
81-47237-03	Vented Loop, 1½" (38,1 mm)

The vented loop is available in different sizes and with its inverted U-shape with a vent at the top it allows the air to escape. Vented loops are to prevent back siphoning and are found in toilet discharge lines or in systems which are mounted below the waterline.

## Y-VALVE

Part No.	Description
81-47238-01	Y-valve 1½" Inner diameter, 1" Straight

Designed for installation in waste discharge and bilge pump-out systems. Allows waste to be pumped directly into holding tank or diverted to another discharge.

## CONVERSION KIT - AquaT SILENT ELECTRIC

Part No.	Description
81-47240-01	Conversion kit AquaT Assembly 12V (Silent Electric)
81-47240-02	Conversion kit AquaT Assembly 24V (Silent Electric)

AquaT Silent Electric conversion kit/spare kit for Compact or Comfort sized bowls. For separate external flush system with flush pump or by existing centralized fresh water system using solenoid. Controls the rinse and discharge with two separate buttons on the control panel. Includes discharge pump, base, connectors and two-switch control panel.

## CONVERSION KIT - AquaT STANDARD ELECTRIC

Part No.	Description
81-47442-01	Conversion Kit 12V (Standard Electric)
81-47442-02	Conversion Kit 24V (Standard Electric)

Standard Electric conversion kit/spare kit for Compact or Comfort sized bowls. To convert a manual model to electric, or to replace an existing electrical system with a "one-push" flush and discharge system. Includes pump, base, hose, fittings and the one- push control panel. Fits with all AquaT™ Standard Electric models.

## CONVERSION KIT - AquaT MANUAL

Part No.	Description
81-47239-01	Conversion kit AquaT (Manual)

This manual toilet pump assembly pairs with any AquaT Manual Marine Toilet. It incorporates an ergonomically designed, hand-powered piston pump that can be mounted for either left handed or right handed use.

## CONTROL PANEL - AquaT SILENT ELECTRIC 12V/24V

Part No.	Description
81-36105-01	Control Panel - AquaT Silent Electric Toilets 12V/24V

Two switch control panel to allow for separate rinse and discharge when using an external flush pump or solenoid.

## CONTROL PANEL - AquaT STANDARD ELECTRIC 12V/24V

Part No.	Description
81-47520-01	Control Panel -AquaT Standard Electric and Super Compact Toilets 12V/24V

One push button on the control panel for combined rinse and discharge pump.

## FLUSH PUMP 3.5

Part No.	Description
10-13399-05	Flush Pump 3.5 GPM w strainer 12V
10-13399-06	Flush Pump 3.5 GPM with strainer 24V

An efficient and robust flush pump to be used with on-off switch for any marine 12V/24V toilet with external flushing pump system. Fits with all Silent Electric models. Delivers 13 l/min/3.5 GPM.

## VIKING POWER VACUUM

Part No.	Description
10-13373-07	Viking Power Vacuum, 12V
10-13373-08	Viking Power Vacuum, 24V

Electrical 12V/24V diaphragm pump to manage all types of wastewater. Can pump un-macerated sewage to a holding tank or transfer it onwards to a septic tank. Equipped with double check valves to secure operation at all times. To be used also with vacuum toilet systems.

## VIKING UNIVERSAL

Part No.	Description
10-13530-01	Viking Universal with connection Ø38 mm (1½")
09-36250	Viking Universal Through Deck Kit

Heavy duty manual bilge pump to fill and discharge waste water holding tanks. Compact to minimize required space, can be installed bulkhead or through. Equipped with large 38 mm connectors to manage all kinds of waste water.

## SOLENOID

Part No.	Description
81-47301-01	Solenoid valve 12V
81-47301-02	Solenoid valve 24V

Electric valve to be used with centralized fresh water system.





# Radial Blowers and Marine Water Heaters

Photo: Sargo Boats



AirV – Extra Heavy Duty Radial Blowers  
 ISO 9097  
 ISO 8846  
 ISO 10133  
 EN 55014-1

AquaH - Marine Water Heaters  
 EN 60335-1  
 EN 60335-2-21 + A1 + EC  
 EN 55014-1 + A1 + A2  
 EN 55014-2 + A1

AquaH is an innovative series of AISI 316 stainless steel water heaters, with a storage capacity of 22 up to 80 litres (5.3 to 19.3 gal.).

Dual heating as standard - electrical heating and indirect heating based on a second heat source, for example the cooling system from the Marine engine or generator set.

AirV extra heavy duty radial blowers for marine engine compartment ventilation prior to start up. The blowers can be used for air intake or extraction in bilges, galleys, accommodation and other compartments.





80-47616-01

## Extra Heavy Duty Radial Blowers

Marine radial blowers designed for engine compartment ventilation prior to start up. Is suitable for air intake or extraction in bilges, galleys, accommodation and other compartments.

Flange Mount and Flex Mount design with double ball bearing motor, high-impact anti-shock ABS body and shaft and screws in stainless steel.



80-47420-01



80-47417-01

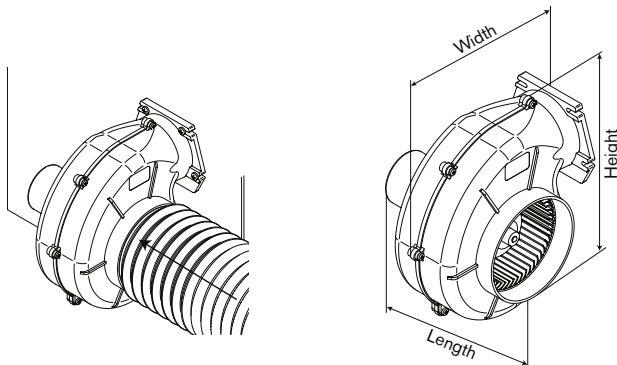
### AirV – MARINE RADIAL BLOWERS

Part No.	Description	Capacity	Dimensions H x W x L	Port Connections		Current [Amp]
				Inlet	Flange Outlet	
80-47416-01	AirV 3-280 Flange Mount, 12V	280 m <sup>3</sup> /h, 163 CFM	198 x 171 x 195 mm / 6.89 x 6.3 x 7.68"	Ø 75 mm / Ø 3"	92 x 80 / 3,62 x 3,15"	3.9
80-47416-02	AirV 3-280 Flange Mount, 24V	280 m <sup>3</sup> /h, 163 CFM	197 x 173 x 195 mm / 6.89 x 6.3 x 7.68"	Ø 75 mm / Ø 3"	92 x 80 / 3,62 x 3,15"	2.5
80-47417-01	AirV 4-550 Flange Mount, 12V	550 m <sup>3</sup> /h, 324 CFM	277 x 259 x 160 mm / 10.91 x 10.08 x 6.61"	Ø 100 mm / Ø 4"	146 x 118 / 5,75 x 4,65"	12.5
80-47417-02	AirV 4-550 Flange Mount, 24V	550 m <sup>3</sup> /h, 324 CFM	277 x 259 x 160 mm / 10.91 x 10.08 x 6.61"	Ø 100 mm / Ø 4"	146 x 118 / 5,75 x 4,65"	7
80-47418-01	AirV 4-750 Flange Mount, 12V	750 m <sup>3</sup> /h, 441 CFM	277 x 257 x 181 mm / 10.91 x 10.08 x 6.73"	Ø 150 mm / Ø 6"	146 x 118 / 5,75 x 4,65"	14.5
80-47418-02	AirV 4-750 Flange Mount, 24V	750 m <sup>3</sup> /h, 441 CFM	277 x 257 x 181 mm / 10.91 x 10.08 x 6.73"	Ø 150 mm / Ø 6"	146 x 118 / 5,75 x 4,65"	8.5
80-47419-02	AirV 4-1000 Flange Mount, 24V	1000 m <sup>3</sup> /h, 589 CFM	278 x 258 x 203 mm / 10.91 x 10.08 x 8.19"	Ø 150 mm / Ø 6"	146 x 118 / 5,75 x 4,65"	15.5

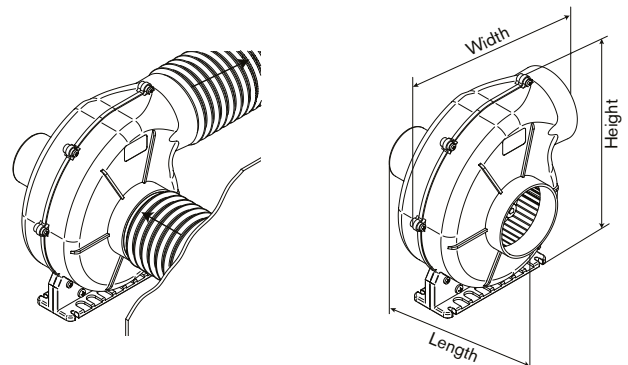
  

Part No.	Description	Capacity	Dimensions H x W x L	Port Connections		Current [Amp]
				Inlet	Outlet	
80-47420-02	AirV 4-550 Flex Mount, 24V	550 m <sup>3</sup> /h, 324 CFM	296 x 257 x 161 mm / 11.61 x 10.08 x 6.61"	Ø 100 mm / Ø 4"	Ø 110 mm / Ø4,33"	7
80-47421-01	AirV 4-750 Flex Mount, 12V	750 m <sup>3</sup> /h, 441 CFM	297 x 257 x 182 mm / 11.61 x 10.08 x 6.61"	Ø 150 mm / Ø 6"	Ø 110 mm / Ø4,33"	14.5
80-47421-02	AirV 4-750 Flex Mount, 24V	750 m <sup>3</sup> /h, 441 CFM	297 x 257 x 182 mm / 11.61 x 10.08 x 6.61"	Ø 150 mm / Ø 6"	Ø 110 mm / Ø4,33"	8.5
80-47422-02	AirV 4-1000 Flex Mount, 24V	1000 m <sup>3</sup> /h, 589 CFM	296 x 257 x 201 mm / 11.61 x 10.08 x 8.19"	Ø 150 mm / Ø 6"	Ø 110 mm / Ø4,33"	15.5

Flange Mount



Flex Mount



## Marine Water Heaters

**Stainless steel water heaters with dual heating as standard - electrical heating and indirect heating based on a second heat source, for example based on the cooling system from the marine engine or generator set.**

### AquaH – MARINE WATER HEATER

AquaH is an innovative series of AISI 316 stainless steel water heaters, with a storage capacity of 22 up to 80 litres (5.3 to 19.3 gal.). The heaters are cased in AISI 304 stainless steel and is provided with a sturdy compact plastic end cover which also includes the mounting brackets.

Electrical heating elements are available in Incoloy at 500W and 1200W allowing hot water production when engine heat is not available but when 230V or 120V AC is. Delivered with an adjustable safety thermostat for temperature adjustment while on electrical heating.



