



# **RAPTOR**

## **SHALLOW WATER ANCHOR**

Owner's Manual

# INTRODUCTION

## THANK YOU

Thank you for purchasing the Minn Kota® Raptor shallow water anchor. This revolutionary shallow water anchor uses state-of-the-art technology to deliver unprecedented levels of boat control. Intuitive features and wireless control enable Raptor to accurately position your boat and improve your bait presentation. Raptor holds your boat in position so you can focus on fishing.

## REGISTRATION

Remember to keep your receipt and immediately register your Raptor. To receive all the benefits of your product warranty, please fill out and mail the registration card. You may also register your product online at [minnkotamotors.com](http://minnkotamotors.com).

## SERIAL NUMBER

Your Minn Kota 11-character serial number is very important. It helps to determine the specific model and year of manufacture. When contacting Consumer Service or registering your product, you will need to know your product's serial number. We recommend that you write the serial number down so that you have it available for future reference.

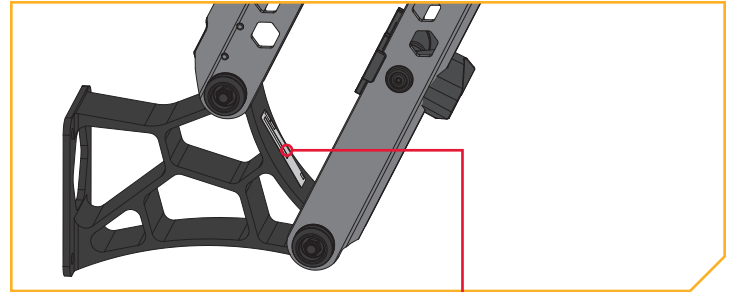
## RAPTOR INFORMATION (For Consumer Reference Only)

Model: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Purchase Date: \_\_\_\_\_

Store Where Purchased: \_\_\_\_\_



**NOTICE:** The serial number on your Raptor is located on the mounting bracket beneath the Arm.

**NOTICE:** Do not return your Minn Kota product to your retailer. Your retailer is not authorized to repair or replace this unit. You may obtain service by: calling Minn Kota at (800) 227-6433; returning your Raptor to the Minn Kota Factory Service Center; sending or taking your product to any Minn Kota authorized service center. A list of authorized service centers is available on our website, at [minnkotamotors.com](http://minnkotamotors.com). Please include proof of purchase, serial number and purchase date for warranty service with any of the above options.

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# SAFETY CONSIDERATIONS

Please thoroughly read the user manual. Follow all instructions and heed all safety considerations. Use of this product is only permitted for persons that have read and understood these instructions. Minors may use this product only under adult supervision.

## **WARNING**

You are responsible for the safe and prudent operation of your boat or vessel, and Raptor(s). This product does not relieve you from the responsibility of safe operation of your boat. It may be hazardous to operate your Raptor in rough or turbulent water conditions, such as fast currents or changing environmental conditions. Do not deploy your Raptor if these conditions are present, especially when the underwater topography is unknown. Failure to follow this warning may result in unexpected operation or failure of the Raptor to operate or anchor and could cause death or serious injury. You must avoid hazards to anchoring and always maintain a permanent watch so you can maintain proper control of your boat. You must always be prepared to regain manual control of your boat. Learn to operate your Minn Kota product in an area free from hazards and obstacles.

## **WARNING**

The Raptor should be disconnected from the power source when it is not in use or is off the water for more than a month. When connecting the power-supply cables of the Raptor to the battery or power switch, ensure that they are not kinked or subject to chafe and route them in such a way that persons cannot trip over them. Before using the Raptor make sure that the insulation of the power cables is not damaged. Disregarding these safety precautions may result in electric shorts of battery(s) and/or the product. Always disconnect the Raptor from battery(s) before cleaning or checking the Raptor. In the event of unexpected operation, remove power leads from the battery. Avoid submerging the Pump Assembly as water may enter, considerable damage to the product can occur. This damage will not be covered by warranty. The constant noise pressure level of the Raptor during use is less than 70dB(A). The overall vibration level does not exceed 2,5 m/sec<sup>2</sup>.

## **WARNING**

Take care that neither you nor other persons approach the Raptor Spike too closely while operating, neither with body parts nor with objects. The Raptor is powerful and may endanger or injure you or others. While the Raptor is operating, watch out for persons swimming and for floating objects. Persons who lack the ability to run the Raptor or whose reactions are impaired by alcohol, drugs, medication, or other substances are not permitted to use this product.

## **CAUTION**

Never leave the boat unattended with the Raptor as your only boat anchor. The Raptor is not intended to provide primary anchorage.

## **WARNING**

It is recommended to only use Johnson Outdoors approved accessories with your Raptor. Using non-approved accessories including those used to mount or control your product may cause damage, unexpected operation and injury. Be sure to use the product and all approved accessories, including remotes, safely and in the manner directed to avoid accidental or unexpected operation. Keep all factory installed parts in place including motor, electronic and accessory covers, enclosures and guards. Failure to adhere to this warning may affect your warranty.

# WARRANTY

## WARRANTY ON RAPTOR SHALLOW WATER ANCHOR

Johnson Outdoors Marine Electronics, Inc. ("JOME") extends the following limited warranty to the original retail purchaser only. Warranty coverage is not transferable.

### Minn Kota Limited Five-Year Warranty

Johnson Outdoors Marine Electronics, Inc. warrants to the original purchaser, that the purchaser's entire Minn Kota Raptor shallow water anchor's system, to include all mechanical, electrical, and hydraulic components, are free from defects in materials and workmanship appearing within five (5) years after the date of purchase. Johnson Outdoors Marine Electronics, Inc. will (at its option) either repair or replace free of charge, any mechanical, electrical, or hydraulic components found to be defective during the term of this warranty. Such repair or replacement shall be the sole and exclusive liability of Johnson Outdoors Marine Electronics, Inc. and the sole and exclusive remedy of the purchaser for breach of this warranty. The Raptor spike is covered by the five year warranty (plus parts and labor to install). After the five year warranty, the spike will be covered by the limited lifetime warranty (part only).

### Minn Kota Limited Lifetime Warranty on the Spike

Johnson Outdoors Marine Electronics, Inc. warrants to the original purchaser that the spike of the purchaser's Minn Kota Raptor shallow water anchor is free from defects in materials and workmanship appearing within the original purchaser's lifetime. Johnson Outdoors Marine Electronics, Inc. will provide a new spike, free of charge, to replace any spike found to be defective more than five (5) years after the date of purchase. Providing a new spike shall be the sole and exclusive liability of Johnson Outdoors Marine Electronics, Inc. and the sole and exclusive remedy of the purchaser for breach of this warranty; and purchaser shall be responsible for installing, or for the cost of labor to install, any new spike provided by Johnson Outdoors Marine Electronics, Inc.

### Terms and Conditions

These limited warranties do not apply to products used in saltwater (except the Chargers, Talon, Raptor and Riptide models) or commercially, nor do they cover normal wear and tear, blemishes that do not affect the operation of the product, or damage caused by accidents, abuse, alteration, modification, misuse or improper care or maintenance. **DAMAGE CAUSED BY THE USE OF OTHER REPLACEMENT PARTS NOT MEETING THE DESIGN SPECIFICATIONS OF THE ORIGINAL PARTS WILL NOT BE COVERED BY THIS LIMITED WARRANTY.** The cost of normal maintenance or replacement parts which are not defective are the responsibility of the purchaser.

### Minn Kota Service Information

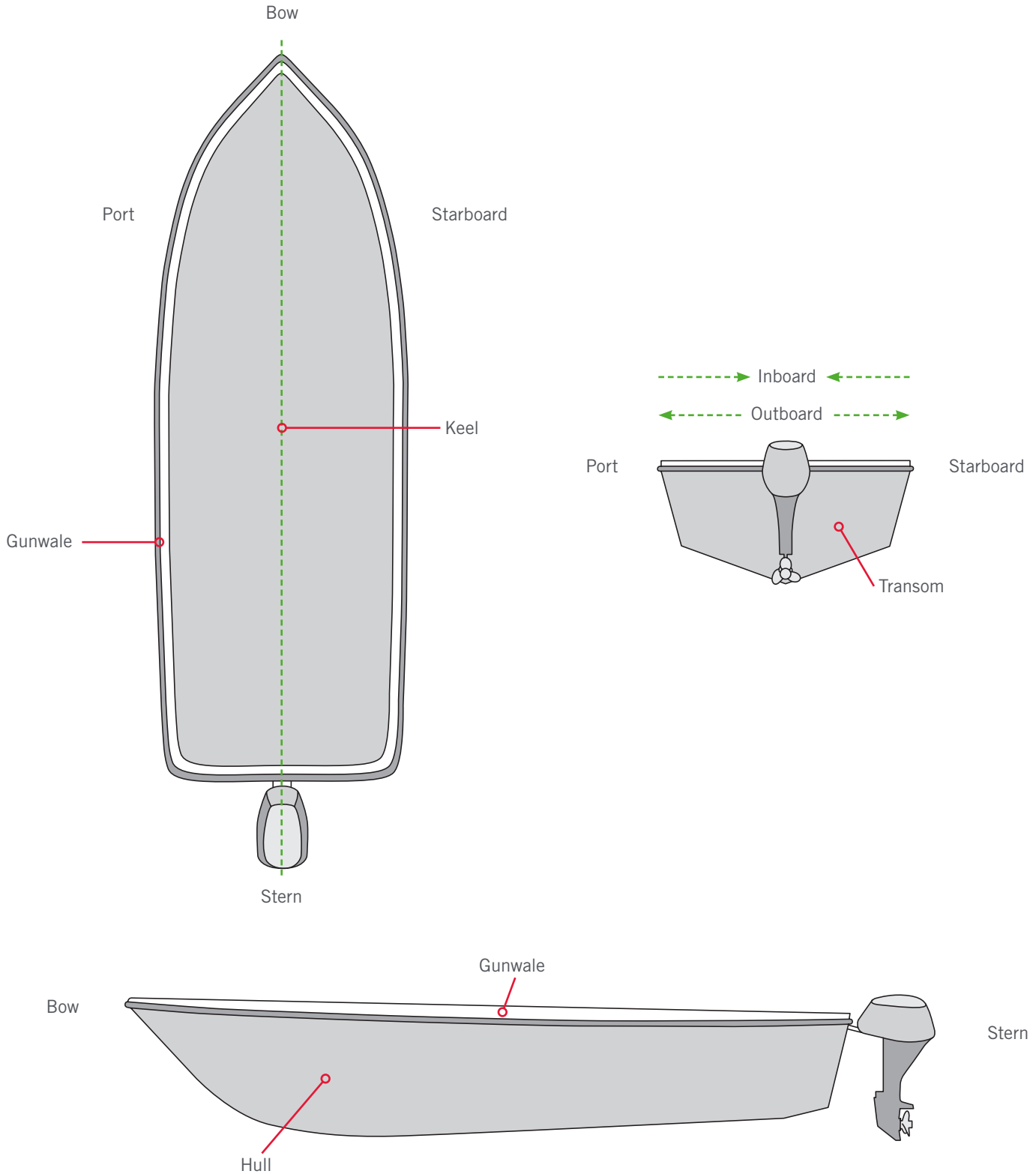
To obtain warranty service in the U.S., the product believed to be defective, and proof of original purchase (including the date of purchase), must be presented to a Minn Kota Authorized Service Center or to Minn Kota's factory service center in Mankato, MN. Any charges incurred for service calls, transportation or shipping/freight to/from the Minn Kota Authorized Service Center or factory, labor to haul out, remove, re-install or re-rig products removed for warranty service, or any other similar items are the sole and exclusive responsibility of the purchaser. Products purchased outside of the U.S. must be returned prepaid with proof of purchase (including the date of purchase and serial number) to any Authorized Minn Kota Service Center in the country of purchase. Warranty service can be arranged by contacting a Minn Kota Authorized Service Center or by contacting the factory at 1-800-227-6433 or email service@minnkotamotors.com. **Products repaired or replaced will be warranted for the remainder of the original warranty period [or for 90 days from the date of repair or replacement, whichever is longer]. For any product that is returned for warranty service that JOME finds to be not covered by or not in breach of this limited warranty, there will be a billing for services rendered at the prevailing posted labor rate and for a minimum of at least one hour.**

**NOTICE:** Do not return your Minn Kota product to your retailer. Your retailer is not authorized to repair or replace products.

**NOTICE:** THERE ARE NO EXPRESS WARRANTIES OTHER THAN THESE LIMITED WARRANTIES. IN NO EVENT SHALL ANY IMPLIED WARRANTIES INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE, EXTEND BEYOND THE DURATION OF THE RELEVANT EXPRESS LIMITED WARRANTY. IN NO EVENT SHALL JOME BE LIABLE FOR PUNITIVE, INDIRECT, INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES. Without limiting the foregoing, JOME assumes no responsibility for loss of use of product, loss of time, inconvenience or other damage.

Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations and/or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other legal rights which vary from state to state.

# KNOW YOUR BOAT



# FEATURES



**NOTICE:** Specifications subject to change without notice. This diagram is for reference only and may differ from your actual Raptor.

# INSTALLATION

## INSTALLING THE RAPTOR

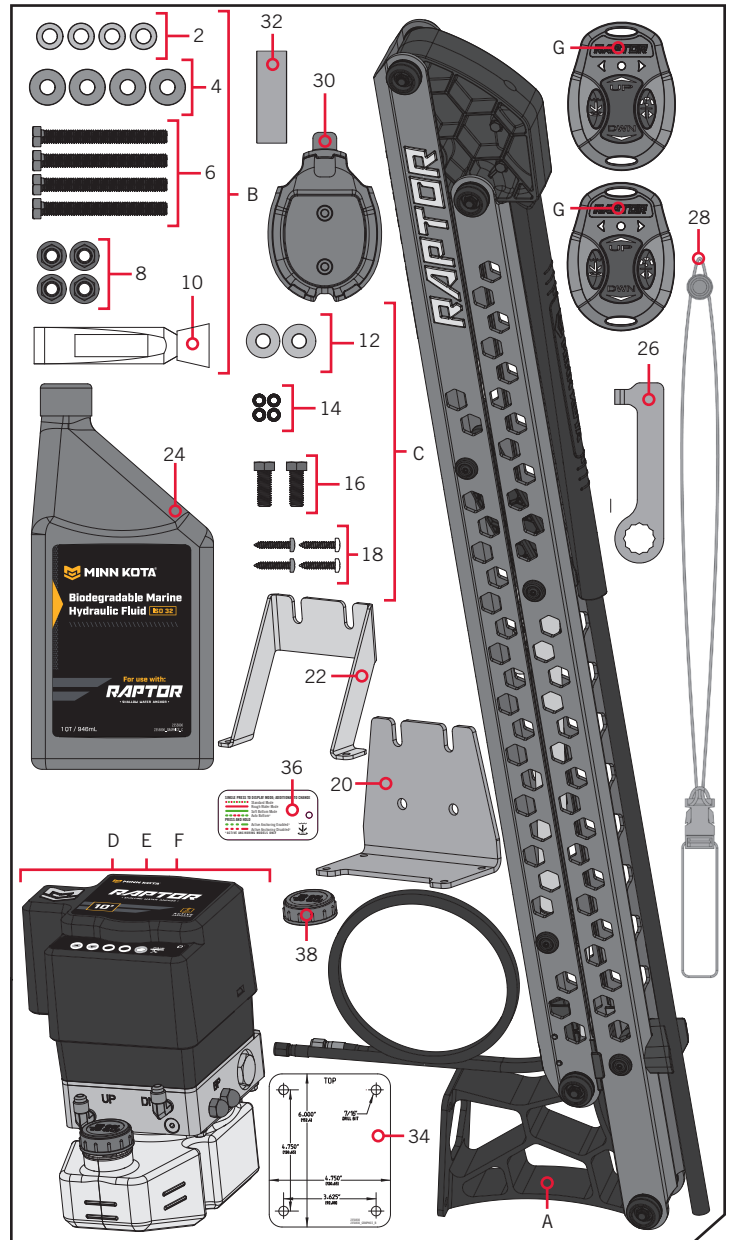
Your new Raptor comes out of the box with the hardware you'll need to install it directly to the transom of your boat. If you have an irregularly shaped transom that cannot accept a direct mount, or you prefer to mount the Raptor with an adapter bracket for ease of mounting and removal, please visit [minnkotamotors.com](http://minnkotamotors.com) for details on our Raptor adapter brackets. For installation with a Raptor adapter bracket, refer to the installation instructions provided with the bracket. For compatible Raptor adapter brackets, to locate the nearest dealer, or for additional product support, please visit [minnkotamotors.com](http://minnkotamotors.com). To install the Raptor directly to the boat, please follow the directions provided in these installation instructions. Please review the parts list, mounting considerations and tools needed for installation prior to getting started.

### INSTALLATION PARTS LIST

Item / Assembly	Part #	Description	Qty.
A	*	RAPTOR ASSEMBLY	1
B Items 2-10	2994943	BAG, ASM, RAPTOR HWD	1
2	2371758	WASHER-3/8 HD FLAT SS	4
4	2371759	WASHER-3/8 HD FENDER SS	4
6	2383421	SCREW-3/8-16X3 1/2 HHCS SS	4
8	2353102	NUT-3/8-16 FLANGE,NYLOK,SS	4
10	2378608	ANTI SEIZE TUBE, 4CC, TALON	1
C Items 12-18	2994944	BAG ASM, RAPTOR PUMP HDW	1
12	2351735	WASHER-3/8" BELLEVILLE SS	2
14	2351733	WASHER-#10 BELLEVILLE SERRATED	4
16	2353412	SCREW-3/8-16 X 1.0" HHCS SS	2
18	2353420	SCREW-#10-16X1.00 TY AB SS	4
20	2351933	BRACKET-MOUNTING, PUMP	1
22	2351934	BRACKET-REINFORCING	1
24	2357700	OIL-HYDRAULIC, QUART, RPTR	1
26	2358800	WRENCH-PRESSURE, RAPTOR	1
28	2390801	LANYARD, REMOTE	1
30	2371829	BRACKET,RMT DASH MNT HLDR	1
32	2375104	TAPE,MNTG,FOAM ULINE #S-10131	1
D	2774106	ASSEMBLY, MAIN PUMP STD 8' *8ft Standard*	1
E	2774105	ASSEMBLY, MAIN PUMP AA 8' *8ft AA*	1
F	2774107	ASSEMBLY, MAIN PUMP AA 10' *10ft AA*	1
G	2994156	TRANSMITTER ASM, RAPTOR	2
▲	2357141	INSTALL. INSTRUCTIONS,RPTR	1
▲	2357142	DISCLAIMER-DOWNLOAD,MANUAL	1
▲	2357140	MANUAL, RAPTOR ANCHOR	1
34	2358830	RAPTOR MOUNTING TEMPLATE	1
36	2354110	TAG, REMOTE, RAPTOR	1
38	2350200	CAP-FILL, RESERVOIR	1

\* This part is included in an assembly and cannot be ordered individually.

▲ Not shown on Parts Diagram.





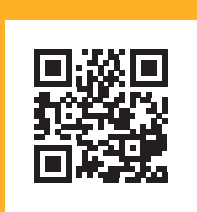
## ▶ MOUNTING CONSIDERATIONS ▶

### ▶ Anchor Mounting Considerations

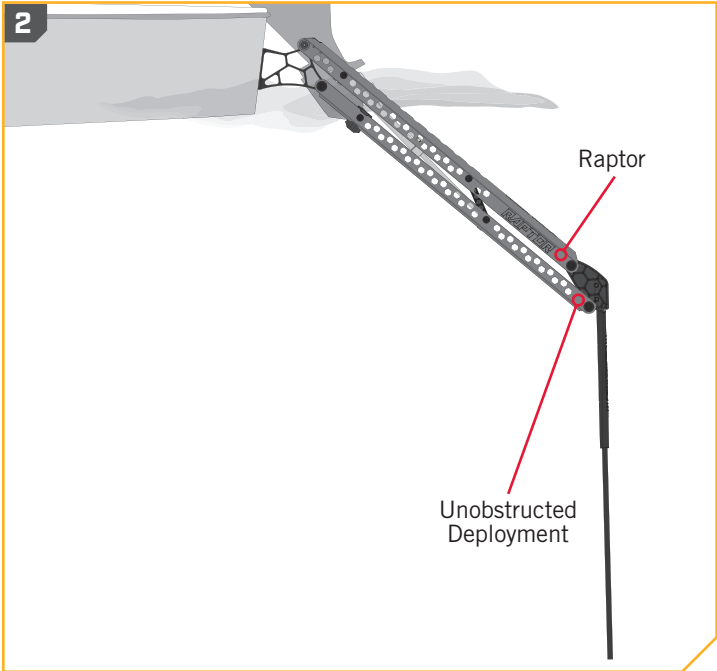
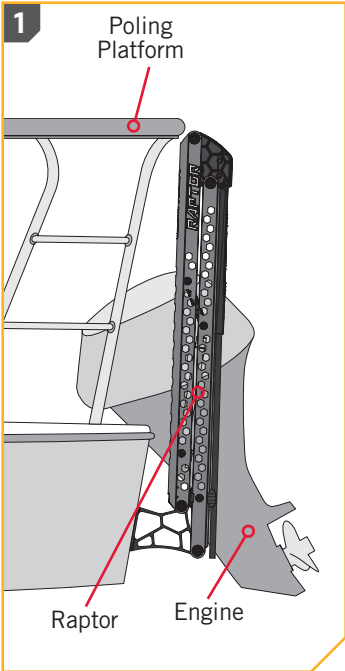
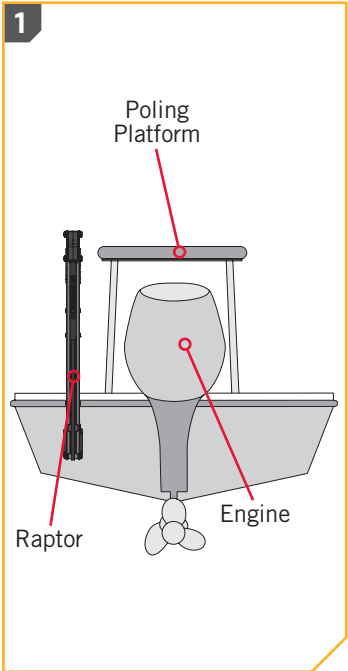
Minn Kota recommends mounting the Raptor directly to the transom of the boat with the built-in Mounting Bracket. Your Raptor comes complete with all the necessary hardware to mount directly to the transom. The Raptor may also be mounted using an optional adapter bracket when direct transom mounting is not possible or desired due to obstructions or irregularly shaped transoms. For more information on universal adapter brackets and other Minn Kota® Raptor accessories, please visit [minnkotamotors.com](http://minnkotamotors.com). When using an adapter bracket to mount the Raptor, please use the instructions included with the accessory.

In order to use the direct mount installation, the following conditions need to be met:

- 1. Unobstructed Mounting** - When selecting the Raptor Mounting Bracket mounting location, examine your boat to ensure that you will not drill into any obstructions and that the hardware will be accessible for assembly. Make sure that the Transom is strong enough to accept the Raptor mounted at the intended location.
- 2. Unobstructed Deployment and Retraction** - The Raptor is designed to mount on either the port or starboard side of the transom. The Raptor must have a clear, unobstructed path to deploy. Check to make sure that your proposed location will allow the anchor to deploy and retract without hitting trim tabs, poling platforms, ladders, the engine or other obstructions. You should also consider your fishing methods when selecting the mounting location.



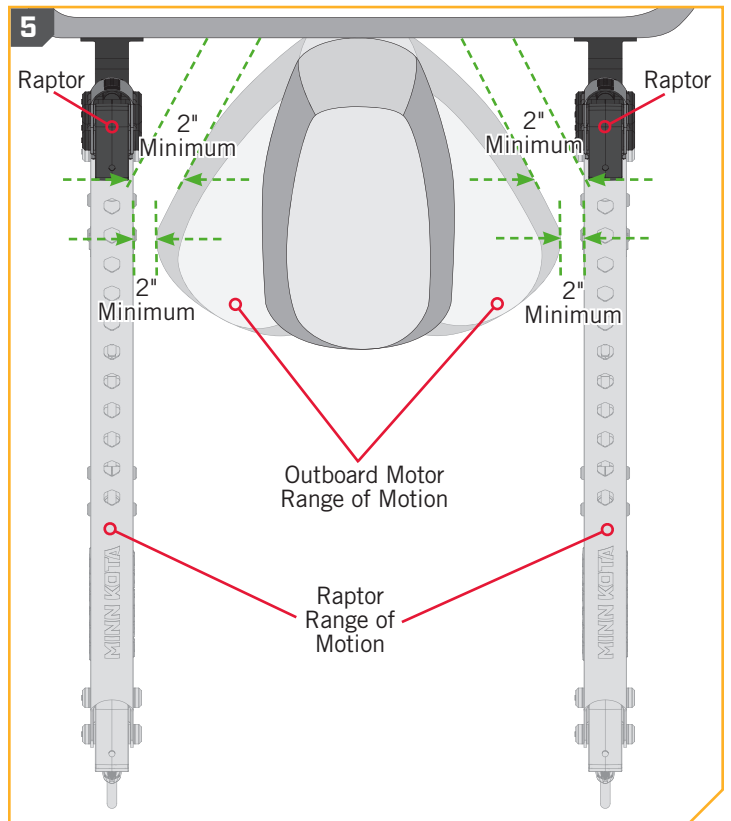
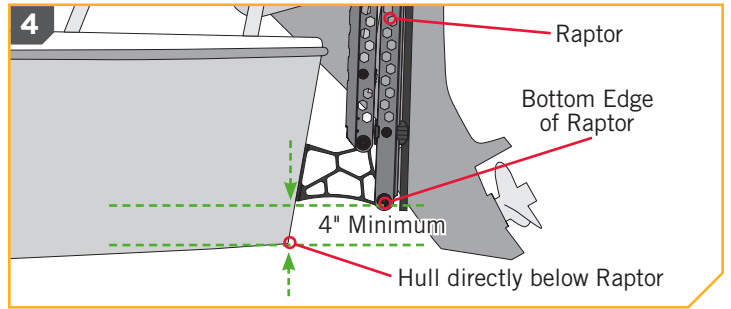
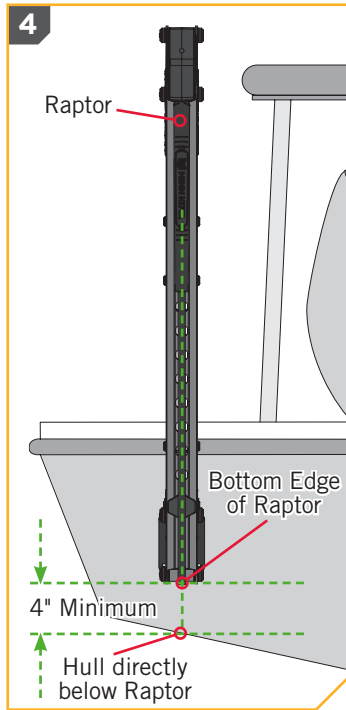
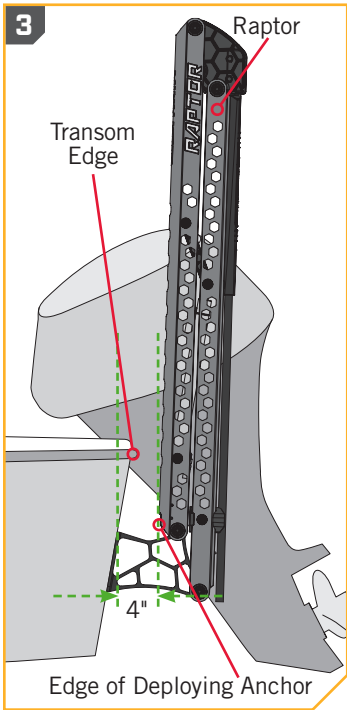
View accessories available for your Raptor at [minnkotamotors.com](http://minnkotamotors.com).



## ⚠ CAUTION

Follow all instructions and heed all safety considerations. Minn Kota recommends having a second person help with installation. Not following proper installation and rigging instructions may result in injury. Mounting the Raptor too low can cause undue drag from the Raptor or Mounting Bracket when operating the boat. It is important to mount the Raptor as recommended to avoid unsafe driving conditions.

# INSTALLING THE RAPTOR



**3. Transom to Raptor Clearance** - The Raptor Mounting Bracket included with your unit will allow for approximately 4" of clearance or set back from the transom to the front edge of the deploying anchor.

**4. Raptor to Hull Clearance** - The bottom edge of the Raptor should never be less than 4" above the hull directly below the Raptor to prevent spray and drag conditions.

**5. Raptor to Engine Clearance** - When selecting a mounting location, make sure that no interference exists between the Raptor and your engine during normal operation. Once you have selected your mounting location, trim the engine all the way up and all the way down, and steer the engine fully to the left and right to confirm proper engine clearance. Ensure there is a minimum of two to three inches of clearance from any point on the Raptor in all states of stow and deploy.

If these conditions are not met, please consider using an optional Minn Kota adapter bracket accessory. There are many adapter brackets designed for the Raptor that allow for greater adjustability of the mount and allow for greater clearances to operate the Raptor. Please visit [minnkotamotors.com](http://minnkotamotors.com) to learn more about selecting and installing an adapter bracket.

**NOTICE:** In some instances, boat manufactures have begun to make hollow boat Transoms. We recommend speaking to your local boat dealer or OEM Manufacturer for mounting recommendations.

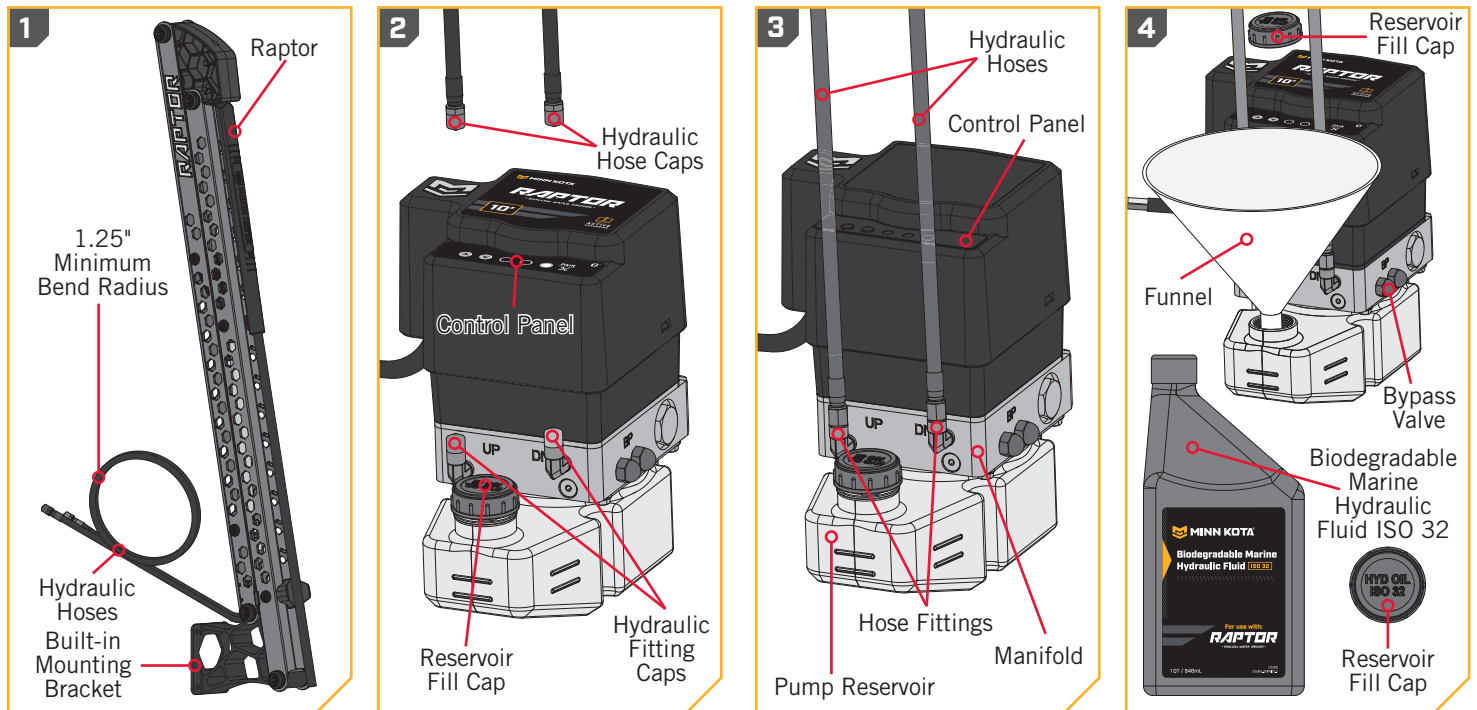
**Review the mounting considerations for the hydraulic pump and hose routing before installing the anchor to the boat.**

## Hydraulic Pump Mounting Considerations

Minn Kota recommends reviewing all mounting considerations for the hydraulic pump and hose routing for the Raptor to ensure that all circumstances are taken into account before installation.

In order to successfully route the hydraulic hoses and mount the hydraulic pump, please consider the following:

**1. Hydraulic Hose Routing** - The hydraulic hoses exit the anchor near the top of the built-in mounting bracket and will be routed to the hydraulic pump. When selecting the mounting location for the hydraulic pump, examine your boat to ensure that you can route hydraulic hoses to the intended hydraulic pump mounting location, and the hoses can be connected once the pump is mounted. Hoses may be routed over or through the hull of the boat. It is recommended to route hoses through an established routing on the boat, such as where the main engine lines are routed. If routing through an established routing on the boat such as the manufacturer's boot, ect, make sure they are re-rigged and tightened to their original state when installation is complete. If drilling holes in the hull of the boat is necessary, make sure that the drilled location is free from obstructions that could damage existing gas or electrical lines. Make sure that the hoses have enough slack so that the anchor can be deployed and stowed without creating pinch points or excessive tightness along the path for the intended mounting locations. Make sure that the hoses do not pass over any sharp surfaces or edges that could cause abrasions over time. Make sure that the hydraulic hoses are not kinked or bent when routing through the boat compartment. The minimum bend radius for hose routings is 1.25 inches. Hydraulic lines shall be routed away from heat sources. There shall be no joints or connections in hydraulic lines directly over exhaust lines or high temperature manifolds. Make sure that the routed hoses do not create a tripping hazard.



**2. Keep Hydraulic Lines Clean** - During installation, precautions must be taken to prevent the entrance of foreign material into components or hydraulic lines. Take note of the black and green caps on the hose fittings on the hydraulic pump and hydraulic hoses. Do not prematurely remove the protective caps from the ends of the hydraulic hoses that exit the anchor or the hose fittings on the pump assembly. Keep the fill cap on the pump reservoir in place unless filling the reservoir, to keep dirt and debris from entering.

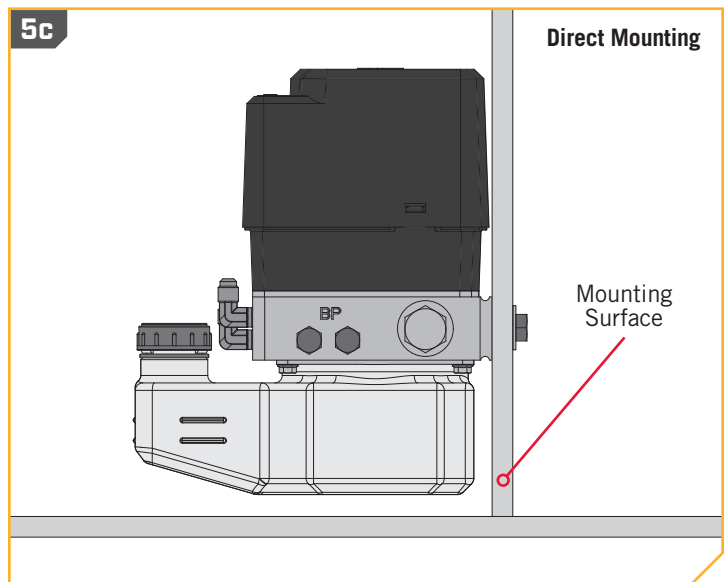
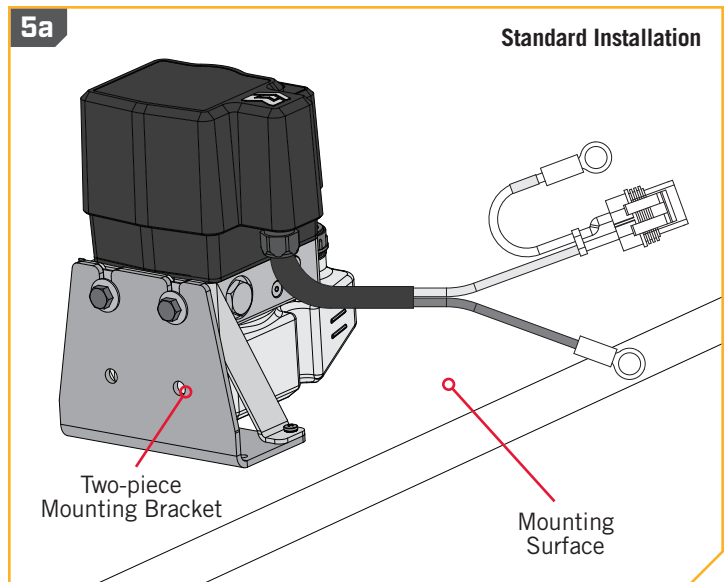
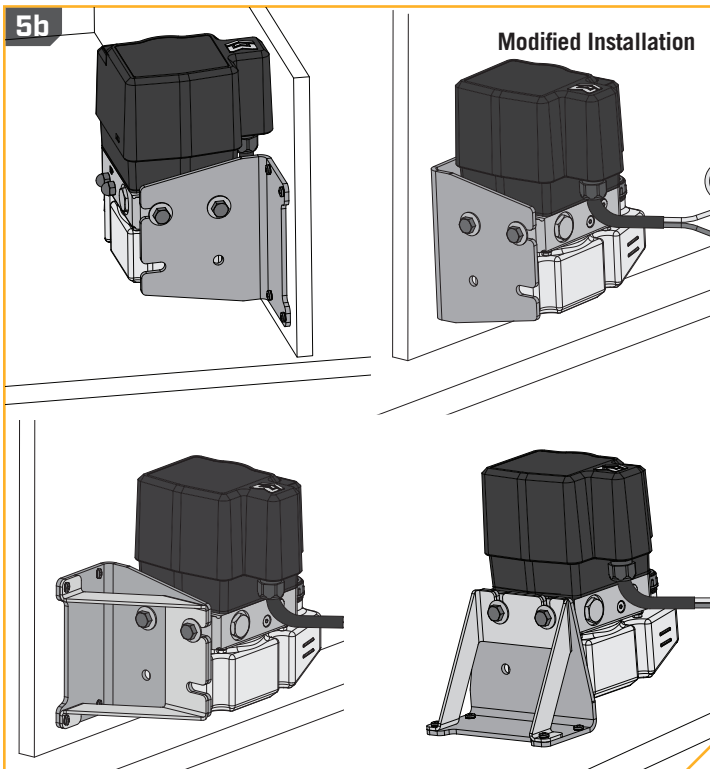
**3. Hose Attachment** - Install the pump in a way so that there is space between the compartment or mounting locations and the pump to attach hoses. The hose fittings are located on the manifold of the hydraulic pump between the pump reservoir and control panel. Also be sure that the location will have room to allow the hoses to pass through and maintain proper hose placement that will prevent it from bending or kinking.