56-47456-01



56-47457-01



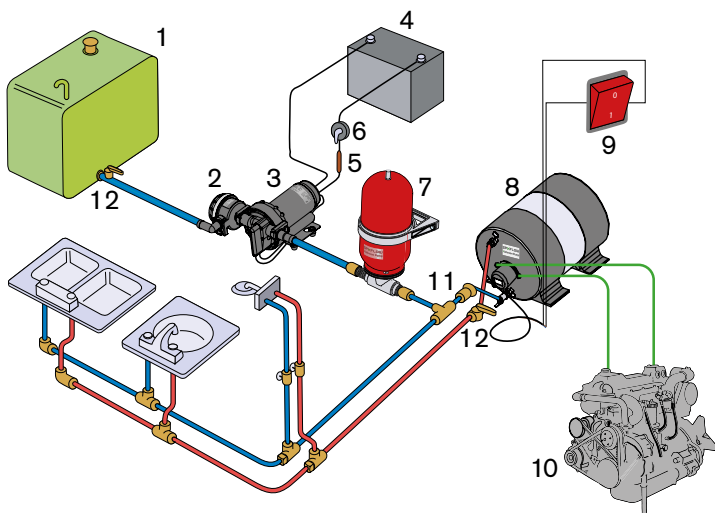
Part No.	Description
56-47455-01	AquaH Marine Water Heater 1200W / 22L BSP 220V
56-47455-03	AquaH Marine Water Heater 500W / 22L BSP 220V
56-47456-01	AquaH Marine Water Heater 1200W / 30L BSP 220V
56-47456-03	AquaH Marine Water Heater 500W / 30L BSP 220V
56-47457-01	AquaH Marine Water Heater 1200W / 45L BSP 220V
56-47457-03	AquaH Marine Water Heater 500W / 45L BSP 220V
56-47458-01	AquaH Marine Water Heater 1200W / 60L BSP 220V
56-47458-03	AquaH Marine Water Heater 500W / 60L BSP 220V
56-47459-01	AquaH Marine Water Heater 1200W / 80L BSP 220V
56-47459-03	AquaH Marine Water Heater 500W / 80L 220V

### Accessories

Part No.	Description
56-47464-01	AquaH Thermostat Water Mixer Kit 1/2" BSP
56-A.100-0086	AquaH Gasket
56-A.280-0014	AquaH Heater Element 500W 220V

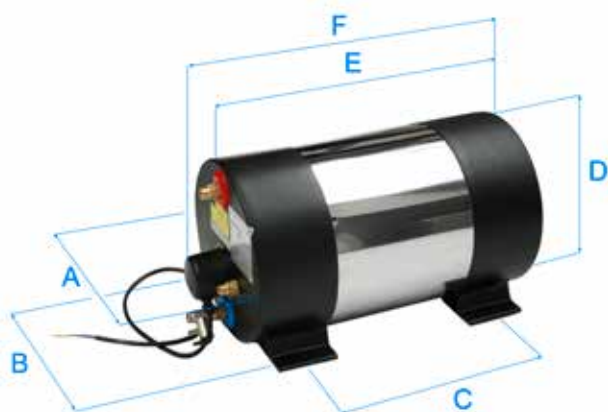
## Typical Water Heater Application

1. Water Tank
2. PUMProtector Inlet Strainer
3. Aqua Jet Water Pressure System Pump
4. Battery
5. Fuse
6. Switch
7. Accumulator Tank
8. AquaH Water Heater
9. ON/OFF Bipolar Switch
10. Motor
11. Check Valve
12. Shut-off Valve





**AquaH - DIMENSIONS**



Part No.	Electrical supply w	Storage capacity lt (gallons)	Weight empty kg (lbs)	A mm	B mm	C mm	D mm	E mm	F mm
56-47455-01	1200	22 (5.81)	10 (22)	322 12.7"	290 11.4"	235 9.25"	325 12.8"	410 16.1"	485 19.1"
56-47455-03	500								
56-47456-01	1200	30 (7.93)	11,5 (25.4)	322 12.7"	290 11.4"	370 14.6"	325 12.8"	545 21.5"	620 24.4"
56-47456-03	500								
56-47457-01	1200	45 (11.9)	15 (33.1)	322 12.7"	290 11.4"	625 24.6"	325 12.8"	805 31.7"	880 34.6"
56-47457-03	500								
56-47458-01	1200	60 (15.9)	17,3 (38.1)	322 12.7"	290 11.4"	810 31.9"	325 12.8"	990 39"	1065 41.9"
56-47458-03	500								
56-47459-01	1200	80 (21.1)	20 (44.1)	322 12.7"	290 11.4"	1090 42.9"	325 12.8"	1270 50"	1345 53"
56-47459-03	500								

Electric supply 220-240 V ~ 50 Hz  
Water connections 1/2"

**AquaH - HEATING TIME**

**1200W**

Part No.	Electrical supply w	Storage capacity lt (gallons)	Water temperature in °C (°F)							
			20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	45 (113)	50 (122)	55 (131)
56-47455-01	1200	22 (5.81)	6	12	19	25	31	38	44	51
56-47456-01	1200	30 (7.93)	8	17	26	34	43	52	61	69
56-47457-01	1200	45 (11.9)	13	26	39	52	65	78	91	104
56-47458-01	1200	60 (15.9)	17	34	52	69	87	104	122	139
56-47459-01	1200	80 (21.1)	23	46	69	93	116	139	162	186

Initial temperature 15°C

**500W**

Part No.	Electrical supply w	Storage capacity lt (gallons)	Water temperature in °C (°F)							
			20 (68)	25 (77)	30 (86)	35 (95)	40 (104)	45 (113)	50 (122)	55 (131)
56-47455-03	500	22 (5.81)	15	30	46	61	76	92	107	122
56-47456-03	500	30 (7.93)	20	41	62	83	104	125	146	167
56-47457-03	500	45 (11.9)	31	62	94	125	156	188	219	251
56-47458-03	500	60 (15.9)	41	83	125	167	209	251	293	334
56-47459-03	500	80 (21.1)	55	111	167	223	279	334	390	446

Initial temperature 15°C



Photo: Swedish Coast Guard

# Impeller Pumps and Impellers



Flexible impeller pumps provide an efficient solution to most raw water pumping needs. The pumps are self-priming and can pass fairly large solids without clogging or damaging the pumps.

Our engine cooling pumps are designed to the demands of engine manufacturers and are built to take rough treatment.

We supply engine cooling pumps to the world's leading marine motor manufacturers, not just because of our renowned pumps; but also because of the heart of an engine cooling pump: the impeller.

**With SPX FLOW Johnson Pump Marine Original Impellers you get:**

- Ensures correct cooling flow
- Stable pressure delivery over time
- Significantly longer service life
- Excellent self-priming capability
- Ensures sufficient cooling directly at start up
- Our impellers are manufactured to strict tolerances for optimal functionality unique MC97 rubber compound in many of our impellers
- Correct impeller dimensions
- Optimized to provide maximum life, especially for applications where the end user doesn't run the engine on a regular basis:
  - Stable pressure delivery over time
  - Minimized failures due to fatigue
  - Minimized swelling

# Self-Priming Flexible Impeller Pumps

## Heavy Duty Impeller Pumps



F35B-8

A range of multipurpose bronze pumps. Compact design, raw water resistant pumps at an attractive price – with the renowned SPX FLOW Johnson Pump quality. These pumps are designed for a number of applications on board.

With excellent self-priming capability, these pumps are ideal as cooling water pumps for marine engines, bilge pumps, deckwash pumps, fresh water pumps, fuel transfer pumps and other applications. Also ideally suited on shore to empty septic tanks, to flush clean and to fill water tanks.

Available in sizes from 3/8" to 1 1/2" (4 l/min to 279 l/min).

Vacuum switch (see page 45) as extra accessory for F8B-8007 only.

<b>Pump Body</b>	Bronze	<b>Seal</b>	Mechanical seal
<b>Shaft</b>	Stainless steel	<b>Cam</b>	Full or reduced
	The shaft is mounted with permanently lubricated double ball bearings	<b>Connection</b>	BSP or NPT

### HEAVY DUTY IMPELLER PUMPS - FB-8

Part No.	Description*	Impeller	Connection	Length	Width	Height	Weight	Drive Shaft Ø
10-24569-01	F35B-8	09-808B-1	3/8" BSP	109 mm – 4.29"	80 mm – 3.14"	30 mm – 1.18"	0.5 kg – 1.2 lbs	3/8"
10-24570-01	F4B-8	09-810B-1 (09-810B-9**)	3/8" BSP	111 mm – 4.37"	80 mm – 3.15"	50 mm – 1.97"	0.8 kg – 1.8 lbs	3/8"
10-24571-01	F5B-8	09-1027B-1 (09-1027B-9**)	3/4" BSP	151 mm – 5.95"	106 mm – 4.17"	50 mm – 1.97"	1.6 kg – 3.5 lbs	5/8"
10-24572-01	F7B-8	09-1028BT-1 (09-1028B-9**)	1" BSP	170 mm – 6.69"	120 mm – 4.72"	50 mm – 1.97"	1.9 kg – 4 lbs	5/8"
10-13021-1	F8B-8	09-819B (09-819B-9**)	1 1/4" BSP	217 mm – 8.54"	160 mm – 6.3"	65 mm – 2.56"	5.9 kg – 13 lbs	1"

\*See page 56 for pump type specification system  
 \*\*Pump with nitrile impeller available on request



10-24569-01  
F35B-8



10-24572-01  
F7B-8



10-13021-1  
F8B-8

### FLEXIBLE IMPELLERS - OPERATING PRINCIPLE

- A vacuum is created as the flexible impeller vanes straighten upon leaving the cam, drawing liquid into the pump.
- The rotating impeller carries liquid from the inlet to the outlet port. As a consequence of their design, flexible impeller pumps can pass fairly large solids.
- When the flexible impeller vanes regain contact with the cam, they bend and the liquid is discharged from the pump in a uniform flow. Liquids can be pumped in the opposite direction by reversing the rotation of the pump.





**EXTRA HEAVY DUTY IMPELLER PUMPS - FB-3000**

Whenever you need greater strength or service from a pump, use an extra heavy duty flexible impeller pump with separate bearing housing and mechanical seal for less wear and longer life. These pumps cover the entire range of marine applications and may be used as cooling water pumps, bilge pumps, deckwash pumps, emergency and fire fighting pumps, etc.