# INSTALLING THE RAPTOR

**4. Hydraulic Fluid and Filling Access** - Make sure that the mounting location allows for the pump to be filled with hydraulic fluid. The cap to the pump assembly must be accessible to fill the hydraulic pump reservoir with hydraulic fluid. Be sure that the installation location allows access with a funnel or similar tool to aide in filling the reservoir. The pump is filled with fluid as noted on the red cap marked "Hyd Oil ISO 32". Biodegradable Marine Hydraulic Fluid ISO 32 (Item# 2357700) is provided for the installation.

**5. Secured Mounting** - Mount the pump in a secure location where it will remain affixed to a rigid surface. Hydraulic components shall be secured to the boat's structure in consideration of the potential forces transmitted. It is recommended to mount the hydraulic pump with the Two-piece Mounting Bracket provided. The Pump Assembly must be mounted vertically. If adjustments to the mounting need to be made, adjust the position of the Two-piece Bracket that will accommodate keeping the Pump Assembly vertical. Make sure that there is enough room to successfully use the tools needed to secure the installation hardware to the intended mounting location. Make sure that the hydraulic hoses will not be kinked or bent when attached to the pump. Options for mounting the pump include:

- a. **Standard Installation** - Mounting the pump with the Two-piece Mounting Bracket.
- b. **Modified Installation** - Mounting the pump using either both of the pieces from the Two-piece Mounting Bracket rotated to fit your specific mounting needs or just the Pump Mounting Bracket (Item #20) on its own rotated to fit your specific mounting needs.
- c. **Direct Mounting** - Mounting the Hydraulic Pump directly to a secure structure on the boat without the use of the bracket.

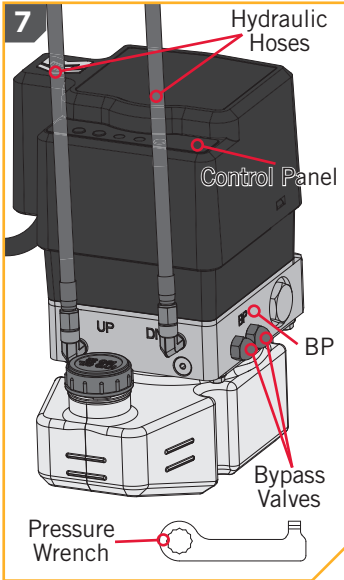
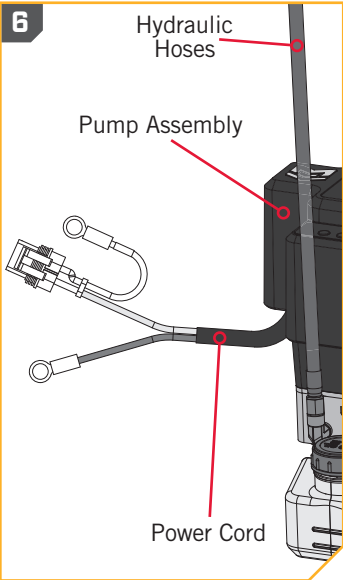


# INSTALLING THE RAPTOR

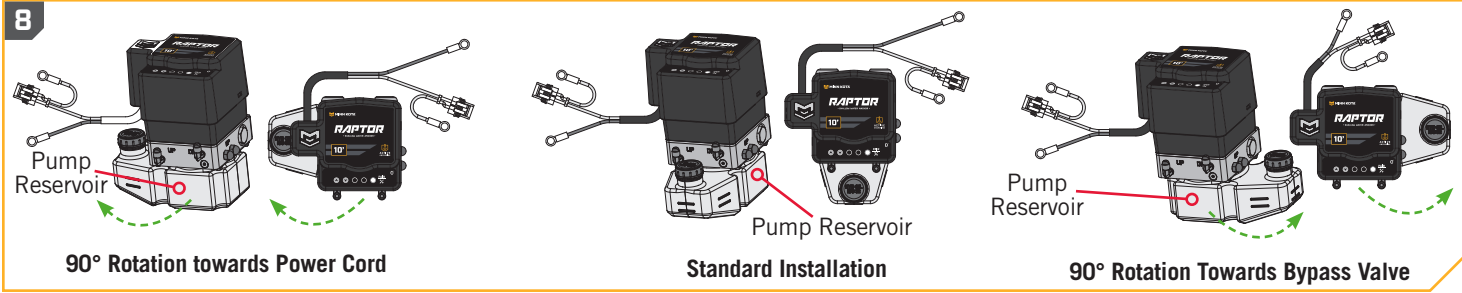
**6. Power Source** - Make sure that the power cord can reach its intended power source and will not pose as a tripping hazard. It is recommended to mount the pump as close to the power source as possible to create the least obtrusive routing for cables between the pump and power source.

**7. Bypass Access** - On the side of the hydraulic pump manifold, there are two acorn nuts that cover manual Bypass Valves in the event of the need to Emergency Stow. The installation kit comes with a Pressure Wrench (Item #2358800). Be sure that the installation location allows a minimum of 1-1/2 inch clearance around the "BP" on the pump manifold to access these acorn nuts and the Bypass Valves below them and enough space to utilize the Pressure Wrench. Store the pressure wrench in the boat.

**8. Reservoir Clearance** - When selecting the mounting location, it may be necessary to rotate the position of the reservoir on the hydraulic pump to accommodate for tight mounting locations. The hydraulic pump comes out of the box with the reservoir fill cap directly below the hydraulic hose fittings on the pump manifold. The reservoir can be rotated 90 degrees to either the right or the left so that the fill cap is either directly below the power cord, or directly below the bypass valves on the manifold to accommodate a variety of installation variability. If you need to rotate your Pump Reservoir, please see the "Rotating the Pump Reservoir" section of these instructions.



**NOTICE:** The orientation of the Reservoir on the pump may affect how the Two-piece Mounting Bracket is used.



## **⚠ WARNING**

Do not run the Hydraulic Pump until after hydraulic fluid has been added. Running the Hydraulic Pump without hydraulic fluid can damage the pump.

### TOOLS AND RESOURCES REQUIRED >

- Drill
- 5/16" Drill Bit
- 9/16" Box End or Socket Wrench
- Marine Grade Sealant
- Cable Ties
- 30ft/lb capacity Torque Wrench
- Awl or similar marking tool
- A second person to help with installation
- Funnel
- Masking Tape
- 7/16" Drill Bit
- 5/16" Deep Well Socket or 5/16" Ratchet Wrench
- 1/8" Drill Bit
- 3/4" Drill Bit
- Anti-seize
- 5/32" Drill Bit
- File, sand paper, or emery board
- #2 Phillips Bit
- Tie Wraps

# INSTALLING THE RAPTOR

## INSTALLATION >

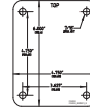
### > Installing the Raptor

1

#### ITEM(S) NEEDED



#A x 1

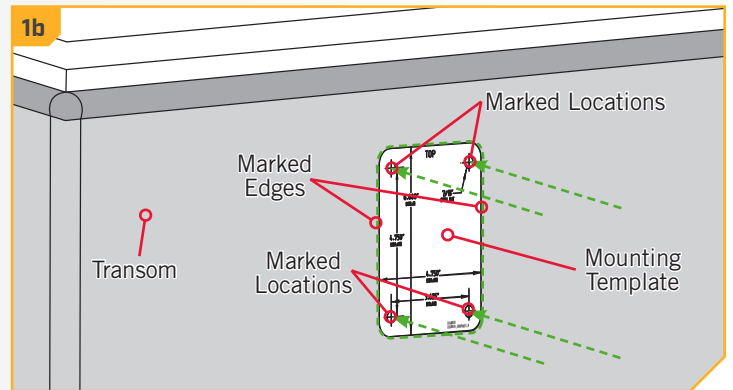
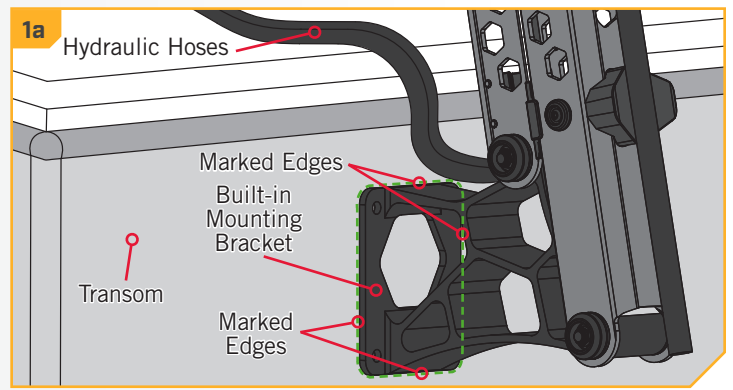


#34 x 1

- a. Review the Mounting Considerations to determine if it is acceptable to complete a direct mount of the Raptor Built-in Mounting Bracket. Move the Hydraulic Hoses away from the bracket and out of the way for installation. If acceptable, position the Built-in Mounting Bracket (Item #A) at the selected location and mark the edge of the Mounting Bracket with a pen or similar marking tool. Mark at least 2 of the 4 edges and then set the Mounting Bracket aside.

**NOTICE:** The Raptor weighs approximately 27lbs. It is recommended to have a second person help with installation.

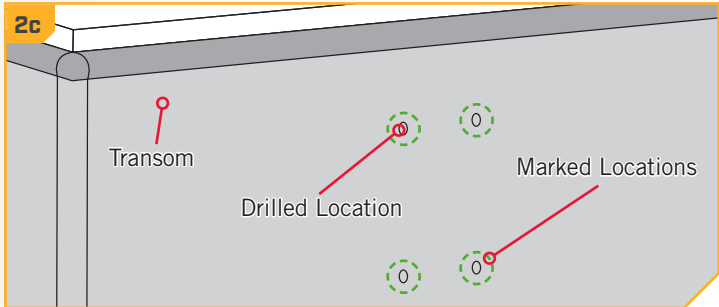
- b. With the Raptor set aside, take the Mounting Template (Item #34) and place it along the marked edges. Using a level along the edge of the Mounting Template, rotate the position of the template so that it sits level. Use an awl or similar marking tool and mark all four Mounting Holes. All 4 Mounting Holes are used for the installation of the Raptor.



2

- c. Double check that the mounting location is clear to drill holes and then use a Drill with a 7/16" Drill Bit to drill through the Transom/Stern of the boat on the marked locations.

**NOTICE:** When drilling holes into fiberglass, it is helpful to first cover the surface with masking tape. This will help keep the boat surface unmarked and help with cleanup. Cover the surface and then mark the location to drill. Once the holes are drilled, remove the masking tape before continuing installation.



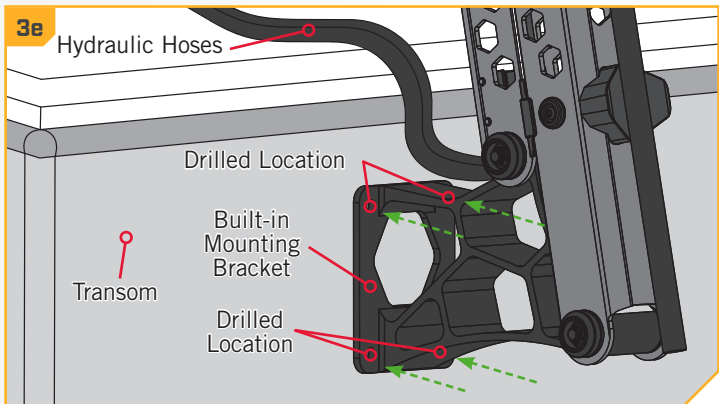
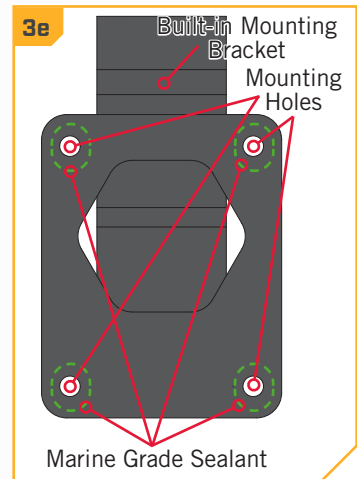
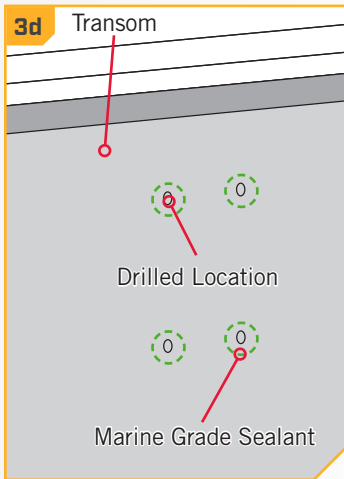
**NOTICE:** When drilling the marked holes, make sure that the drill bit is perpendicular to the Transom/Stern of the boat and that the holes are being drilled straight. Not drilling the holes straight will give the mounting hardware a poor fit.

3

- d. Place a 1/8" bead of Marine Grade Sealant on the Transom of the boat around the drilled holes.
- e. Place the Marine Grade Sealant around the Mounting Holes on the face of the Built-in Mounting Bracket that will contact the boat Transom/Stern when mounted. Keep the sealant approximately centered between the outside edge of the Mounting Bracket and the Mounting Holes. Once the sealant is in place, align the Built-in Mounting Bracket in the desired orientation with the holes that were drilled in the Transom/Stern. Make sure that the Hydraulic Hoses are out of the way to install hardware.

**CAUTION**

Do not use the Built-in Mounting Bracket or Raptor as a step to enter the boat. The bracket will be slippery when wet and is not designed to support people. Using this product as a step may result in injury.



# INSTALLING THE RAPTOR

4

## ITEM(S) NEEDED

⊙ #2 x 4

⊙ #4 x 4

⌋ #6 x 4

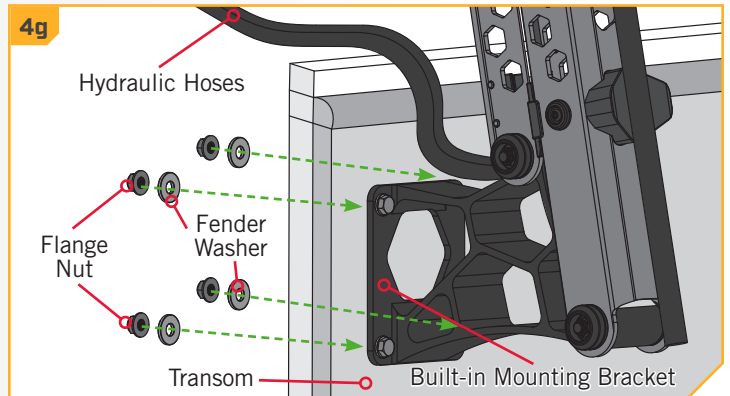
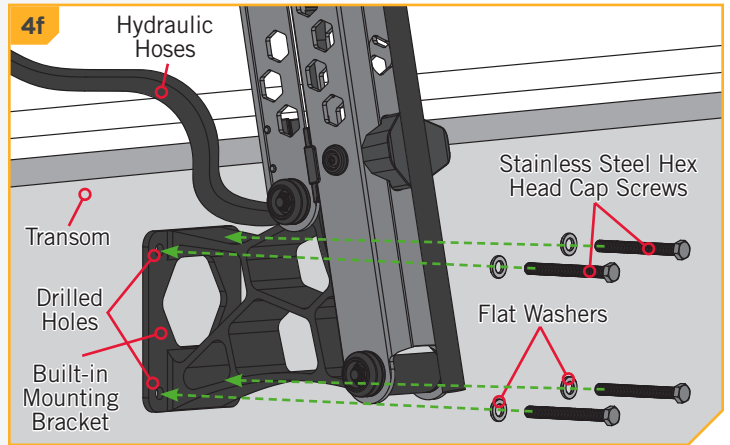
⊙ #8 x 4

🔧 #10 x 1

- f. Take each of the four 3-1/2" Stainless Steel Hex Head Cap Screws (Item #6) and place one Flat Washer (Item #2) on them. Apply anti-seize (Item #10) to the hardware. Place one screw in each of the Mounting Holes so that it passes through the Built-in Mounting Bracket and the drilled holes on the transom of the boat.
- g. Place a Fender Washer (Item #4) on the end of each Screw on the inside of the Transom and then secure each with a Flange Nut (Item #8). Apply anti-seize to the threads before tightening. Tighten the screws with a 9/16" Box End or Socket Wrench. Do not over-tighten. Tighten to 20 ft-lbs. Recheck mounting hardware periodically to make sure it remains tight.

**NOTICE:** To prevent seizing of the stainless steel hardware, do not use high speed installation tools. Applying an anti-seize may help prevent seizing.

**NOTICE:** If you are replacing a Talon with the Raptor, DO NOT REUSE the 5/16" Talon mounting hardware for mounting purposes.





### Rotating the Pump Reservoir

After reviewing the mounting considerations for your installation, you may have identified that the reservoir on your Pump Assembly needs to be rotated. If your installation requires rotating the Pump Reservoir, please follow the instructions below. If your installation does not require the Pump Reservoir to be rotated, please see "Installing the Hydraulic Pump " section of these instructions.

1

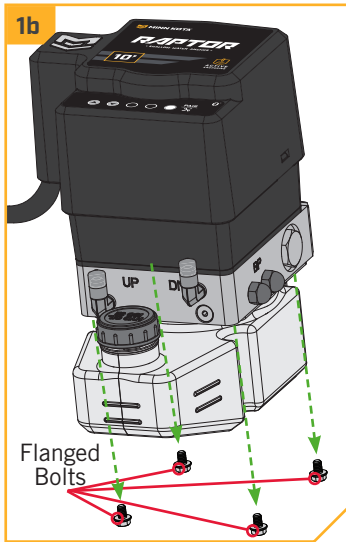
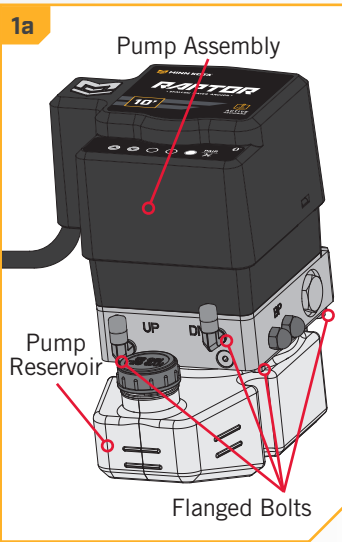
ITEM(S) NEEDED



#D, E, or F x 1

- a. Take the Pump Assembly (Assembly D, E, or F) and identify the four Flanged Bolts that hold the Pump Reservoir in place on the Pump Assembly.
- b. Using a 5/16" Deep Well Socket or 5/16" Ratchet Style Wrench, remove all four Flanged Bolts and set them aside.

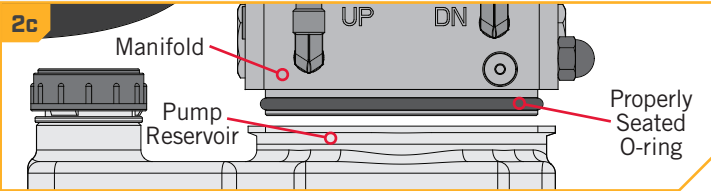
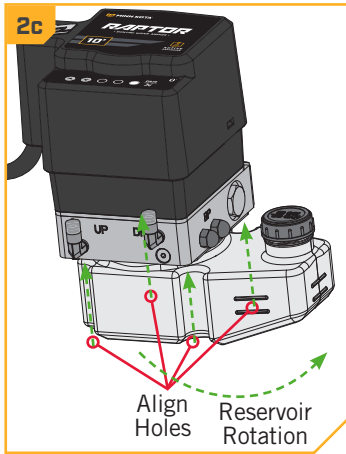
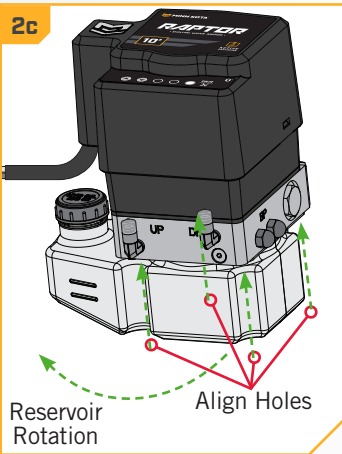
**NOTICE:** Do not pull the Pump Reservoir off of the Pump Assembly. It is recommended to rotate the Pump Reservoir in place to maintain a proper seal between pump components.



2

- c. Determine which direction the Pump Reservoir will be rotated. While firmly holding the top of the Pump Assembly, rotate the Pump Reservoir to its new position. Complete the rotation by making sure that the holes in the Pump Reservoir are aligned with the holes for the Flanged Bolt.

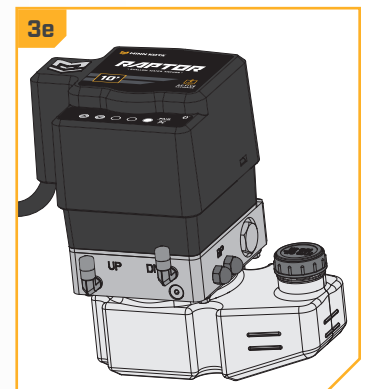
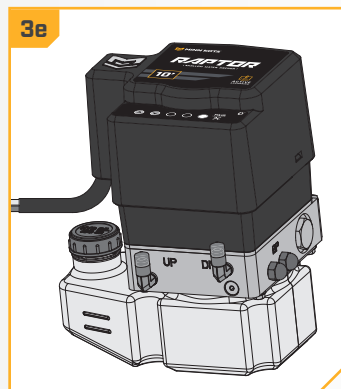
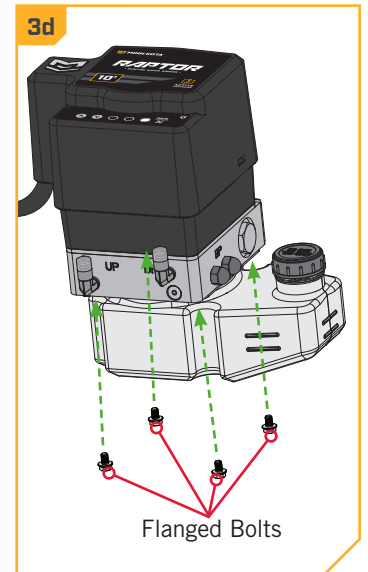
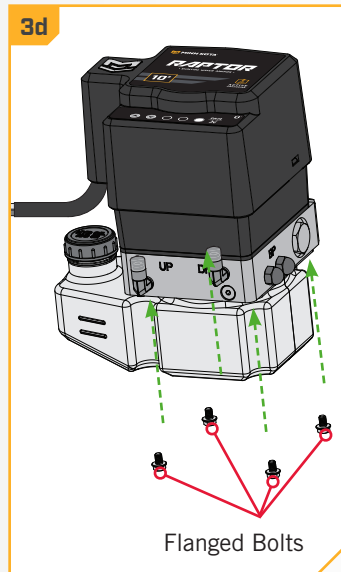
**NOTICE:** If the Pump Reservoir becomes detached from the Pump Assembly, make sure that the O-ring that sits on the bottom of the Pump Manifold is fully seated in the groove along the assembly. In the event that the reservoir needs to be pushed back in place on the Pump Assembly, make sure that the O-ring does not get pinched between the pieces. An improperly seated seal between components will affect pump operation.



## INSTALLING THE RAPTOR

3

- d. With the Pump Reservoir rotated and seated in place, use the 5/16" Deep Well Socket or 5/16" Ratchet-Style Wrench to replace the four Flanged Bolts. Tighten to 12 in-lbs.
- e. With the Flanged Bolts back in place, continue with the Hydraulic Pump installation.



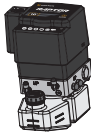
### › Installing the Hydraulic Pump

Review the mounting considerations at the beginning of the installation. If it is necessary to rotate the Pump Assembly, refer to the "Rotate the Pump Assembly" section of these instructions. When ready to install the pump, follow the directions below.

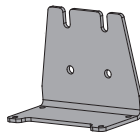
**NOTICE:** Installation for your Pump Assembly may vary from the standard installation. Review the mounting considerations for variations in mounting.

1

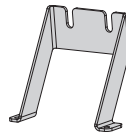
**ITEM(S) NEEDED**



#D, E, or F x 1



#20 x 1

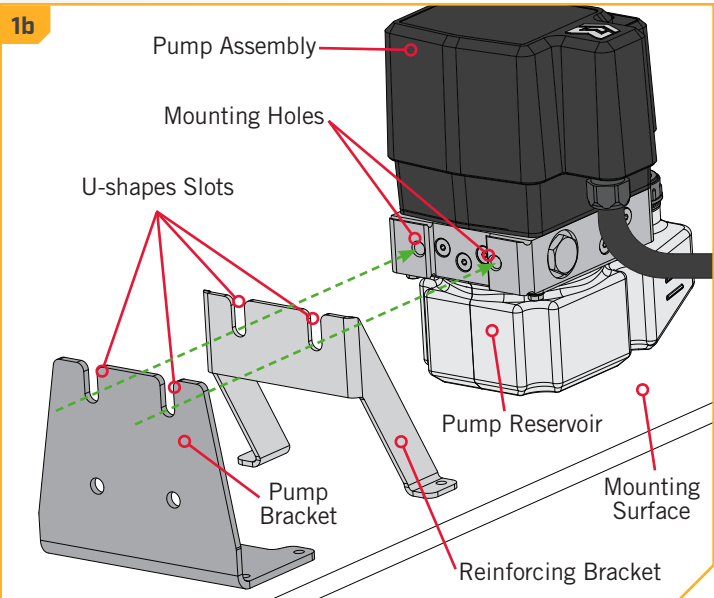
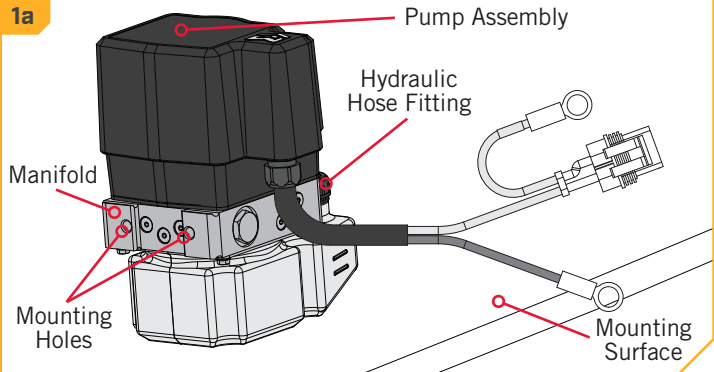


#22 x 1

## ⚠ CAUTION

Avoid the risk of electric shock. Do not connect the Pump Assembly to a power source before installation.

- a. Take the Pump Assembly (Assembly D, E, or F) and identify the two mounting holes on the Manifold. The mounting holes are on the opposite side of the pump from the brass colored Hydraulic Hose Fittings. Position the Pump Assembly at the intended mounting location. Review the mounting considerations and make sure the selected location is acceptable.
- b. The Two-piece Mounting Bracket consists of the Pump Bracket (Item #20) and the Reinforcing Bracket (Items #22). For a standard installation, the Reinforcing Bracket sits nested on top of the Pump Bracket with the U-shaped slots aligned. Take the Two-piece Mounting Bracket and align the U-shaped slots.
- c. Slide the Pump Bracket and Reinforcing Bracket together and then slide the Pump Assembly into the bracket. The angled sides of the Reinforcing Bracket fit along each side of the Pump Reservoir in a standard installation. Review the mounting considerations and position the Pump Assembly with the Two-piece Bracket in the intended mounting location.



**NOTICE:** If the Pump Reservoir is rotated for installation, it will not be possible to install the Reinforcing Bracket. The position of the Pump Bracket may vary for your installation based on conditions outlines in the mounting considerations.

**NOTICE:** The Pump Assembly must be mounted vertically. If adjustments to the mounting need to be made, rotate the position of the Two-piece bracket to accommodate the necessity to keep the pump vertical.

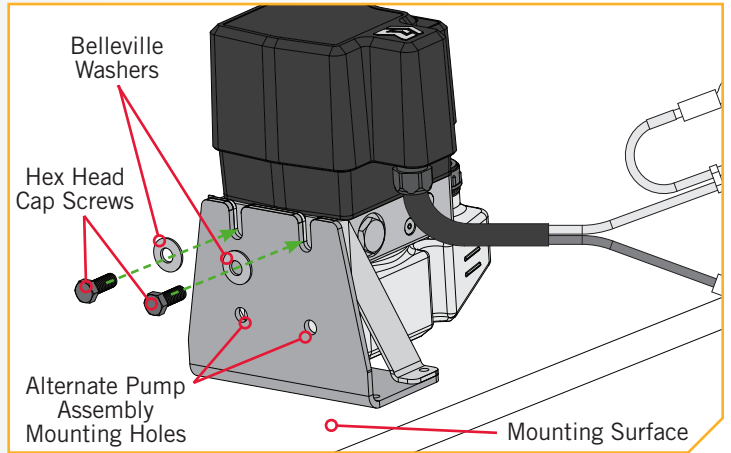
# INSTALLING THE RAPTOR

## 2

### ITEM(S) NEEDED



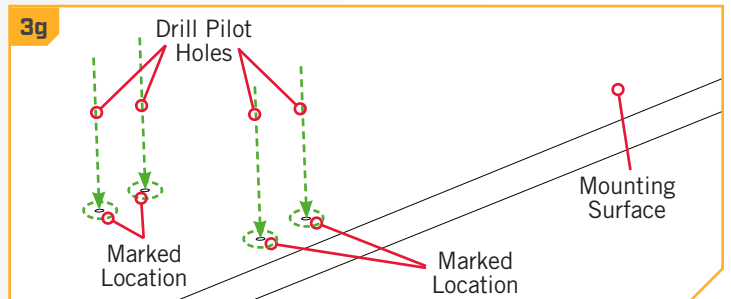
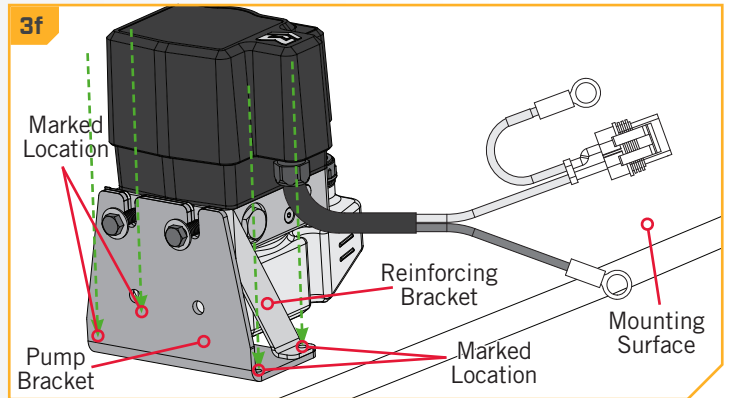
- d. The U-shaped Slots on the Mounting Bracket allow for adjustability between the Pump and the mounting bracket. Take both Hex Head Cap Screws (Item #16) and place one 3/8" Belleville Washer (Item #12) on each. The Hex Head Cap Screws will hold the Pump in place along the U-shaped slots. Insert the bolts with the washers in place so that they are partially installed into the Mounting Holes on the Pump. The washers should sit on the outside of the Mounting Bracket, farthest from the Pump Assembly on the screws. Hand tighten or use a 9/16" Wrench just until the bolts are placed. It may be easier to first install the screws and washers partially and then lower the Pump Assembly to fit in the U-shaped slot on the brackets, making sure the washer is closest to the screw head.
- e. Once partially installed, check the mounting location and determine the final position of the Pump Assembly and mounting bracket at the intended mounting location.



**NOTICE:** The U-shaped slots and the larger holes on the Pump Bracket may be used to mount the Pump Assembly to the bracket. The holes used will depend on individual mounting circumstances.

## 3

- f. Once positioned, take a pen or similar marking tool and mark the Mounting Surface where the Reinforcing Bracket and Pump Bracket overlap at the Mounting Hole on each side of the Pump Reservoir. Also mark the bottom holes on the Pump Bracket. It is recommended to mark all four Mounting Holes in the Mounting Bracket.
- g. Set the Pump Assembly aside and use a Drill with a 1/8" Drill Bit to drill Mounting Holes in the Mounting Surface at the marked locations.



**NOTICE:** When drilling holes, especially into fiberglass, it is helpful to first cover the surface with masking tape. Use a 5/32" Drill Bit when drilling into Fiberglass for the Pilot Holes. Masking Tape will help keep the boat surface unmarked and help with cleanup. Cover the surface and then mark the location to drill. Once the pilot holes are drilled, remove the masking tape before continuing installation.

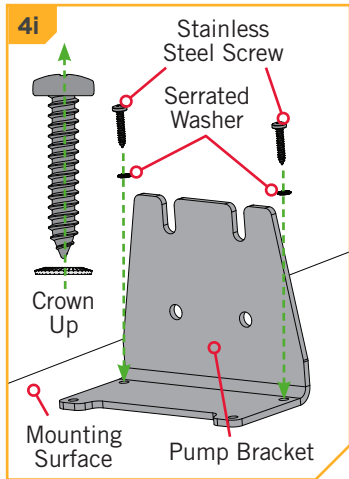
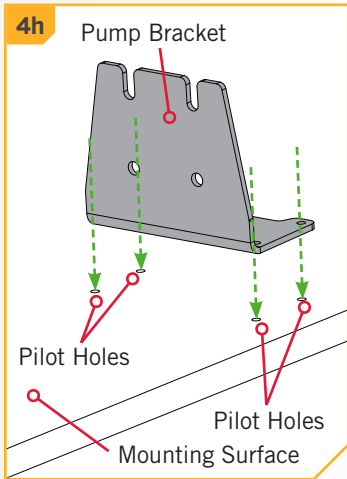
## 4

### ITEM(S) NEEDED

○ #14 X 2

🔩 #18 X 2

- h. Replace the Pump Bracket only and align the Mounting Holes with the Pilot Holes.
- i. Take two 1" Stainless Steel Screws (Item #18) and two Serrated Washers (Item #14). Place one washer on the end of each screw so that the crown of the washer is facing up towards the head of the screw. Install the Screws with drill and a #2 Phillips Bit. The screws should pass through the Serrated Washer and Pump Bracket and then into the Mounting Surface.



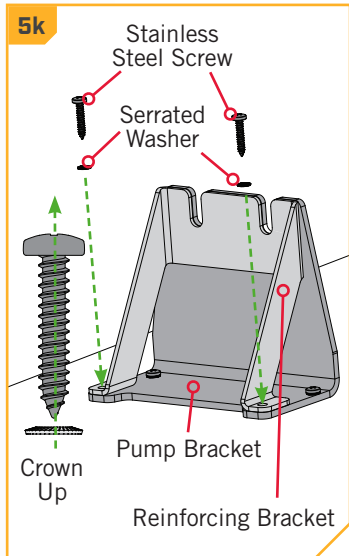
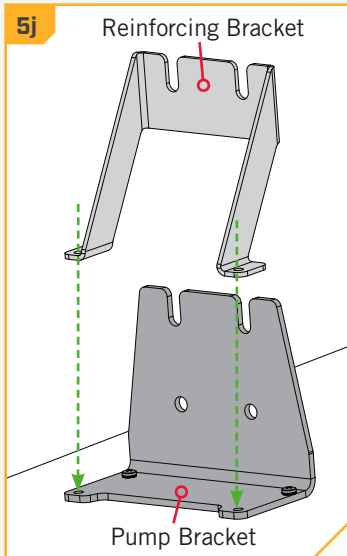
## 5

### ITEM(S) NEEDED

○ #14 X 2

🔩 #18 X 2

- j. With the two Screws installed, replace the Reinforcing Bracket onto the Pump Bracket so that the mounting holes are again aligned.
- k. Take the two remaining 1" Stainless Steel Screws (Item #18) and two Serrated Washers (Item #14). Place one washer on the end of each screw so that the crown of the washer is facing up towards the head of the screw. Install the Screws with a Drill and a #2 Phillips Bit in the overlapping holes of the Two-Piece Mounting Bracket. The Screws should pass through the Serrated Washer, Reinforcing Bracket and Pump Bracket and into the Mounting Surface.