Available in sizes from 3/4" to 2 1/2" (13 l/min to 625 l/min). Wearing parts are easily replaceable and service kits are available for all standard models. **Vacuum switch as extra accessory, see below.**

<b>Pump body</b>	Bronze (Connection for vacuum switch)	<b>Cam</b>	Full or reduced
<b>Shaft</b>	Stainless steel	<b>Pedestal</b>	Cast iron with permanently lubricated double ball bearings
<b>Seal</b>	Mechanical seal	<b>Connection</b>	BSP or NPT

Part No.	Description*	Impeller	Connection	Length	Width	Height	Weight	Drive Shaft Ø
10-24210-1	F5B-3000	09-1027B-1 (09-1027B-9**)	3/4" BSP	195 mm – 7.68"	106 mm – 4.17"	88 mm – 3.46"	2,9 kg – 6.5 lbs	17 mm
10-24209-1	F7B-3000	09-1028BT-1 (09-1028B-9**)	1" BSP	213 mm – 8.38"	120 mm – 4.72"	93 mm – 3.66"	3,1 kg – 6.9 lbs	17 mm
10-13024-1	F8B-3000 VF	09-819B (09-819B-9**)	Port Adaptor Kit	255 mm – 10.04"	152 mm – 5.98"	154 mm – 6.06"	7,6 kg – 16.5 lbs	1"
10-13026-1	F9B-3000	09-802B (09-814B***)	2" BSP	282 mm – 11.1"	192 mm – 7.56"	157 mm – 6.18"	9,3 kg – 21 lbs	1"
10-13175-01	F8B-3000 TSS	09-819B (09-819B-9**)	Port Adaptor Kit	255 mm – 10.04"	198 mm – 7.79"	151 mm – 5.94"	7,6 kg – 16.5 lbs	1"
10-13225-01	F9B-3000 VF	09-802B (09-814B***)	Port Adaptor Kit	282 mm – 11.1"	152 mm – 5.98"	175 mm – 6.89"	9,3 kg – 21 lbs	1"
10-13177-01	F9B-3000 TSS	09-802B (09-814B***)	Port Adaptor Kit	282 mm – 11.1"	200 mm – 7.87"	151 mm – 5.94"	9,3 kg – 21 lbs	1"

\*See page 56 for pump type specification system  
 \*\*Pump with nitrile impeller available on request  
 \*\*\*Pump with alternative impeller available on request

**EXTRA HEAVY DUTY, HIGH FLOW, IMPELLER PUMPS - F95B-3000**

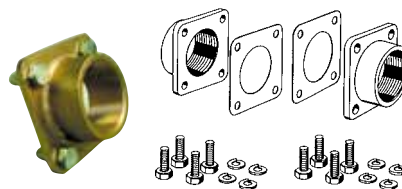
Part No.	Description*	Impeller	Connection	Length	Width	Height	Weight	Drive Shaft Ø
10-13121-01	F95B-3000	09-820B	2 1/2" BSP	354 mm – 13.93"	246/295 mm 9.68"/11.61"	226/201 mm 8.89"/7.91"	17,2 kg – 38 lbs	24 mm

\*See page 56 for pump type specification system

**PORT ADAPTOR KIT**

Part No.	Description*
09-43112	1 1/2" BSP for F8B-3000/5000-VF, F8B-3000/5000-TSS
09-46557-01	2" BSP for F9B-3000/5600-VF and F9B-3000/5600-TSS
09-45562	1 1/2" NPT for F8B-3000/5000-VF, F8B-3000/5000-TSS
09-46557-02	2" NPT for F9B-3000/5600-VF and F9B-3000/5600-TSS

\*See page 56 for pump type specification system



**VACUUM SWITCH**

For automatic shut off operation to prevent pump damage. The vacuum switch works with all self-priming impeller pumps and should be used for e.g. bilge pumping/emptying of tanks to prevent the pump from dry running. The vacuum switch automatically shuts the pump off when the bilge/tank is dry. With the switch fitted, you can start the pump by remote push button or manually by depressing lever on the switch.

Part No.	Description
09-45053	Vacuum Switch

# Clutch Pumps



10-13022-99

**Pump Body** Bronze (Connection for vacuum switch)  
**Shaft** Stainless steel  
 The shaft is mounted with permanently lubricated double ball bearings  
**Seal** Mechanical seal  
**Cam** Full or reduced

**Connection** BSP or NPT  
**Clutch** Electro-Magnetic 12/24V DC  
**Pulley** 2xA or 1xB-groove  
**Pulley Ø** Ø178 mm / 7"



10-24577-99

## HEAVY DUTY ELECTRO-MAGNETIC CLUTCH PUMPS - FB-5001

With an electro-magnetic clutch you will have pumping power whenever needed, at a push of a button, without being at the pump. Combined with a vacuum switch (recommended for bilge pump application), the clutch will automatically disengage whenever the pump starts priming air, thereby preventing dry running and pump damage. Automatically controlled pumps are available in sizes from 1" to 2½" (20 l/min to 625 l/min), with clutches in 12 or 24 volts. Wearing parts are easily replaceable and service kits are available for all standard models. Vacuum Switch as extra accessory, see page 46. *Note! Clutch to be ordered separately.*



10-24116-99

Part No.	Description*	Impeller	Connection	Length	Width	Height	Weight
10-24577-99	F7B-5001	09-1028B	1" BSP	156 mm – 6.14"	120 mm – 4.72"	93 mm – 3.66"	5.8 kg – 12.7 lbs
10-13022-99	F8B-5001*	09-819B	1½" BSP	225 mm – 8.85"	160 mm – 6.29"	124 mm – 4.88"	9.9 kg – 22 lbs

\* See page 56 for pump type specification system



10-13025-99

### CHOICE OF CLUTCH

Part No.	Description
0.3454.001	Electro-Magnetic Clutch, 12V 2xA 7" Pulley
0.3454.002	Electro-Magnetic Clutch, 24V 2xA 7" Pulley
0.3454.003	Electro-Magnetic Clutch, 12V 1xB 7" Pulley
0.3454.004	Electro-Magnetic Clutch, 24V 1xB 7" Pulley
0.3454.050	Coil 12V
0.3454.051	Coil 24V



10-13226-99

## EXTRA HEAVY DUTY ELECTRO-MAGNETIC CLUTCH PUMPS - FB-5000

*Note! Clutch to be ordered separately.*



10-13027-99

Part No.	Description*	Impeller	Connection	Length	Width	Height	Weight
10-24116-99	F7B-5000	09-1028B	1" BSP	226 mm – 8.9"	120 mm – 4.72"	93 mm – 3.66"	6.9 kg – 15 lbs
10-13025-99	F8B-5000 VF	09-819B	Port Adaptor Kit	265 mm – 10.43"	152 mm – 5.98"	154 mm – 6"	11.9 kg – 26 lbs
10-13176-99	F8B-5000 TSS	09-819B	Port Adaptor Kit	265 mm – 10.43"	198 mm – 7.79"	151 mm – 5.94"	11.9 kg – 26 lbs
10-13027-99	F9B-5600	09-802B (09-814B**)	2" BSP	290 mm – 11.42"	192 mm – 7.56"	157 mm – 6.18"	13.2 kg – 29 lbs
10-13226-99	F9B-5600 VF	09-802B (09-814B**)	Port Adaptor Kit	290 mm – 11.4"	152 mm – 5.98"	175 mm – 6.88"	13.2 kg – 27 lbs
10-13178-99	F9B-5600 TSS	09-802B (09-814B**)	Port Adaptor Kit	290 mm – 11.4"	200 mm – 7.87"	151 mm – 5.94"	13.2 kg – 27 lbs

\* See page 56 for pump type specification system  
 \*\* Pump with alternative impeller available on request



10-13176-99



10-13178-99

## EXTRA HEAVY DUTY, HIGH FLOW ELECTRO-MAGNETIC CLUTCH PUMP - F95B-5000

Part No.	Description*	Impeller	Connection	Length	Width	Height	Weight
10-13143-99	F95B-5000	09-820B	2½" BSP	358 mm	246/295 mm	226/201 mm	21 kg – 46 lbs
				14.09"	9.68"/11.61"	8.89"/7.91"	

The Port Adaptors can be fitted either vertically or horizontally.  
 \* See page 56 for pump type specification system



10-13143-99

**Note!** Reduced cam - 30-40% lower capacity  
 Impeller of nitrile - adjust total head approx. 30% down

# Bronze Impeller Pump Performance Tables

F35B			700 rpm			900 rpm			1400 rpm			1750 rpm			2000 rpm			2500 rpm		
Bar	kPa	ft	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM
0.3	30	10.1	0.06	5.2	1.4	0.09	6.8	1.8	0.13	11.2	3.0	0.16	14.0	3.7	0.18	16.0	4.2	0.18	20.5	5.4
0.6	60	20.1	0.09	4.6	1.2	0.09	6.2	1.6	0.13	10.6	2.8	0.16	13.7	3.6	0.18	15.8	4.1	0.18	19.6	5.2
1.0	100	33.5	0.09	4.0	1.1	0.09	5.6	1.5	0.18	9.2	2.4	0.18	11.8	3.1	0.18	13.6	3.6	0.18	17.0	4.5

F4B			700 rpm			900 rpm			1400 rpm			1750 rpm			2000 rpm			2500 rpm		
Bar	kPa	ft	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM
0.3	30	10.1	0.06	12.0	3.2	0.09	15.0	4.0	0.13	23.0	6.0	0.17	27.0	7.1	0.18	30.5	8.1	0.18	34.5	9.1
0.6	60	20.1	0.09	11.0	2.9	0.09	14.0	3.7	0.13	21.0	5.4	0.17	25.0	6.6	0.18	28.0	7.4	0.18	33.0	8.7
1.0	100	33.5	0.09	9.0	2.4	0.09	11.0	2.9	0.18	18.0	4.8	0.18	22.0	5.8	0.18	25.0	6.6	0.18	29.5	7.8
1.5	150	50.3	0.09	4.5	1.2	0.09	7.0	1.8	0.18	13.5	3.6	0.18	17.0	4.5	0.18	20.0	5.3	0.24	25.0	6.6

F5B			700 rpm			900 rpm			1400 rpm			1750 rpm			2000 rpm		
Bar	kPa	ft	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM
0.3	30	10.1	0.13	16.0	4.2	0.18	21.0	5.5	0.37	33.0	8.7	0.37	41.0	10.8	0.37	46.0	12.2
0.6	60	20.1	0.13	15.0	4.0	0.18	20.0	5.3	0.37	32.0	8.5	0.37	39.5	10.4	0.37	45.0	11.9
1.0	100	33.5	0.13	14.0	3.7	0.18	19.0	5.0	0.37	30.0	7.9	0.37	37.0	9.8	0.37	42.0	11.1
1.5	150	50.3	0.13	13.0	3.4	0.18	17.0	4.5	0.37	27.0	7.1	0.37	33.5	8.9	0.37	38.0	10.0
2.0	200	67.1	-	-	-	-	-	-	0.37	22.0	5.8	0.37	28.5	7.5	0.37	33.0	8.07

F7B			700 rpm			900 rpm			1400 rpm			1750 rpm			2000 rpm		
Bar	kPa	ft	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM
0.3	30	10.1	0.37	36.0	9.5	0.37	46.0	12.2	0.75	74.0	19.6	0.75	98.0	25.9	0.75	107.0	28.3
0.6	60	20.1	0.37	34.0	9.0	0.37	44.0	11.6	0.75	72.0	19.0	0.75	96.0	25.4	0.75	104.0	27.5
1.0	100	33.5	0.37	29.0	7.7	0.37	40.0	10.6	0.75	67.0	17.7	0.75	87.0	23.0	0.75	98.0	25.9
1.8	180	60.4	0.37	21.0	5.5	0.37	30.0	7.9	0.75	57.0	15.1	0.75	73.0	19.3	0.75	84.0	22.2
2.5	250	83.8	-	-	-	-	-	-	0.75	37.0	9.8	1.1	52.0	13.7	1.1	63.0	16.6

F8B			700 rpm			900 rpm			1400 rpm			1750 rpm			2000 rpm		
Bar	kPa	ft	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM
0.3	30	10.1	0.37	87.0	9.5	0.75	114.0	30.1	1.1	188.0	50.0	1.5	241.0	63.7	1.5	279.0	73.7
0.6	60	20.1	0.37	80.0	9.0	0.75	107.0	28.3	1.1	180.0	47.6	1.5	233.0	61.6	1.5	270.0	71.3
1.0	100	33.5	0.37	73.0	7.7	0.75	101.0	26.7	1.1	177.0	46.8	1.5	228.0	60.2	1.5	264.0	69.7
1.8	180	60.4	-	-	-	1.1	70.0	18.5	1.1	148.0	39.1	2.2	203.0	53.6	2.2	242.0	63.4
2.5	250	83.8	-	-	-	-	-	-	1.1	108.0	28.5	2.2	166.0	43.9	2.2	208.0	55.0

F9B-5000			700 rpm			900 rpm			1400 rpm			1750 rpm			2000 rpm		
Bar	kPa	ft	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM
0.3	30	10.1	0.75	129.0	34.1	0.75	170.0	44.9	1.5	268.0	70.8	1.5	331.0	87.5	2.2	388.8	102.7
0.6	60	20.1	0.75	124.0	32.8	0.75	161.0	42.5	1.5	260.0	68.9	2.2	323.0	85.3	2.2	383.1	101.2
1.0	100	33.5	0.75	118.8	31.4	1.1	156.0	41.2	1.5	255.6	67.5	2.2	315.2	83.3	3.0	379.2	100.2
1.8	180	60.4	1.1	105.0	27.7	1.1	140.0	37.0	1.5	235.0	62.1	2.2	286.1	75.6	3.0	351.3	92.8
2.5	250	83.8	1.1	83.7	22.1	1.5	102.0	26.9	2.2	208.0	55.2	3.0	266.0	70.3	3.0	304.1	80.3

F9B-5600			700 rpm			900 rpm			1400 rpm			1750 rpm			2000 rpm		
Bar	kPa	ft	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM
0.3	30	10.1	0.75	129.0	34.1	1.1	170.0	44.9	1.5	270.0	71.3	1.5	331.0	87.5	2.2	376.0	99.3
0.6	60	20.1	0.75	126.0	32.8	1.1	165.0	43.6	1.5	266.0	70.3	2.2	323.0	85.3	2.2	368.0	97.2
1.0	100	33.5	0.75	123.0	32.5	1.1	161.1	42.6	2.2	260.0	68.7	2.2	314.0	83.3	3.0	361.0	95.4
1.8	180	60.4	0.75	110.0	29.1	1.5	153.0	40.4	2.2	242.0	63.9	2.2	291.0	76.9	3.0	340.0	89.8
2.5	250	83.8	1.1	90.0	23.8	1.5	130.0	34.3	2.2	218.0	57.6	3.0	269.0	71.1	3.0	312.0	82.4
3.0	300	100.6	1.5	61.0	16.1	2.2	102.0	26.9	3.0	190.0	50.2	3.0	242.0	63.9	3.5	284.0	75.0
3.5	350	117.4	-	-	-	-	-	-	3.0	160.0	42.3	3.5	205.0	54.2	3.5	235.0	62.1

F95B			700 rpm			900 rpm			1400 rpm			1750 rpm			2500 rpm		
Bar	kPa	ft	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM	kW	l/min	GPM
0.5	50	16.8	0.75	182.6	48.2	1.1	236.5	62.5	1.5	384.2	101.5	2.2	483.6	127.8	4.0	626.7	165.5
1.0	100	33.5	1.1	172.7	45.6	1.1	231.3	61.1	1.5	372.0	98.3	3.0	472.9	124.9	5.5	617.9	163.2
1.5	150	50.3	1.1	160.1	42.3	1.5	214.5	56.7	2.2	350.4	92.6	3.0	444.1	117.3	5.5	583.8	154.2
2.0	200	67.1	1.1	132.3	35.0	1.5	181.0	47.8	3.0	315.4	83.3	3.5	406.2	107.3	5.5	553.1	146.1
2.5	250	83.8	1.5	79.5	21.0	2.2	137.8	36.4	3.0	267.6	70.7	4.0	361.3	95.5	7.5	506.4	133.8



## Engine Cooling – Raw Water Handling

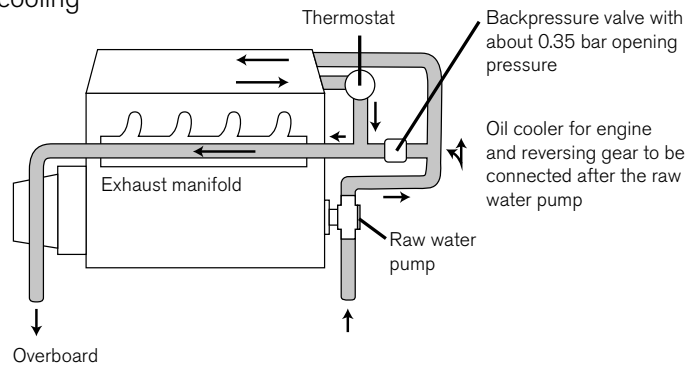
Flexible impeller pumps, F-series, provide an efficient solution to most raw water pumping needs. The primary advantage of a flexible impeller pump is its self-priming ability. As the vanes of the impeller are depressed and rebound, they create their own vacuum drawing fluid into the pump.

A dry pump can lift water up to as much as 3 meters. Thus a flexible impeller pump being used for engine cooling needs not be located below the water line or manually primed. An added feature of flexible impeller pumps is that they can pass fairly large solids without clogging or damaging the pump. This reduces the need for filtering the incoming fluid.

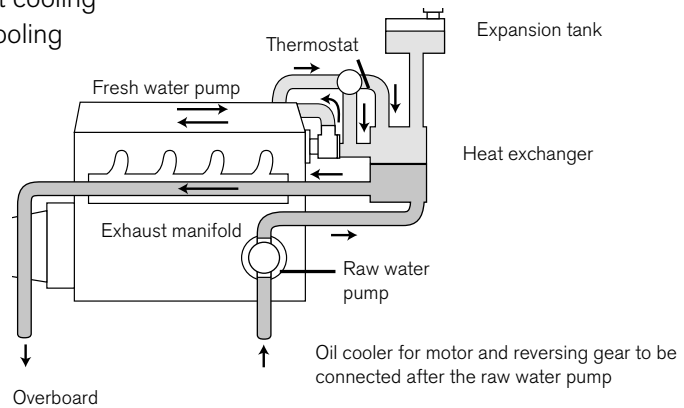
For general raw or fresh water applications, the standard long lasting neoprene rubber impeller is used. A general feature of all flexible impeller pumps is that they cannot be permitted to run dry for more than 30 seconds. Both the impeller and the seals depend upon the water for lubrication and will soon burn out if run dry. Wearing parts are easily replaceable, and service kits are available for all standard models.

# DIFFERENT TYPES OF COOLING SYSTEMS

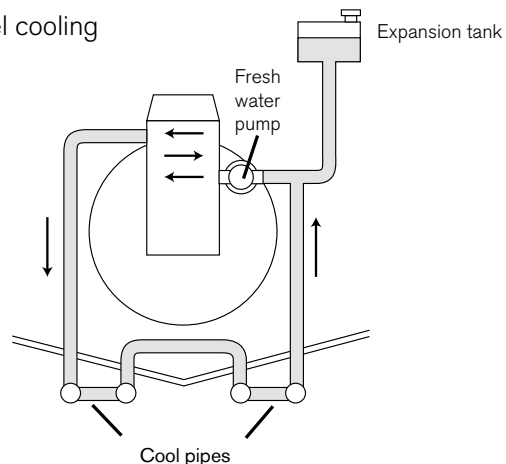
Direct cooling

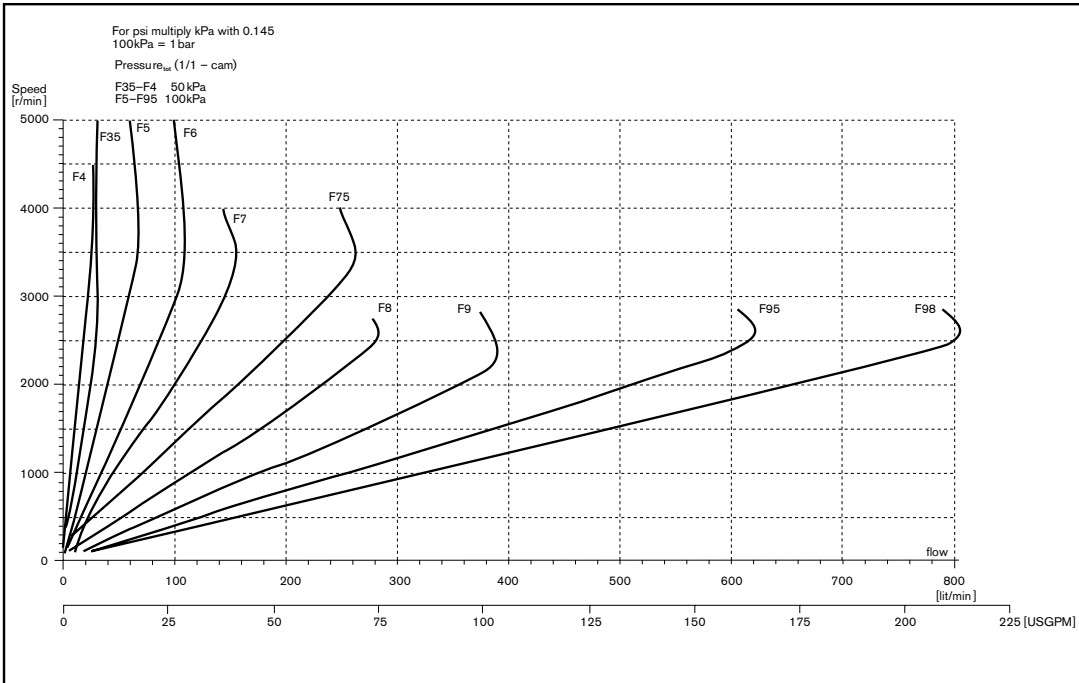


Indirect cooling  
Inter cooling



Keel cooling





**CAPACITY RANGE**  
(based on water at 20°C/68°F)

**FRESH WATER HANDLING**

For circulation of the internal, closed, fresh water circuit of the cooling system SPX FLOW Johnson Pump can offer a number of alternatives in its DC driven Circulation Pumps CM- and CO-series (see page 29 for further information).