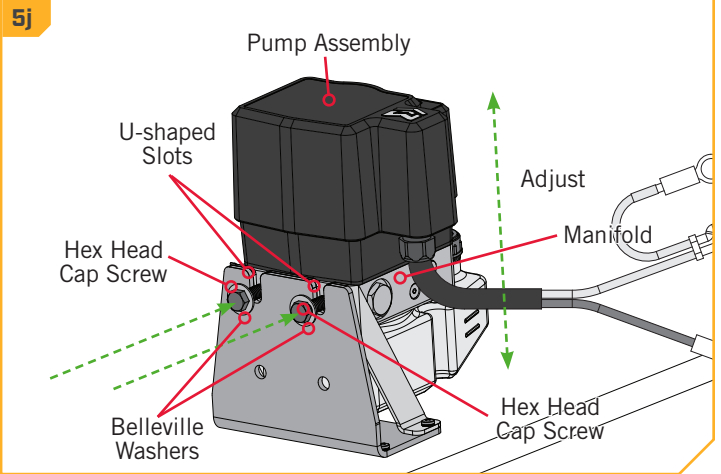
**NOTICE:** If the Pump Reservoir is rotated for installation, it will not be possible to install the Reinforcing Bracket. To complete installation, it is recommended to use all four Stainless Steel Screws and Serrated Washers to secure the Pump Bracket to the Mounting Surface.

# INSTALLING THE RAPTOR

6

- i. With the Two-Piece Mounting Bracket fully installed, replace the Pump Assembly on the Mounting Bracket. Make sure that the Belleville Washers sit between the head of the screw and the Mounting Bracket. The Pump Assembly is secured to the mounting bracket by tightening the Hex Head Cap Screws that were previously put in place on the Manifold.
- m. Slide the Pump Assembly either up or down in the U-shaped slots to find the position that works best for your installation. When satisfied with the position, tighten the hardware with a 9/16" Wrench to 12 ft-lbs.

**NOTICE:** When direct-mounting the Pump Assembly, only the two Hex Head Cap Screws are used for installation. If direct mounting the Pump Assembly, use a Drill with a 7/16" Drill Bit to drill Pilot Holes in the Mounting Location. Secure the Pump Assembly in place by placing a Belleville Washer on each screw. Then place the screw through the mounting surface and into the mounting holes on the Manifold of the Pump Assembly.



7

## ITEM(S) NEEDED

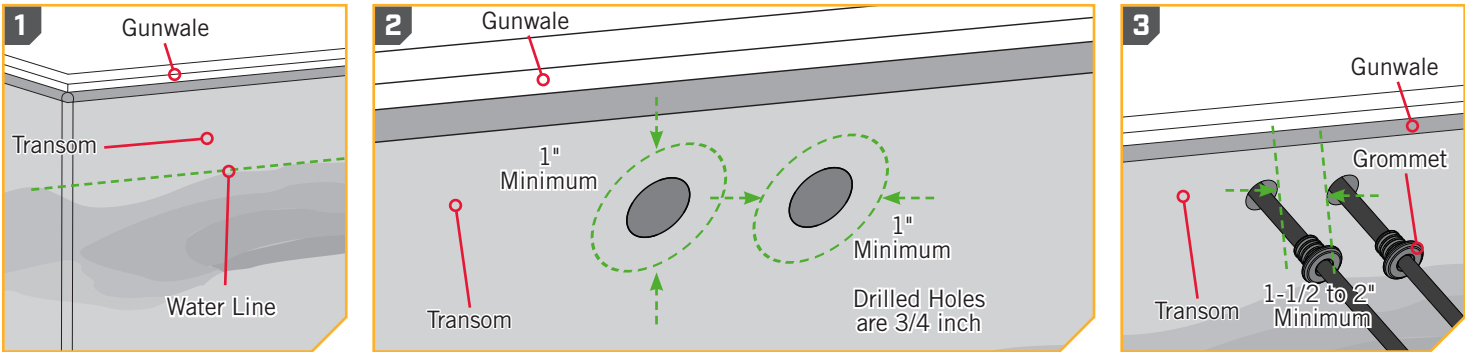


- n. Take the Pressure Wrench (Item #26) and store it in a secure location on the boat. The Pressure Wrench is only needed if pressure in the hydraulic system needs to be manually relieved. To learn more, please refer to the Owner's Manual.

Installing Hydraulic Hoses

Review the Mounting Considerations at the beginning of installation and then locate the Hydraulic Hoses attached to the Raptor. There will be a green Cap on one hose, designated as the hose controlling the UP/retract function. The hose with the black cap is designated for the DOWN/deploy function. The hose with the black cap (DOWN) extends further from the Raptor due to its mounting position within the Raptor. Determine if hydraulic hoses may be routed through an established route on the boat to the Hydraulic Pump. The Hydraulic Hoses are 15 feet in length. If longer hoses are needed for your installation, Minn Kota recommends the Raptor Hydraulic Hose Extension Kit 2771401. If holes need to be drilled to provide a suitable routing for the installation location of the connected components, please give consideration to the following:

- 1. Above Water Line - If drilling holes to route the Hydraulic Hoses through the Hull, Transom, or other appropriate structure of the boat, make sure that the holes drilled are above the water line when the boat sits in water.
2. Minimum Clearance - It is recommended to place the holes a minimum of 1 inch from any obstruction to allow for complete installation of the Grommet. This may include structural changes to the selected location such as seams or structural supports and the presence of any existing hardware such as ladders, brackets and existing accessories.
3. Hole Spacing - Two separate holes will need to be drilled for the Hydraulic Hoses. There is a rubber Grommet on each hose. The intention is to use the Grommet to cover the space between the hose and the transom where the holes are drilled. To allow space for the hoses and a proper seal on the Grommet, drill the holes between 1-1/2 and 2 inches apart.



WARNING

- Only use hydraulic hose approved by Johnson Outdoors with the Raptor. The use of unapproved hydraulic components may cause damage, unexpected operation, or injury.
• Do not allow hoses to kink, twist, curl, be crushed or bent in a manner that blocks or reduces the flow of fluid within the hose. The minimum bend radius for the hydraulic hoses is 1.25 inches.
• Do not overtighten hydraulic connections.

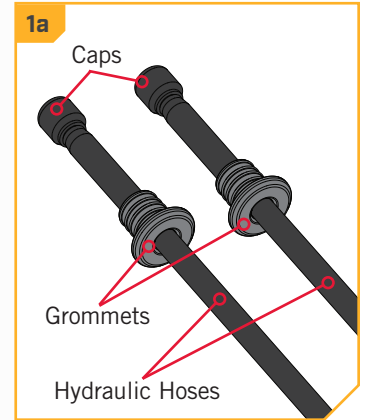
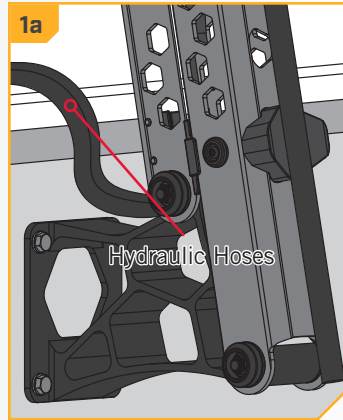
# INSTALLING THE RAPTOR

1

- a. Locate the Hydraulic Hoses that exit the Raptor, and note the Grommet on each hose. If the Hydraulic Hoses are tie wrapped in a circle, it may be necessary to carefully cut the tie wrap with a scissors or similar cutting tool and unwrap the hoses. There will be a green Cap on one hose, designated as the hose controlling the UP/retract function. The hose with the black cap is designated for the DOWN/deploy function.

## CAUTION

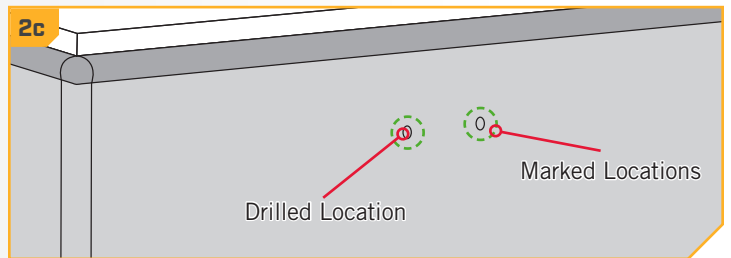
Do not remove the black and green Caps from the end of the Hydraulic Hoses until instructed to do so. Keeping the Caps in place until needed will keep the hydraulic lines clean. Dirt in the hydraulic fluid may affect hydraulic operation.



**NOTICE:** If routing the Hydraulic Hose through an established routing system on the boat, the Grommets may be removed.

2

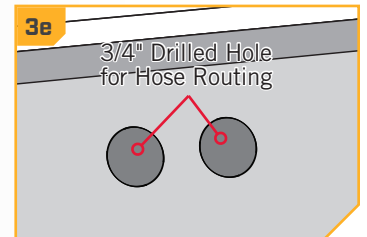
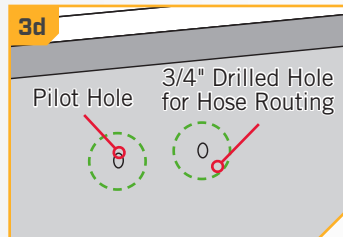
- b. Review the installation considerations for the hoses at the beginning of this section. Select, measure and mark the location on the boat that will be drilled for routing the Hydraulic Hoses using a measuring tool and a pen or similar marking tool.
- c. Make sure that the drilled location is clear to drill holes and pull the Hydraulic Hoses aside so they do not pose an obstruction and to clear the marked location. Using a Drill with a 5/16" Drill Bit, drill Pilot Holes through the Marked Locations.



**NOTICE:** When drilling holes into fiberglass, it is helpful to first cover the surface with masking tape. Use a 5/16" Drill Bit when drilling into Fiberglass for the Pilot Holes. Masking Tape will help keep the boat surface unmarked and help with cleanup. Cover the surface and then mark the location to drill. Once the pilot holes are drilled, remove the masking tape before continuing installation.

3

- d. Once the Pilot Holes are drilled, use a Drill with a 3/4" Drill Bit in each 5/16" Pilot Hole. The final holes for hose routing should have a diameter of 3/4" each.
- e. Use a file, sand paper or an emery board to smooth the edge of the drilled hole, to smooth the edges, that contact the Hydraulic Hoses and make placement of the Grommets easier.

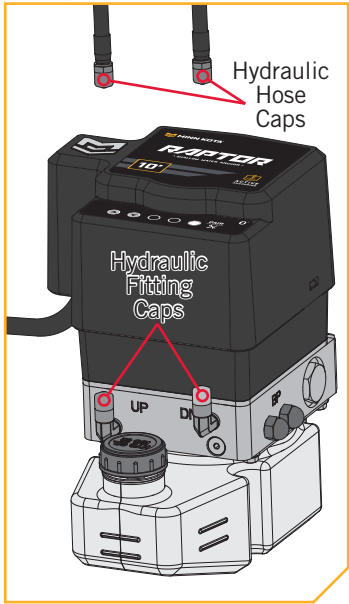
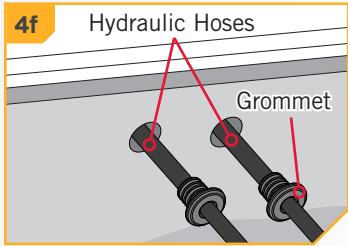
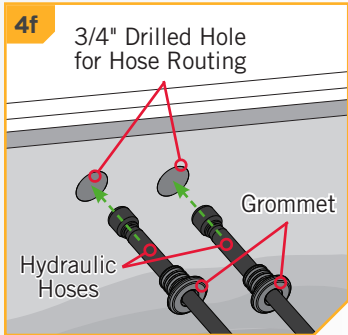




4

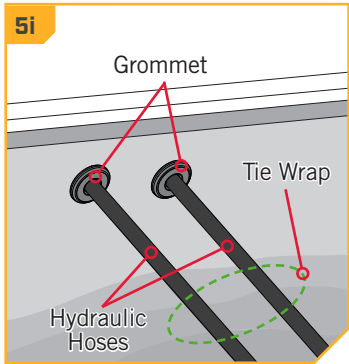
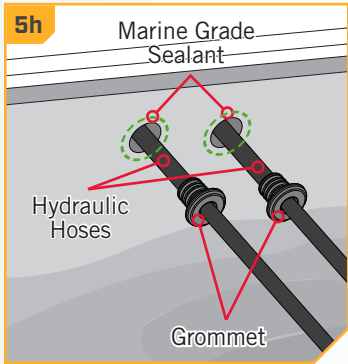
- f. Take the Hydraulic Hoses with the green and black Caps still in place and insert one hose into each drilled hole. If necessary, slide the Grommets back so that the Hydraulic Hose has enough slack on the other side of the drilled location to reach the Pump Assembly.
- g. Route most of length of the Hydraulic Hoses into the hull so that each hose can be attached to the Hydraulic Hose Fittings on the Pump Assembly. While pulling the hoses thru the hull make sure that the hoses do not kink. Most of the hose should be routed into the boat, but leave slack outside the hull for the anchor to deploy and not pull the hose, but not excessive slack that it would cause the hoses to kink. Then return to the Hydraulic Hoses and Grommets at the Drilled Location.

**⚠ CAUTION**  
Avoid the risk of electric shock. Do not connect the Pump Assembly to a power source when installing hoses.



5

- h. With the hoses routed to the Pump Assembly, the Mounting surface should be sealed. To seal the space around the grommet and finish installing it, first apply 1/8" bead of marine grade sealant around each Drilled Hole. The sealant should be reasonably close to the edge of the hole so that it will sit under the edge of the Grommet when pressed in place.
- i. Once the sealant is applied, press the Grommets in place so they are seated against the mounting surface. When the hose routing is complete, it is recommended to loosely secure the Hydraulic Hoses together with a tie wrap between the anchor and the main entrance point on the boat to keep the hose routing clean.



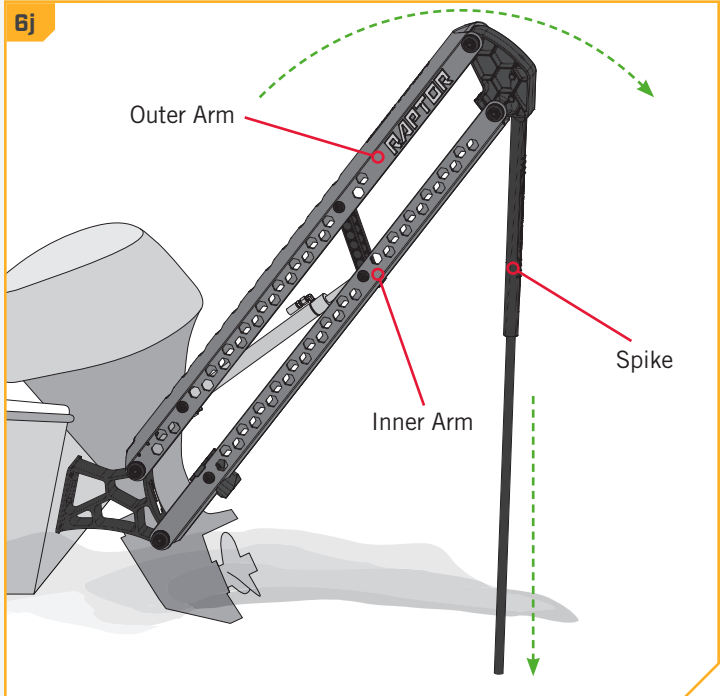
# INSTALLING THE RAPTOR

6

- j. With the Hydraulic Hoses and Grommets installed, use a second person to carefully lower the Raptor so that the Spike is resting on the ground. Watch for pinch points when lowering the anchor and make sure that the anchor is clear from obstructions or persons before lowering it to the ground.

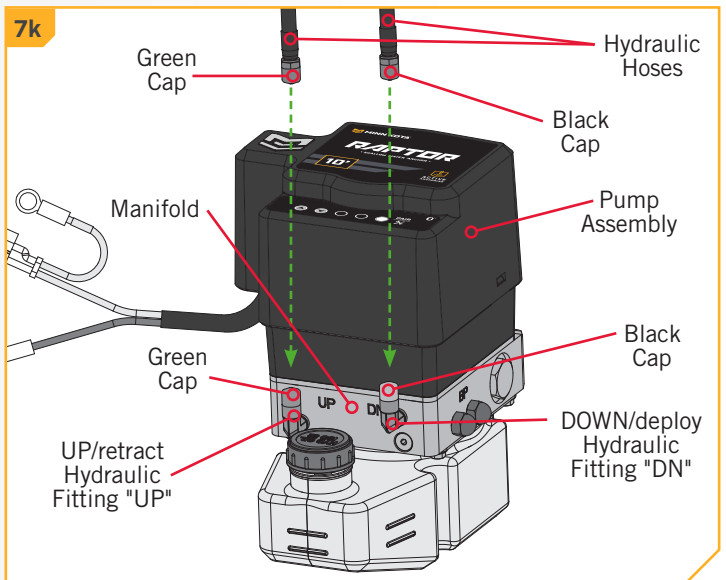
## ⚠ CAUTION

Be sure that the Raptor is clear of obstructions and persons while deploying or retracting. The spaces between the Outer Arm, Inner Arm, Spike and brackets of the Raptor can create a pinch point. Do not come in contact with an area of the Raptor that may cause a pinch point while it is moving in any direction to avoid the risk.



7

- k. Return to the routed hoses and the Hydraulic Fittings on the Pump Assembly. The Hydraulic Fitting with the green Cap on the Manifold will correspond to the UP/retract function. It will be marked on the Manifold with "UP". The Hydraulic Fitting with the black Cap on the Manifold will correspond to the DOWN/deploy function. The Hydraulic Fitting will be marked on the Manifold with "DN". The Hydraulic Hose with the green Cap will be matched to the Hydraulic Fitting with the green Cap. The Hydraulic Hose with the black Cap will be matched to the Hydraulic Fitting with the black Cap.



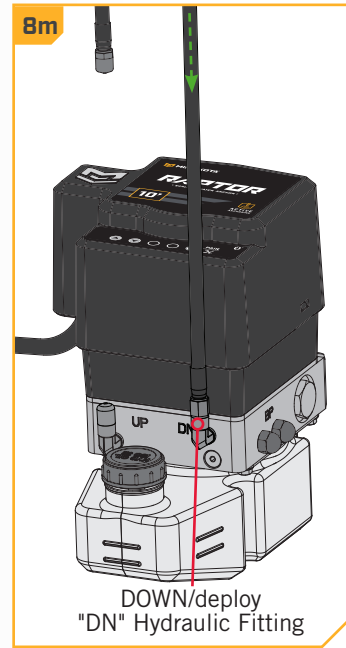
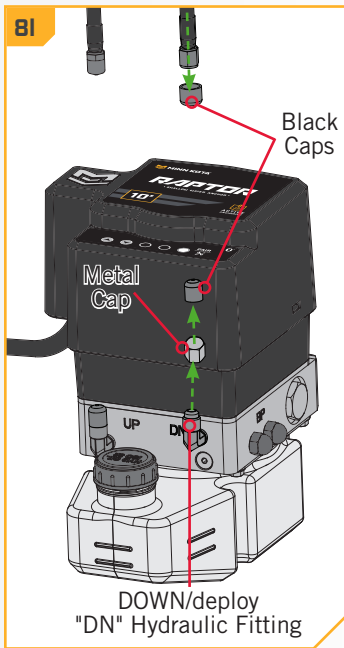
## ⚠ CAUTION

Make sure that the Raptor anchor is deployed and the Spike is touching the ground if hydraulic pressure is not present. This includes before the Pump Assembly is filled with hydraulic fluid and any time changes to the Hydraulic Circuit are made. Changes to the Hydraulic Circuit may include adjustments to the Hydraulic Hoses, or adjustments to the bypass valves. Changes to pressure in the Hydraulic Circuit may cause the Raptor to fall and pose a striking hazard due to gravity. Rest the Spike on the ground to avoid this hazard.

8

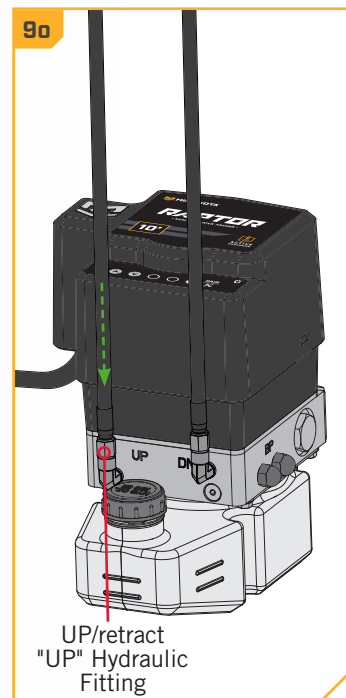
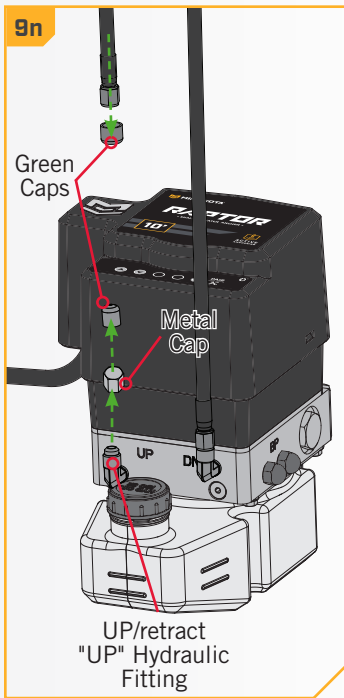
- l. Remove the black Cap on the Hydraulic Hose and the black Cap on the "DN" Hydraulic Fitting. The Hydraulic Hose with the black Cap will be the longer of the two hoses that come from the Raptor. Under the black Cap on the "DN" Hydraulic Fitting is a Metal Cap sealing the fitting. Using a 9/16" Wrench remove the Metal Cap, turning in a counterclockwise direction.
- m. Attach the Hydraulic Hose to the "DN" Hydraulic Fitting, by turning the threaded connection on the Hydraulic Hose onto the Hydraulic Fitting on the pump by turning 5 to 7 times by hand. If the threads are not freely turning, the threads are misaligned. Lift off and try again. Hand-tighten in a clockwise direction until seated. Then finish tightening with a 9/16" Wrench to 120 in-lbs.

**NOTICE:** Do not apply anything to the ends of the Hydraulic Hoses or the Hydraulic Fittings on the pump.



9

- n. Remove the green Cap on the Hydraulic Hose and the green Cap on the "UP" Hydraulic Fitting. The Hydraulic Hose with the green Cap will be the one that has the shorter extension from the Raptor. Under the green Cap on the "UP" Hydraulic Fitting is a Metal Cap sealing the fitting. Using a 9/16" Wrench remove the Metal Cap, turning in a counterclockwise direction.
- o. Attach the Hydraulic Hose to the "UP" Hydraulic Fitting, by turning the threaded connection on the Hydraulic Hose onto the Hydraulic Fitting on the pump by turning 5 to 7 times by hand. If the threads are not freely turning, the threads are misaligned. Lift off and try again. Hand-tighten in a clockwise direction until seated. Then finish tightening with a 9/16" Wrench.



# INSTALLING THE RAPTOR

## › Installing the Remote Bracket

The Raptor comes with two remotes. Mounting the Remote Bracket to your boat is an option installation. The Remote Bracket is only intended to hold one remote. Mounting the Remote Bracket in the boat is based on personal preference. It is recommended to mount the Remote Bracket to a flat surface where the remote can be easily accessed for anchor control. Avoid a space where the buttons on the remote may be accidentally actuated. To mount the bracket, follow the steps below:

1

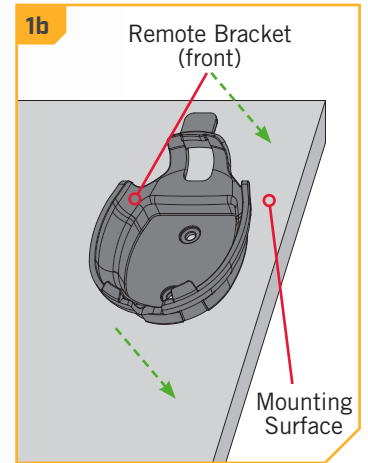
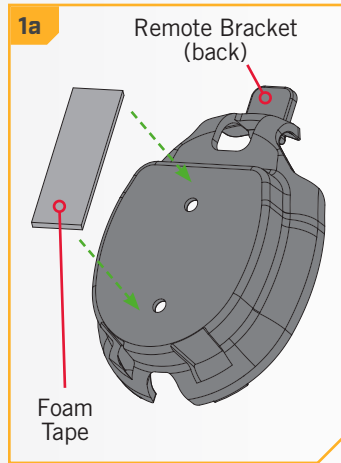
### ITEM(S) NEEDED

 #32 X 1



#30 X 1

- a. Select a flat mounting location for the Remote Bracket. Check the location for fit and function of the Bracket Holder. Clean and thoroughly dry the mounting surface. Once satisfied with the location, take the Foam Tape (Item #32) and pull the backing off of one side of it. Install the Foam Tape with the exposed adhesive facing toward bracket, approximately centered on the back of the Remote Bracket (Item #30). Press and hold in place for 30 seconds.
- b. Remove the backing on the outside of the Foam Tape to expose the adhesive. Place the Bracket Holder to the mounting location. Firmly press and hold for 30 seconds.



2

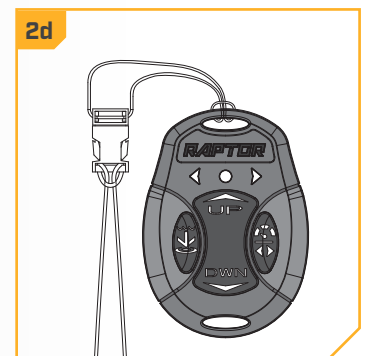
### ITEM(S) NEEDED

 #28 X 1



#G X 1

- c. Take one of the Raptor remotes (Assembly G) and place it in the Bracket Holder.
- d. It is also optional to place the Lanyard (Item #28 X 1) on either of the Raptor remotes.



**NOTICE:** The two Raptor remotes that come with the Raptor from the factory are pre-paired. If the network connection between the remotes and the anchor is interrupted, please see "Pairing the Raptor" section of these instructions.

# BATTERY & WIRING INSTALLATION

## BOAT RIGGING & PRODUCT INSTALLATION

For safety and compliance reasons, we recommend that you follow American Boat and Yacht Council (ABYC) standards when rigging your boat. Altering boat wiring should be completed by a qualified marine technician. The following specifications are for general guidelines only.

### CAUTION

Please read the following information before connecting your Raptor(s) to your battery in order to avoid damaging your product and/or voiding your warranty.

### CAUTION

These guidelines apply to general rigging to support your Minn Kota product. Powering multiple Raptors or additional electrical devices from the same power circuit may impact the recommended conductor gauge and circuit breaker size. If you are using wire longer than that provided with your unit, follow the conductor gauge and circuit breaker sizing table below. If your wire extension length is more than 25 feet, we recommend that you contact a qualified marine technician.

### CAUTION

**An over-current protection device (circuit breaker or fuse) must be used.** Coast Guard requirements dictate that each ungrounded current-carrying conductor must be protected by a manually reset, trip-free circuit breaker or fuse. The type (voltage and current rating) of the fuse or circuit breaker must be sized accordingly. The table below gives recommended guidelines for circuit breaker sizing.

## CONDUCTOR GAUGE AND CIRCUIT BREAKER SIZING TABLE

This conductor and circuit breaker sizing table is only valid for the following assumptions:

1. No more than 2 conductors are bundled together inside of a sheath or conduit outside of engine spaces.
2. Each conductor has 105° C temp rated insulation.
3. No more than 5% voltage drop allowed at full power based on published product power requirements.

Max Amp Draw	Circuit Breaker	Wire Extension Length				
		5 feet	10 feet	15 feet	20 feet	25 feet
70 Amps	30 Amp @ 12 VDC	10 AWG	8 AWG	6 AWG	4 AWG	4 AWG

**NOTICE:** Wire Extension Length refers to the distance from the batteries to the Raptor leads. Maximum Amp Draw values only occur intermittently during select conditions and should not be used as continuous amp load ratings.

#### Reference

United States Code of Federal Regulations: 33 CFR 183 – Boats and Associated Equipment ABYC E-11: AC and DC Electrical Systems on Boats

## SELECTING THE CORRECT BATTERIES

### SELECTING THE CORRECT BATTERIES

The Raptor will operate with any lead acid, marine 12 volt battery. For best results, Minn Kota recommends connecting to the starting battery. The Raptor may operate with a Lithium Ion battery. Maintain battery at full charge. Proper care will ensure having battery power when you need it, and will significantly improve the battery life. Failure to recharge lead-acid batteries (within 12-24 hours) is the leading cause of premature battery failure. Use a multi-stage charger to avoid overcharging. We offer a wide selection of chargers to fit your charging needs. For more information on battery selection and rigging, please visit [minnkotamotors.com](http://minnkotamotors.com).

The Raptor draws a small amount of residual current from the battery even when not in use. If the Raptor will not be used for more than a month, the Raptor power leads should be disconnected from the battery. Avoid connecting the Raptor to the same batteries that a trolling motor or other accessories are connected to. It is recommended the Raptor be connected to the Starting Battery through a battery selector or power disconnect switch. This will disconnect power to the Raptor when the Power Switch is "off". If you are not using a battery selector/power disconnect switch, the Raptor may be connected directly to the Starting Battery.

#### **WARNING**

Never connect the (+) and the (-) terminals of the same battery together. Take care that no metal object can fall onto the battery and short the terminals. This would immediately lead to a short and extreme fire danger.

For proper ABYC compliance, when the factory fuse has been removed, the user must install a 30A fuse within 7" of the positive battery terminal.

**NOTICE:** The in-line re-settable 30A fuse is designed to protect the system. If this fuse repeatedly trips, faulty wiring could be the cause and must be corrected. If the re-settable fuse itself is suspect, Minn Kota recommends contacting customer service for a proper replacement.

### CONNECTING THE BATTERIES

#### › 12 Volt Systems

1. If connecting to an optional battery selector/power disconnect switch, turn it to the "off" position prior to connecting the power cable.
2. Connect positive (+) white lead to positive (+) battery terminal, or switch positive.
3. Connect negative (-) black lead to negative (-) battery terminal, or switch negative.

#### **WARNING**

Observe proper polarity and follow instructions in your boat owner's manual regarding polarity.

4. The Pump Assembly will beep to indicate Power "on". There is NO "on/off" switch. To remove power from the Pump Assembly, the Raptor must be powered "off" by removing the leads from the battery terminals, or switch.

#### **WARNING**

Do not run the Hydraulic Pump until after hydraulic fluid has been added. Running the Hydraulic Pump without hydraulic fluid can damage the pump.

## CONNECTING THE BATTERIES



### **WARNING**

- The Raptor draws a small amount of residual current from the battery even when not in use. If the Raptor is not be used for more than a month, or while the battery/batteries are being charged, the Raptor power leads should be disconnected from the battery. It is recommended the Raptor be connected to the Starting Battery through a battery selector or power disconnect switch. This will disconnect power to the Raptor when the Power Switch is "off". If you are not using a battery selector/switch, the Raptor may be connected directly to the starting battery.
- Keep lead wire connections tight and solid to the battery or switch terminals.
- The Starting Battery should be located in a ventilated compartment to avoid sparks from combustible materials.

### **WARNING**

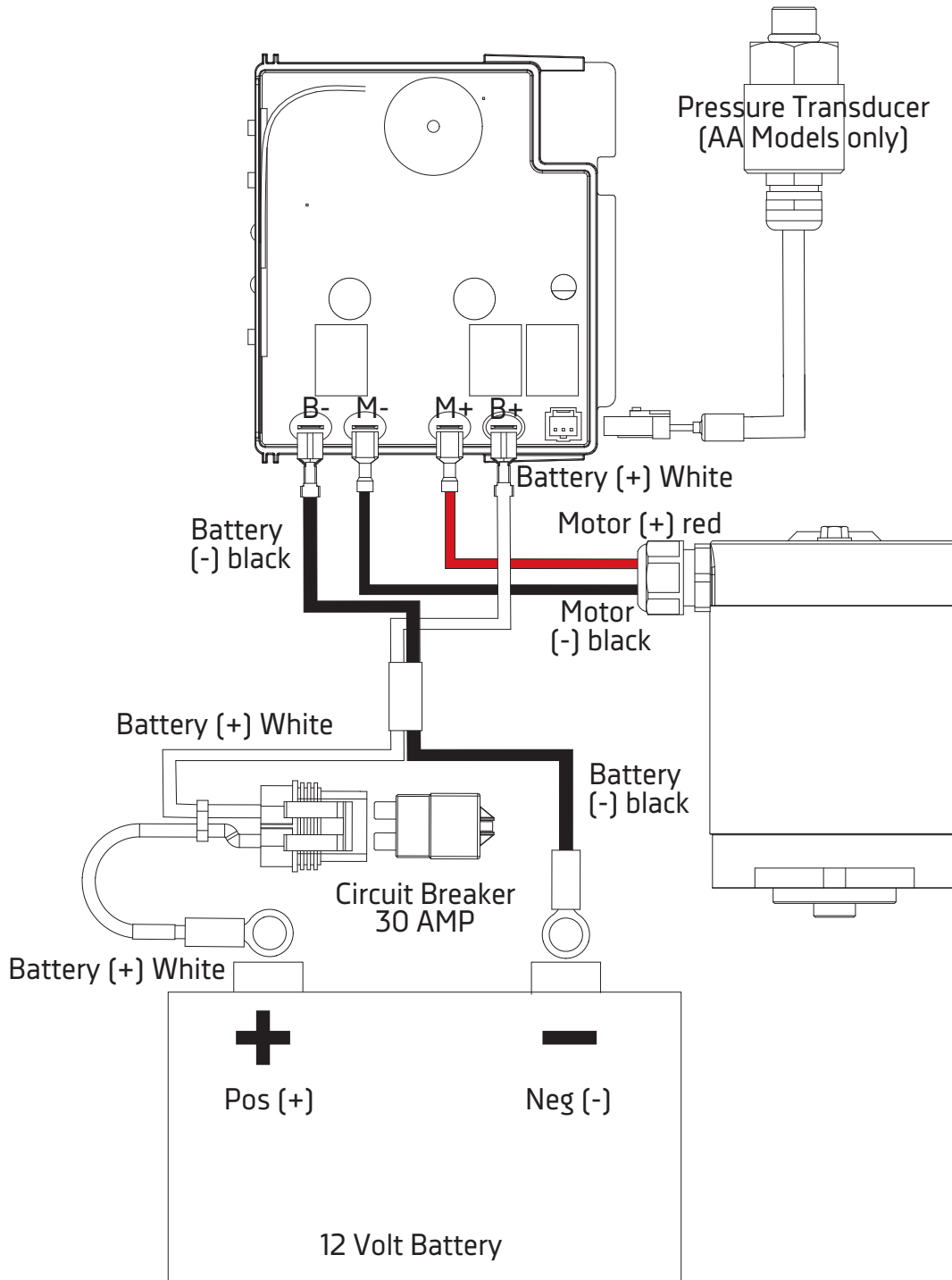
Never disconnect hydraulic components while power is applied and bypass valves are not open.



# WIRING DIAGRAM

## RAPTOR

The following wiring diagram applies to the Raptor. The Pressure Transducer is included in Active Anchoring Models only.

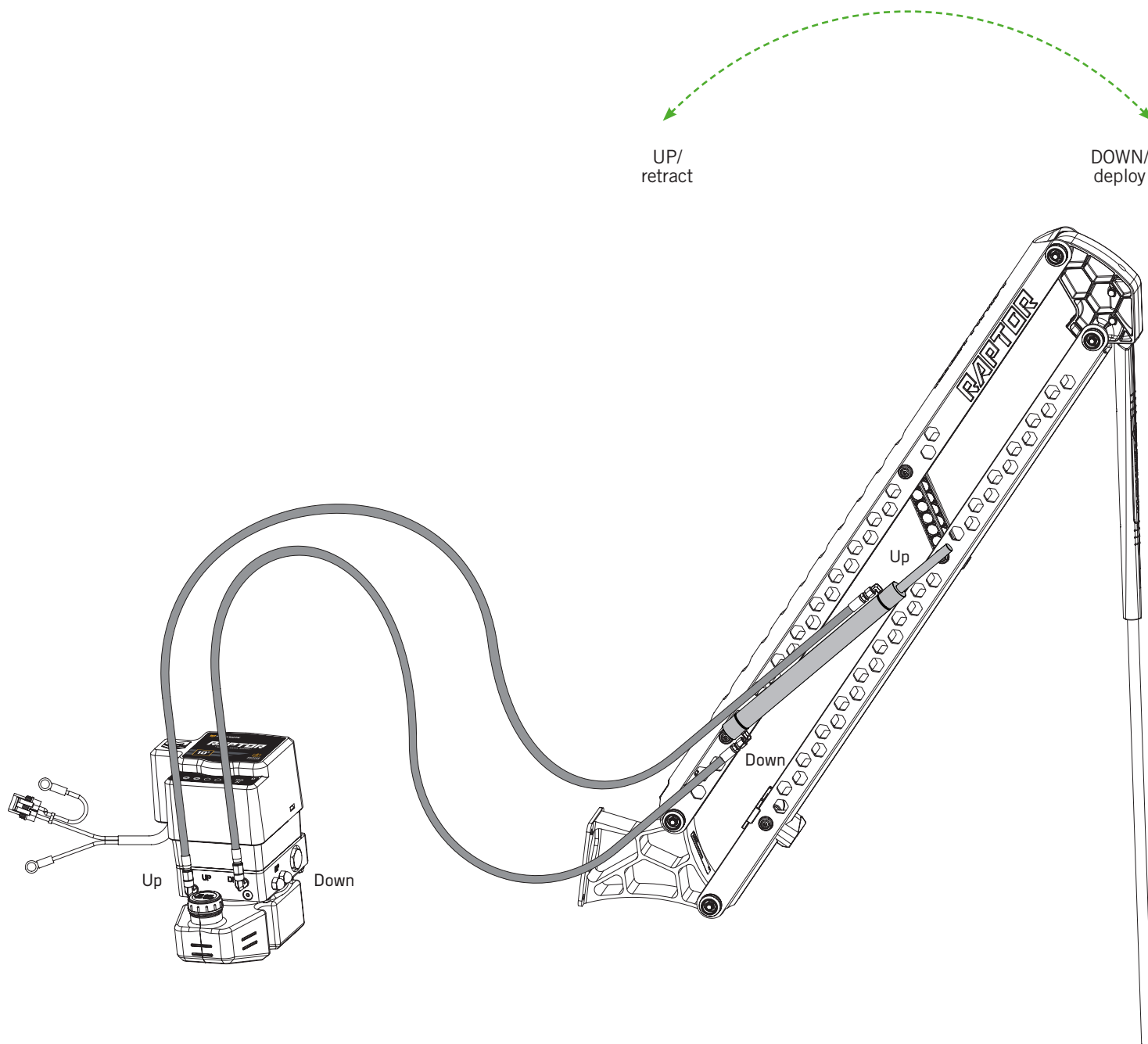




# HYDRAULIC DIAGRAM

## RAPTOR

The following hydraulic diagram applies to all Raptors.