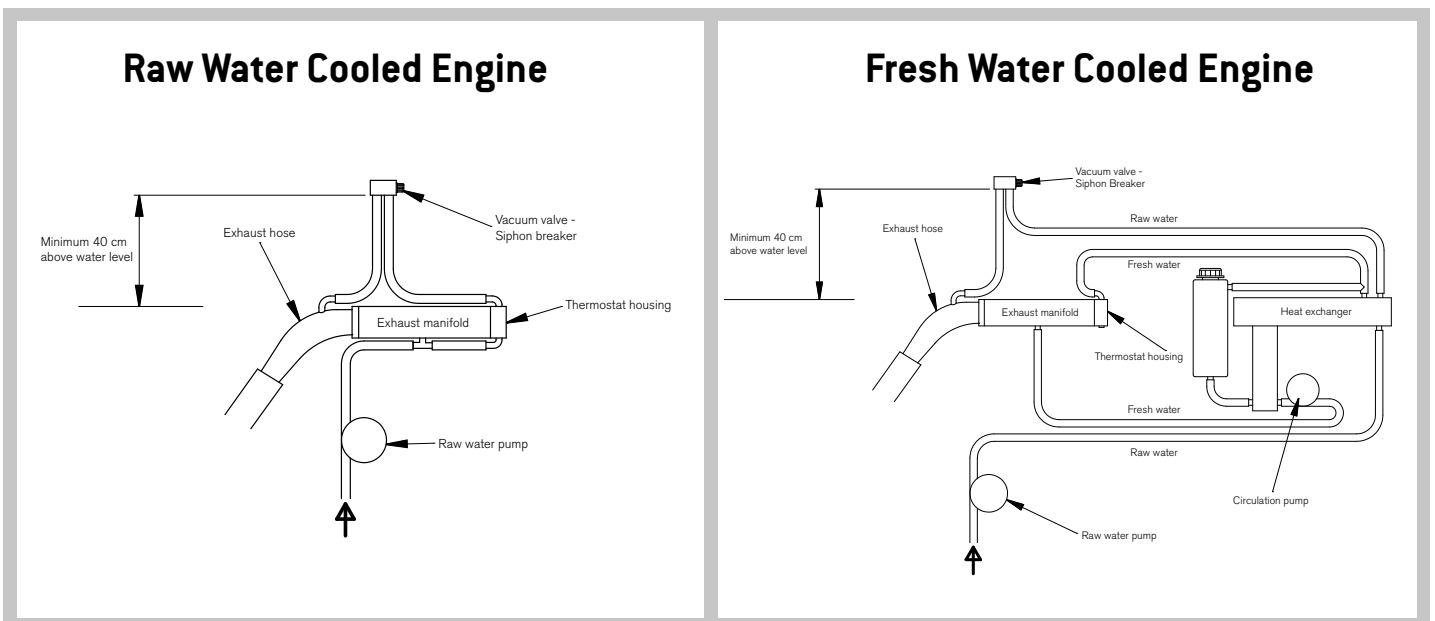
It is also common to use a flexible impeller pump for this purpose if it is located on the cold side of the system (max. 55°C). Other types of belt-driven centrifugal pumps may also be useful. The closed circuit normally transfers heat from the engine to the heat exchanger. The liquid is water and anti-freeze.

**COOLING CAPACITY**

The required output of the cooling pump – raw water as well as fresh water handling – is related to:

- engine size and type (gasoline or diesel)
- type of cooling system (size of heat exchanger)
- water cooled engine oil, reverse gear, exhaust system

Contact your local dealer for more information, or for indirect cooling systems your supplier of heat exchangers.



**PUMP MOUNTING**

Engine cooling pumps, the F-series, are available in several different styles and sizes to satisfy different cooling system needs. Flanged pumps which mount directly to the engine and crank shaft pulley mounted pumps are available for a wide variety of engines. SPX FLOW Johnson Pump Marine is one of the original equipment pump supplier to the largest manufacturers world-wide of inboard engines. Both flange mounted and pulley driven pedestal pumps can be used to provide cooling with a maximum of ease and flexibility. Pump ports are available in sizes from 3/8" to 2 1/2".

**FLANGE MOUNTED PUMPS**

Flanged pumps are normal pumps produced in high volumes, customer designed for flange-mounting at a power take off of the engine. Different types of drives can be used but mainly gears or any type of driving members are used.

**CRANK SHAFT PULLEY MOUNTED**

These pumps are designed for direct installation on the engine crank shaft pulley. Max. revs. 5.000 per minute.

To prevent the pump from rotating, a torque bracket from the fastening point on the pump body to a suitable point on the engine has to be used.

**PEDESTAL MOUNTED PUMPS**

Pulley driven pedestal mounted pumps are used when a free driving pulley is available on the engine.

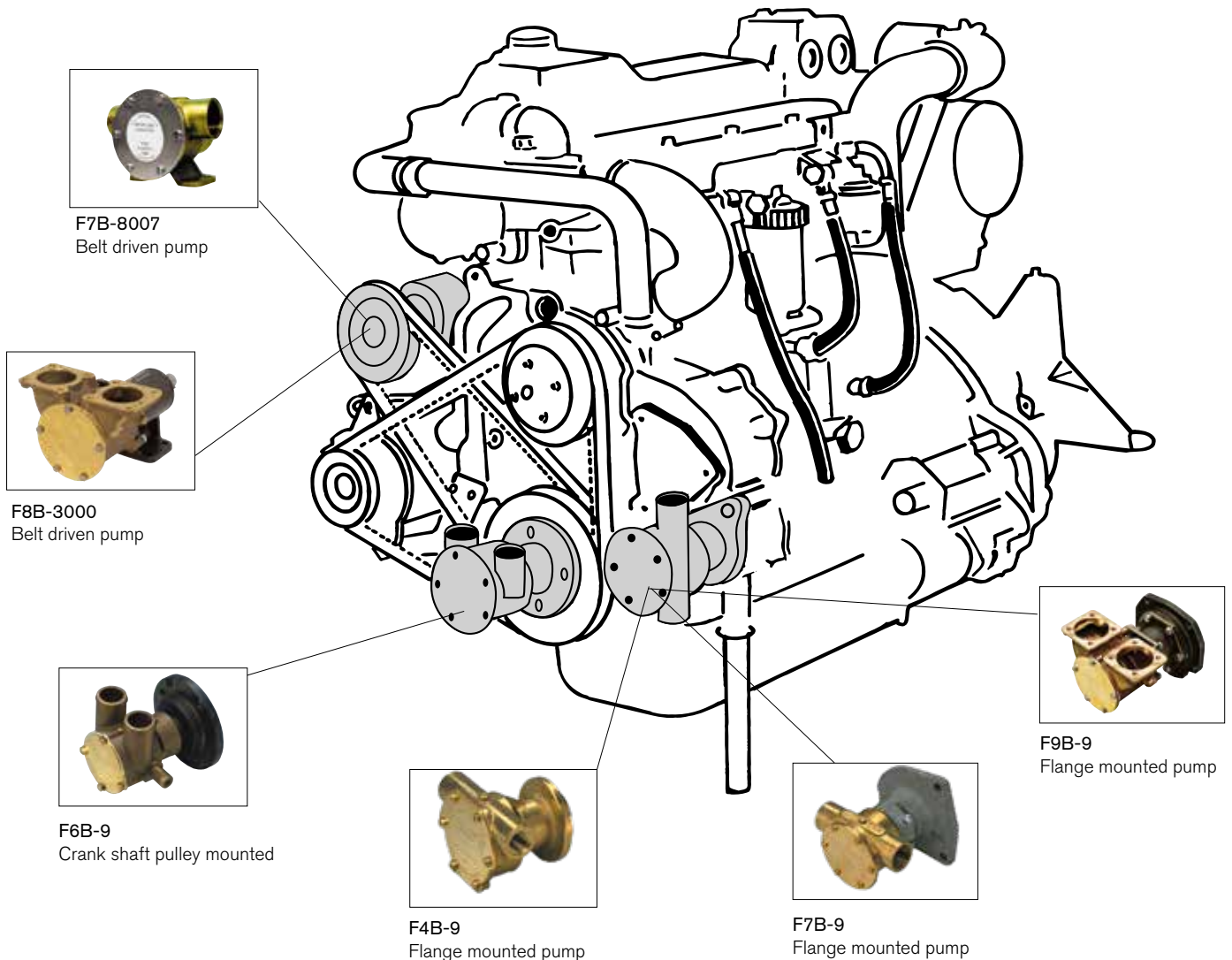
Two different types of pedestal mounted pumps are supplied:

**• FB-8 BSP/ FB-8007 NPT**

A range of bronze pumps in compact design. Ideal as cooling water pumps in marine engines. Available in sizes from 3/8" to 1 1/2", all with permanently lubricated double ball bearings and mechanical seal.

**• FB-3000 BSP OR FLANGE/ FB-3007 NPT**

A range of extra heavy duty pedestal mounted pumps excellent for cooling purpose in commercial vessels. The design means separate bearing housings with permanently lubricated double ball bearings, mechanical shaft seal for extended service life. Wetted parts as wear plate, cam and endcover are easily replaceable.



F7B-8007  
Belt driven pump



F8B-3000  
Belt driven pump



F6B-9  
Crank shaft pulley mounted



F4B-9  
Flange mounted pump



F7B-9  
Flange mounted pump



F9B-9  
Flange mounted pump



# Accessories Impeller Pumps and Impellers

## VACUUM VALVE - SIPHON BREAKER

A vacuum valve is a cheap insurance against water intrusion in a engine with expensive repairs as a consequence. The maximum ambient temperature should not exceed 60 °C.