# COMPLETING THE INSTALLATION

## COMPLETING THE RAPTOR INSTALLATION

At this point in the installation, the Raptor anchor and Pump Assembly have been successfully mounted to the boat and connected to a power source. The Hydraulic Hoses have also been routed and connected to the Pump Assembly. Since the motion of the anchor is also controlled by the use of hydraulics, to complete the installation, the Pump Assembly needs to be filled with hydraulic fluid and go through a deploy/retract sequence to bleed the hydraulic lines. The final steps in installation will include confirming the Bluetooth connection between the remotes that come paired with the anchor from the factory and the Pump Assembly. Before using the Raptor for its intended purpose, confirm that the installation of the components is complete and then finalize the installation for successful operation.

### **CAUTION**

Because of the mechanical pressure from the use of hydraulics, avoid injury by making sure the mechanical installation of the Raptor anchor and Pump Assembly is complete before finalizing the installation. Hydraulic pressure from unsecured components may cause unexpected operation and movement of components.

### COMPLETING THE INSTALLATION >

## > Filling the Pump with Hydraulic Fluid and Bleeding the Hydraulic Lines

In order to complete the installation, the Pump Assembly needs to be connected to a power source. If the Pump is not connected to a power source, review the "Battery & Wiring Installation" section of these instructions.

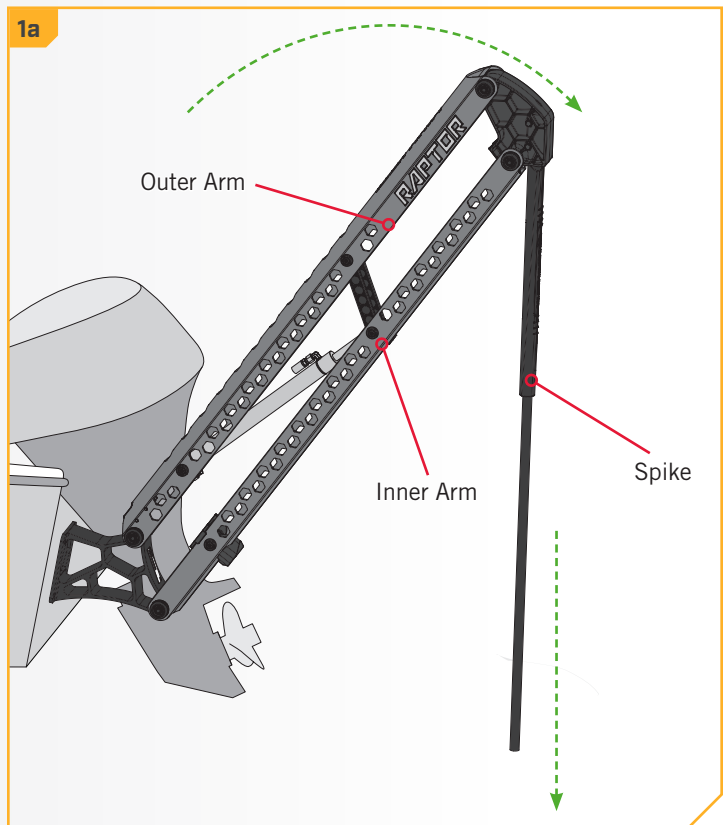
- 1 a. The Raptor anchor should be extended so that the Spike is resting on the ground. If the Spike is not resting on the ground from the previous installation steps, carefully lower the anchor with the help of a second person. Watch for pinch points when manually moving the Raptor.

### **CAUTION**

Be sure that the Raptor is clear of obstructions and persons while deploying or retracting. The spaces between the Outer Arm, Inner Arm, Spike and brackets of the Raptor can create a pinch point. Do not come in contact with an area of the Raptor that may cause a pinch point while it is moving in any direction to avoid the risk. Stay clear of the anchor if it is not held in place under the power of the Hydraulic Circuit or physical restraint. Not lowering the Spike before filling the Hydraulic Circuit and bleeding the hydraulic lines can result in a striking hazard created by the force of gravity on an unsecured anchor. Lower the Spike to avoid the risk.

### **WARNING**

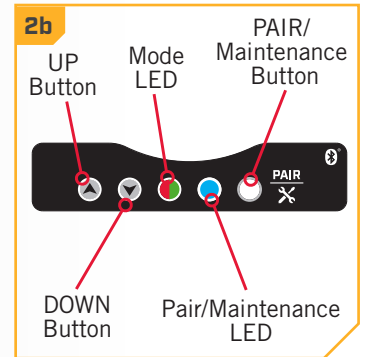
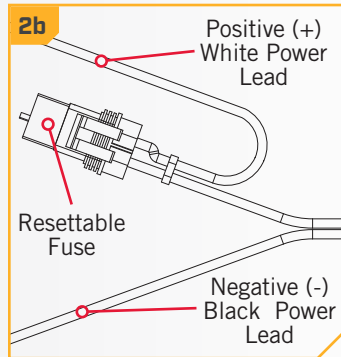
Do not run the Hydraulic Pump until after hydraulic fluid has been added. Running the Hydraulic Pump without hydraulic fluid can damage the pump.



## COMPLETING THE INSTALLATION

2

- b. When the Pump Assembly was attached to a power source, it beeped to indicate Power "on". To test that there is power to the Pump Assembly, remove the Resettable Fuse from the positive (+) white power lead and re-insert it. When Power is restored, the LED's will flash in a series and then the pump will beep. The Mode LED will flash red ● at the same time as the Pair/Maintenance LED flashes blue ●. Then the LEDs will shut off and the Mode LED will flash green ●. When the Mode LED turns off, the pump will beep to confirm that power is restored. The Pump Assembly is ready to be filled with Hydraulic Fluid.



### ⚠ CAUTION

The Pump Assembly is connected to a power source during this step of the installation. Review the "Battery & Wiring Installation" section of these instructions to become familiar with the risks involved in working with electrical currents.

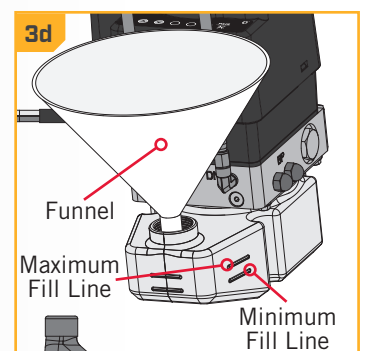
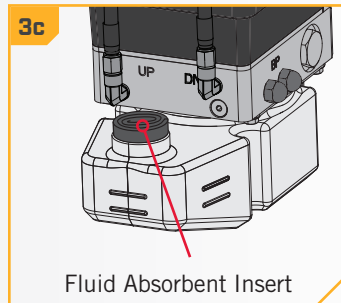
3

#### ITEM(S) NEEDED



#24 X 1

- c. Remove the Fluid Absorbent Insert sealing the Pump Assembly by pulling it out. Remove the Insert completely and discard it.
- d. Place a clean Funnel or similar tool onto the Reservoir. Notice the maximum and minimum fill lines on the Reservoir. The Raptor Pump Reservoir is designed to hold 1 quart of Hydraulic Fluid. Take the Biodegradable Marine Hydraulic Fluid ISO 32 (Item #24) and fill the Reservoir with at least half of the quart until the Reservoir is filled to the Maximum Fill Line.



**NOTICE:** Raptor is 100% quality and performance tested with hydraulic fluid. Discard residual fluid absorbent insert. For shipping purposes only.



Biodegradable Marine Hydraulic Fluid ISO 32

### ⚠ CAUTION

Biodegradable Marine Hydraulic Fluid ISO 32

**First Aid:** Keep out of reach of children - do not induce vomiting

**Eye Contact:** Flush affected eyes with water for at least 15 minutes.

**Skin Contact:** Wash any exposed skin portion thoroughly with soap and water.

**NOTICE:** Minn Kota recommends using Biodegradable Marine Hydraulic Fluid ISO 32 (Part #2357700.) If additional Hydraulic Fluid is needed, order online at [minnkotamotors.com](http://minnkotamotors.com) or find an equivalent ISO 32 biodegradable marine grade hydraulic fluid.

# COMPLETING THE INSTALLATION

4

## ITEM(S) NEEDED



- e. Take the Reservoir Cap (Item #38) and place it on the Pump Reservoir. Close to finger tight by turning the Reservoir Cap clockwise.
- f. Use the Up ▲ and Down ▼ Buttons on the Hydraulic Pump to cycle through the retract (up) and deploy (down) sequence. After one to two deploy and retract cycles, check the Reservoir to make sure that the Hydraulic Fluid is not below the Minimum Fluid Line.

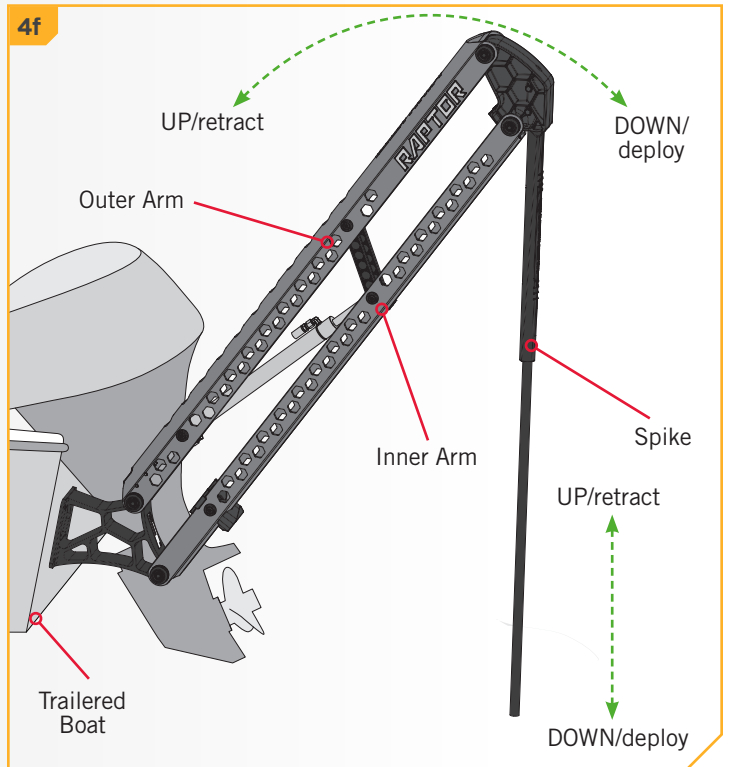
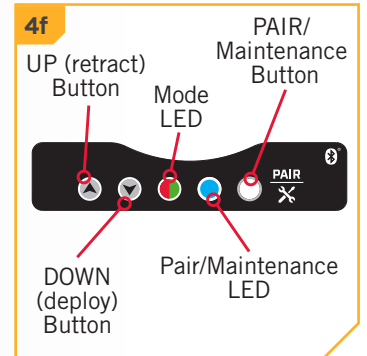
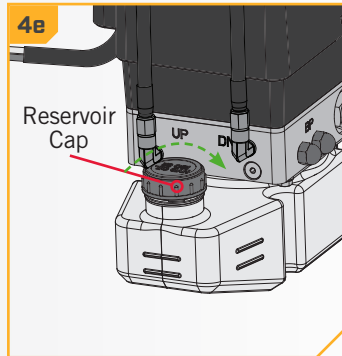
**NOTICE:** If the Reservoir Cap (Part #2350200) becomes lost or dirty, order a new one online at [minnkotamotors.com](http://minnkotamotors.com).

**NOTICE:** During the first few cycles it is normal for the anchor to have little movement when the Up and Down Buttons are pressed. The Hydraulic Lines and Cylinder must fill with Hydraulic Fluid before normal, smooth movements will take place.

## ⚠ WARNING

Take care that neither you nor other persons approach the Raptor Spike too closely while operating, neither with body parts nor with objects. The Raptor is powerful and may endanger or injure you or others. While the Raptor is operating, watch out for persons and obstructions while controlling the Raptor.

- g. If the Hydraulic Fluid is below the minimum, add more, by following the procedure above. Then cycle the Raptor through a minimum of ten deploy and retract cycles.
- h. Once ten cycles are completed, return to filling the Reservoir. If the Hydraulic Fluid is below the minimum, add more, by following the procedure above. Repeat five more retract and deploy cycles. Finish with the Raptor in the fully retracted state.





## COMPLETING THE INSTALLATION

5

- i. Before normal use of the Raptor, trailer the boat to a body of water. Unload the boat into the water and drive it to water that is no less than the depth of your anchor or a minimum of 10 feet. It is recommended to go into no less than 10 feet of water to ensure that the anchor is able to actuate in its full range of motion to bleed Hydraulic Fluid through the circuit and remove any air present.

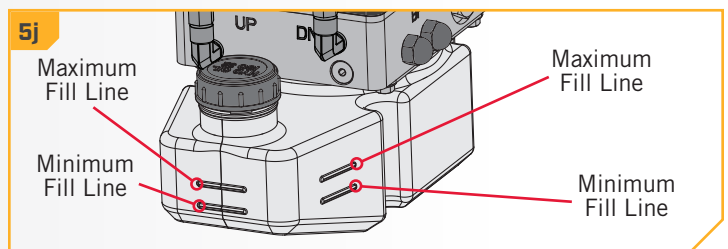
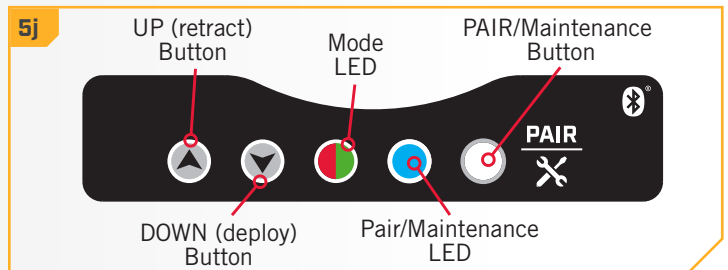
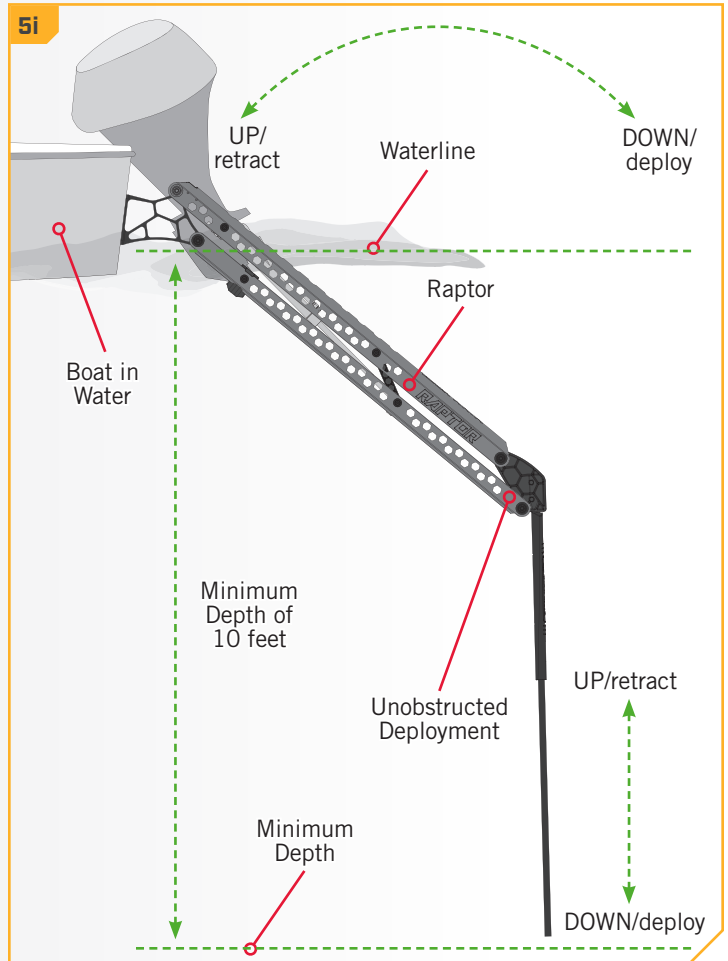
### CAUTION

To successfully complete the installation and clear air from the Hydraulic Circuit, it is necessary to purge the circuit of air. Failure to purge the Hydraulic Circuit may result in unexpected anchor operation. Purging the Hydraulic Circuit requires the anchor to fully retract and deploy. Complete the on-water deploy and retract sequences to fully purge the lines.

- j. Actuate the pump to its full length of travel using the Up  and Down  Buttons on the Hydraulic Pump to cycle through the deploy (down) and retract (up) sequence. Repeat the cycle ten times. Finish with the Raptor in the retracted state. Once complete, the Hydraulic Circuit is ready for normal use.
- k. The Raptor should be in the retracted state and the Hydraulic lines should be fully purged. Double check the reservoir to make sure that the Hydraulic Fluid is filled to the Maximum Fill Line. After filling the reservoir, if there is Hydraulic Fluid left, retain it for future maintenance. Periodically check the Hydraulic Fluid level in the future to make sure that it is adequate.

**NOTICE:** The Maximum Fill Line and the Minimum Fill Line are located on three sides of the Reservoir so that checking the Hydraulic Fluid level is easily identifiable regardless of Reservoir orientation.

**NOTICE:** After the Hydraulic Pump has been bled, review the hose routing to make sure it is clean and secure it in place with ties. Review the "Secure the Hydraulic Hoses" section of the manual for details.



# COMPLETING THE INSTALLATION

## › Securing the Hydraulic Hoses

Once the Hydraulic Pump has been bled, the Hydraulic Hoses should be set for their final hose routings. It is important to secure hoses to ensure that the hose routings remain clean and maintained for safe operation. Minn Kota recommends securing the Hydraulic Hoses with tie wraps along the hose routings.

### **WARNING**

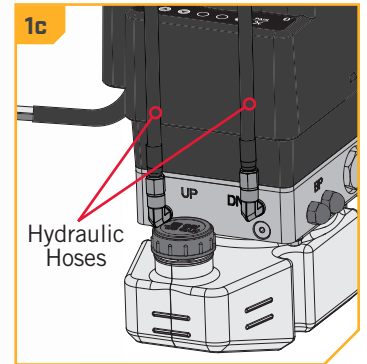
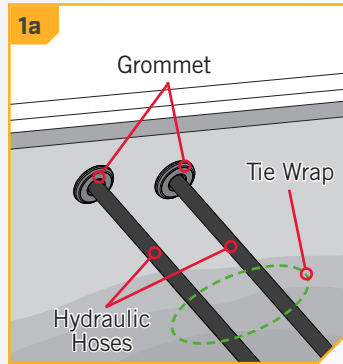
- Periodically inspect hoses for signs of wear or damage. Operation of the Raptor system with a worn or damaged hydraulic hose may cause damage, unexpected operation or injury.
- In the event a hydraulic hose ruptures, bursts or becomes disconnected during operation, immediately shut off power at the pump assembly and manually relieve pressure in the hydraulic system using the manual bypass valves.
- Do not grasp a leaking pressurized hose with your hands. Do not feel for hydraulic leaks with your hands. The force of escaping hydraulic fluid can cause serious injury.

**1**

- a. Begin by examining the Hydraulic Hoses between the Raptor and the entry point on the boat. Where necessary place a Tie Wrap to secure any loose hose.

**NOTICE:** Review the mounting consideration at the beginning of the installation instructions for recommendations on Hydraulic Hose routings.

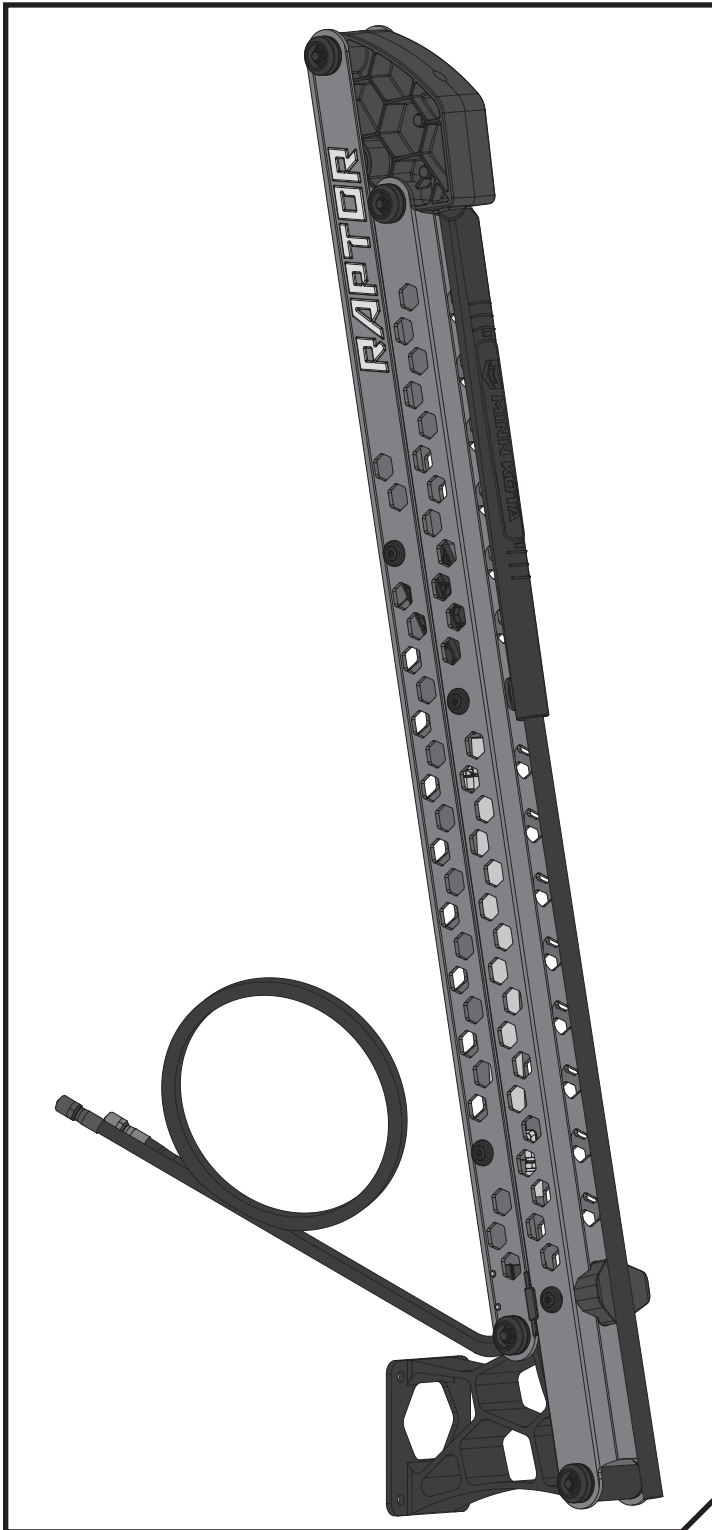
- b. Follow the hose routing along the established route on the boat. Secure the Hydraulic Hoses so they can be maintained within the intended routing.
- c. Follow the Hydraulic Hoses all the way back to the Hydraulic Pump and use a Tie Wrap to secure the Hydraulic Hoses any place necessary.



# USING THE RAPTOR

## RAPTOR FEATURES

Become familiar with the features of the Raptor to maximize the capabilities this product offers.



### › Auto Drive

In select Modes, Auto-Drive will automatically power the Spike into the bottom with two successive hits. Raptor actually drives the anchor in for you to ensure the anchor is seated. The number of hits may be reduced when pressure is sufficient on Raptor models with Active Anchoring.

### › Active Anchoring

This feature is available on select Raptor models only. It enables the anchor to tell if the pressure on the Spike at the anchored location has changed and allows the Spike to reengage the bottom based on the pressure reading. This feature allows for the Raptor to be anchored more effectively and to adapt to changing conditions.

# USING THE RAPTOR

## Mode Functions

The Raptor operates in three different modes and the Raptor with Active Anchoring operates in four different modes. Each Mode is designed for a specific on water scenario and changes the anchoring behavior of the Raptor when it deploys. Modes are identified on the Indicator Panel and the Raptor remotes. Raptor is capable of anchoring in most conditions and it is important to select the right anchoring mode. The four different Mode functions are:

1. **Standard Mode** - Standard Mode is the default anchoring Mode for Raptor units without Active Anchoring. When put in Standard Mode, the Mode Indicator LED in the Indicator Panel will toggle between red and green several times and then turn off. In Standard Mode, Raptor's Auto Deploy will operate with maximum down-force with a complete Auto-Drive cycle of two hits spaced at three seconds apart.

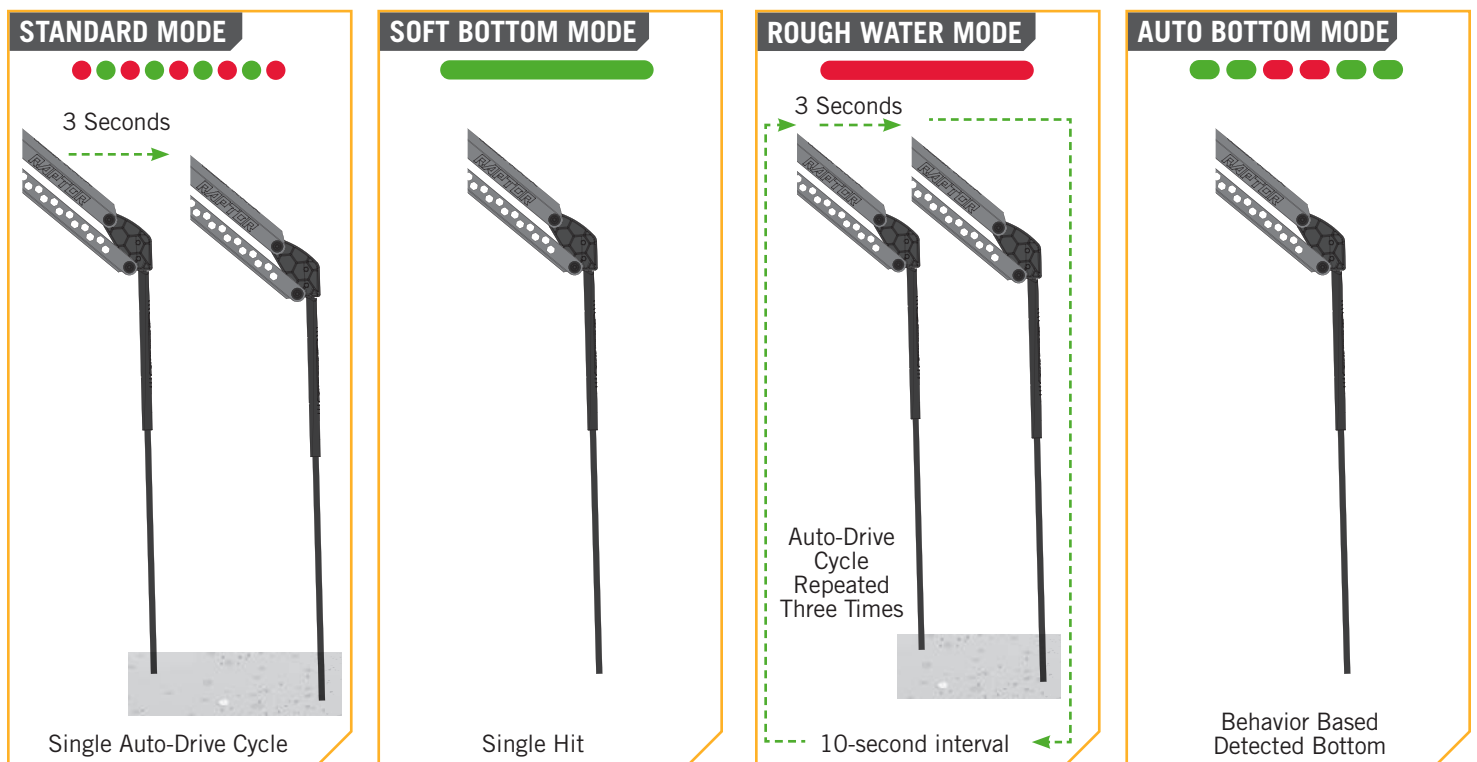
2. **Soft Bottom Mode** - In Soft Bottom Mode, the Mode Indicator LED will be lit green on the Indicator Panel. In Soft Bottom Mode, the Auto Deploy will operate at a reduced power with a single hit.

3. **Rough Water Mode** - In Rough Water Mode, the Mode LED Indicator on the Indicator Panel will be lit red. In Rough Water Mode, the Auto Deploy will operate with maximum down-force with three Auto-Drive cycles of two hits each, spaced 3 seconds apart. **The three Auto-Drive cycles will be spaced at 10 second intervals.**

4. **Auto Bottom Mode** (Active Anchoring Models only) The system detects the bottom type and automatically adjusts force and number of hits accordingly. This is the default mode for all Active Anchoring models. The Mode indicator LED flashes red red green green and then off to indicate this mode is in effect.

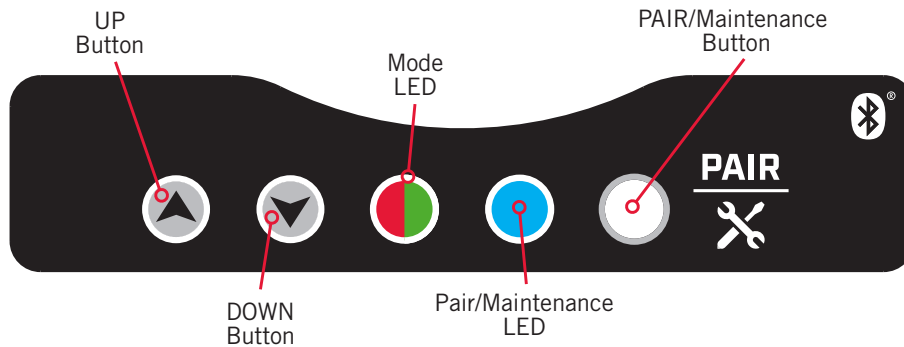
**NOTICE:** During calm conditions or on water with muddy or soft sandy bottoms, Soft Bottom Mode will prevent the Raptor from over-anchoring.

**NOTICE:** If power is cycled to the Raptor, the Raptor will "remember" if it was last in "Standard Mode", "Soft Bottom Mode", or "Auto Bottom" and will return to that last known mode. However, if it is left in "Rough Water Mode," and power is cycled, it will revert back to the default mode. This is done to prevent Raptor from unnecessarily over-anchoring.





## CONTROLLING THE RAPTOR WITH THE INDICATOR PANEL











### UP

Press and hold to retract the anchor. The anchor will continue to retract when the button is held until the button is released.



### DOWN

Press and hold to deploy the anchor. The anchor deploys until the button is released or the anchor has reached its full range of deployment.

### Mode LED

Used to identify the different Anchor Modes. The Mode LED  flashes between green and red for a period of three seconds when the anchor is in Standard Mode. Rough Water mode is identified when the Mode LED  illuminates red and Soft Bottom when the Mode LED  illuminates green. The Mode LED  flashes green and green and then red and red when Auto Bottom is selected. The Mode LED is used to identify Active Anchoring. Mode LED  will briefly pulse green when Active Anchoring is enabled and the Mode LED  will briefly pulse red when it is disabled. The Mode LED  will continue to pulse between green and red while Active Anchoring is enabled and the anchor is deployed. The Mode LED  will also flash red to identify system errors.

### Pair/Maintenance LED

While the anchor is in PAIR Mode, the Pair/Maintenance LED  will flash blue. While in Maintenance Mode, the Pair/Maintenance LED  will illuminate blue.

### PAIR/Maintenance Button

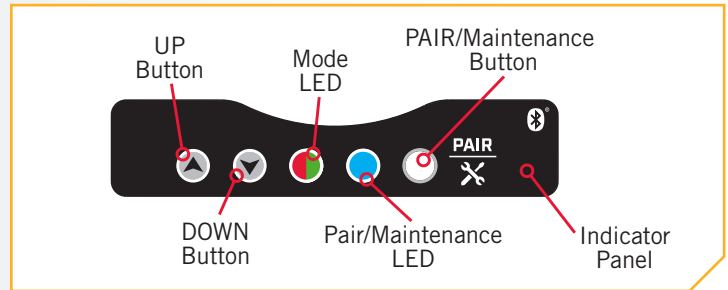
Single press to enter PAIR Mode. The anchor will stay in PAIR Mode until successfully paired, the PAIR button is pressed again to cancel it or until the PAIR process times out after 30 seconds. Press and hold the PAIR button to enter Maintenance Mode. While in Maintenance Mode, the anchor motor is disabled. To cancel Maintenance Mode, press the PAIR button again.

# USING THE RAPTOR

## › Deploy the Raptor from the Indicator Panel

Use the buttons on the Indicator Panel to deploy the Raptor anchor.

- 1**
  - a. To deploy the Raptor, press and hold the Down ▼ button on the Indicator Panel.
  - b. While the anchor is deploying, the action can be paused on the panel letting go of the Down ▼ button.
  - c. The paused deployment can be resumed by pressing and holding the Down ▼ button again.
  - d. Once the deploying anchor gets to its full length of travel or comes in contact with the bottom, it will stop.



### **WARNING**

Be sure that the Raptor is clear of obstructions and persons while deploying or retracting. Take care that neither you nor other persons approach the Raptor too closely, while operating, neither with body parts nor with objects. The Raptor is powerful and may endanger or injure you or others. While the Raptor is operating, watch out for persons swimming and for floating objects. Persons who lack the ability to run the Raptor or whose reactions are impaired by alcohol, drugs, medication, or other substances are not permitted to use this product.

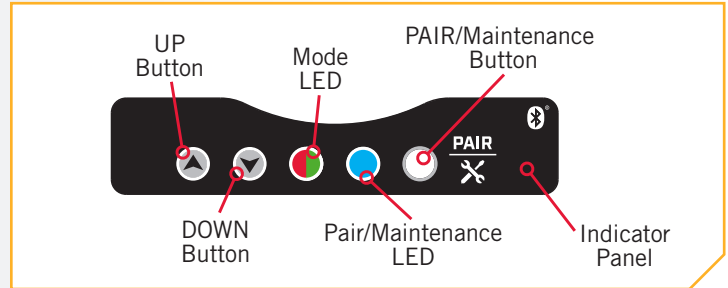
### **CAUTION**

The spaces between the Outer Arm, Inner Arm, Spike and brackets of the Raptor can create a pinch point. Do not come in contact with an area of the Raptor that may cause a pinch point while it is moving in any direction to avoid the risk.

## Retracting the Raptor from the Indicator Panel

Use the buttons on the Indicator Panel to retract the Raptor anchor.

- 1
  - a. To retract the Raptor, press and hold the Up ▲ button on the Indicator Panel.
  - b. While the anchor is retracting, the action can be paused on the panel by letting go of the Up ▲ button.
  - c. The paused retraction can be resumed by pressing and holding the Up ▲ button again.
  - d. Once the retracting anchor becomes fully retracted, release the Up ▲ button.



### WARNING

Be sure that the Raptor is clear of obstructions and persons while deploying or retracting. Take care that neither you nor other persons approach the Raptor too closely, while operating, neither with body parts nor with objects. The Raptor is powerful and may endanger or injure you or others. While the Raptor is operating, watch out for persons swimming and for floating objects. Persons who lack the ability to run the Raptor or whose reactions are impaired by alcohol, drugs, medication, or other substances are not permitted to use this product.

### CAUTION

The spaces between the Outer Arm, Inner Arm, Spike and brackets of the Raptor can create a pinch point. Do not come in contact with an area of the Raptor that may cause a pinch point while it is moving in any direction to avoid the risk.

## Pairing the Raptor

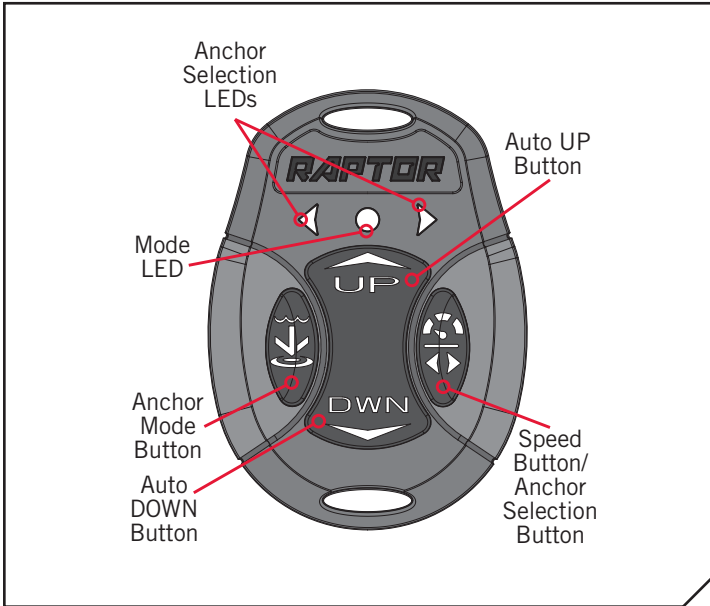
For instruction on how to Pair the Raptor, please see the "Pairing the Raptor" section of these instructions.

## Maintenance Mode

For instruction on how to put the Hydraulic Pump into Maintenance Mode, please see the "Service & Maintenance" section of these instructions.