The valve opens at a pressure which is equivalent to 3-5 cm Water Column. The materials which are used are resistant to sea water and fresh water, and to glycol compounds in appropriate concentrations. Avoid exposing the valve to oil and grease. If it has been in contact with such substances, please clean or replace it.



Part No.	Description
09-47316-01	Vacuum Valve 12 mm
09-47316-02	Vacuum Valve 16 mm
09-47316-03	Vacuum Valve 19 mm

Part No.	Description
09-47316-04	Vacuum Valve 22 mm
09-47316-05	Vacuum Valve 25 mm
09-47316-06	Service Kit Vacuum Valve

- Non corrosive
- Easy to install
- Does not leak
- High quality plastic
- 5 spud sizes

## IMPULLERS

Removal tools for impellers.

Part No.	Description
09-47165-01	Puller for 09-1028BT
09-47163-01	Puller for 09-821BT
09-36166-01	Puller for 09-820B
09-47154-01	Puller for 09-812BT and 09-1027BT
09-950-9300	JP Impuller



09-47165-01



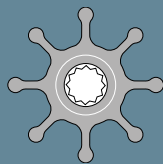
09-36166-01



09-47163-01



09-950-9300

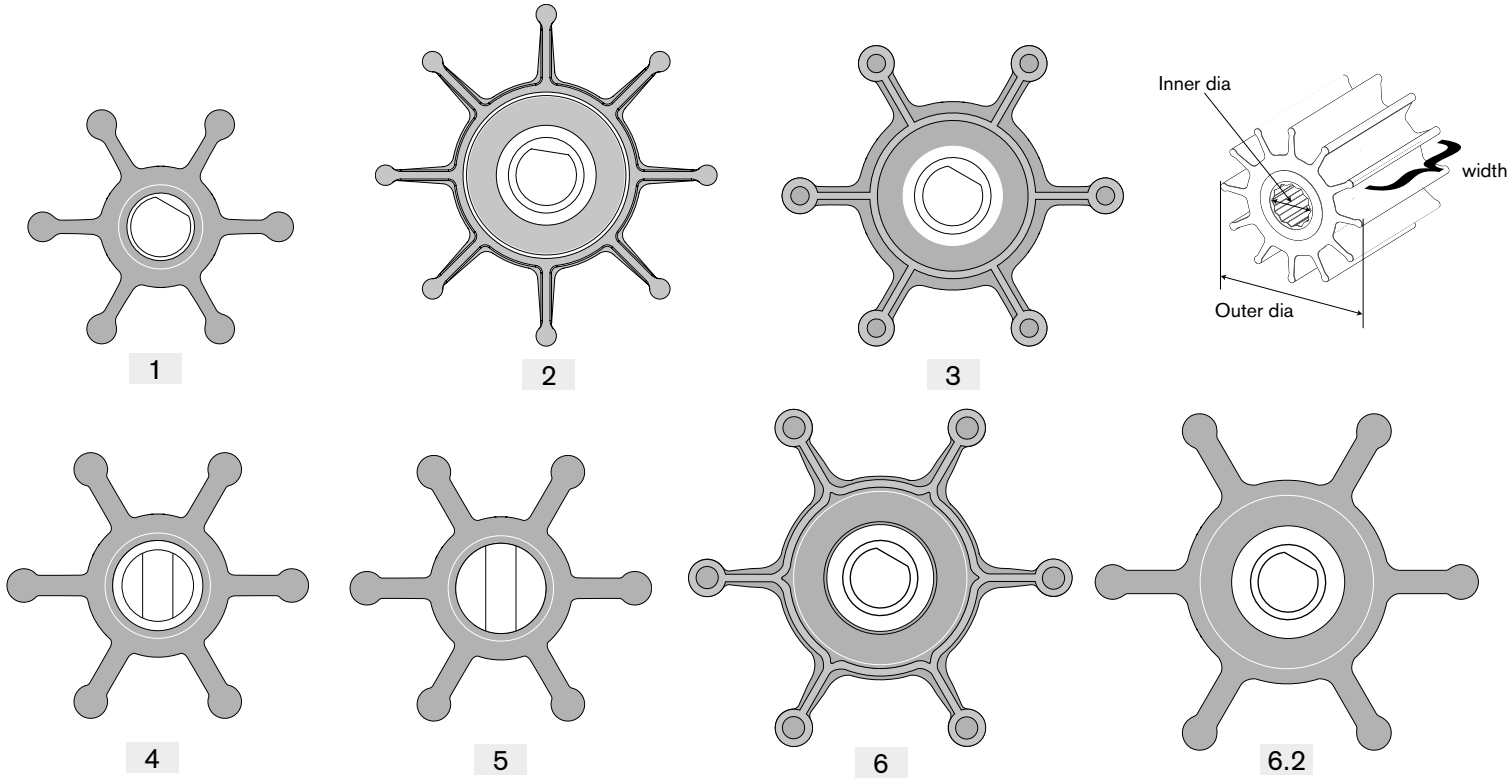


Take good care of the cooling system  
- change to a new impeller every year!



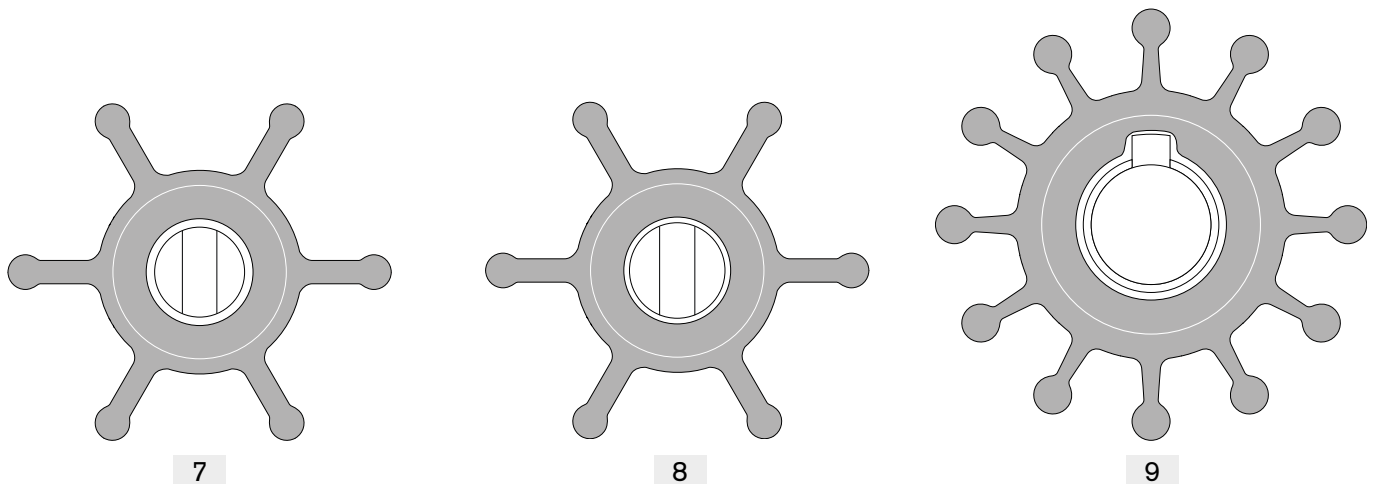
# SPX FLOW's Johnson Pump Marine Brand Original Impellers

SCALE 1:1



Ref.	Pump	Impeller Kit	Material *	Outer dia		Inner dia		Width		Replaces Jabsco No	
				mm	inch	mm	inch	mm	inch	Europe	USA
1	F2	09-1077B-9	Nitrile	35.2	1.29	8.0 / Flat	0.31 / Flat	12.7	0.50		
2	F3	09-843S-9	Nitrile	45.2	1.78	8.0 / Flat	0.31 / Flat	12.8	0.50		
3	TA3P10	09-1052S-9	Nitrile	45.2	1.78	8.0 / Flat	0.31 / Flat	12.8	0.50		
4	F35	09-806B-1	MC97	40.0	1.58	9.5	0.37	19.0	0.75		4528-0001
5	F35	09-808B-1	MC97	40.0	1.58	12.0	0.47	19.0	0.75		22405-0001
6	F4	09-824P-1	MC97	50.8	2.00	8.0 / Flat	0.31 / Flat	22.0	0.87		
6	F4	09-824P-9	Nitrile	50.8	2.00	8.0 / Flat	0.31 / Flat	22.0	0.87		6303-0003
6.2	F4	09-824P-2	Polyurethane	50.8	2.00	8.0 / Flat	0.31 / Flat	22.0	0.87		6303-007-P "Green Impeller"

\* MC97 and Neoprene - for cooling, Nitrile - oil resistant

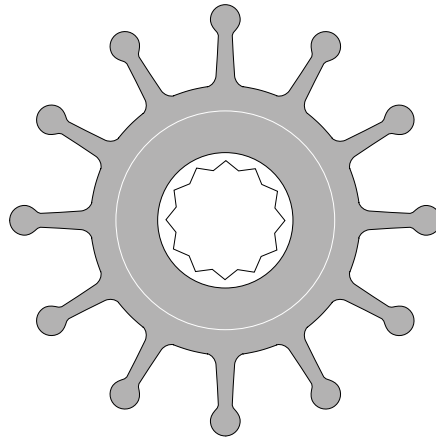


Ref.	Pump	Impeller Kit	Material *	Outer dia		Inner dia		Width		Replaces Jabsco No	
				mm	inch	mm	inch	mm	inch	Europe	USA
7	F4	09-810B-1	MC97	50.8	2.00	12.0	0.47	22.0	0.87		18653-001
7	F4	09-810B-9	Nitrile	50.8	2.00	12.0	0.47	22.0	0.87		
8	F4	09-1026B-1	MC97	50.8	2.00	12.7	0.50	22.0	0.87		673-0001
8	F4	09-1026B-9	Nitrile	50.8	2.00	12.7	0.50	22.0	0.87		673-0003
9	F5	09-801B	Neoprene	57.1	2.25	15.9 Key	0.63 / Key	31.5	1.24		4568-0001

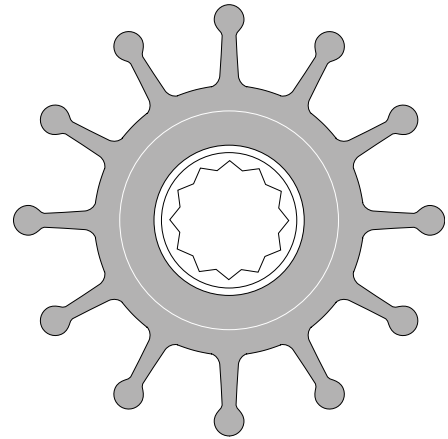
\* MC97 and Neoprene - for cooling, Nitrile - oil resistant