# USING THE RAPTOR

## CONTROLLING THE RAPTOR WITH THE REMOTE >



### Anchor Mode Button

Single press to display the current Anchor Mode. While the mode is displayed, continue to single press through the Anchor Modes to change them. This will toggle through the Anchor Modes of Standard, Rough Water, Soft Bottom and Auto Bottom. Standard Mode is identified when the Mode LED flashes between red and green. Rough Water mode is identified when the Mode LED flashes red and Soft Bottom when the Mode LED flashes green. Auto Bottom Mode is only available on the Active Anchoring Model and is identified by a Mode LED that flashes slowly from green to green and then red to red. On the Active Anchoring Model, the Anchor Mode button will also enable and disable Active Anchoring. Active Anchoring is engaged and disengaged by a single press and hold. When the Mode LED displays green it is enabled and when the Mode LED displays red it is disabled.



### Auto Up Button

Single press to auto retract the anchor. Press and hold to continually retract the anchor. The anchor will continue to retract when the button is held until the button is released. Also used to pair the Remote to a Raptor.



### Auto Down Button

Double press to auto deploy the anchor. Double press and hold the second press to continually deploy the anchor. The anchor will continue to deploy when the button is held until it reaches its full range of operation or until the button is released. Also used to pair the Remote to a Raptor.



### Speed Button / Anchor Selection Button

Single press to display the current operating speed. While the speed is displayed, continue to single press through the operating speed to toggle between slow, medium and fast. The Mode LED will flash red three consecutive times at the speed that corresponds with the selected speed. Pressing and holding the button will toggle the remote to control either the Port, Starboard or both anchors (when two anchors are paired in the system). The Raptor Selection LEDs will illuminate to correspond to the anchor(s) selected. The right LED will illuminate when the Starboard anchor is selected and the left LED will illuminate when the Port anchor is selected. Both the right and left LEDs illuminate when both anchors are selected.






## CAUTION

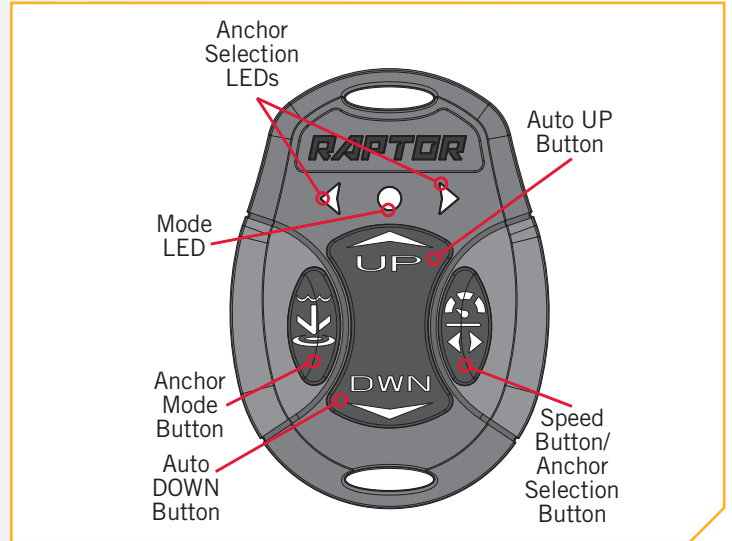
Never leave the boat unattended with the Raptor as your only boat anchor. Raptor is not intended to provide primary anchorage. This includes operating the remote at a safe distance. It is not recommended to leave the boat while operating the Raptor with the remote. Doing so is at the owner's risk. This product does not relieve you from the responsibility of safe operation of your boat.

**NOTICE:** The two Raptor remotes that come with the Raptor from the factory are pre-paired. If the network connection between the remotes and the anchor is interrupted, please see the "Pairing the Raptor" section of these instructions.

## › Deploy the Raptor from the Remote

Use the buttons on the Remote to deploy the Raptor anchor.

- 1**
  - a. To auto deploy the Raptor, double press and then release the Down  button on the Remote. To continually deploy the Raptor, double press the Down  button and hold the second press.
  - b. While auto deploying, the action can be paused by pressing the Down  button again. While the anchor is continually deploying, the action can be paused on the Remote by releasing the Down  Button.
  - c. The paused deployment can be resumed by pressing the Down  button again in the same manner.
  - d. If continuing to deploy the Raptor, and the anchor gets to its full length of travel, it will stop. If auto deploying the anchor, once the deploying anchor gets to its full length of travel or comes in contact with the bottom, it will go through an anchoring sequence determined by the current Mode and then stop.



**NOTICE:** When two Raptors are paired, the anchor of the selected Raptor will deploy. The selection can be Port, Starboard, or both.

### **WARNING**

Be sure that the Raptor is clear of obstructions and persons while deploying or retracting. Take care that neither you nor other persons approach the Raptor too closely, while operating, neither with body parts nor with objects. The Raptor is powerful and may endanger or injure you or others. While the Raptor is operating, watch out for persons swimming and for floating objects. Persons who lack the ability to run the Raptor or whose reactions are impaired by alcohol, drugs, medication, or other substances are not permitted to use this product.







### **CAUTION**

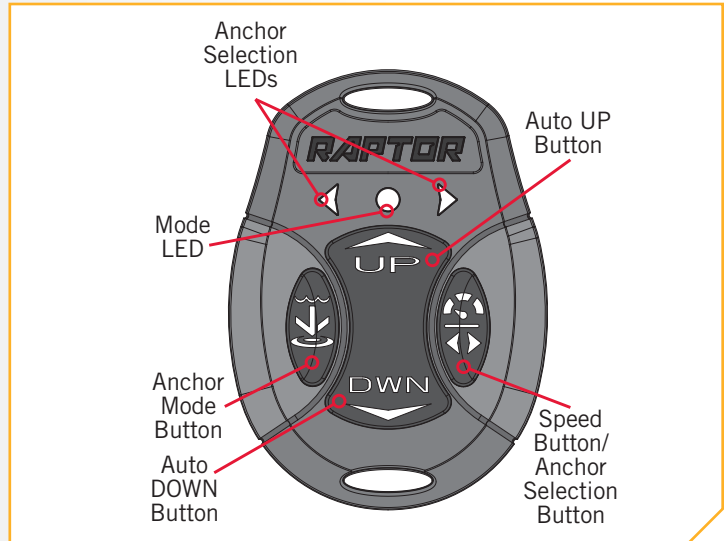
The spaces between the Outer Arm, Inner Arm, Spike and brackets of the Raptor can create a pinch point. Do not come in contact with an area of the Raptor that may cause a pinch point while it is moving in any direction to avoid the risk.

# USING THE RAPTOR

## › Retracting the Raptor from the Remote

Use the buttons on the Remote to retract the Raptor anchor.

- 1 a. To auto retract the Raptor, press and then release the Up  button on the Remote. To continually retract the Raptor, press the Up  button and hold.
- b. While auto retracting, the action can be paused by either pressing the Up  button again, or by pressing the Down  button. While the anchor is continually retracting, the action can be paused on the Remote by releasing the Up  button.
- c. The paused retraction can be resumed by pressing the Up  button again in the same manner.
- d. If auto retracting, the anchor will stop when the anchor is fully retracted. If continually retracting the button should be released when the anchor is fully retracted.



**NOTICE:** When two Raptors are paired, the anchor of the Raptor selected on the Remote will retract. The selection can be Port, Starboard, or both.

### **WARNING**











Be sure that the Raptor is clear of obstructions and persons while deploying or retracting. Take care that neither you nor other persons approach the Raptor too closely, while operating, neither with body parts nor with objects. The Raptor is powerful and may endanger or injure you or others. While the Raptor is operating, watch out for persons swimming and for floating objects. Persons who lack the ability to run the Raptor or whose reactions are impaired by alcohol, drugs, medication, or other substances are not permitted to use this product.

### **CAUTION**

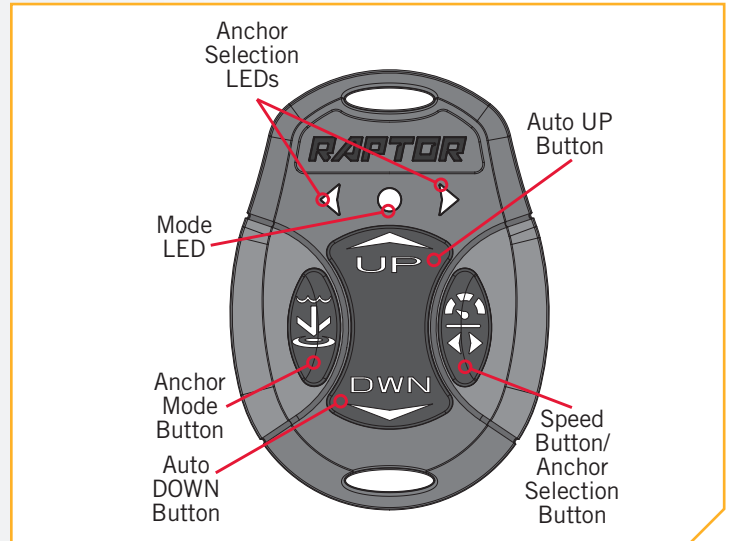
The spaces between the Outer Arm, Inner Arm, Spike and brackets of the Raptor can create a pinch point. Do not come in contact with an area of the Raptor that may cause a pinch point while it is moving in any direction to avoid the risk.

## › Toggle the Mode from the Remote

Toggle the Mode on the Remote when the water or anchoring conditions change to fit your anchoring needs.




- 1
  - a. Single press the Anchor Mode  button to display the current Mode.
  - b. While the Mode is displayed via the Mode LED, continue to single press through the Modes to toggle between Standard, Rough Water, Soft Water and Auto Bottom. Standard Mode is identified when the Mode LED     flashes between red and green. Rough Water mode is identified when the Mode LED  flashes red and Soft Bottom when the Mode LED  flashes green. Auto Bottom Mode is only available on the Pro Model and is identified by a Mode LED    that flashes slowly from green to green and then red to red.

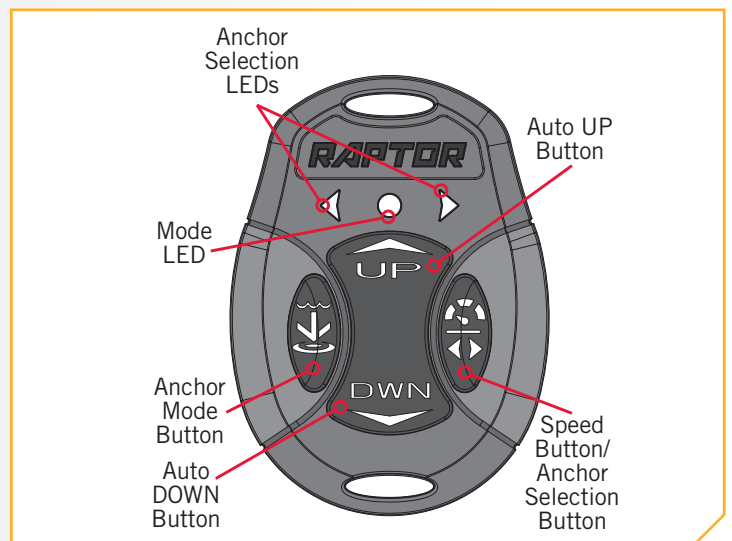
**NOTICE:** When the Raptor is paired with a second Raptor, changing the Anchor Mode on one Raptor will change the Mode for both Raptors. Read the "Using the Raptor" section of this manual to learn more about Modes.



## › Toggle Active Anchoring


Active Anchoring is a feature that comes pre-installed on select Raptor models. To learn more about Active Anchoring, see the "Using the Raptor" section of these instructions.



- 1
  - a. Active Anchoring is engaged and disengaged by a single pressing and holding of the Anchor Mode  button. When the Mode LED  displays three short flashes and then one longer flash of green it is enabled and when the Mode LED  displays three short flashes and then one longer flash of red it is disabled.

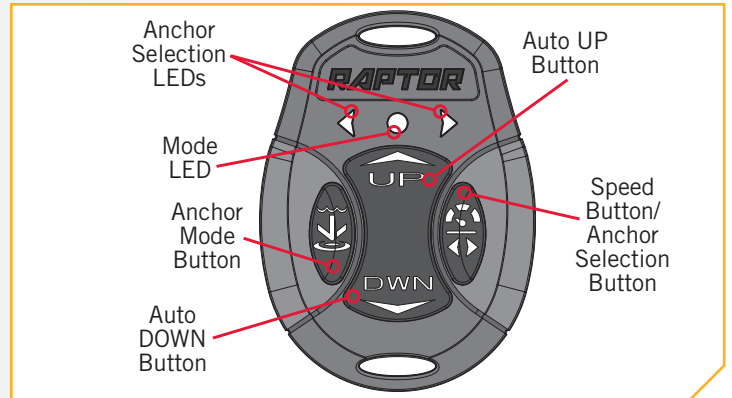


# USING THE RAPTOR


## › Select Anchor Operating Speed







The Raptor Speed/Anchor Selection  button is used to select the speed at which the anchor operates to stow and deploy. It can be changed to slow, medium or fast. Follow the directions below to set the speed.

- 1** a. Single press the Speed/Anchor Selection  button to display the current operating speed.
- b. While the speed is displayed via the Mode LED, continue to single press through the operating speed to toggle between slow, medium and fast. The Mode LED  will flash red three consecutive times at the speed that corresponds with the selected speed.

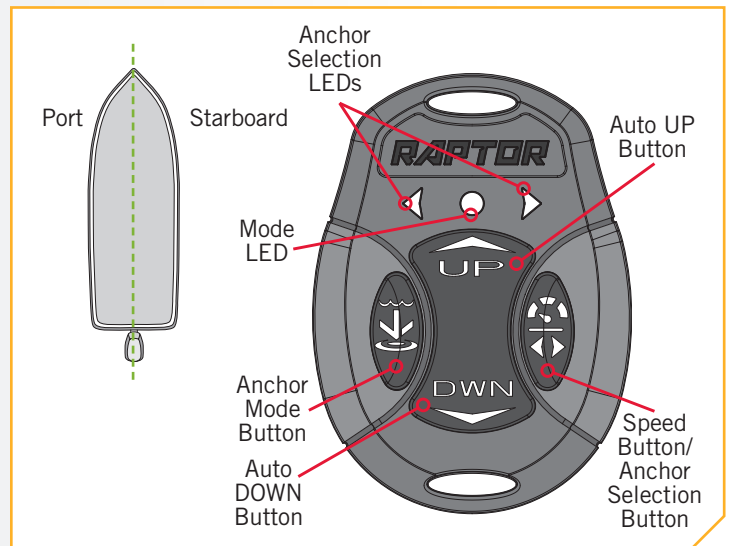


## › Selecting a Raptor to Operate with the Remote

The Raptor Speed/Anchor Selection  button toggles the Raptor that the remote is controlling, when two Raptors are installed on the boat. The selection toggles between a Raptor mounted on the Port or Starboard side of the boat, or it can control both Raptors at the same time. The Anchor Selection LED's are lit based on the selection made.

- 1** a. To toggle the Raptor selected, press and hold the Speed/Anchor Selection  button.
- b. When the button is pressed, one or both of the Anchor Selection LEDs will be lit. The Anchor Selection LEDs  will illuminate to correspond to the anchor(s) selected. The right LED  will illuminate when the Starboard anchor is selected and the left LED  will illuminate when the Port anchor is selected. Both the right and left LEDs  illuminate when both anchors are selected. Release the Speed/Anchor Selection  button when the desired Raptor(s) is/are selected.

**NOTICE:** When two Raptors are paired to the remote, the anchors may not be in sync when retracting and deploying.

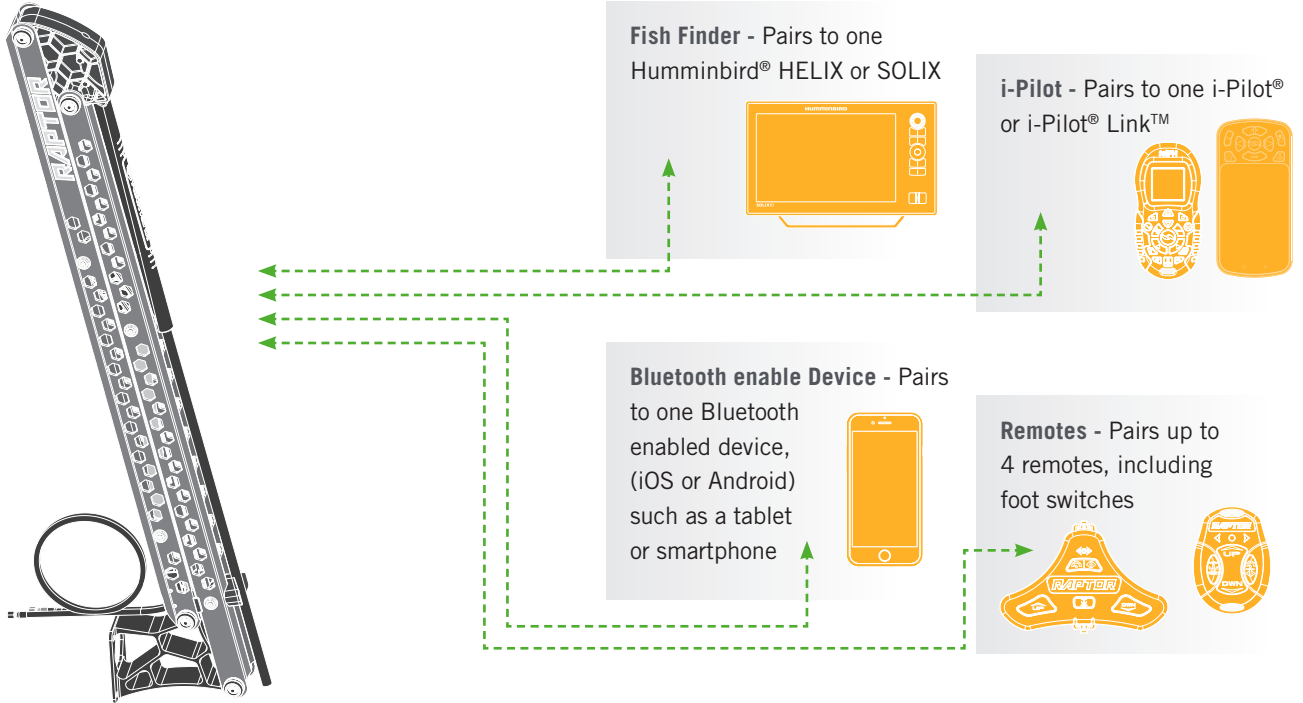


**NOTICE:** The Raptor Remote will always remember the last selection made unless the remote or Raptor lose power.



# PAIRING THE RAPTOR

## NETWORK FOR A SINGLE RAPTOR

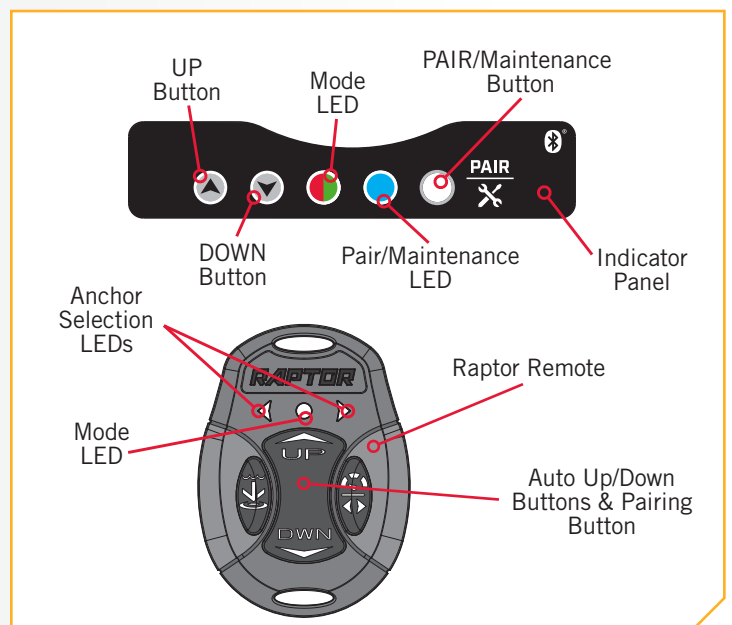


## PAIRING A REMOTE TO A SINGLE RAPTOR

Every Raptor comes direct from the factory with 2 remotes already paired to the Raptor. If more remotes are paired to the Raptor than the network allows, the Raptor will pair the new remote and remove the remote that was least recently used from the network.

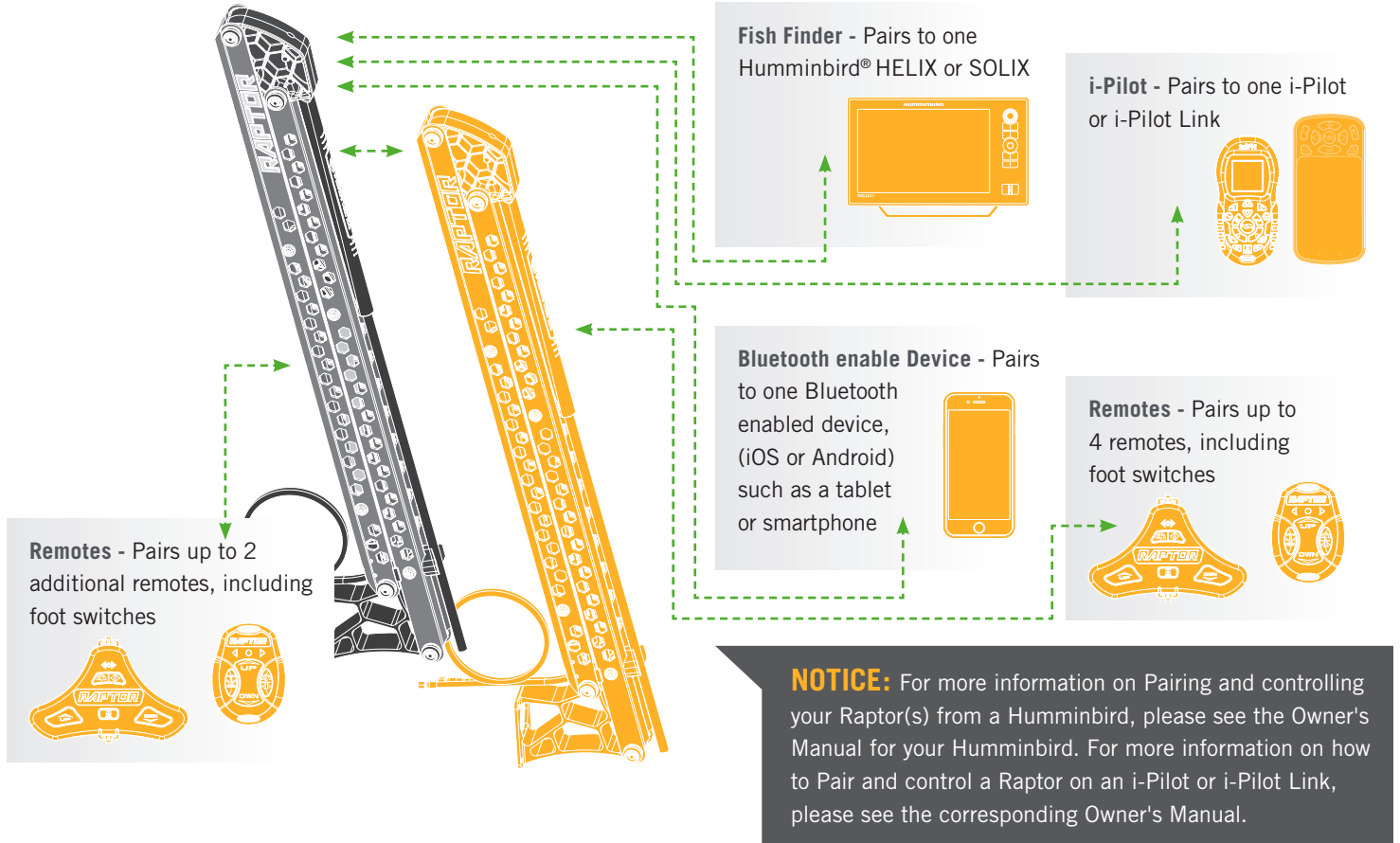
1

- Press and hold the Up button and the Down button on the Remote at the same time until the Anchor Selection LEDs and the Mode LED on the Remote begin to scroll red, green, red and red. Then release them.
- Immediately press the Pair button on the Indicator Panel located on the Raptor Pump Assembly. The PAIR/Maintenance LED will begin to flash blue. The Raptor and Remote will go into Pairing Mode for 30 seconds. If a signal with three fast beeps occurs, the Raptor and Remote have successfully paired. If 30 seconds pass while in Pairing Mode and they do not successfully pair, a chirp will sound from the Pump Assembly, signaling that the Pairing has timed out.
- If the Pair is unsuccessful, repeat the process.





# PAIRING THE RAPTOR

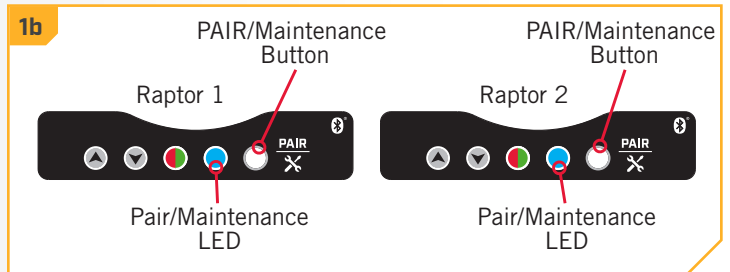
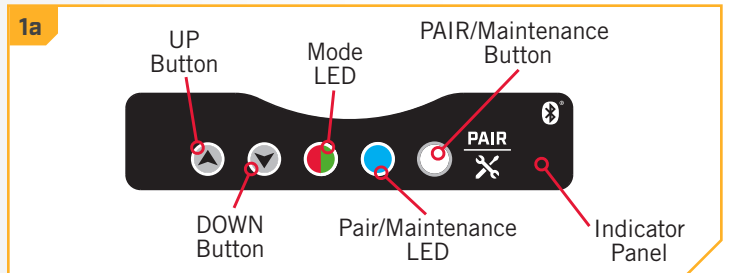
## NETWORK FOR TWO RAPTORS






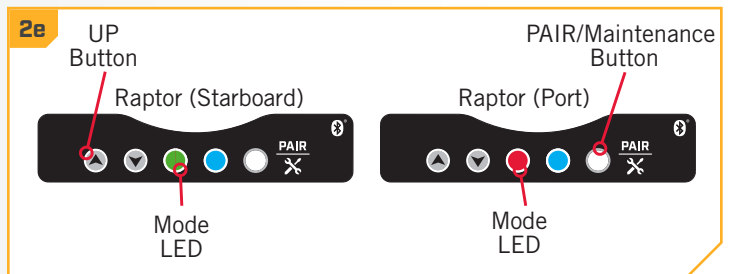
## PAIRING TWO RAPTORS AND PROGRAMMING THE MOUNTING LOCATION

Every Raptor comes direct from the factory with two Remotes already paired to the Raptor. When installing two Raptors, it will first be necessary to clear all devices from both Raptor networks. To clear the pairing in each Raptor, follow the instructions in the "Clearing Paired Remotes or Devices from the Raptor" section of the Owner's Manual. Once both Raptor networks are cleared, the Raptors can then be paired together. The clear Raptor networks will allow the system to complete an automated process during pairing that will designate the Port and Starboard positions of the two Raptors as installed on the boat. The process below is used to pair the Raptors together, and to designate which side of the boat that each Raptor is installed on. Once complete, the Raptor remotes will need to be re-paired to the dual Raptor system. Please see the "Pairing a Remote to Two Raptors" section of this manual to pair a remote. Additional Bluetooth enabled devices may now be added to the One Boat Network such as a Humminbird fish finder, an i-Pilot or i-Pilot Link system, and a device such as a smartphone or tablet.

- 1**
  - a. Press the Pair  button on the Indicator Panel on one of the Raptors. The PAIR/Maintenance LED will begin to flash  blue. Immediately follow this step on the second Raptor.
  - b. The Raptors are in Pairing Mode and will search for each other for 30 seconds. If they do not Pair after 30 seconds, an error tone will sound signaling that the Pairing has timed out. If this occurs, start the process again.
  - c. If the Raptors successfully Pair, a confirmation tone with three fast beeps will occur. At this point, the Raptors have successfully paired, and now need to be programmed to designate the Port or Starboard locations. This process will automatically begin when two Raptors have successfully paired to each other.



- 2**
  - d. The Mode Indicator LED will turn green  on both Raptors. On the Indicator Panel of the Starboard Raptor, press the Up  button. The Raptor will accept the selection. The Mode LED of the Raptor on the Port side will flash red  and then the LEDs on both Raptors will turn off. Now the Raptors are successfully Paired together and know their mounted position.











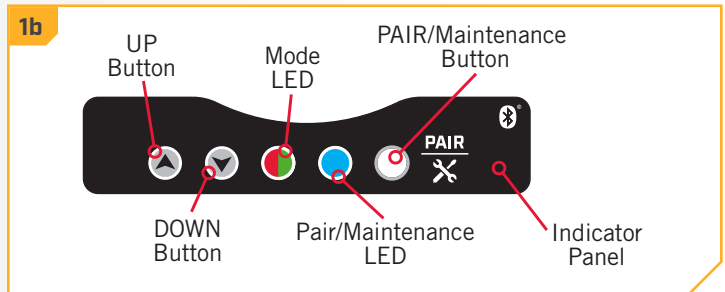
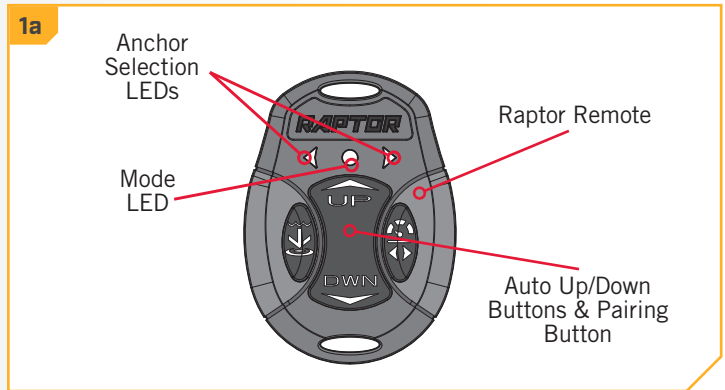
**NOTICE:** When the process is complete, all remotes that were paired to an individual Raptor will need to be re-paired. Please see the "Pairing a remote to two Raptors" section of this manual.

# PAIRING THE RAPTOR

## PAIRING A REMOTE TO TWO RAPTORS


In order to Pair a remote to the Raptor, please be sure to first Pair the Raptors together. When two Bluetooth Raptors are paired together, all remotes that were paired to an individual Raptor will unpair. Please see the "Pairing Two Raptors and Programming the Mounting Location" section of this manual. If the two Raptors are already paired together, a remote can be paired to the dual Raptors. Either Raptor in the network can be used to Pair a remote to the dual Raptor. If more remotes are paired to the dual Raptors than the network allows, the Raptor will pair the new remote and remove the remote that was least recently used from the network. When the pairing process is complete, the remote will be able to control both Raptors.

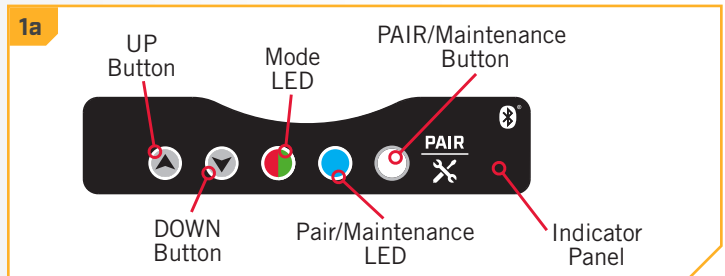
- 1 a. Press and hold the Up  button and the Down  button on the Remote at the same time until the Anchor Selection LEDs and the Mode LED on the Remote begin to scroll     red, green, red and red. Then release them.
- b. Immediately press the Pair  button on the Indicator Panel located on the Pump Assembly of one of the Raptors. The PAIR/Maintenance LED on both Raptors will begin to flash  blue. The Raptor and Remote will go into Pairing Mode for 30 seconds.
- c. If a signal with three fast beeps occurs, the Raptor and Remote have successfully paired. If 30 seconds pass while in Pairing Mode and they do not successfully pair, a chirp will sound from the Pump Assembly signaling that the Pairing has timed out.
- d. If the Pair is unsuccessful, repeat the process.



## CLEARING PAIRED REMOTES OR DEVICES FROM THE RAPTOR



The Raptor was designed so that all paired devices can be cleared from memory.

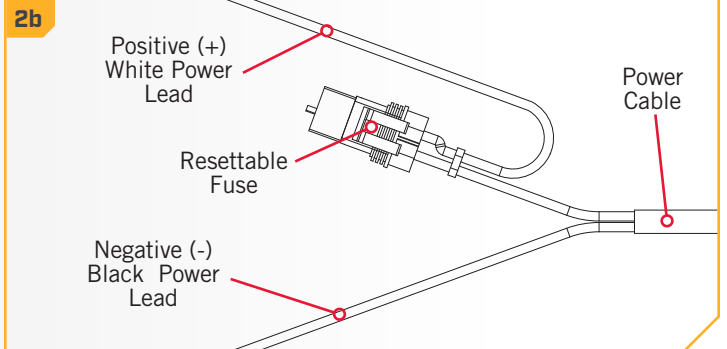
- 1 a. Retract the anchor on the Raptor by pressing the Up  button located on the Indicator Panel on the Pump Assembly.



2

**NOTICE:** This may require assistance from another person.




- b. Turn the power to the Raptor "off" by removing the resettable Fuse located on the Raptor Power Cable.
- c. While holding in the Up  button on the Indicator Panel, restore power to the Raptor. You will hear a long steady tone.
- d. After the steady tone stops, release the Up  button. Wait a full 30 seconds. Remove the fuse to power cycle the Raptor again and then replace the fuse.
- e. The Raptor memory is now clear of all previously paired devices.



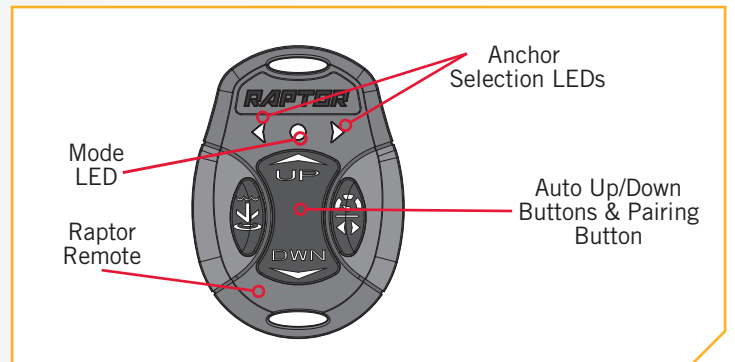
## CLEARING A PAIRED RAPTOR FROM THE REMOTE

The Remote was designed so that a paired Raptor can be cleared from memory.

1

- a. Press and hold the Up  button and the Down  button on the Remote at the same time until the Anchor Selection LEDs and the Mode LED on the Remote begin to scroll  red, green, red and red. Then release them. The Remote will go into Pairing Mode for 30 seconds. Once Pairing times out the paired Raptor will be cleared.

**NOTICE:** Putting the Remote into Pairing Mode, even if it is accidental, without Pairing the Remote to a Raptor will clear a paired Raptor.



# THE RAPTOR APP

## › Raptor App Home Screen

Minn Kota offers a Raptor app that can be used to control and update the Raptor using a Bluetooth® enabled device. The Raptor app is available for download on iOS devices through the Apple App store or on Android™ devices through the Google Play Store.

### HEADER ›



### Menu

When selected, the Menu gives additional options to control the Raptor such as anchor speed, software updates, the setup guide, and additional product control and support.

**NOTICE:** When the device is not connected to a Raptor, the Menu will bring up the option to enter Demo Mode. Once the device is connected to a Raptor, Demo Mode is exited and the option is not available.

### APP BUTTONS ›



### Auto Up

Single press to auto retract the anchor. Press and hold to continually retract the anchor. The anchor will continue to retract when the button is held until the button is released.



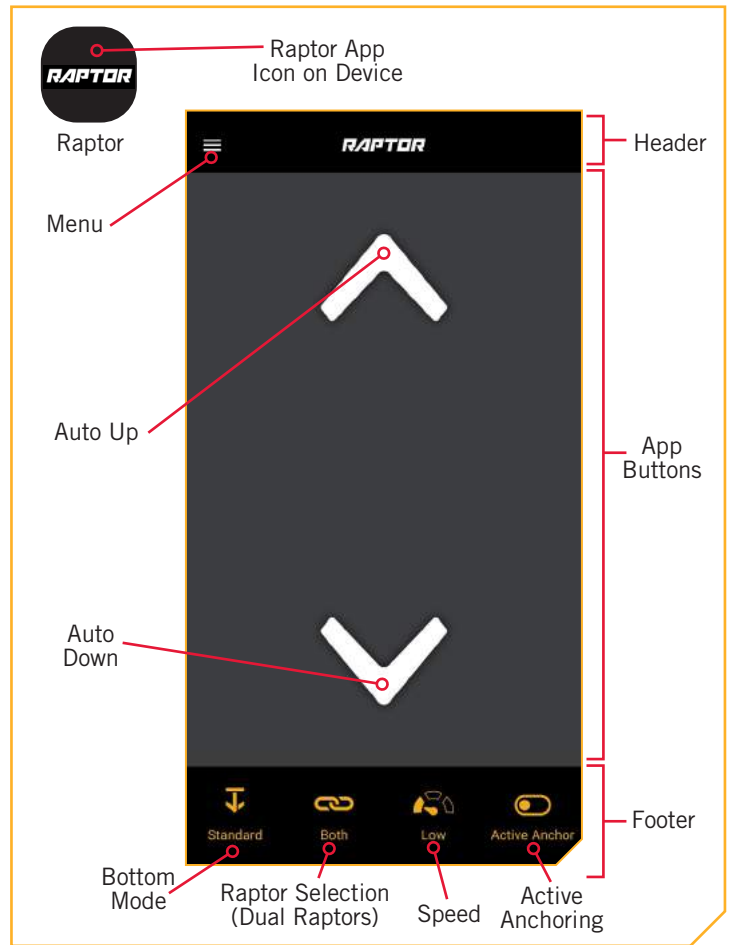
### Auto Down

Double press to auto deploy the anchor. Double press and hold the second press to continually deploy the anchor. The anchor will continue to deploy when the button is held until it reaches its full range of operation or until the button is released.