# SPX FLOW's Johnson Pump Marine Brand Original Impellers

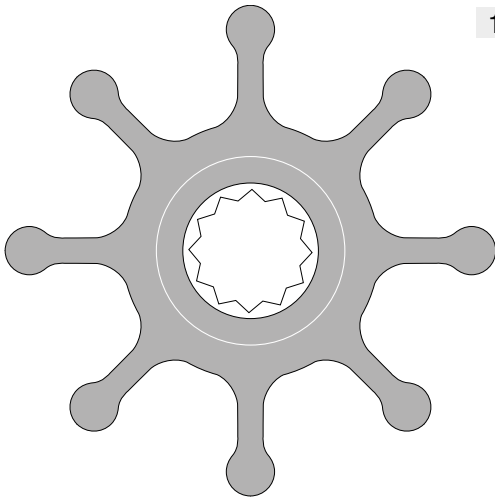
SCALE 1:1



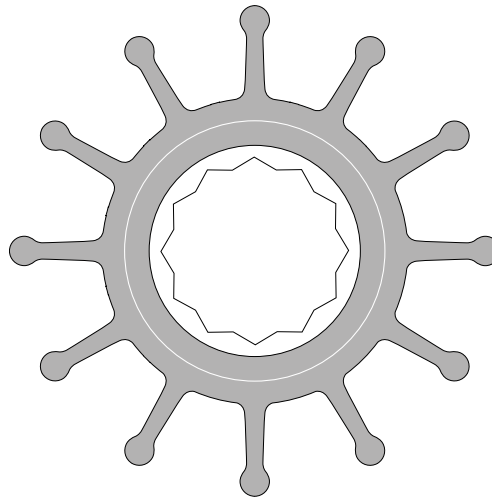
10



11



12



13

Ref.	Pump	Impeller Kit	Material *	Outer dia		Inner dia		Width		Replaces Jabsco No	
				mm	inch	mm	inch	mm	inch	Europe	USA
10	F5	09-1027B-1	MC97	57.1	2.25	Splines		31.5	1.24	1210-0001	
10	F5	09-1027B-10	MC97	57.1	2.25	Splines		31.85	1.24		
10	F5	09-1027B-9	Nitrile	57.1	2.25	Splines		31.5	1.24	1210-0003	
11	F6	09-812B-1	MC97	57.1	2.25	Splines		48.2	1.90	13554-0001	
11	F6	09-812BT-1	MC97	57.1	2.25	Splines		48.2	1.90	13554-0001	
12	F7	09-1028BT-1**	MC97	65	2.56	Splines		50.2	1.98	17937-0001	
12	F7	09-1028B-9	Nitrile	65	2.56	Splines		50.2	1.98	17937-0003	
13	F75	09-821BT-1**	MC97	65	2.56	Splines		80	3.15		

\* MC97 and Neoprene - for cooling, Nitrile- oil resistant

\*\* BT-1 replaces B

## Benefits with flexible impellers from Johnson Pump®

- Stable pressure delivery over time
- Significantly longer service life
- Excellent self-priming capability
- Minimized swelling
- Minimized failures due to fatigue
- Correct impeller dimensions
- Correct cooling flow & sufficient cooling directly at start up

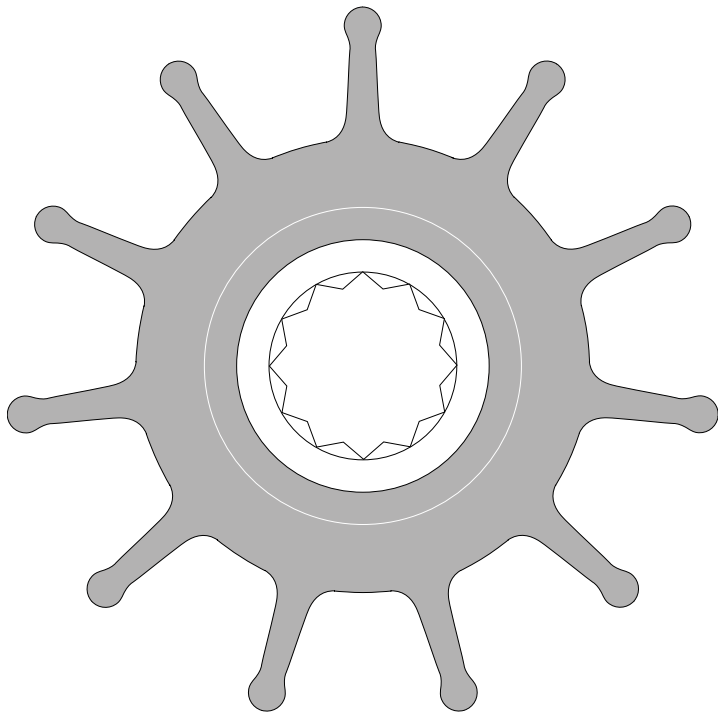
**Original Impellers**  
MORE FLOW - BETTER PERFORMANCE

**SPXFLOW** RELIABILITY ON BOARD  
Johnson Pump® - SINCE 1968 -

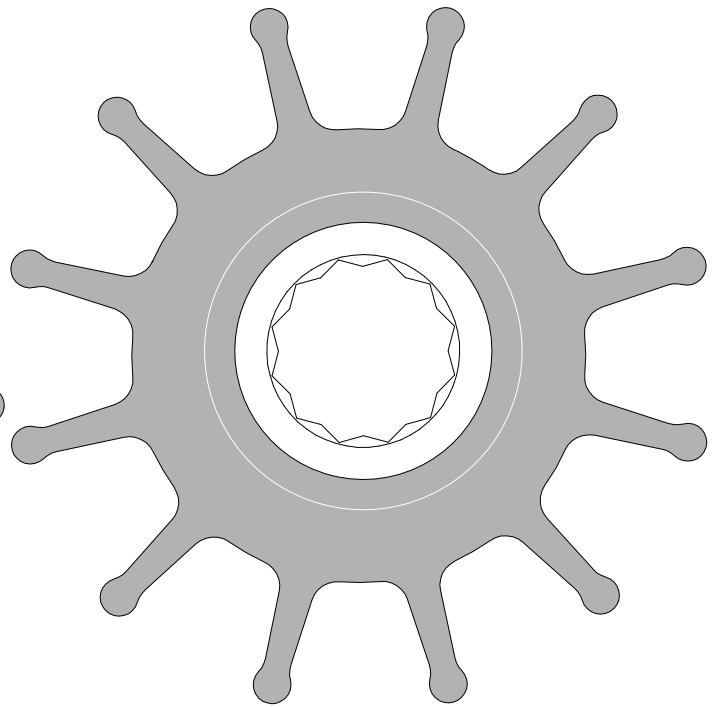


# SPX FLOW's Johnson Pump Marine Brand Original Impellers

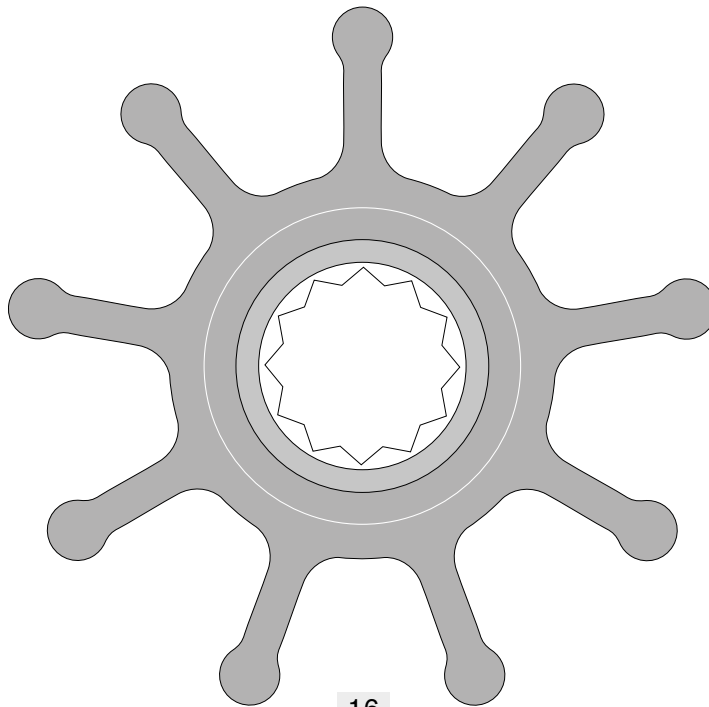
## SCALE 1:1



14



15



16

Ref.	Pump	Impeller Kit	Material*	Outer dia		Inner dia		Width		Replaces Jabsco No	
				mm	inch	mm	inch	mm	inch	Europe	USA
14	F8	09-819B	Neoprene	95	3.74	Splines		63	2.48	836-0001	17935-0001
14	F8	09-819B-9	Nitrile	95	3.74	Splines		63	2.48	836-0003	17935-0003
16	F8	09-1029B <sup>1)</sup>	Neoprene	95	3.74	Splines		63	2.48	836-0001	17935-0001
15	F9	09-814B	Neoprene	95	3.74	Splines		88.5	3.48	21676-0001	17936-0001
15	F95	09-820B	Neoprene	95	3.74	Splines		130	5.12		
15	F98	09-842B	Neoprene	95	3.74	Splines		180	7.09		
16	F9	09-802B	Neoprene	95	3.74	Splines		88.5	3.48	6760-0001	

<sup>1)</sup> Alternative impeller 09-819B

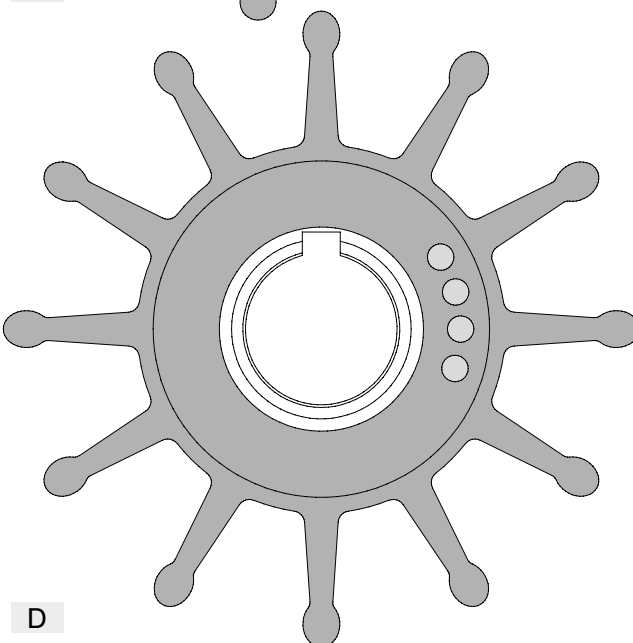
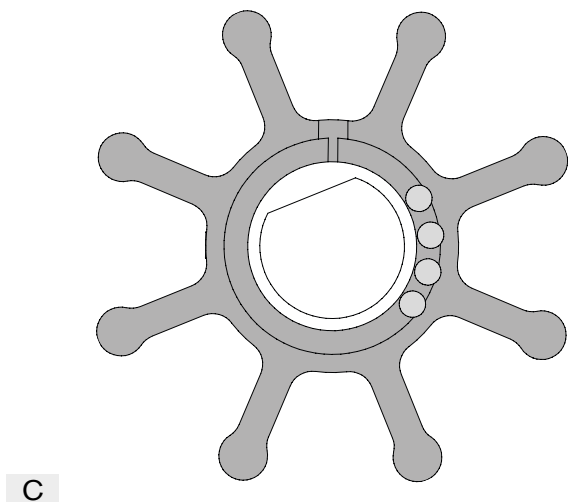
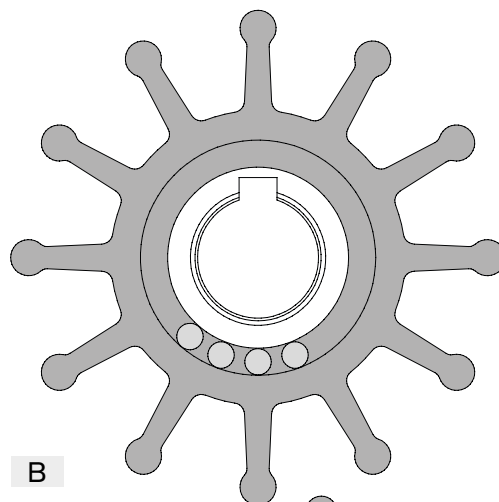
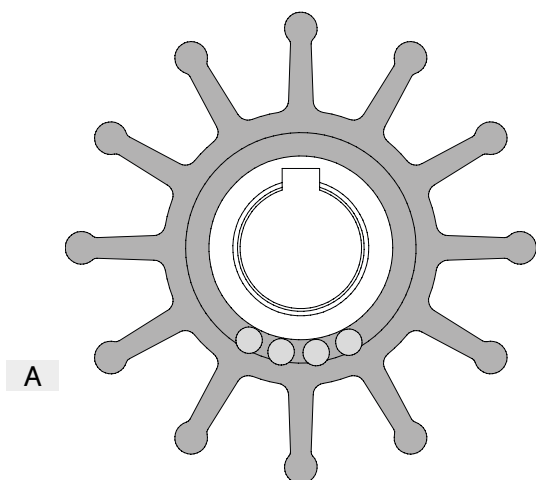
\* MC97 and Neoprene - for cooling, Nitrile - oil resistant

# Sherwood / Mercruiser Impeller replacement program

## SCALE 1:1

Sherwood / Mercruiser owners can now take advantage of premium replacement impellers from SPX FLOW Johnson Pump Marine; documented superior to the competition. We do not venture into this market lightly. We have prepared ourselves well.

- Engineering time in excess of 2000 hours
- More than 80,000 hours of continuous testing
- Manufactured from our MC 97 rubber compound



Ref.	Pump	Impeller Kit	Material*	Outer dia		Inner dia		Width		Replaces Jabsco No	
				mm	inch	mm	inch	mm	inch	Europe	USA
A		09-701B-1	MC97	62.3	2.45			31.8	1.25	18838-0001	
B		09-702B-1	MC97	65.4	2.57			41.4	1.63	18948-0001	
C		09-703P-1	MC97	66.7	2.63			51	2.01	17954-0001	
D		09-704BT-1	MC97	84.1	3.31			73.4	2.89	18958-0001	

\* MC97 and Neoprene - for cooling, Nitrile - oil resistant

## IMPELLER REPLACEMENT KITS

Ref.	SPX FLOW Johnson Pump part no.	Sherwood part no.	Mercruiser part no.	Jabsco part no.	Engines / Pumps
A	09-701B-1	9959K	-	18838-0001	Chris Craft; Chrysler Marine; Commander; Crusader; Glastron Boat Co.; Gray Marine; Interceptor; Onan; OMC; Pathfinder VolksWagon Eng.; Perkins Eng. U.S.; Pleasurecraft Marine; Universal Medalist; Volvo Penta; Yamaha; Westerbeke 24102; Sherwood 11353; Pleasure Craft 302 and 351; Chris Craft 350; Onan MDL3,4
B	09-702B-1	10615K	-	18948-0001	Chris Craft; Chrysler Marine; Commander; Crusader; Escort (Skiltec); Gray Marine; Isuzu; Lenco; Marine Power; North American Engine; Onan; Osco Motors; OMC; Perkins Engine U.S.; Pleasurecraft Marine; Volvo Penta; J.H. Westerbeke Corp; Crusader 97179; Chrysler 3675763; Chrysler 4142878; Cummins 4B; Onan MDL6; Chris Craft 454; Pleasure Craft 454
C	09-703P-1	-	47-59362T	17954-0001	Pump Quicksilver Model 46-72774 A32
D	09-704BT-1	17000K	-	18958-0001	Cummins 6B 300Hp B Series; Cummins C Series; CAT 3208; CAT 3116; CAT 3126; Deere 6076; Sherwood Pump P17 series

# Key to SPX FLOW Johnson Pump type specification system

Pump types F2–F95 (excluding F70, F80 and F100)

Example:

**F 7 B - 3 0 0 0**

**Pump type**

F = Flexible Impeller

**Pump size**

- 2
- 3/35
- 4
- 5
- 6
- 7
- 75
- 8
- 9
- 95
- 98

Generally increasing size ↓

**Body material**

B = Bronze                      P1  
   = Epoxy

**Port connection**

0 = BSP thread  
7 = NPT thread (on request)

**Cam size**

0 = 1/1 - Standard  
2 = 1/2  
3 = 2/3

**Impeller material**

0 = Neoprene  
2 = Polyurethane  
5 = Neoprene - Intermediate pressure  
6 = Neoprene - High pressure  
9 = Nitrile

**Mounting**

- 1 = Flange mounted to the motor
- 3 = Pedestal mounted with double ball bearings and mech. seal.
- 5 = Pedestal mounted with double ball bearings and mech. seal, magnetic clutch operated.
- 5001 = Compact unit with lip seal \*)
- 8 = General purpose with double ball bearings and lip seal \*)
- 9 = Custom, follows customer's specification

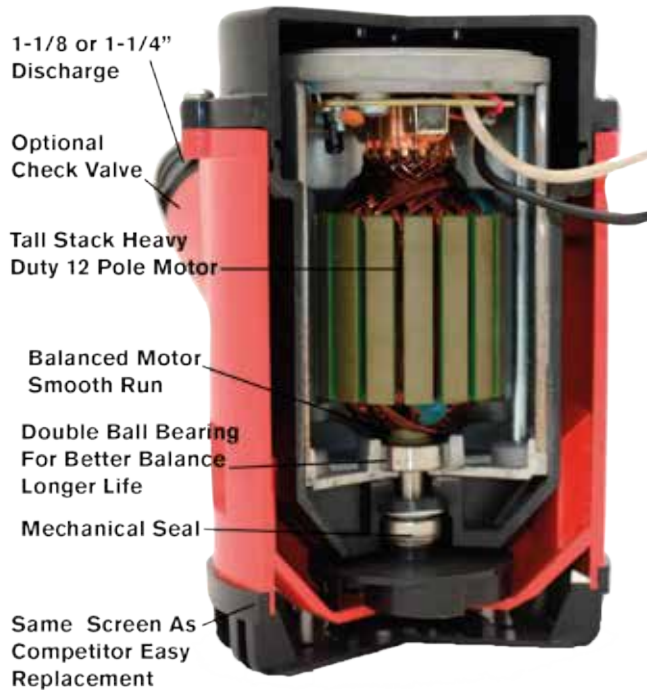
\*) F8B-5001, F8B-8 also available with mechanical seal

**TSS**    The Space Saver  
**VF**     Vertical Flange

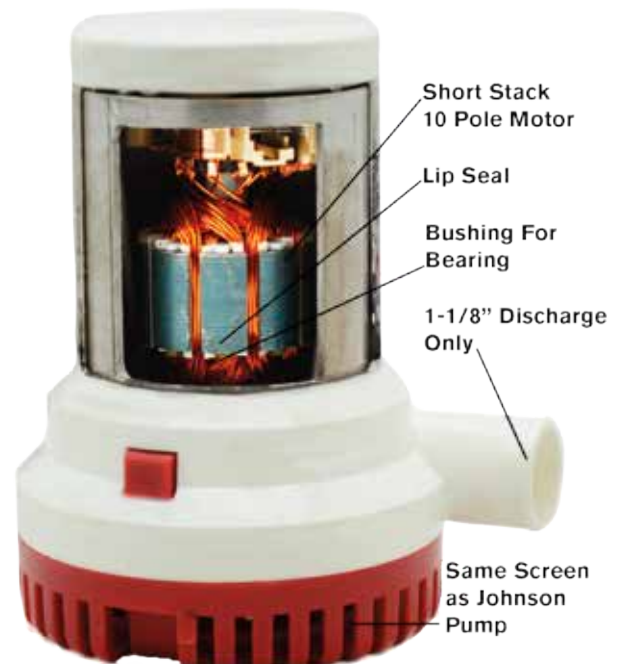


# What differentiates a Johnson Pump Bilge Pump?

Johnson Pump 2200 GPH



Competitor 2000 GPH



## Johnson Pump 2200 GPH Advantages To The Competition

Johnson Pump Model 2200 GPH	Johnson Pump Advantages
Motor Assembly Hermetically Ultrasonically Welded	Assured Water Proof / Tightness
15 Degree Discharge On Top Of Pump Housing	Easy Installation For Routing Of Hose
External Hose Barb For Hose Attachment	No Cracking Of Pump Housing Due To Over Clamping Pressure
Check Valves Included In Pump Body	Prevent Excess Water From Coming Down Hose And Restarting Your Automatic Bilge Pump
12 Pole Motor	Less Wear And Tear On Rotor
Larger Stack On Stator	Heavy Duty Motor For Heat Dissipation
Mechanical Seal	Higher Pump Longevity, Less Prone To Scoring, Shaft Damage
Double Ball Bearing Motor Design	Better Motor Rotor Support, Less Rotor Deflation, Higher Motor Longevity
Balanced Motor Design	Balance Reduces Motor Noise And Vibration, Reduces Load On Bearings For Improved Motor Performance
Assembled In USA	In House Control And Over Sight

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