### Pause

When pressed it interrupts the current action. The Raptor(s) will remain at the current depth until another command is sent. The action for both deploying and retracting the anchor can be paused. The pause button may appear in place of the Auto Up or Auto Down buttons during deploying or retracting and will disappear when pressed while the unit is paused.



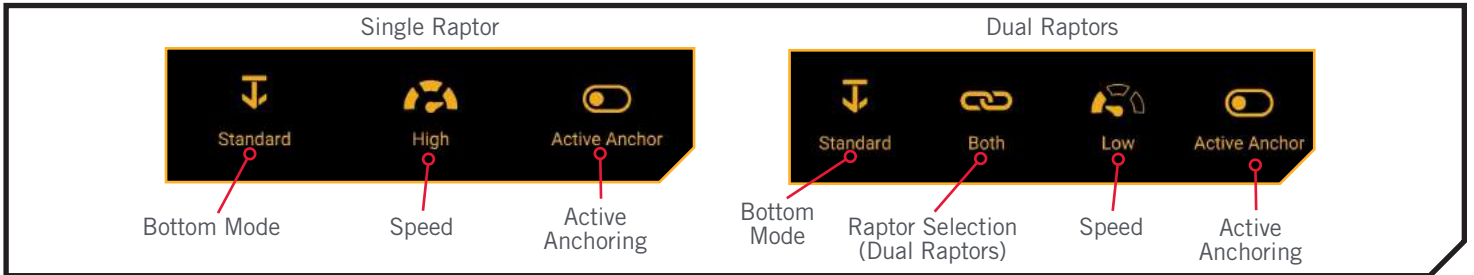
### Direction Indication

Shows the direction of deployment and retraction when the Raptor is in use.

**NOTICE:** Specifications subject to change without notice. This diagram is for reference only and may differ from your actual app interface. The Raptor App will only work with Bluetooth® enabled Raptors. Be sure that you download the correct app as other Minn Kota® apps will not work with your Raptor.

**NOTICE:** Active Anchoring is only available in select models and the selection will be disabled in the Standard Model.

FOOTER >



### Standard Mode

When put in Standard Mode, the Mode Indicator LED in the Indicator Panel will toggle between red and green ● ● ● ● and then turn off.



### Rough Water Mode

In Rough Water Mode, the Mode LED on the Indicator Panel will be lit red ●. In Rough Water Mode, the anchor will operate with maximum down-force when anchoring.



### Soft Bottom Mode

In Soft Bottom Mode, the Auto Deploy will operate at a reduced power with a single hit. During calm conditions or on water with muddy or soft sandy bottoms, Soft Bottom Mode will prevent the Raptor from over-anchoring. In Soft Bottom Mode, the Mode Indicator LED will flash green ● on the Indicator Panel.



### Auto Bottom Mode

In Auto Bottom Mode, the anchor uses pressure readings to determine how best to anchor the Raptor. Auto Bottom Mode is only available on Raptor's equipped with Active Anchoring and is identified by a Mode LED ● ● ● ● that flashes slowly from green to green and then red to red when activated.



### Raptor Selection - Both

Indicates both the Port and Starboard Raptors are selected and will be controlled while operating. Press to Toggle between having both Raptors selected or controlled individually. This option is only seen when the app is set up to control two Raptors.



### Raptor Selection - Individual

Indicates the Raptors will be controlled individually while operating. Press to Toggle between controlling Raptors individually or together.



### Speed Button

Toggles the Speed that the anchor retracts and deploys between low, medium and High. The respective speeds can be set in a Range in the App Menu.



### Active Anchoring

Enables Active Anchoring and allows the Raptor to adjust to changes in pressure while anchored. Active Anchoring is engaged and disengaged by a single press. When the Mode LED ● displays green it is enabled and when the Mode LED ● displays red it is disabled. If Active Anchoring is not available for your model, the selection will be gray.



### Low Battery

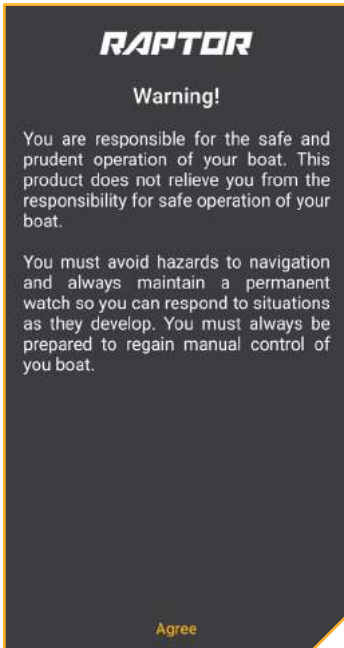
Displayed when the App recognizes that the Raptor is powered by a low battery.

**NOTICE:** The Raptor Selection options are only visible when the Raptor App is set up to control two Raptors.

# THE RAPTOR APP

## LAUNCHING THE APP & DEMO MODE >

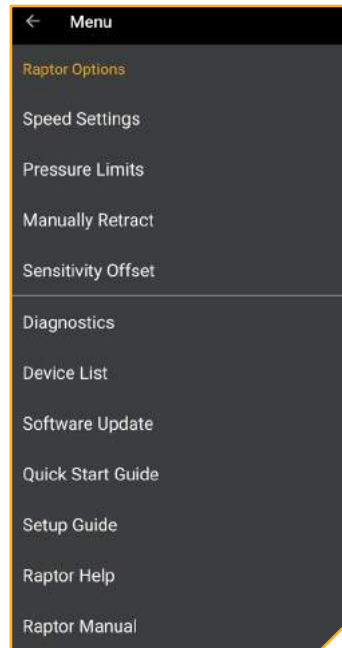
Launching the app when it is not paired with the Raptor will allow you to try it in Demo Mode. The first time the app is launched, you must agree with the disclaimer in order to continue. Become familiar with the app screens in order to understand how to operate your Raptor with the app.



The Disclaimer screen appears when the app is launched for the first time.



The Setup Guide appears after the Disclaimer when the device is not paired or actively communicating with a Raptor.



The Menu brings up a variety of control options for the Raptor. The options will depend on if and how many Raptors are paired.



The Raptor Control Screen when one Raptor is paired to the device. This screen differs slightly when two devices are paired.

## WARNING

You are responsible for the safe and prudent operation of your boat. This product does not relieve you from the responsibility for safe operation of your boat.


You must avoid hazards to navigation and always maintain a permanent watch so you can respond to situations as they develop. You must always be prepared to regain manual control of your boat.



## › Check the Application and Raptor Software Version on the App

When a Raptor is paired with a device, the Raptor app on the device records information about the paired Raptor(s), including the software version installed on each. This information can be used to detect if a Raptor requires a software update. To check the software version on paired Raptor(s), follow the steps below.

1

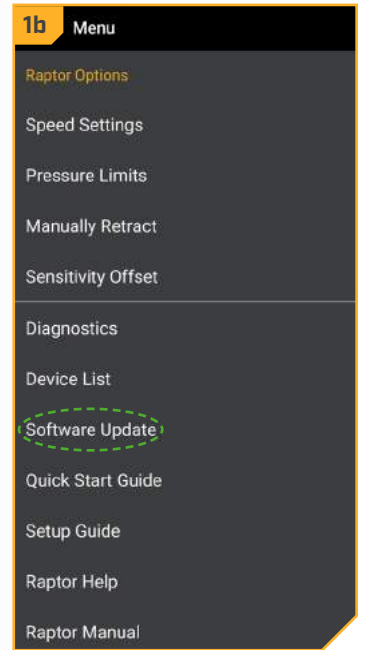
- a. From the Raptor app Home screen, press the Menu  Button.
- b. In the Menu Screen, find the Software Update option and select it.
- c. The Software Updates Screen will appear. The Software List will show any Raptors that are paired with the app and the Raptor App Software Version.

**NOTICE:** Noting the version of the Raptor and/or App, before and after updates, helps to identify if the updates were successful.

**NOTICE:** If the App cannot communicate directly with the Raptor, the App will show the version of software that it detected the last time the device was paired and communicating with the Raptor.

- d. If there are no Raptors paired, the list will only show information for the Raptor App. If Raptors are paired and communicating, the name of each device will be colored white. If the Raptors are paired but are not communicating the Raptor name will be colored gray.

**NOTICE:** If the Raptor App or Raptor software needs an update, the App will list "UPDATE" next to it. If the software is up-to-date, the App will list "Up to Date".





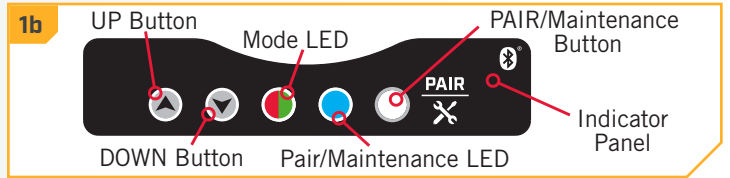
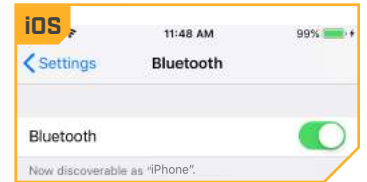
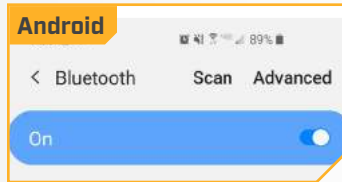
# THE RAPTOR APP

## › Pairing a Device with a Single Raptor

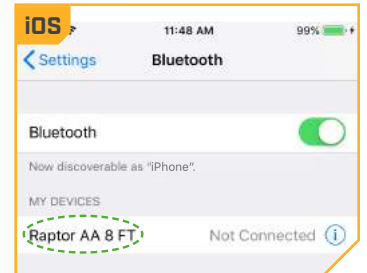
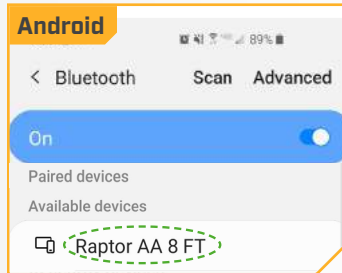
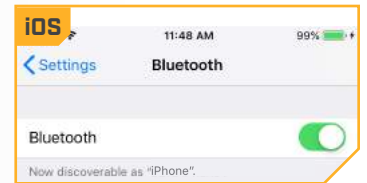
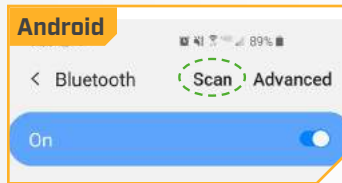
The Raptor App can be used to control the Raptor using a device that is paired to the Raptor with a Bluetooth connection. Before pairing the device with the Raptor, the Raptor App should first be successfully downloaded. You can confirm that the app was successfully downloaded by opening it on your device. Once confirmed, close the App to begin the pairing process.

**NOTICE:** Your device will only be able to connect to a Raptor and be paired if the device is Bluetooth enabled.

- 1 a. On the device you intend to pair with the Raptor, turn Bluetooth “on” and keep your device on that screen.
- b. Press the Pair  button on the Indicator Panel located on the Raptor Pump Assembly. The PAIR/Maintenance LED will begin to flash  blue. The Raptor will go into Pairing Mode for 30 seconds.



- 2 c. If on an Android device, select the Scan button to begin the process on your device. On an iOS device, as soon as the Bluetooth menu is opened, the scan starts automatically. The Raptor will appear on the list of available devices once it is recognized by the device.
- d. Select the Raptor from the list of available devices. This will pair the Raptor to the device. Once you hear the beeps, the Raptor is successfully paired.



**NOTICE:** When the device Bluetooth is scanning for the Raptor, the Raptor must be in Pairing Mode. If the Raptor or the device time out, the process on both will need to be re-initiated.

- 3 f. In order for the device and your Raptor to stay connected, Bluetooth needs to remain "on". Once the device is paired with the Raptor, the device will connect and begin communicating with each other. When the Raptor is paired to the device and communicating with it, the Raptor App will automatically recognize that the Raptor is paired.
- g. If the pair is unsuccessful, repeat the process.

**NOTICE:** When a device is paired with the Raptor, the paired device and Raptor know each other. When a paired device and a Raptor are connected they can actively communicate with each other. In order for the Raptor App to detect the Raptor, it needs to be paired and communicating with the Raptor.



## › Pairing a Device with Two Raptors

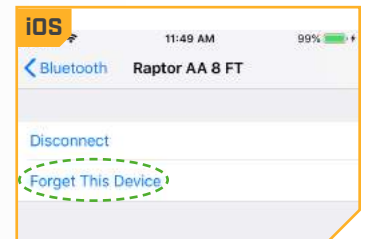
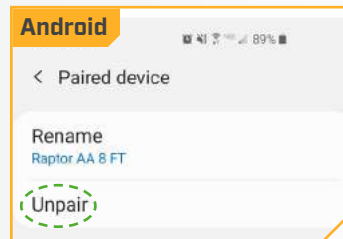
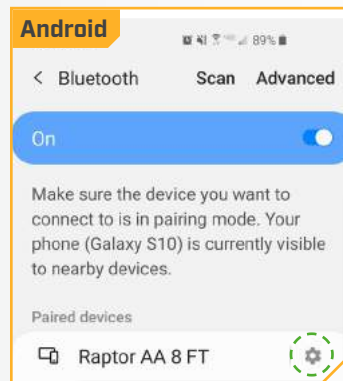
In order for the Raptor App to pair two Raptors to the device, the Raptors first need to be paired together. To learn how to pair two Raptors together, read the "Pairing Two Raptors and Programming the Mounting Location" section of the Raptor Manual. Once the Raptors are paired together, follow the directions for "Pairing a Device with a Single Raptor". Only one Raptor needs to be paired with the device where the Raptor App is installed.

## › Forgetting a Raptor on a Device

Once a device is paired to a Raptor, it will remember the device, even if the device and the Raptor are not actively communicating. In some cases, it may be necessary to clear the memory on the device and forget any paired Raptors. To do this, use the Bluetooth settings on the device.

1

- a. Open the Bluetooth settings on the device.
- b. A list of paired devices will appear. The appearance of the list from an Android to an iOS device will look different.
- c. On an Android device, select the Settings  icon next to the device in the list of Paired Devices. When the next screen appears, find the option to Unpair the device and select it.
- d. On an iOS device, select the "i"  icon next to the device in the list of My Devices. When the next Screen appears, find the option to Forget this Device and select it.
- e. Once the device is unpaired or forgotten, the device is no longer paired or communicating with the device and will not be visible to the Raptor App or device.




## › Raptor Control and Disable Auto-Lock

Most devices are programmed to Auto-Lock the device screen after a certain amount of time has lapsed where the device has been inactive. In these cases, when the user had the Raptor app open to control the Raptor and returns to the device, the screen may be locked. In order to control the Raptor, the device will first need to be unlocked to control the Raptor with the app. This Auto-Lock feature can be disabled from the Raptor app in order to immediately control the Raptor after the device has been inactive. To turn Auto-Lock "on", open the Raptor app and navigate to the Menu. Scroll to the bottom of the Menu and find the Disable Auto-Lock setting. When the toggle is slid "on" and appears yellow, the Disable Auto-Lock is engaged and will prevent the device screen from locking when the device experiences moments of inactivity. With this feature enabled, the device will immediately control the Raptor.

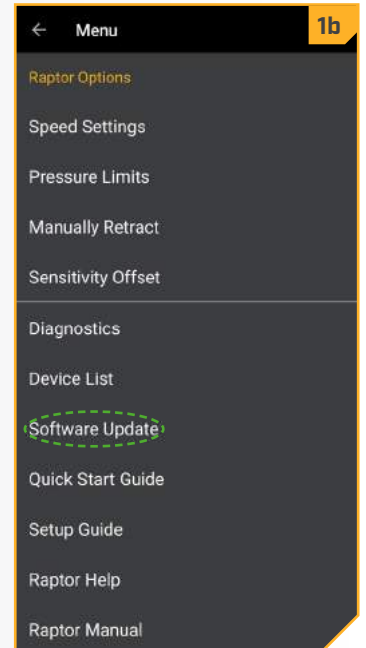
# THE RAPTOR APP

## Update the Raptor from the Raptor App

Raptor software updates are performed through the Raptor app. The Raptor must be paired and communicating with the device through a Bluetooth connection in order for the Raptor to be updated.

- 1**
- Open the Raptor App. From the Raptor Home Screen select the Menu  Button.
  - With the Menu open, select "Software Update".

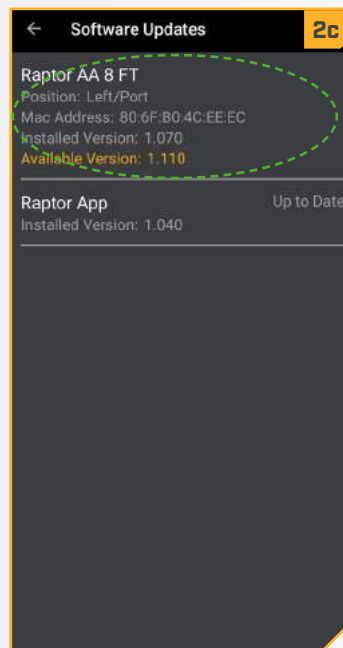
**NOTICE:** The Raptor App will be updated on iOS devices through the Apple App store or on Android™ devices through the Google Play Store.



- 2**
- The Software Update screen will list all Paired Raptors. If a software update is available for a Raptor, an "Available Version" will be listed. If the App detects that the Raptor(s) is/are up to date, it will list "Up to Date".

**NOTICE:** If there is a single Raptor in the system, only one Raptor will be listed. If two Raptors are paired together, both Raptors will be listed. If the App is not actively communicating with the Raptor(s), the Raptor App will list the last known software installed on the Raptor. The App must be paired and actively communicating with the Raptor in order to install the update.

- After the Raptor is chosen, select "UPDATE" to begin the update.

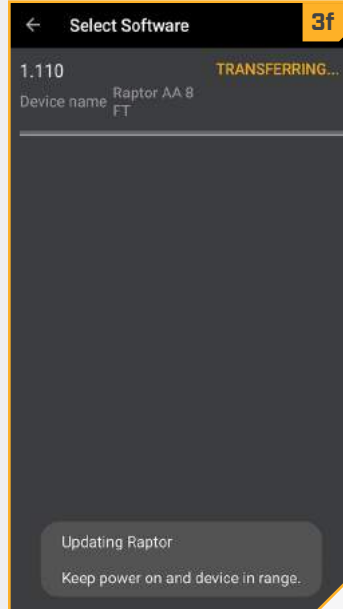
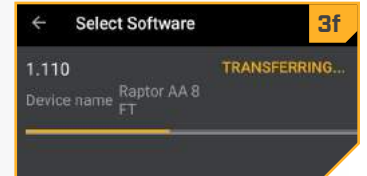
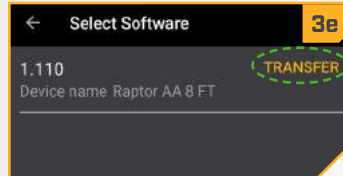


## 3

- e. By selecting "UPDATE" the software will load and prepare. When ready, the app will read "TRANSFER". Select "TRANSFER" to push the update to the Raptor.
- f. The app will transfer the software to the Raptor. Keep the device in range to allow communication via the Bluetooth enabled devices so that all the software transfers.

**NOTICE:** While transferring, the App on an Android device will read, "Updating Raptor - Keep power on and device in range." The App on the Android will then read "TRANSFERRING..."

**NOTICE:** If you have a dual Raptor system, the App will push the software update to one of the Raptors. The first Raptor to receive the update will push the Raptor to the paired Raptor in the dual System. When the software transfer to the second Raptor in the system is complete, both Raptors will reboot simultaneously.

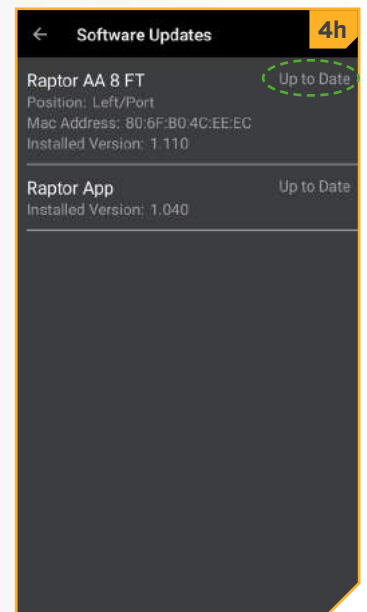


## 4

- g. When the transfer is complete, the Raptor App on an Android will flash a message "Raptor Update Complete. Raptor is restarting."
- h. When the App returns to the Software Update Screen, the Raptor will read "Up to Date"


**NOTICE:** On an iOS device, the App will close when the software update is complete. To confirm that the update worked, reopen the App, and select the Menu ☰ Button. With the Menu open, select "Software Update" to check the update Status.


**NOTICE:** All paired remotes must be repaired to the Raptor when the Raptor software is updated. When the paired remotes are repaired, the software updates will be pushed to the remote. For details on how to Pair the remote to the Raptor, see the "Pairing the Raptor" section of this manual.



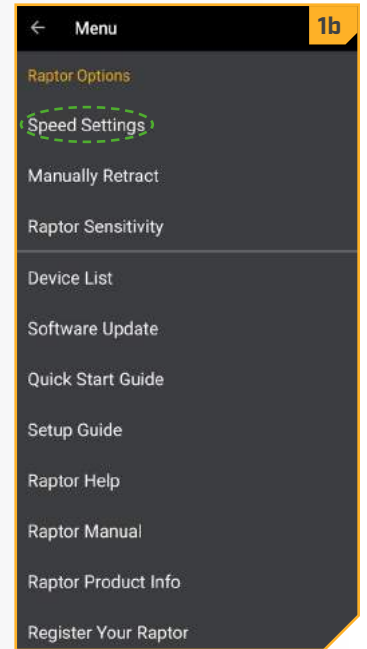
# THE RAPTOR APP

## Change the Range of Speed for the Raptor Speed Button

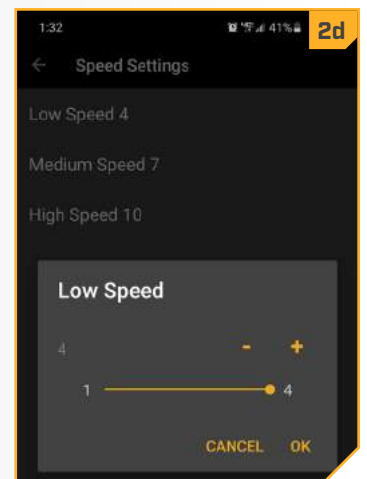
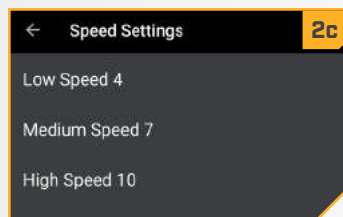
The Raptor Speed can be toggled between Slow, Medium and Fast from the App using the Speed  Button. The Slow, Medium and Fast Speed can be controlled further by changing the range of each option to fit personal preference. Slow can be adjusted from 1 to 4 with the default set to 4. Medium can be adjusted from 5 to 7 with the default is set to 7, and Fast is adjusted from 8 to 10 with the default being 10. Within the range of options, the lower the number, the lower the speed, the higher the number, the quicker the Raptor will move at the selected speed. Follow the instructions below to adjust the range of the Speed for each option.

- 1
  - a. Open the Raptor App. From the Raptor Home Screen select the Menu  Button.
  - b. With the Menu open, select "Speed Settings". This opens the Speed Settings.

**NOTICE:** If changing the Speed on a dual Raptor system, changing the Speed for one Raptor will change the Speed for both Raptors.



- 2
  - c. The menu for Speed Settings will list a separate selection each for Low Speed, Medium Speed and High Speed. The current selection for each Speed will also list the default, or currently selected Speed which will start at 4, 7 and 10 respectively.
  - d. To edit the current selection select the Speed you would like to adjust. When selected, the Speed will bring up a sliding range for the selected Speed. If Low Speed is selected, the full range will appear along the sliding bar and the selected speed will be reflected by the status of the bar. Use your finger to slide along the range or select the (+) or (-) option on the screen. When happy with the selection, close the menu by selecting "OK". If you want to keep the previous selection, select "CANCEL" to close the sliding bar.




## Adjusting Raptor Sensitivity

Raptor Sensitivity is a setting that controls the final position of the Raptor when it is deployed and stowed. The Sensitivity of the Raptor when it is stowed is the Up Sensitivity and when it is deployed is the Down Sensitivity. Sensitivity for both Up and Down range from -10 to 10 with the default being 0. In a Dual Raptor system, the ideal sensitivity may not be the same for both Raptors and should be adjusted independently.

**Up Sensitivity** - When the Raptor is completing the stow sequence when responding to Auto Up, and it is not fully stowed when the sequence is complete, the Up Sensitivity should be turned down. If the Raptor is completing the stow sequence and the Hydraulic Pump continues to run after the Raptor is fully stowed, the Up Sensitivity should be turned up.

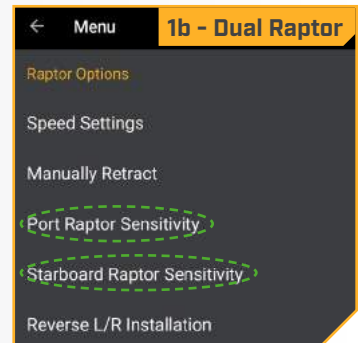
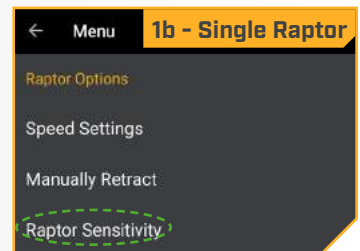
**NOTICE:** If Raptors are pulsing upwards when NOT stuck in mud, decrease Up Sensitivity setting.

**Down Sensitivity** - When the Raptor is completing the deploy sequence and when responding to the Auto Down, and the Raptor does not fully deploy, the Down Sensitivity should be turned down. If the Raptor is completing the deploy sequence and the Hydraulic Pump continues to run after the Raptor is fully deployed, the Down Sensitivity should be turned up.

- 1 a. Open the Raptor App. From the Raptor Home Screen select the Menu  Button.

**NOTICE:** Sensitivity is a setting that can be adjusted specific to every Raptor. In a Dual Raptor system, the Sensitivity can be adjusted separately for both Raptors in the system.

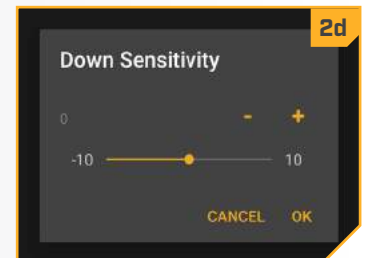
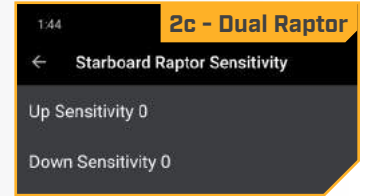
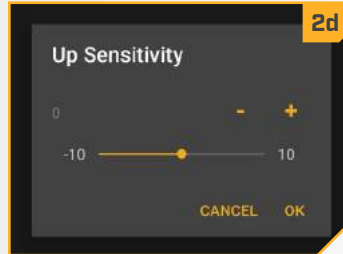
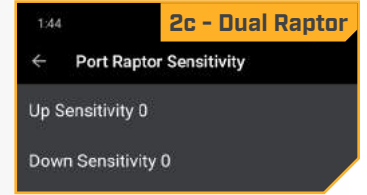
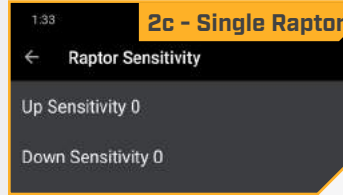
- b. On a single Raptor system select "Raptor Sensitivity". On a dual Raptor System, select either "Port Raptor Sensitivity" or "Starboard Raptor Sensitivity".



# THE RAPTOR APP

## 2


- c. The Raptor Sensitivity will list a selection for "Up Sensitivity" and "Down Sensitivity". The default or currently selected sensitivity will follow the selection.
- d. To change the Sensitivity, select which one you would like changed. A sliding scale for the sensitivity selected displays. The range will go from -10 to 10 with the default in the middle at 0. Use your finger to slide along the range or select the (+) or (-) option on the screen. When happy with the selection, close the menu by selecting "OK". If you want to keep the previous selection, select "CANCEL" to close the sliding bar.

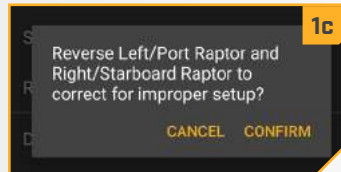
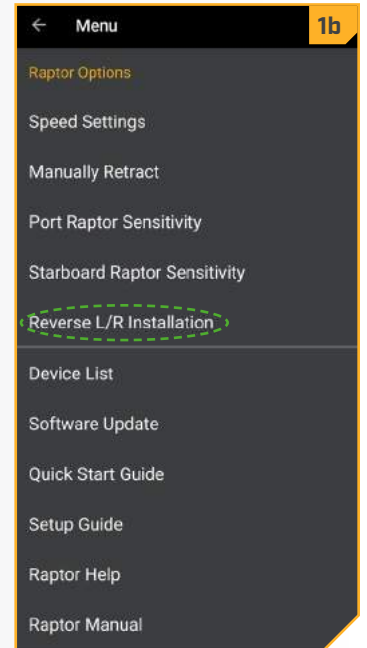




## Reverse Raptor Left/Port and Right/Starboard Installation

The Reverse L/R Installation selection is only available on the App Menu when a dual Raptor System is set up. This selection is used to reverse the mounting location as recognized in the Raptor system.

- 1
  - a. Open the Raptor App. From the Raptor Home Screen select the Menu  Button.
  - b. With the Menu open, select "Reverse L/R/ Installation".
  - c. When selected, a dialogue box opens that asks, "Reverse Left/Port Raptor and Right/Starboard Raptor to correct for improper setup?". Select "CONFIRM" to reverse the current setup or "CANCEL" to leave it.



# SERVICE & MAINTENANCE

## ⚠ CAUTION

Before beginning any maintenance work, disconnect the Raptor from the battery or if connected to a battery selector switch or power disconnect switch, make sure that it is turned to the "off" position. Failure to disconnect power during maintenance work may result in shock, unexpected operation and/or injury. Minn Kota recommends having the Raptor serviced by an qualified marine technician at an Authorized Service Center.

## REPLACING THE REMOTE BATTERY

### TOOLS AND RESOURCES REQUIRED >

- Large Coin

### INSTALLATION >

## ⚠ WARNING

Do not ingest battery. Chemical Burn Hazard.

## ⚠ WARNING

[The remote control(s) supplied with] This product contains a coin/button cell battery. If the coin/button cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death.

## ⚠ WARNING

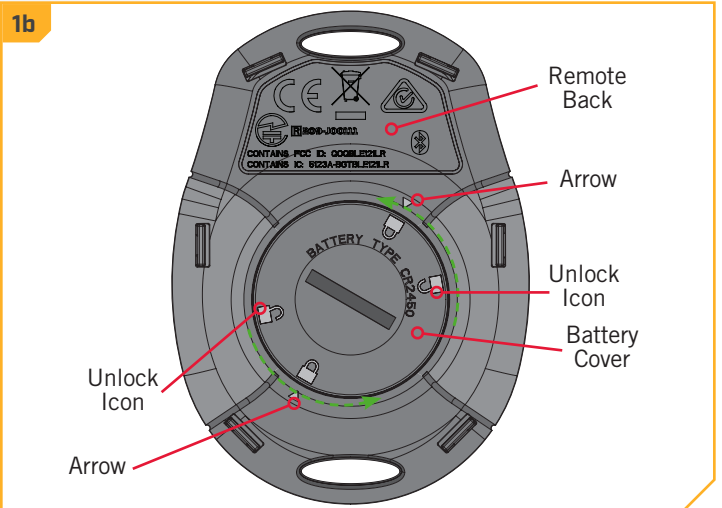
Keep new and used batteries away from children. If the battery compartment does not close securely, stop using the product and keep it away from children. If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention.

- 1 a. Make sure your hands are clean, dry and static free. Temporarily ground yourself by touching a grounded metal object in order to discharge any static electricity in your body.

## ⚠ CAUTION

Static electricity can cause damage to the circuit board. Discharge any static electricity by touching a metal object that is grounded before beginning the remote battery replacement.

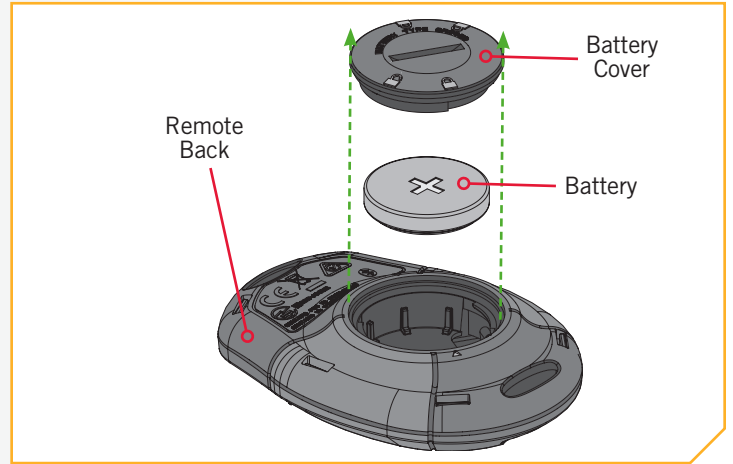
- b. With the back of the Remote facing you, use a large coin to rotate the Battery Cover counterclockwise until either of the Unlock Icons align with the Arrow.



**2**

- c. Remove the Battery Cover and old battery and replace with a new CR2450 coin cell battery. Note the proper polarity of the battery.

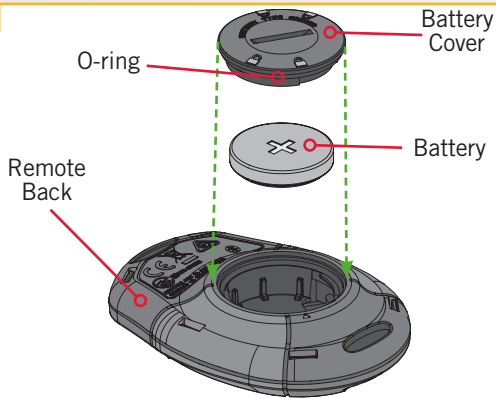
**NOTICE:** The replacement battery must be a model CR2450 coin cell type. It is strongly recommended that a high quality battery is used. The positive (+) of the battery should be facing towards the Battery Cover.



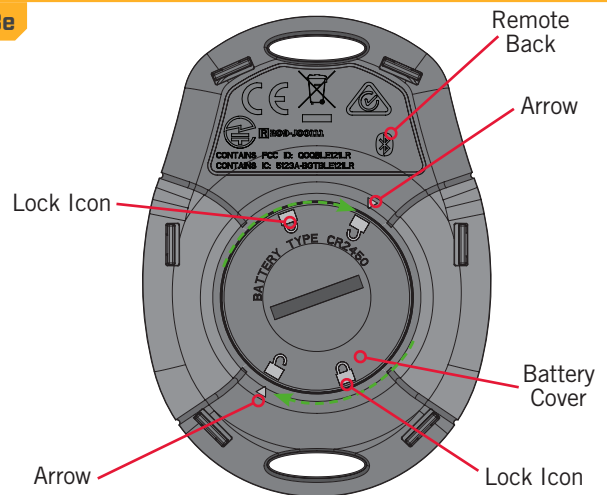
**3**

- d. Ensure the rubber O-ring is properly seated in the underside of the Battery Cover. Replace battery cover by aligning either of the Unlock icons with the arrow, and pressing the cover down.
- e. Rotate the Battery Cover clockwise using the large coin until the Lock Icon aligns with the Arrow.

**3d**



**3e**





# SERVICE & MAINTENANCE

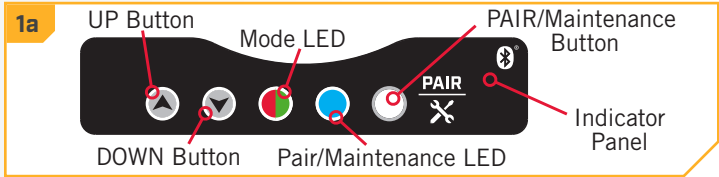
## MAINTENANCE MODE AND OPENING THE BYPASS VALVES

In the event that you ever need to manually move the Raptor for the purpose of stowing, deploying, or perform maintenance work it is important to put the Hydraulic Pump in Maintenance Mode and open the Hydraulic Circuit. The Pump Assembly contains Bypass Valves on the side of the Manifold marked with a "BP". They are used to relieve pressure with the Pressure Wrench after the Pump is put into Maintenance Mode. The Pump Assembly is placed into Maintenance Mode and then the pressure on the Hydraulic Lines is released, this allows the anchor to be stowed and deployed manually if the need should arise. When both the Hydraulic Pump is placed into Maintenance Mode AND the Bypass Valves are opened, the Raptor can be controlled manually and Hydraulic Pressure is relieved and able to move. To do this, follow the procedure below.

**WARNING**

Never disconnect hydraulic components while power is applied and bypass valves are not open.

- 1** a. Press and hold the Pair/Maintenance  button on the Indicator Panel, located on the Pump Assembly. The Pump will beep three times consecutively to confirm that the Pump is in Maintenance Mode. The Pair/Maintenance LED  will illuminate blue and will stay lit while in Maintenance Mode.



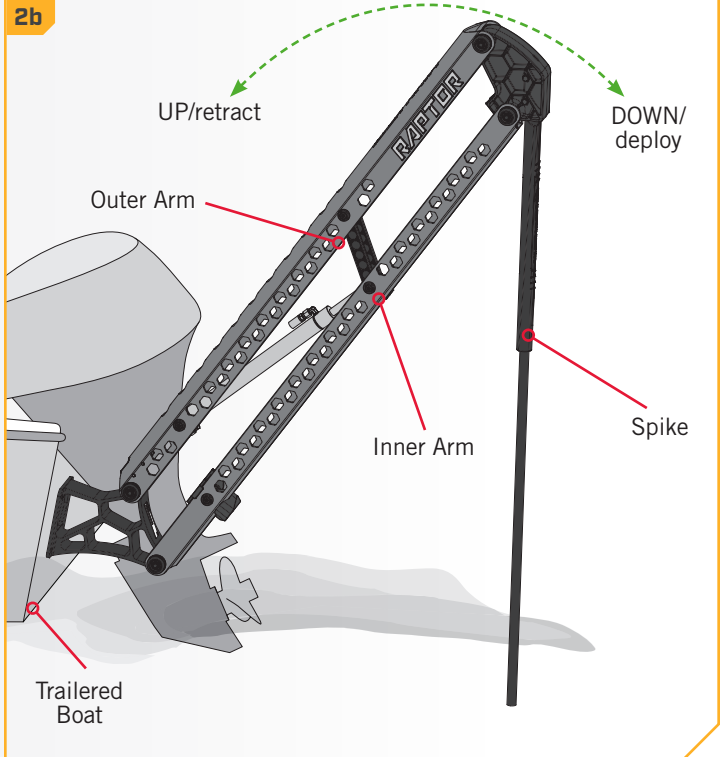
**NOTICE:** When a Hydraulic Pump is put in Maintenance Mode, it disables the control of any devices or remotes that were paired and able to control the Pump. When two Raptors are Paired together, the disabled control is specific to the Hydraulic Pump placed in Maintenance mode. If the second Raptor, in a Paired system is not placed in Maintenance mode, the devices and remotes are still able to control the Raptor not placed in Maintenance Mode. The Maintenance Mode status is independent for Two Raptors paired together.

2

- b. If the Raptor is retracted, even if only partially, secure the Spike and/or make sure the path of travel for the Raptor is clear so that the Raptor will not pose a striking hazard when the Bypass Valves are opened. Keep fingers clear of pinch points and moving parts.

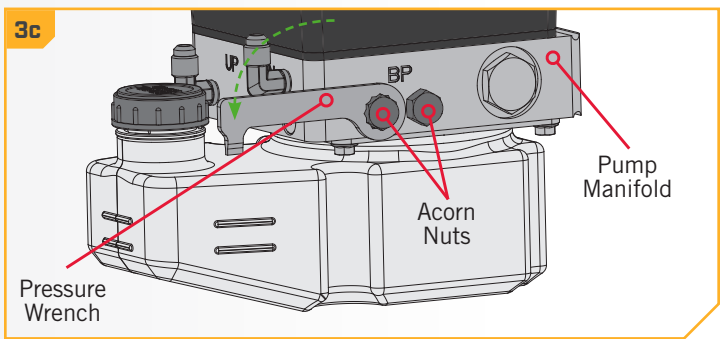
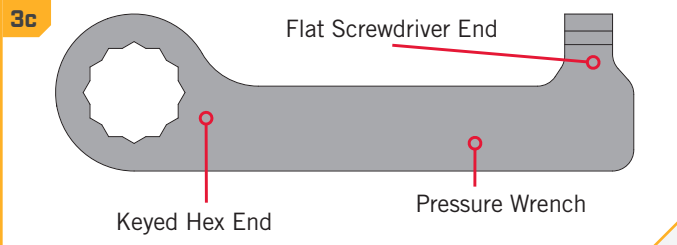
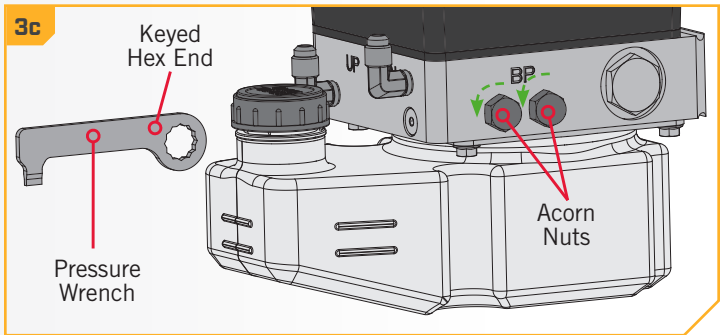
## CAUTION

Be sure that the Raptor is clear of obstructions and persons while deploying or retracting. The spaces between the Outer Arm, Inner Arm, Spike and brackets of the Raptor can create a pinch point. Do not come in contact with an area of the Raptor that may cause a pinch point while it is moving in any direction to avoid the risk. Stay clear of the anchor if it is not held in place under the power of the Hydraulic Circuit or physical restraint. Lack of Hydraulic Pressure when the Hydraulic Circuit is open can result in a striking hazard created by the force of gravity on an unsecured anchor. Secure the Spike to avoid the risk.



3

- c. The Pressure Wrench (Part No. 2358800) will be used to open the Bypass Valves on the Hydraulic Pump. The Pressure Wrench has two ends. The Keyed Hex End is used to loosen the Acorn Nuts covering the Bypass Valves on the side of the Pump Manifold and the Flat Screwdriver End is used to open the valves. Locate the Acorn Nuts on the side of the Hydraulic Pump Manifold. The Acorn Nuts are marked with "BP". Use the Keyed Hex End of the Pressure Wrench to loosen and remove both Acorn Nuts covering the Bypass Valves by turning counterclockwise. With the Acorn Nuts removed, set them aside in a secure location for reinstallation later.



## SERVICE & MAINTENANCE

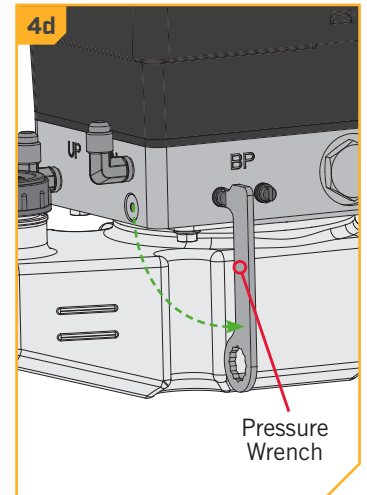
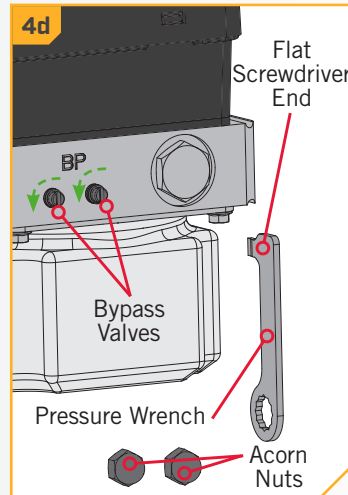
4

- d. Flip the pressure Wrench over and use the Flat Screwdriver End of the Wrench to turn both Bypass Valves one turn in a counterclockwise direction to open the Hydraulic Circuit. Turning the Bypass Valves more than one turn, or continuing to turn the Bypass Valves counterclockwise will not increase the degree to which the Hydraulic Circuit is opened. Do not turn the Bypass Valves so much that they become removed. Additional turning of the Bypass Valve will not increase the amount of relief on the Hydraulic Circuit. Once the Circuit is relieved, the Raptor anchor can be manually adjusted into the desired position.



### CAUTION

When making changes to the Hydraulic Circuit, it is recommended to secure the Raptor for transport. This includes when taking the Raptor in and out of Maintenance Mode. Securing the Raptor will prevent unexpected deployment that may result from changes to pressure in the Hydraulic Circuit.



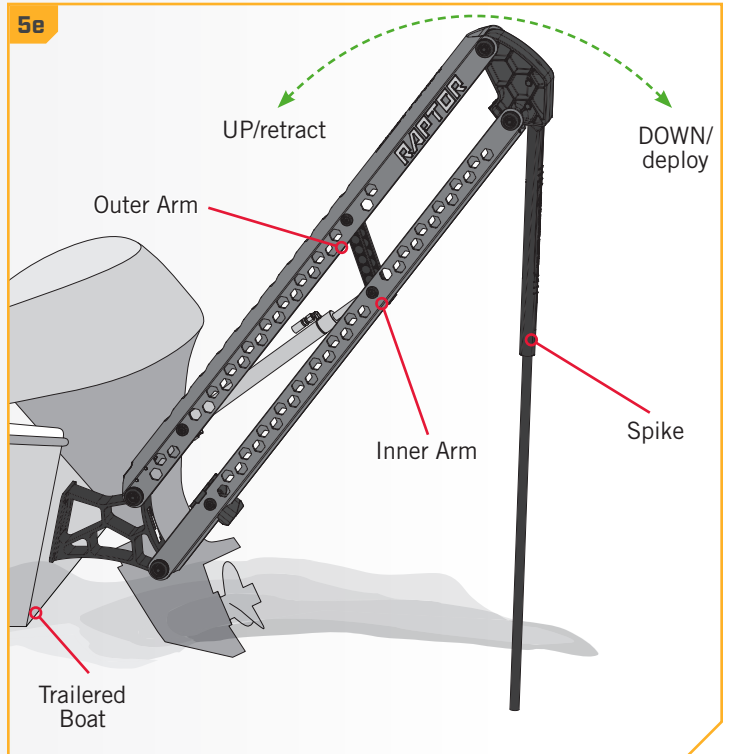
5

- e. The anchor can now freely move into the desired position. Move the Anchor into the desired position and secure it. It may be necessary to have a second person help you move and secure the anchor.

**CAUTION**

Be sure that the Raptor is clear of obstructions and persons while deploying or retracting. The spaces between the Outer Arm, Inner Arm, Spike and brackets of the Raptor can create a pinch point. Do not come in contact with an area of the Raptor that may cause a pinch point while it is moving in any direction to avoid the risk. Stay clear of the anchor if it is not held in place under the power of the Hydraulic Circuit or physical restraint. Lack of Hydraulic Pressure when the Hydraulic Circuit is open can result in a striking hazard created by the force of gravity on an unsecured anchor. Secure the Spike to avoid the risk.

**NOTICE:** Placing the Hydraulic Pump into Maintenance Mode disables other methods of control for the Pump including paired remotes and devices through Bluetooth connections. If two Raptors are paired together, placing one Raptor into Maintenance mode will NOT place the other paired Raptor into Maintenance Mode. If two Raptors are Paired, they each need to be placed into Maintenance Mode in order for paired devices and remotes to be disabled for both Raptors.

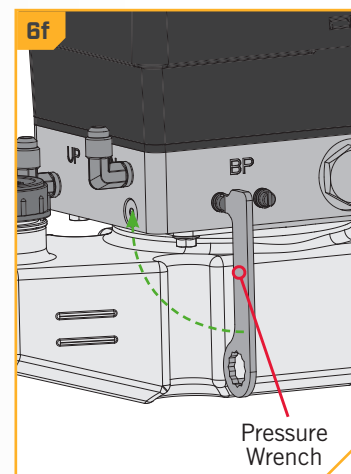
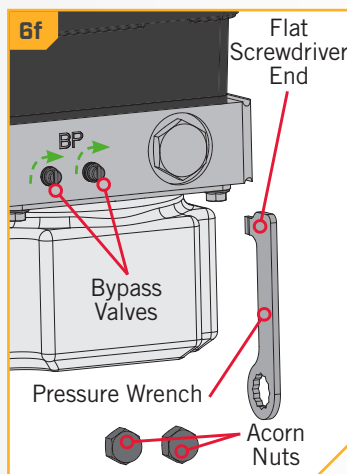


**NOTICE:** Removing power from the Hydraulic Pump takes it out of Maintenance Mode. If power is re-applied to a Hydraulic Pump that was in Maintenance Mode before power was removed, when power is restored, the Hydraulic Pump will no longer be in Maintenance Mode.

## SERVICE & MAINTENANCE

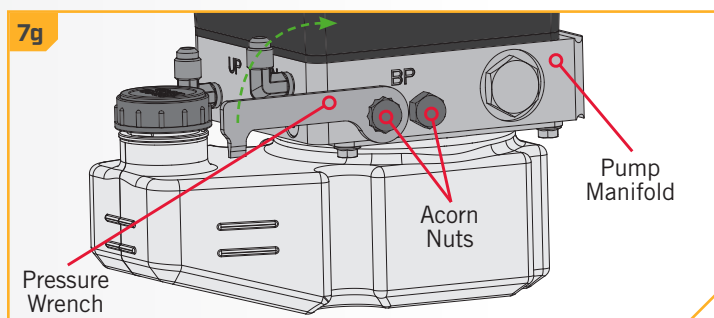
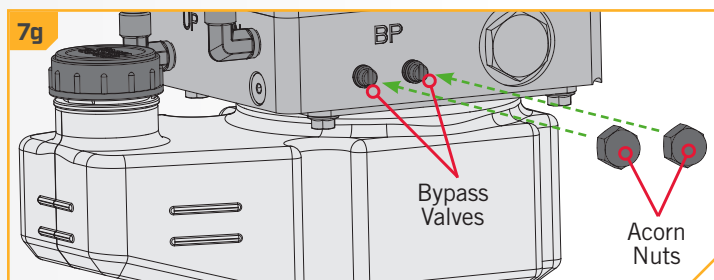
6

- f. With the anchor in the desired position, use the Flat Screwdriver End of the Pressure Wrench to turn both Bypass Valves one turn in a clockwise direction to close the Hydraulic Circuit. Use the Pressure Wrench to hand tighten the Bypass Valves until they are tight. Once the Circuit is closed, the Raptor is held in position from the Hydraulic pressure and should not move freely.





7

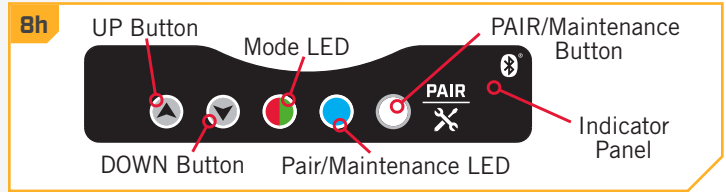
- g. Replace the Acorn Nuts over the Bypass Valves. Use the Keyed Hex End of the Pressure Wrench to tighten and replace both Acorn Nuts covering the Bypass Valves by turning clockwise. Tighten the Acorn Nuts to 120 in-lbs.





**8**

- h. Take the Hydraulic Pump out of Maintenance Mode by pressing the Pair/Maintenance  button on the Indicator Panel, located on the Pump Assembly. The Pump will beep three times consecutively to confirm that the Pump is out of Maintenance Mode. The Pair/Maintenance LED  will turn off. The Hydraulic Pump will be able to then be controlled by any Paired devices and Remotes once Maintenance Mode is disabled.

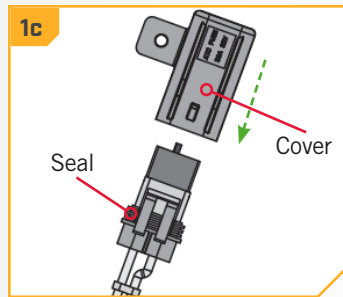
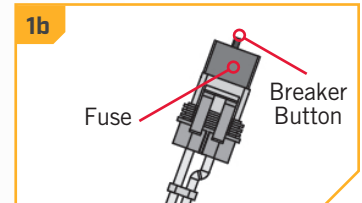
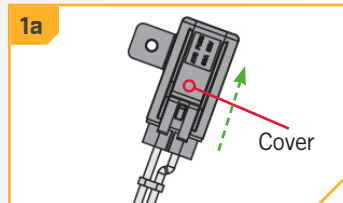


## RESETTING THE FUSE

In the event that you need to reset the factory installed 30 amp Fuse, follow the instruction below. The fuse should be located no more than 7 inches from the Positive Battery terminal on the Positive Lead (+). If an alternate Fuse is installed, please refer to directions by your Fuse manufacturer to correctly reset it.

**1**

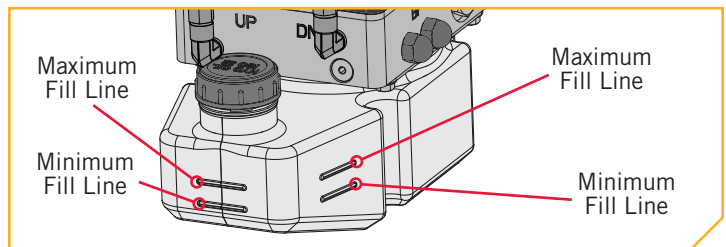
- a. Remove the protective cover from the Fuse Assembly, exposing the 30 amp Fuse.
- b. Reset the Fuse by pushing the Breaker Button to engage the Fuse.
- c. Ensure that the Seal is in place, and replace the protective housing on the Fuse Assembly. Make sure that the Cover snaps together to provide a watertight seal.



## CHECKING HYDRAULIC FLUID LEVELS

The Raptor Pump Reservoir has a minimum and maximum hydraulic fluid level marked on the side of the Pump Reservoir. Maintaining the proper fluid level allows for the proper pump operation. Minn Kota recommends using Biodegradable ISO 32 Marine Hydraulic Fluid. Periodically check fluid levels to make sure that the level of Hydraulic fluid is adequate for pump operation.

Note the color of the hydraulic fluid. If over time the hydraulic fluid becomes discolored, it may be a sign of contamination. Change the fluid and check the seal on the Pump Reservoir, the seal between the Hydraulic hoses and the Hydraulic fittings on the Manifold and the Hydraulic Hoses and the Hydraulic Cylinder on the anchor to ensure that the Hydraulic Circuit remains sealed.



# SERVICE & MAINTENANCE

## REPLACING THE SPIKE

The Spike for your Raptor comes with a lifetime guarantee. See the Warranty section of the manual for further details. In order to replace the Spike, you must be able to safely reach the top of the Raptor anchor. It is recommended to place the Raptor in Maintenance Mode when performing service or maintenance work on the Raptor. See the "Maintenance Mode and Opening the Bypass Valves" section of this manual to place the Raptor in Maintenance Mode before beginning any work on replacing the Spike. Placing the Raptor in Maintenance mode will also allow the Raptor to move freely so that the hardware holding the Spike in place can be accessed. When work is complete, take the Raptor out of Maintenance Mode to return the product to normal operation. In the event that the Spike needs to be replaced, follow the direction below to adjust the bolts and replace the Spike.

**NOTICE:** The Spike Replacement Kit for the 8 foot Raptor is 2772019. The Spike Replacement Kit for the 10 ft Raptor is 2772020.

### TOOLS AND RESOURCES REQUIRED >

- Pin Punch 1/8"
- Hammer
- (2) 7/16" Socket Wrenches

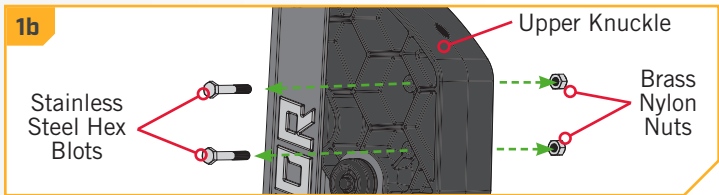
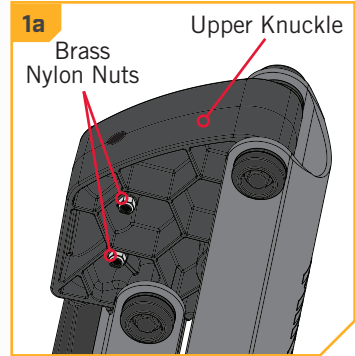
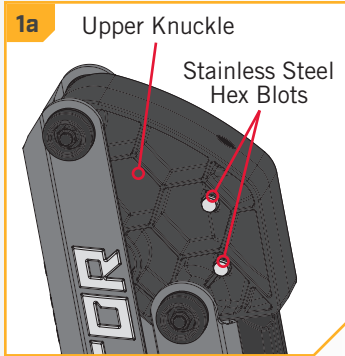
### INSTALLATION >

1

#### CAUTION

Before beginning any maintenance work on the Raptor, that requires the Raptor to be movable, place the Raptor in Maintenance Mode. Failure to place the Raptor in Maintenance Mode may result in shock, unexpected operation and or injury. See the "Maintenance Mode and Opening the Bypass Valves" section on this manual for instruction. Do not remove power from the Raptor while in Maintenance Mode.

- The Upper Knuckle, located at the top of the Raptor, contains two 1/4 - 20 X 1.75 inch Stainless Steel Hex Bolts and two Brass Nylon Nuts that retain the Spike.
- To replace the Spike, take two 7/16 inch socket wrenches and place one on the head of one of the Stainless Steel Bolts. Hold the first Socket Wrench in place and place the second Socket Wrench on the Brass Nylon Nut holding the Hex Bolt in place. While holding the first wrench, turn the second wrench in a counterclockwise direction to loosen and remove the Nut. Pull the Hex Bolt out.
- Repeat the process with the two wrenches on the second Hex Bolt.



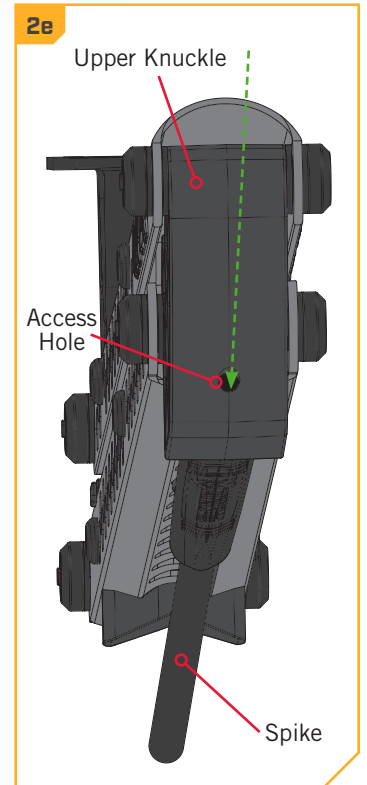
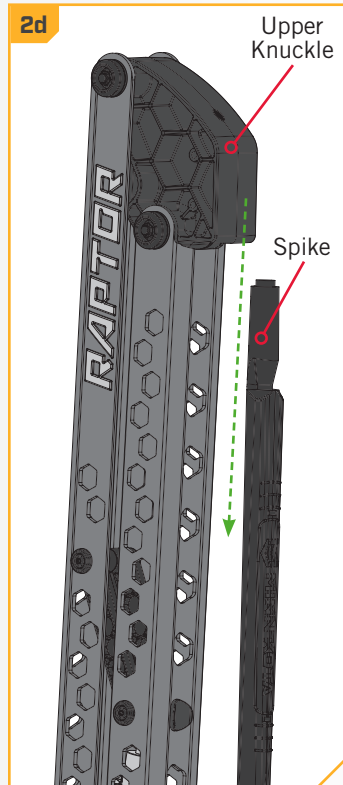
**NOTICE:** It may be necessary to use a socket extension or a deep socket because the Hex Bolts and Brass Nylon Nuts are recessed into the Upper Knuckle.

#### CAUTION

The Raptor may become slippery when wet. Be careful to not slip and fall when working with the Raptor. Do not lean on the Raptor as a support.

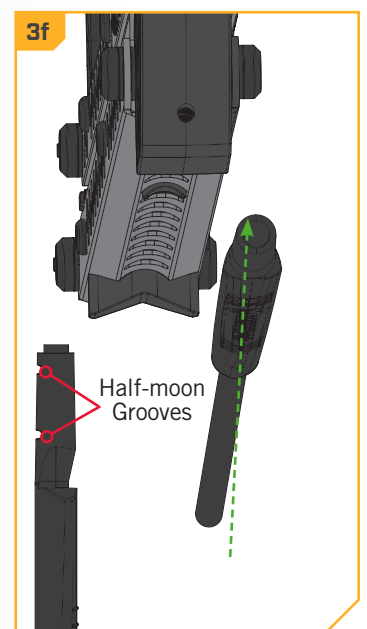
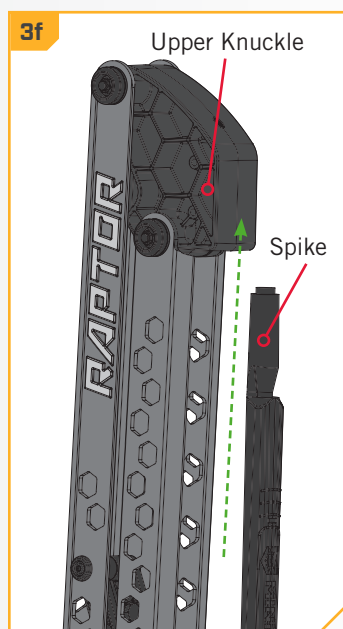
## 2

- d. With the Hex Bolts removed, the Spike should slide out freely. Pull the spike out.
- e. If the Spike does not slide out, there is an Access Hole on the top of the Upper Knuckle. Use an 1/8 inch Pin Punch through the Access Hole and a Hammer to tap the Spike out if it is wedged in place.



## 3

- f. With the Spike removed, take the new Spike and place it back into the Upper Knuckle. Note that the top of the Spike has two a Half-moon Grooves perpendicular to the length of the Spike. This helps orientate the Spike into the Upper Knuckle in the correct direction to be captured by the Hex Bolts. Replace the Spike and align the holes in the top of the Spike with the Half-moon Grooves on the top of the Spike. The logo on the Spike molding should be facing away from the Raptor.



## SERVICE & MAINTENANCE

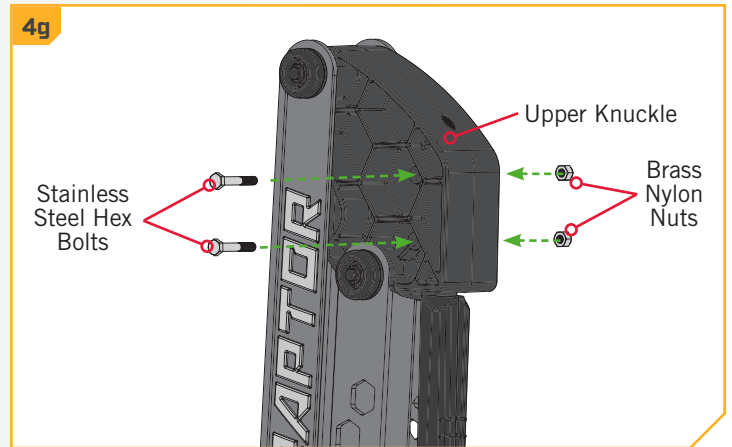
4

- g. With the Spike in place, take the two 1/4 - 20 X 1.75 inch Stainless Steel Hex Bolts and replace them on the Upper Knuckle. Be sure to correctly capture the Spike as the Bolts pass through the Upper Knuckle, past the Spike grooves and exit the other side of the Upper Knuckle.

**NOTICE:** If a Spike Replacement Kit was purchased, use the two new Hex Bolts and two Brass Nylon Nuts from the Kit to reinstall a new Spike.

- h. Take the Brass Nylon Nuts and place one on each of the Hex Nuts.
- i. Using two 7/16 inch socket wrenches to tighten the Nuts and Bolts back in place. One Wrench is placed on the head of one of the Stainless Steel Bolts. Hold the first Socket Wrench in place and place the second Socket Wrench on the Brass Nylon Nut holding the Hex Bolt in place. While holding the first wrench, turn the second wrench in a clockwise direction to tighten to 60 in-lbs and secure the Nut.
- j. Repeat the process with the two Socket Wrenches on the second Hex Bolt.

4g



**NOTICE:** Check the Spike periodically for any wear and fractures. Replace the Spike when excessive wear and/or fractures are present.

## TROUBLESHOOTING

We offer several options to help you troubleshoot and/or repair your product. Please read through the options listed below.

1. Do I need a separate battery to operate the Raptor?
  - No. Minn Kota recommends connecting your Raptor to the starting/cranking battery of your boat.
2. How do I determine where and how to mount the Raptor?
  - This will vary from one boat to the next. It is important to check for proper steering and trimming clearances when laying out your installation. See the "Installation" section of this Manual for detailed instructions.
3. Which side of the boat do I want to install the Raptor?
  - The Raptor can be installed on either side or both sides of the boat. Review the mounting considerations in the "Installation Instructions" section of this document to make sure that the Raptor can be installed at the intended location.
4. How do I know when I should use a mounting adapter bracket?
  - Some boats have irregular-shaped transoms and the standard Raptor mounting bracket cannot be mounted directly to the transom. In other cases there are other accessories such as trim tabs, transducers, poling platforms, etc., that may require additional clearance. Review the mounting considerations in the "Installation" section of this manual and browse the Raptor adapter brackets online at [minnkotamotors.com](http://minnkotamotors.com) to select the proper application for your boat.
5. Why do the battery level readings for the Raptor remote seem sporadic?
  - The Raptor remote is powered by a coin cell battery. The battery level is displayed as a simple voltage measurement, converted to a percent of useable life. The reading is updated about once per hour when the Raptor is in use. The voltage of a coin cell battery can vary drastically based on intensity of prior use and ambient temperature. The voltage change created by these conditions is reflected in the battery reading. The remote battery level is displayed on the following devices when paired to a Raptor system: Humminbird fish finder, i-Pilot or i-Pilot Link remote, and a Bluetooth enabled device such as a tablet or smartphone.

**NOTICE:** For all other malfunctions, visit an Authorized Service Center. You can search for an Authorized Service Center in your area by visiting our Authorized Service page, found online at [minnkotamotors.com](http://minnkotamotors.com), or by calling our customer service number at 800-227-6433.

**NOTICE:** For additional trouble shooting information, including instructional videos, please visit [minnkotamotors.com](http://minnkotamotors.com).

## FOR FURTHER TROUBLESHOOTING AND REPAIR



## FOR FURTHER TROUBLESHOOTING AND REPAIR

We offer several options to help you troubleshoot and/or repair your product. Please read through the options listed below.



### Buy Parts Online

You can buy parts on-line directly from our website at [minnkotamotors.com](http://minnkotamotors.com). Orders confirmed by 12 Noon Central Time, with Overnight Shipping selected, should ship the same business day if the parts are in stock. All other orders should ship within the next 3 business days, depending on the shipment method chosen, and if the parts are in stock.



### Frequently Asked Questions

We have FAQs available on our website to help answer all of your Minn Kota questions. Visit [minnkotamotors.com](http://minnkotamotors.com) and click on “Frequently Asked Questions” to find an answer to your question.



### Call Us (for U.S. and Canada)

Our consumer service representatives are available Monday – Friday between 7:00 a.m. – 4:30 p.m. CST at 800-227-6433. If you are calling to order parts, please have the 11-character serial number from your product, specific part numbers, and credit card information available. This will help expedite your call and allow us to provide you with the best consumer service possible. You can reference the parts list located in your manual to identify the specific part numbers.



### Email Us

You can email our consumer service department with questions regarding your Minn Kota products. To email your question, visit [minnkotamotors.com](http://minnkotamotors.com) and click on “Support”.



### Authorized Service Centers

Minn Kota has over 800 authorized service providers in the United States and Canada where you can purchase parts or get your products repaired. Please visit our Authorized Service Center page on our website to locate a service provider in your area.



Scan to visit Minn Kota service online.

# COMPLIANCE STATEMENTS

## ENVIRONMENTAL COMPLIANCE STATEMENT

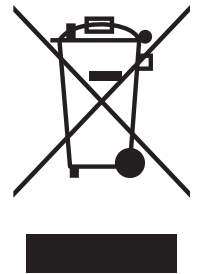
It is the intention of JOME to be a responsible corporate citizen, operating in compliance with known and applicable environmental regulations, and a good neighbor in the communities where we make or sell our products.

### WEEE DIRECTIVE

EU Directive 2002/96/EC “Waste of Electrical and Electronic Equipment Directive (WEEE)” impacts most distributors, sellers, and manufacturers of consumer electronics in the European Union. The WEEE Directive requires the producer of consumer electronics to take responsibility for the management of waste from their products to achieve environmentally responsible disposal during the product life cycle.

WEEE compliance may not be required in your location for electrical & electronic equipment (EEE), nor may it be required for EEE designed and intended as fixed or temporary installation in transportation vehicles such as automobiles, aircraft, and boats. In some European Union member states, these vehicles are considered outside of the scope of the Directive, and EEE for those applications can be considered excluded from the WEEE Directive requirement.

This symbol (WEEE wheelie bin) on product indicates the product must not be disposed of with other household refuse. It must be disposed of and collected for recycling and recovery of waste EEE. Johnson Outdoors Inc. will mark all EEE products in accordance with the WEEE Directive. It is our goal to comply in the collection, treatment, recovery, and environmentally sound disposal of those products; however, these requirements do vary within European Union member states. For more information about where you should dispose of your waste equipment for recycling and recovery and/or your European Union member state requirements, please contact your dealer or distributor from which your product was purchased.



### DISPOSAL

Minn Kota Raptors are not subject to the disposal regulations EAG-VO (electric devices directive) that implements the WEEE directive. Nevertheless, never dispose of your Minn Kota Raptor in a garbage bin but at the proper place of collection of your local town council.

Never dispose of battery in a garbage bin. Comply with the disposal directions of the manufacturer or his representative and dispose of them at the proper place of collection of your local town council.

## REGULATORY COMPLIANCE INFORMATION

### › Raptor

**CONTROLLER :** 2354041 - WITHOUT ACTIVE ANCHORING  
2354040 - WITH ACTIVE ANCHORING

- IC: 4397A-RAPTORCTR
- FCC ID: T62-RAPTORCTR



**REMOTE : 2994156**

- IC: 4397A-RAPTORREM
- FCC ID: T62-RAPTORREM



# COMPLIANCE STATEMENTS



## FCC COMPLIANCE

This device complies with Part 15 of the FCC rules. **Operation is subject to the following two conditions:**

1. This device may not cause harmful interference.
2. This device must accept any interference that may be received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by Johnson Outdoors Marine Electronics, Inc. could void the user's authority to operate this equipment.

**NOTICE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. **If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:**

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## INDUSTRY CANADA COMPLIANCE

This product meets the applicable Industry Canada technical specifications. Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Changes or modifications not expressly approved by Johnson Outdoors Marine Electronics, Inc. could void the user's authority to operate this equipment.

## ENVIRONMENTAL RATINGS

Ambient operating temperature range: -10C to 50C

Ambient operating humidity range: 5% to 95%

Maximum operating altitude: 10,000 feet

## RADIO OPERATION

### CONTROLLER

- Frequency band: 2402 MHz to 2480 MHz
- Maximum RF power transmitted: +10 dBm

### REMOTE

- Frequency band: 2402 MHz to 2480 MHz
- Maximum RF power transmitted: +10 dBm

## TRADEMARKS

Minn Kota®, Humminbird®, i-Pilot® and i-Pilot® Link™ are trademarked by or registered trademarks of Johnson Outdoors Marine Electronics, Inc.

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Android is a trademark of Google LLC.

## CE MASTER USER MANUAL [FOR CE CERTIFIED MODELS]





# PARTS DIAGRAM & PARTS LIST

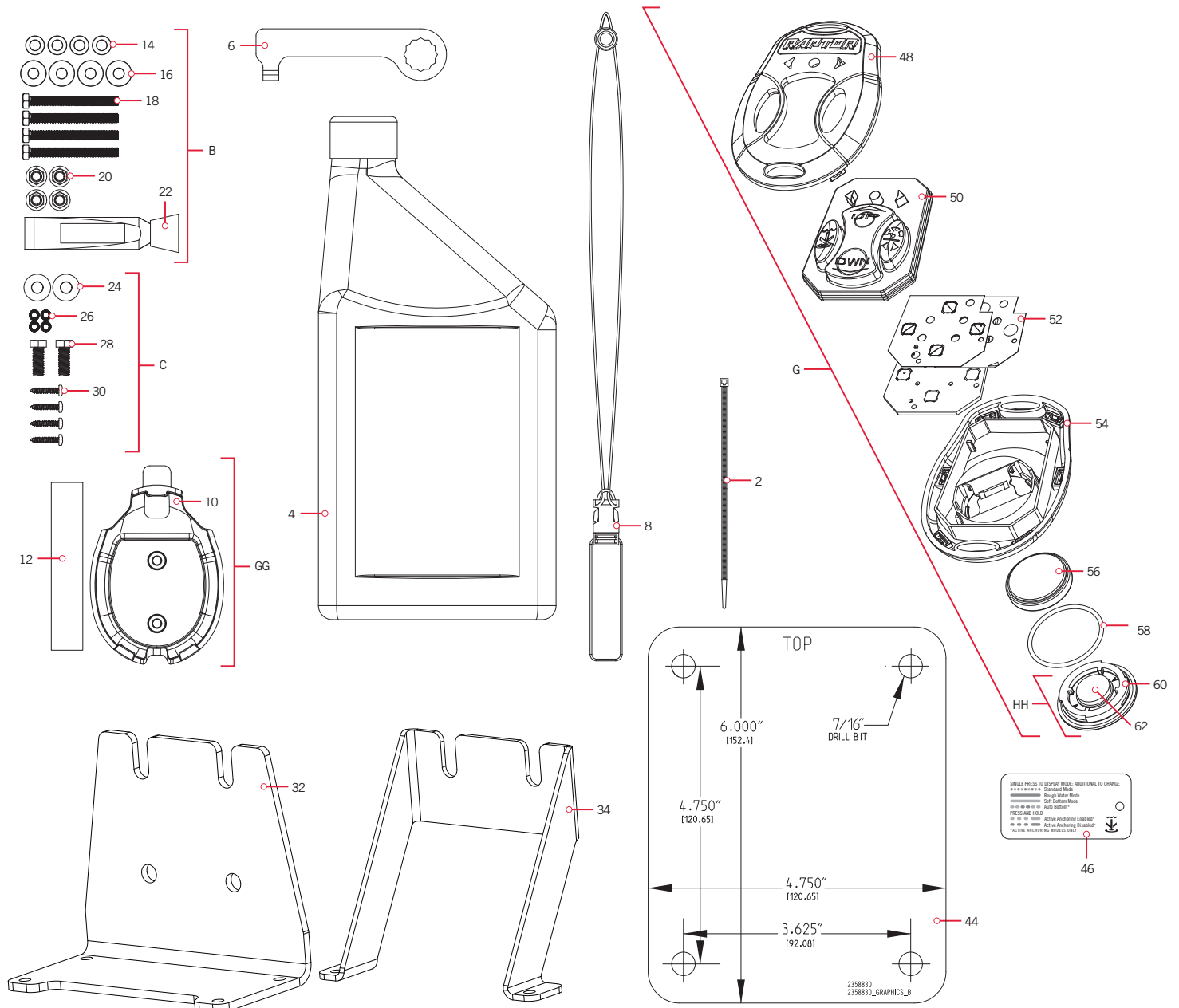
## RAPTOR

### 12 VOLT - 8'/10' RAPTOR

The parts diagram and parts list provide Minn Kota® WEEE compliance disassembly instructions. For more information about where you should dispose of your waste equipment for recycling and recovery and/or your European Union member state requirements, please contact your dealer or distributor from which your product was purchased. Tools required, but not limited to: flat head screwdriver, Phillips screwdriver, socket set, pliers, wire cutters.

### RAPTOR INSTALLATION HARDWARE AND REMOTE >

### > Installation Hardware & Remote Parts Diagram



# PARTS DIAGRAM & PARTS LIST

## Installation Hardware & Remote Parts List

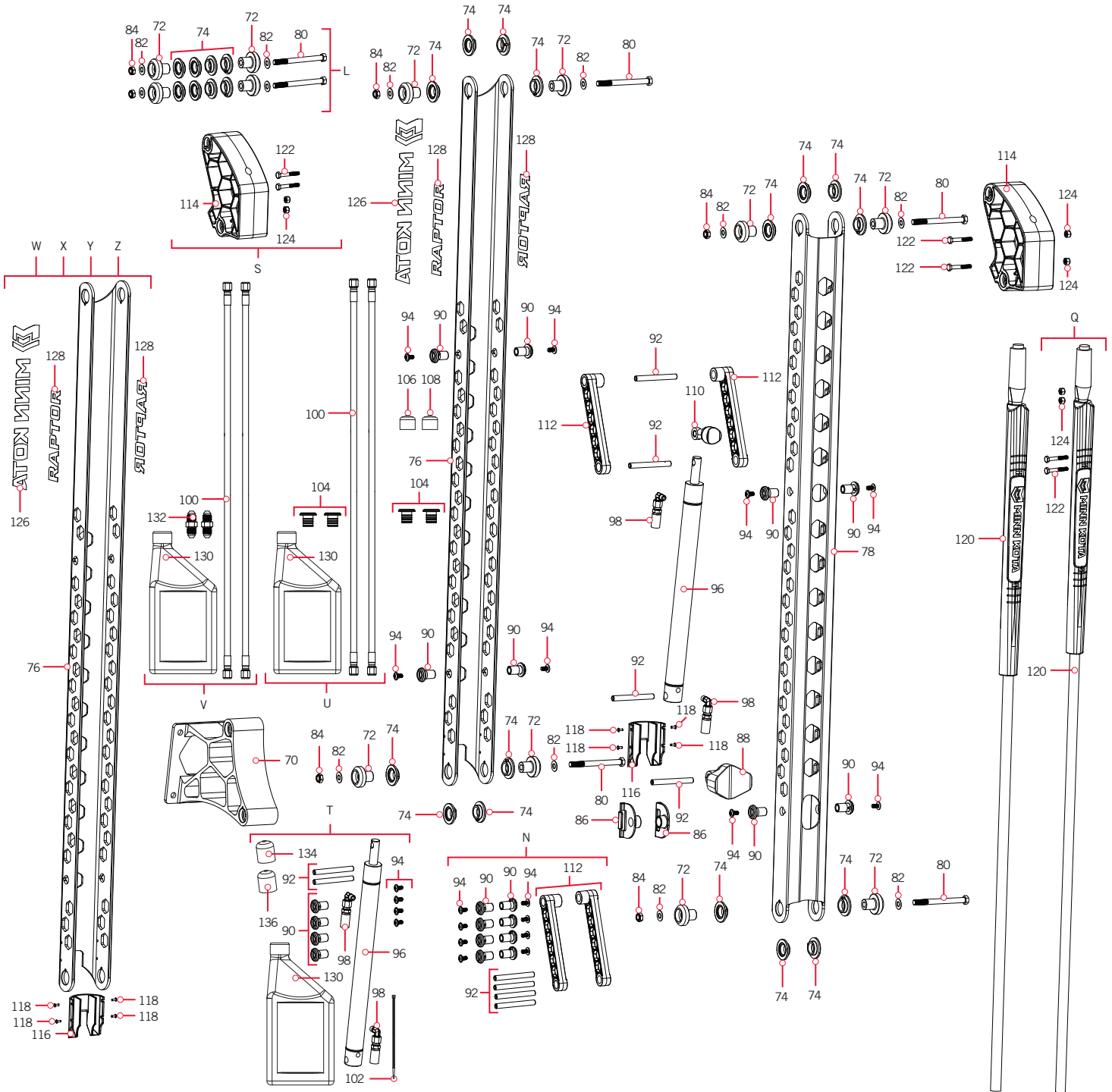
Assembly	Part #	Description	Notes	Quantity
B	2994943	BAG, ASM, RAPTOR HWD		1
C	2994944	BAG ASM, RAPTOR PUMP HDW		1
G	2994156	TRANSMITTER ASM, RAPTOR		2
GG	2771829	BRACKET,DASH MNT HLDR/TAPE KIT		1
HH	2886422	COVER, BATTERY COMPARTMENT ASY		1
Item	Part #	Description	Notes	Quantity
2	2376310	TIE WRAP-DH35 11.5"		1
4	2357700	OIL-HYDRAULIC, QUART, RPTR		1
6	2358800	WRENCH-PRESSURE, RAPTOR		1
8	2390801	LANYARD, REMOTE		1
10	2371829	BRACKET,RMT DASH MNT HLDR	*ASSEMBLY GG*	1
12	2375104	TAPE,MNTG,FOAM ULINE #S-10131	*ASSEMBLY GG*	1
14	2371758	WASHER-3/8 HD FLAT SS	*ASSEMBLY B*	4
16	2371759	WASHER-3/8 HD FENDER SS	*ASSEMBLY B*	4
18	2383421	SCREW-3/8-16X3 1/2 HHCS SS	*ASSEMBLY B*	4
20	2353102	NUT-3/8-16 FLANGE,NYLOK,SS	*ASSEMBLY B*	4
22	2378608	ANTI SEIZE TUBE, 4CC, TALON	*ASSEMBLY B*	1
24	2351735	WASHER-3/8" BELLEVILLE SS	*ASSEMBLY C*	2
26	2351733	WASHER-#10 BELLEVILLE SERRATED	*ASSEMBLY C*	4
28	2353412	SCREW-3/8-16 X 1.0" HHCS SS	*ASSEMBLY C*	2
30	2353420	SCREW-#10-16X1.00 TY AB SS	*ASSEMBLY C*	4
32	2351933	BRACKET-MOUNTING, PUMP		1
34	2351934	BRACKET-REINFORCING		1
36	2357141 ▲	INSTALL. INSTRUCTIONS,RPTR		1
38	2357142 ▲	DISCLAIMER-DOWNLOAD,MANUAL		1
40	2357140 ▲	MANUAL, RAPTOR ANCHOR		1
42	2006819 ▲	LABEL-CARTON ,"CAUTION HEAVY"		1
44	2358830	RAPTOR MOUNTING TEMPLATE		1
46	2354110	TAG, REMOTE, RAPTOR		1
48	✱	CASE-REMOTE, TOP, TALON 3	*ASSEMBLY G*	1
50	✱	KEYPAD-REMOTE, TALON 3	*ASSEMBLY G*	1
52	✱	CTRL BOARD,TRNSMTR,TALON 3	*ASSEMBLY G*	1
54	✱	CASE-REMOTE, BTM, TALON 3	*ASSEMBLY G*	1
56	✱	BATTERY CR2450	*ASSEMBLY G*	1
58	2376941	GASKET,BATTERY COMPARTMENT	*ASSEMBLY G*	1
60	✱	COVER, BATTERY COMPRT(SUB)	*ASSEMBLY G* *ASSEMBLY HH*	1
62	✱	PAD-FOAM, I-PILOT 1.5	*ASSEMBLY G* *ASSEMBLY HH*	1

✱ This part is included in an assembly and cannot be ordered individually.

▲ Not shown on Parts Diagram.

RAPTOR ANCHOR

Raptor 8ft Parts Diagram



# PARTS DIAGRAM & PARTS LIST

## › Raptor 8ft Parts List

Assembly	Part #	Description	Notes	Quantity
L	2777301	BUSHING KIT, MAIN, RAPTOR	*ASSEMBLY S QTY 2*	1
N	2777303	BUSHING KIT, CENTER, 8' RAPTOR	*8FT*	1
Q	2772019	SPIKE KIT 8' RAPTOR	*8FT*	1
S	2777300	UPPER KNUCKLE KIT, RAPTOR		1
T	2778411	CYLINDER KIT, RAPTOR		1
U	2771400	HYDRAULIC HOSE REP KIT, RAPTOR		1
V	2771401	HYDRAULIC HOSE EXT KIT, RAPTOR	*NOT INCLUDED FROM THE FACTORY*	1
W	2776512	RAPTOR UPPER ARM, 8', SILVER	*8FT*	1
X	2776513	RAPTOR UPPER ARM, 8', BLACK	*8FT*	1
Y	2776514	RAPTOR UPPER ARM, 8', WHITE	*8FT*	1
Z	2776515	RAPTOR UPPER ARM, 8', RED	*8FT*	1
Item	2776515	RAPTOR UPPER ARM, 8', RED	Notes	Quantity
70	2351908	BRACKET, LOWER MOUNT, PAINTED		1
	2351908	BRKT, LWR MNT, PAINT WHT	*WHITE*	1
72	2357310	BUSHING, PIVOT LINK, ANODIZED		8
74	2357301	BUSHING, FLANGE	*ASSEMBLY S* *ASSEMBLY L QTY 8*	16
76	2356513	EXTRUSION-OUTER, BLACK 8'	*BLACK* *8FT* *ASSEMBLY X*	1
	2356512	EXTRUSION-OUTER, CLEAR 8'	*SILVER* *8FT* *ASSEMBLY W*	1
	2356514	EXTRUSION-OUTER, WHITE 8'	*WHITE* *8FT* *ASSEMBLY Y*	1
	2356515	EXTRUSION-OUTER, RED 8'	*RED* 8FT* *ASSEMBLY Z*	1
78	2356523	EXTRUSION-INNER, BLACK 8'	*BLACK* *8FT*	1
	2356522	EXTRUSION-INNER, CLEAR 8'	*SILVER* *8FT*	1
	2356524	EXTRUSION-INNER, WHITE 8'	*WHITE* *8FT*	1
	2356525	EXTRUSION-INNER, RED 8'	*RED* *8FT*	1
80	2353500	BOLT-3/8-16 X 4.25" HEX HD SS	*ASSEMBLY S* *ASSEMBLY L QTY 2*	4
82	2351734	WASHER-3/8" FLAT SS	*ASSEMBLY S* *ASSEMBLY L QTY 4*	8
84	2263115	NUT-NYLOK JAM 3/8-16 UNC SS	*ASSEMBLY S* *ASSEMBLY L QTY 2*	4
86	2351721	SPACER, COMPRESSION SHIM		2
88	2355125	BUMPER, SPIKE LOWER		1
90	2357302	BUSHING, CENTER SUPPORT	*ASSEMBLY T QTY 4* *ASSEMBLY N*	8
92	2352610	PIN, CYLINDER BASE, RAPTOR	*ASSEMBLY N* *ASSEMBLY T*	4
94	2353403	SCREW-1/4-20 FLANGED BTTN HEAD	*ASSEMBLY T QTY 4* *ASSEMBLY N*	8
96	2358411	CYLINDER-HYDRAULIC, SS	*ASSEMBLY T*	1
98	2354600	FITTING-HYDRAULIC	*ASSEMBLY T*	2
100	2351400	HOSE, HYDRL ASM #JO-HOH-W-02-0	*ASSEMBLY V* *ASSEMBLY U*	2
102	2376310	TIE WRAP-DH35 11.5"	*ASSEMBLY T*	1
104	2352920	GROMMET-THRU HULL	*ASSEMBLY U*	2

✘ This part is included in an assembly and cannot be ordered individually.

▲ Not shown on Parts Diagram.

## PARTS DIAGRAM & PARTS LIST



Item	2776515	RAPTOR UPPER ARM, 8', RED	Notes	Quantity
106	2350207	CAP-VINYL, .562" X 1/2" BLACK		1
108	2350208	CAP-VINYL, .562" X 1/2" GREEN		1
110	2355120	BUMPER, SPIKE UPPER		1
112	2352300	SUPPORT, CENTER CYLINDER	*ASSEMBLY N*	2
114	2351926	BRACKET, UPPER KNUCKLE, MACH	*ASSEMBLY S*	1
116	2351930	BRACKET, HOSE ROUTE LOWER	*ASSEMBLY Z* *ASSEMBLY Y* *ASSEMBLY X* *ASSEMBLY W*	1
118	2358600	RIVET-POP, 1/8"	*ASSEMBLY Z* *ASSEMBLY Y* *ASSEMBLY X* *ASSEMBLY W*	4
120	2352019	SPIKE, 8', .750" OVERMOLDED	*8FT* *ASSEMBLY Q*	1
122	2353501	BOLT-1/4-20 X 1.75 HEX SS	*ASSEMBLY S* *ASSEMBLY Q*	2
124	2353110	NUT-1/4-20 BRASS NYLON INSERT	*ASSEMBLY S* *ASSEMBLY Q*	2
126	2355642	DECAL, MINN KOTA RAPTOR BLK	*WHITE* *AA* *ASSEMBLY Z* *ASSEMBLY X* *ASSEMBLY W*	1
	2355640	DECAL, MINN KOTA RAPTOR WHT	*BLACK* *RED* *SILVER* *ASSEMBLY Y*	1
128	2355641	DECAL, RAPTOR SIDE	*ASSEMBLY Z* *ASSEMBLY Y* *ASSEMBLY X* *ASSEMBLY W*	2
130	2357700	NRA-OIL-HYDRAULIC, QUART, RPTR	*ASSEMBLY V* *ASSEMBLY U* *ASSEMBLY T*	1
132	2350800	UNION, STRGHT, JIC MALE-MALE	*ASSEMBLY V* *NOT INCLUDED FROM THE FACTORY*	2
134	2350205	CAP-VINYL, .406" X 1/2" BLACK	*ASSEMBLY T* *NOT INCLUDED FROM THE FACTORY*	1
136	2350206	CAP-VINYL, .406" X 1/2" GREEN	*ASSEMBLY T* *NOT INCLUDED FROM THE FACTORY*	1

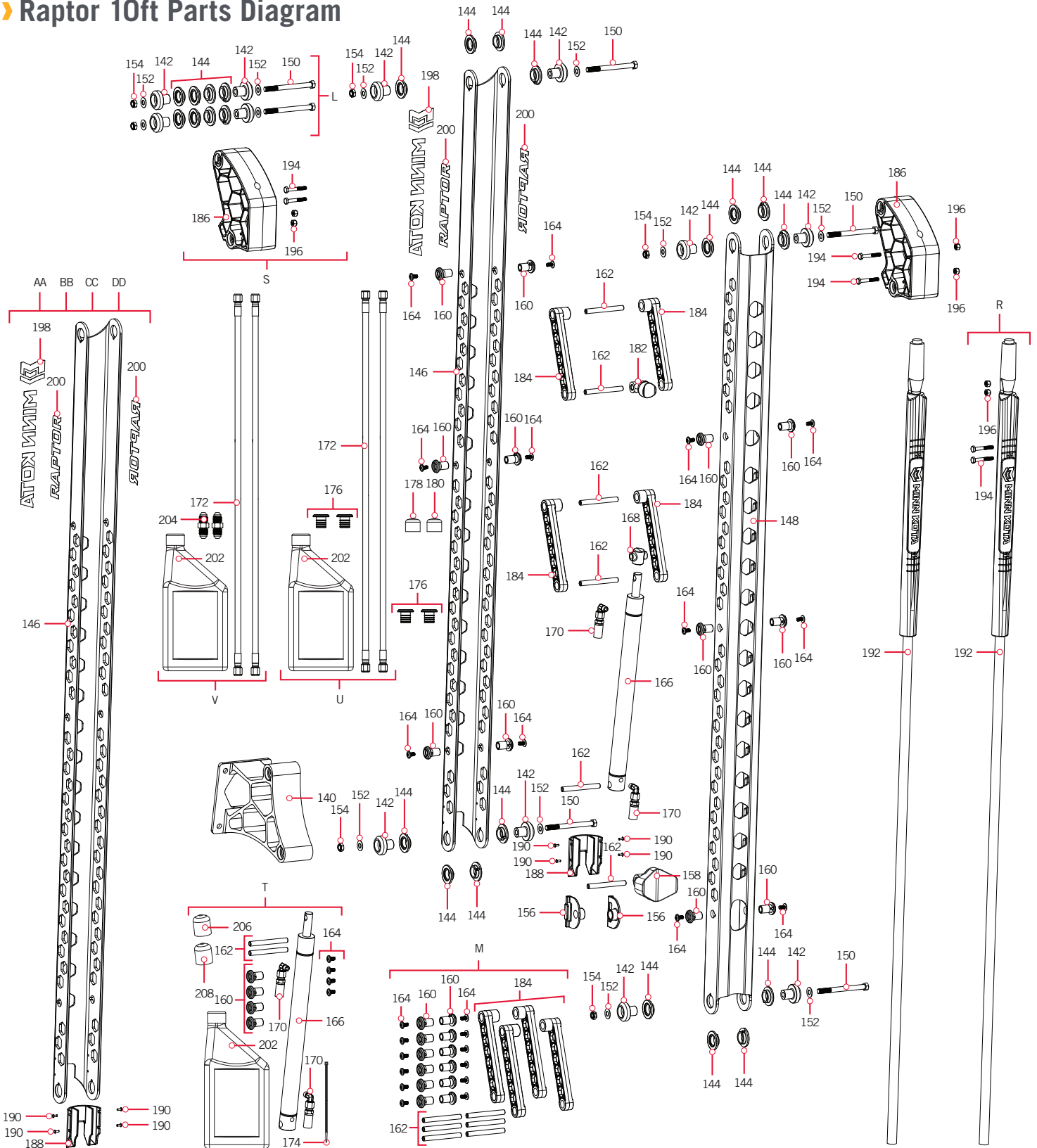
✘ This part is included in an assembly and cannot be ordered individually.

▲ Not shown on Parts Diagram.



# PARTS DIAGRAM & PARTS LIST

## ► Raptor 10ft Parts Diagram



# PARTS DIAGRAM & PARTS LIST

## ▶ Raptor 10ft Parts List

Assembly	Part #	Description	Notes	Quantity
L	2777301	BUSHING KIT, MAIN, RAPTOR	*ASSEMBLY S QTY 2*	1
M	2777302	BUSHING KIT, CENTER,10' RAPTOR	*10FT*	1
R	2772020	SPIKE KIT 10' RAPTOR	*10FT*	1
S	2777300	UPPER KNUCKLE KIT, RAPTOR		1
T	2778411	CYLINDER KIT, RAPTOR		1
U	2771400	HYDRAULIC HOSE REP KIT, RAPTOR		1
V	2771401	HYDRAULIC HOSE EXT KIT, RAPTOR	*NOT INCLUDED FROM THE FACTORY*	1
AA	2776532	RAPTOR UPPER ARM, 10', SILVER	*10FT*	1
BB	2776533	RAPTOR UPPER ARM, 10', BLACK	*10FT*	1
CC	2776534	RAPTOR UPPER ARM, 10', WHITE	*10FT*	1
DD	2776535	RAPTOR UPPER ARM, 10', RED	*10FT*	1
Item	Part #	Description	Notes	Quantity
140	2351908	BRACKET, LOWER MOUNT, PAINTED		1
	2351908	BRKT, LWR MNT, PAINT WHT	*WHITE*	1
142	2357310	BUSHING, PIVOT LINK, ANODIZED		8
144	2357301	BUSHING, FLANGE	*ASSEMBLY S* *ASSEMBLY L QTY 8*	16
146	2356534	EXTRUSION-OUTER, WHITE 10'	*AA* *WHITE* *10FT* *ASSEMBLY CC*	1
	2356535	EXTRUSION-OUTER, RED 10'	*AA* *RED* *10FT* *ASSEMBLY DD*	1
	2356532	EXTRUSION-OUTER, CLEAR 10'	*AA* *SILVER* *10FT* *ASSEMBLY AA*	1
	2356533	EXTRUSION-OUTER, BLACK 10'	*AA* *BLACK* *10FT* *ASSEMBLY BB*	1
148	2356544	EXTRUSION-INNER, WHITE 10'	*AA* *WHITE* *10FT*	1
	2356545	EXTRUSION-INNER, RED 10'	*AA* *RED* *10FT*	1
	2356542	EXTRUSION-INNER, CLEAR 10'	*AA* *SILVER* *10FT*	1
	2356543	EXTRUSION-INNER, BLACK 10'	*AA* *BLACK* *10FT*	1
150	2353500	BOLT-3/8-16 X 4.25" HEX HD SS	*ASSEMBLY S* *ASSEMBLY L QTY 2*	4
152	2351734	WASHER-3/8" FLAT SS	*ASSEMBLY S* *ASSEMBLY L QTY 4*	8
154	2263115	NUT-NYLOK JAM 3/8-16 UNC SS	*ASSEMBLY S* *ASSEMBLY L QTY 2*	4
156	2351721	SPACER, COMPRESSION SHIM		2
158	2355125	BUMPER, SPIKE LOWER		1
160	2357302	BUSHING, CENTER SUPPORT	*ASSEMBLY T QTY 4* *ASSEMBLY M*	12
162	2352610	PIN, CYLINDER BASE, RAPTOR	*ASSEMBLY M* *ASSEMBLY T*	6
164	2353403	SCREW-1/4-20 FLANGED BTTN HEAD	*ASSEMBLY T QTY 4* *ASSEMBLY M*	12
166	2358411	CYLINDER-HYDRAULIC, SS	*ASSEMBLY T*	1
168	2351720	SPACER, CYLINDER ROD END	*10FT AA*	1
170	2354600	FITTING-HYDRAULIC	*ASSEMBLY T*	2
172	2351400	HOSE, HYDRL ASM #JO-HOH-W-02-0	*ASSEMBLY V* *ASSEMBLY U*	2

✘ This part is included in an assembly and cannot be ordered individually.

▲ Not shown on Parts Diagram.

# PARTS DIAGRAM & PARTS LIST



Item	Part #	Description	Notes	Quantity
176	2352920	GROMMET-THRU HULL	*ASSEMBLY U*	2
174	2376310	TIE WRAP-DH35 11.5"	*ASSEMBLY T*	1
178	2350207	CAP-VINYL, .562" X 1/2" BLACK		1
180	2350208	CAP-VINYL, .562" X 1/2" GREEN		1
182	2355120	BUMPER, SPIKE UPPER		1
184	2352300	SUPPORT, CENTER CYLINDER	*ASSEMBLY M*	4
186	2351926	BRACKET, UPPER KNUCKLE, MACH	*ASSEMBLY S*	1
188	2351930	BRACKET, HOSE ROUTE LOWER	*ASSEMBLY DD* *ASSEMBLY CC* *ASSEMBLY BB* *ASSEMBLY AA*	1
190	2358600	RIVET-POP, 1/8"	*ASSEMBLY DD* *ASSEMBLY CC* *ASSEMBLY BB* *ASSEMBLY AA*	4
192	2352021	SPIKE, 10', .750 OVERMOLDED	*10FT* *ASSEMBLY R*	1
194	2353501	BOLT-1/4-20 X 1.75 HEX SS	*ASSEMBLY S* *ASSEMBLY R*	2
196	2353110	NUT-1/4-20 BRASS NYLON INSERT	*ASSEMBLY S* *ASSEMBLY R*	2
198	2355642	DECAL, MINN KOTA RAPTOR BLK	*WHITE* *AA* *ASSEMBLY BB* *ASSEMBLY AA*	1
	2355640	DECAL, MINN KOTA RAPTOR WHT	*BLACK* *RED* *SILVER* *ASSEMBLY DD* *ASSEMBLY CC*	1
200	2355641	DECAL, RAPTOR SIDE	*ASSEMBLY DD* *ASSEMBLY CC* *ASSEMBLY BB* *ASSEMBLY AA*	2
202	2357700	OIL-HYDRAULIC, QUART, RPTR	*ASSEMBLY T* *ASSEMBLY U* *ASSEMBLY V*	1
204	2350800	UNION, STRGHT, JIC MALE-MALE	*ASSEMBLY V* *NOT INCLUDED FROM THE FACTORY*	2
206	2350205	CAP-VINYL, .406" X 1/2" BLACK	*ASSEMBLY T* *NOT INCLUDED FROM THE FACTORY*	1
208	2350206	CAP-VINYL, .406" X 1/2" GREEN	*ASSEMBLY T* *NOT INCLUDED FROM THE FACTORY*	1

✘ This part is included in an assembly and cannot be ordered individually.

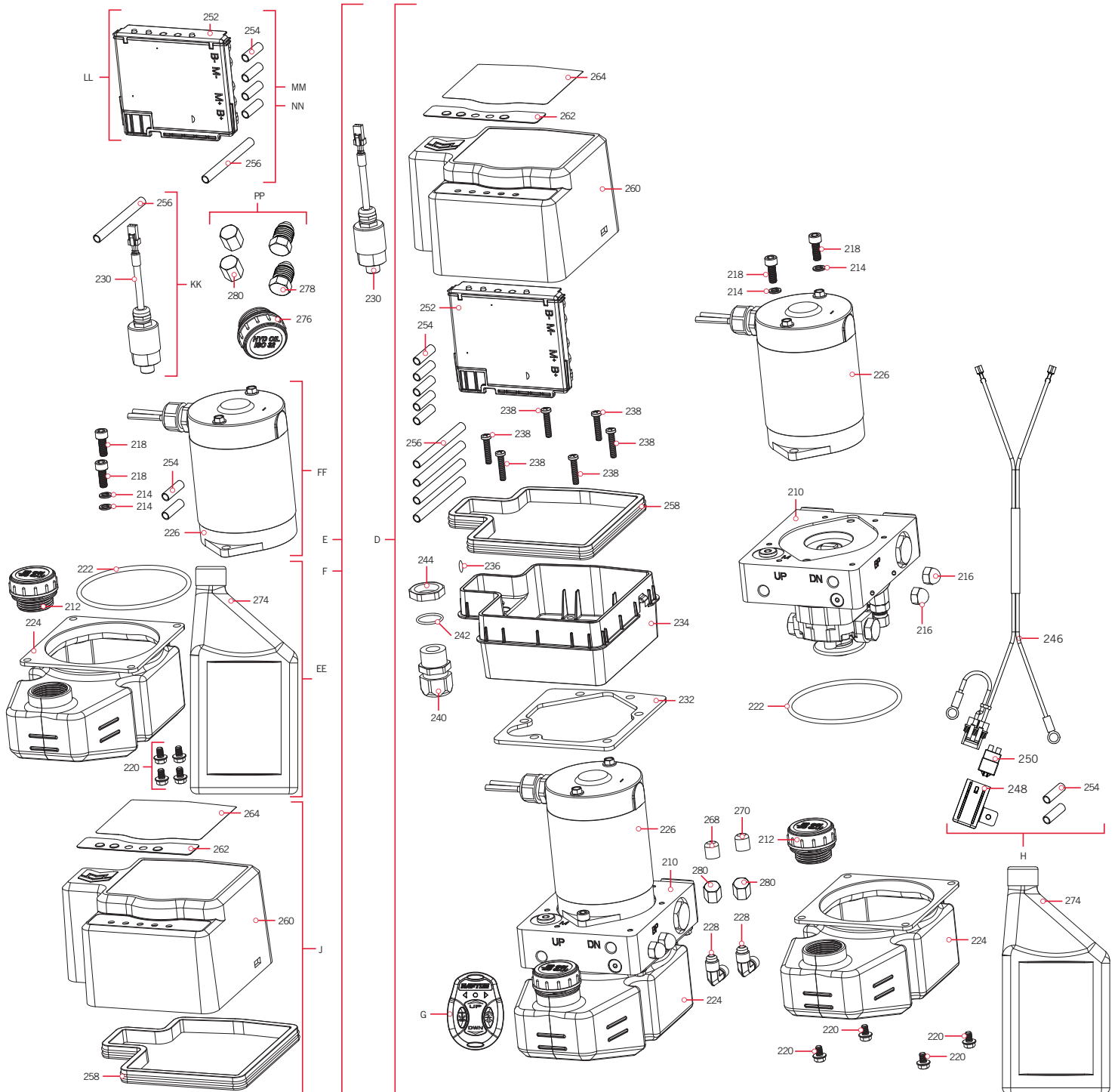
▲ Not shown on Parts Diagram.





## RAPTOR HYDRAULIC PUMP

### Raptor Hydraulic Pump Parts Diagram



# PARTS DIAGRAM & PARTS LIST

## › Raptor Hydraulic Pump Parts List

Assembly	Part #	Description	Notes	Quantity
D	2994106	ASSEMBLY, MAIN PUMP 8'	*8FT*	1
E	2994105	ASSEMBLY, MAIN PUMP W/AA 8'	*8FT AA*	1
F	2994107	ASSEMBLY, MAIN PUMP W/AA 10'	*10FT AA*	1
G	2994156	TRANSMITTER ASM, RAPTOR	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D*	1
H	2778500	LEADWIRE KIT, RAPTOR		1
J	2776410	RAPTOR PUMP COVER KIT		1
EE	2776550	RESERVOIR RPLCMNT KIT, RAPTOR		1
FF	2777803	MOTOR ASSEMBLY, RAPTOR		1
KK	2778210	PRESSURE TRANSDUCER ASM, RAPTOR		1
LL	2774046	RAPTOR CTRL BOARD ASM	*8FT*	1
MM	2774043	RAPTOR W/AA CTRL BRD ASM 8'	*8FT AA*	1
NN	2774044	RAPTOR W/AA CTRL BRD ASM 10'	*10FT AA*	1
PP	2776720	CAP AND PLUG KIT, RAPTOR	*NOT INCLUDED FROM THE FACTORY*	1
Item	Part #	Description	Notes	Quantity
210	2354005	PUMP, HYDRAULIC, BILLET MANIFOLD	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D*	1
212	2350200	CAP-FILL, RESERVOIR	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D* *ASSEMBLY EE*	1
214	2351731	WASHER-LOCK, M6 SS	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D* *ASSEMBLY FF*	2
216	2353120	NUT-M8 CAP	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D*	2
218	2353511	BOLT-SHCS M6 X 16 MM SS	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D* *ASSEMBLY FF*	2
220	2353515	BOLT-FLANGED, M5 X 8 MM SS	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D* *ASSEMBLY EE*	4
222	2354622	O-RING, 3.55 MM X 87.5 MM	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D* *ASSEMBLY EE*	1
224	✘	RESERVOIR, PUMP	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D* *ASSEMBLY EE*	1
226	✘	MOTOR, PUMP DRIVE	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D* *ASSEMBLY K* *ASSEMBLY FF*	1
228	2354600	FITTING-HYDRAULIC	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D*	2
230	2358210	TRANSDUCER-PRESSURE, 12VDC, SS	*AA* *ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY KK*	1
232	2356900	GASKET, SHROUD	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D*	1
234	2351935	BASE, SHROUD	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D*	1
236	2355130	VENT PATCH	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D*	1
238	2353410	SCREW-#8-32 X .88 PPH SS	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D*	6
240	2374630	FITTING-NPT 1/2" CD13NA-BK	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D*	1
242	2374631	O-RING, SEALCON #OR-18-BN	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D*	1
244	2353115	NUT-1/2" NPT BLK NYLON LOCKING	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D*	1

✘ This part is included in an assembly and cannot be ordered individually.

▲ Not shown on Parts Diagram.

# PARTS DIAGRAM & PARTS LIST



Item	Part #	Description	Notes	Quantity
246	2358500	POWER CORD, RAPTOR	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D* *ASSEMBLY H*	1
248	2370279	CAP-RESETTABLE FUSE HOLDER	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D* *ASSEMBLY H*	1
250	2358200	BREAKER, 30A RESETTABLE	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D* *ASSEMBLY H*	1
252	2354041	PCB ASM, RAPTOR	*ASSEMBLY LL* *ASSEMBLY D*	1
	2354040	PCB ASM, RAPTOR W/AA	*AA* *ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY MM* *ASSEMBLY NN*	1
254	2305404	SHRINK TUBE-.374 ID X 1.0"	*ASSEMBLY MM QTY 4* * ASSEMBLY NN QTY 4* *ASSEMBLY LL QTY 4* *ASSEMBLY FF QTY 2* *ASSEMBLY D* *ASSEMBLY E* *ASSEMBLY F* *ASSEMBLY HH QTY 2*	5
256	2305402	SHRINK TUBE-.374 OD X 2.25"	*ASSEMBLY MM QTY 1* * ASSEMBLY NN QTY 1* *ASSEMBLY KK QTY 1* *ASSEMBLY D* *ASSEMBLY E* *ASSEMBLY F*	4
258	2354610	SEAL, SHROUD	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D* *ASSEMBLY J*	1
260	2356410	COVER, SHROUD	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D* *ASSEMBLY J*	1
262	2356610	DECAL, SHROUD	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D* *ASSEMBLY J*	1
264	2356620	DECAL-TOP, 8'	*8FT* *ASSEMBLY D* *ASSEMBLY J*	1
	2356621	DECAL-TOP, 8' W/AA	*8FT AA* *ASSEMBLY E* *ASSEMBLY J*	1
	2356622	DECAL-TOP, 10' W/AA	*10FT AA**ASSEMBLY F* *ASSEMBLY J*	1
266	2355805 ▲	DECAL-COMPLIANCE, PUMP, RAPTOR	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D*	1
268	2350207	CAP-VINYL, .562" X 1/2" BLACK	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D*	1
270	2350208	CAP-VINYL, .562" X 1/2" GREEN	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D*	1
272	2007729 ▲	LOCTITE 243 HENKEL P/N 1329467	*ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D*	1
274	2357700	OIL-HYDRAULIC, QUART, RPTR	*ASSEMBLY EE* *ASSEMBLY F* *ASSEMBLY E* *ASSEMBLY D*	1
276	2356720	PLUG, M30 X 2, RESERVOIR	*ASSEMBLY PP*	1
278	2356721	PLUG, JIC 37 DEG, 7/16-20	*ASSEMBLY PP*	2
280	2350215	CAP, JIC 37 DEG, 7/16-20	*ASSEMBLY PP*	4

✘ This part is included in an assembly and cannot be ordered individually.

▲ Not shown on Parts Diagram.

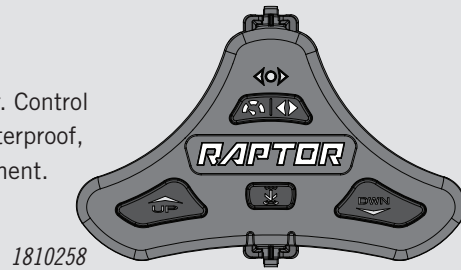


# RECOMMENDED ACCESSORIES

## ▶ RAPTOR CONTROL

### RAPTOR WIRELESS FOOT SWITCH ▶

Raptor wireless foot switch allows for hands free control of your Raptor. Control one or two Raptors independently or simultaneously. Foot switch is waterproof, includes LED indicator lights and has an easy access battery compartment. Convenient Modular deck mount for easy removal and storage.

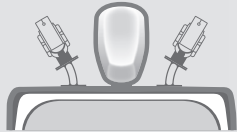


## ▶ RAPTOR MOUNTING ADAPTER BRACKETS

Raptor mounting brackets come in a variety of configurations to meet your mounting needs. They feature a light weight, aluminum construction for superior strength. Constructed with a powder coated exterior for corrosion resistance and include stainless steel mounting hardware. All brackets include a 5-year warranty.

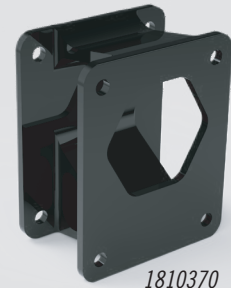
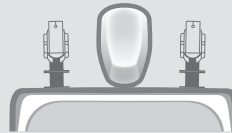
### DIRECT MOUNT ANGLE BRACKET ▶

In direct transom mount applications, maximizes holding power by providing optimal angle for Raptor deployment.



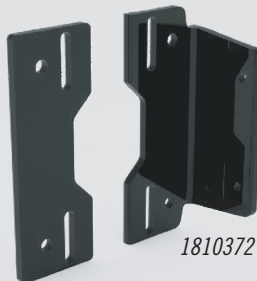
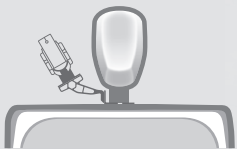
### 3" SETBACK BRACKET ▶

Provides 3" of additional setback to all mounting applications where specific clearances are required.



### UNIVERSAL SANDWICH ADAPTER ▶

Mounts between your jack plate and transom or between the outboard and transom, for use in port or starboard applications.



### JACK PLATE BRACKETS ▶

Mounts directly to your jack plate on the Port or Starboard side of your boat. Comes in a 4" or 6" rise.

