

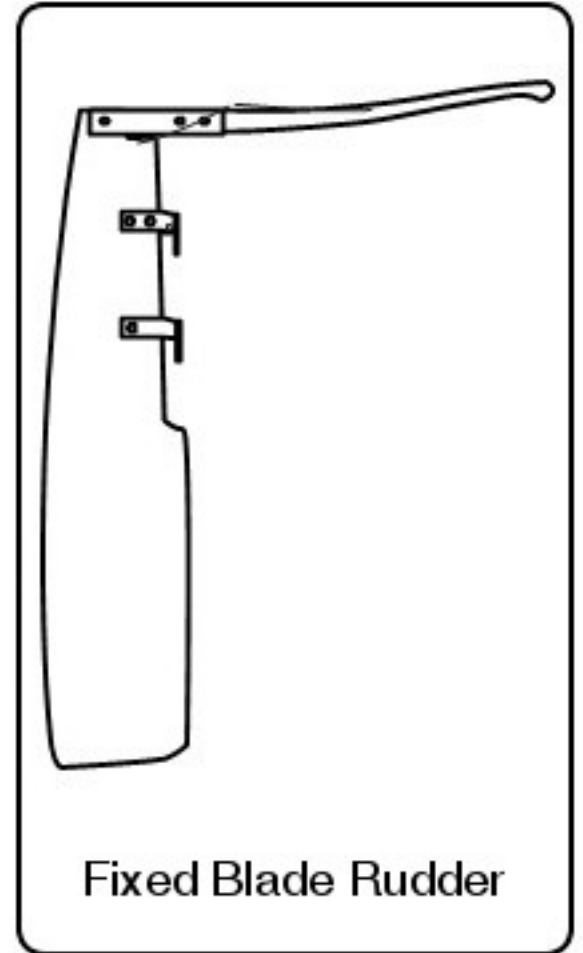
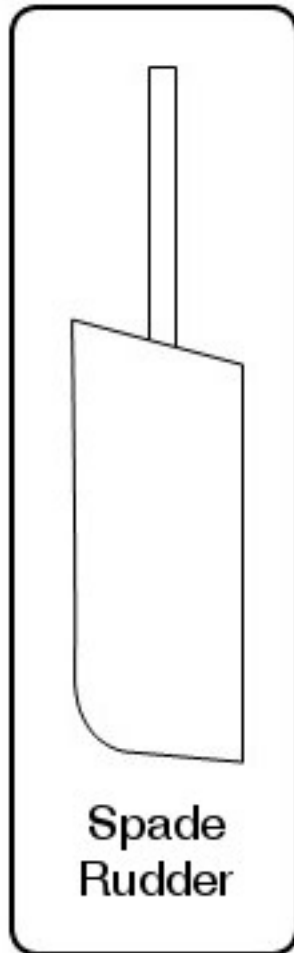
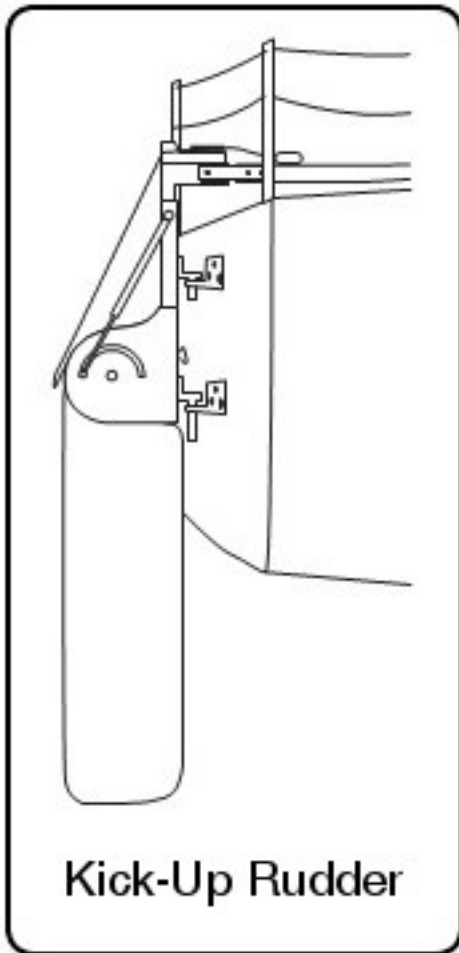
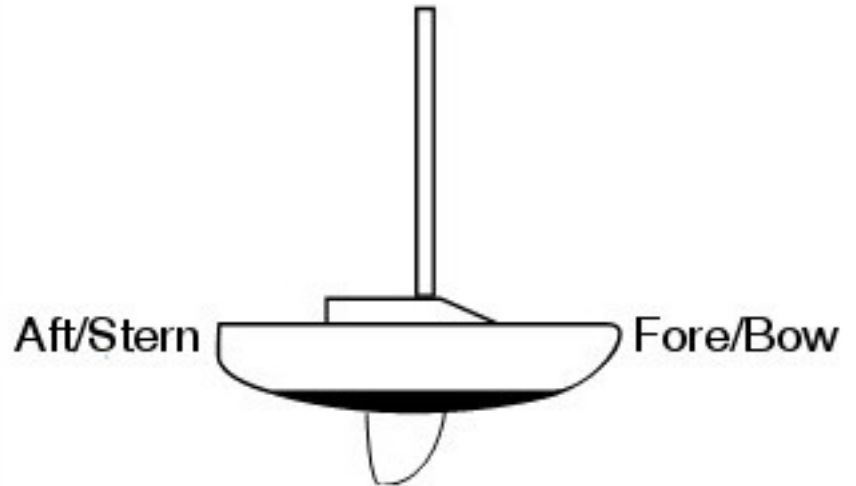
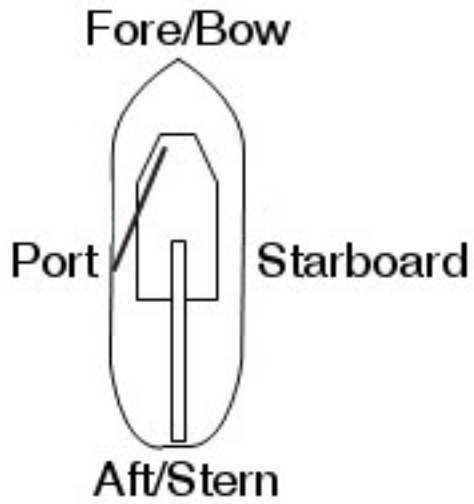
General instructions for using, maintaining, and installing rudder products

Our steering products are built from the highest quality materials, using strict standards of craftsmanship. We stand behind our products with the best warranties in the industry, but we can only control factors within our area of influence. Sailing is an inherently hazardous activity where sound judgment and safety awareness is required. We strongly suggest regular inspection of steering components as part of prudent seamanship. We hope you enjoy your rudder product, as thousands of sailors have already. We would love to hear any feedback regarding fit, finish, and performance under sail that you may have.

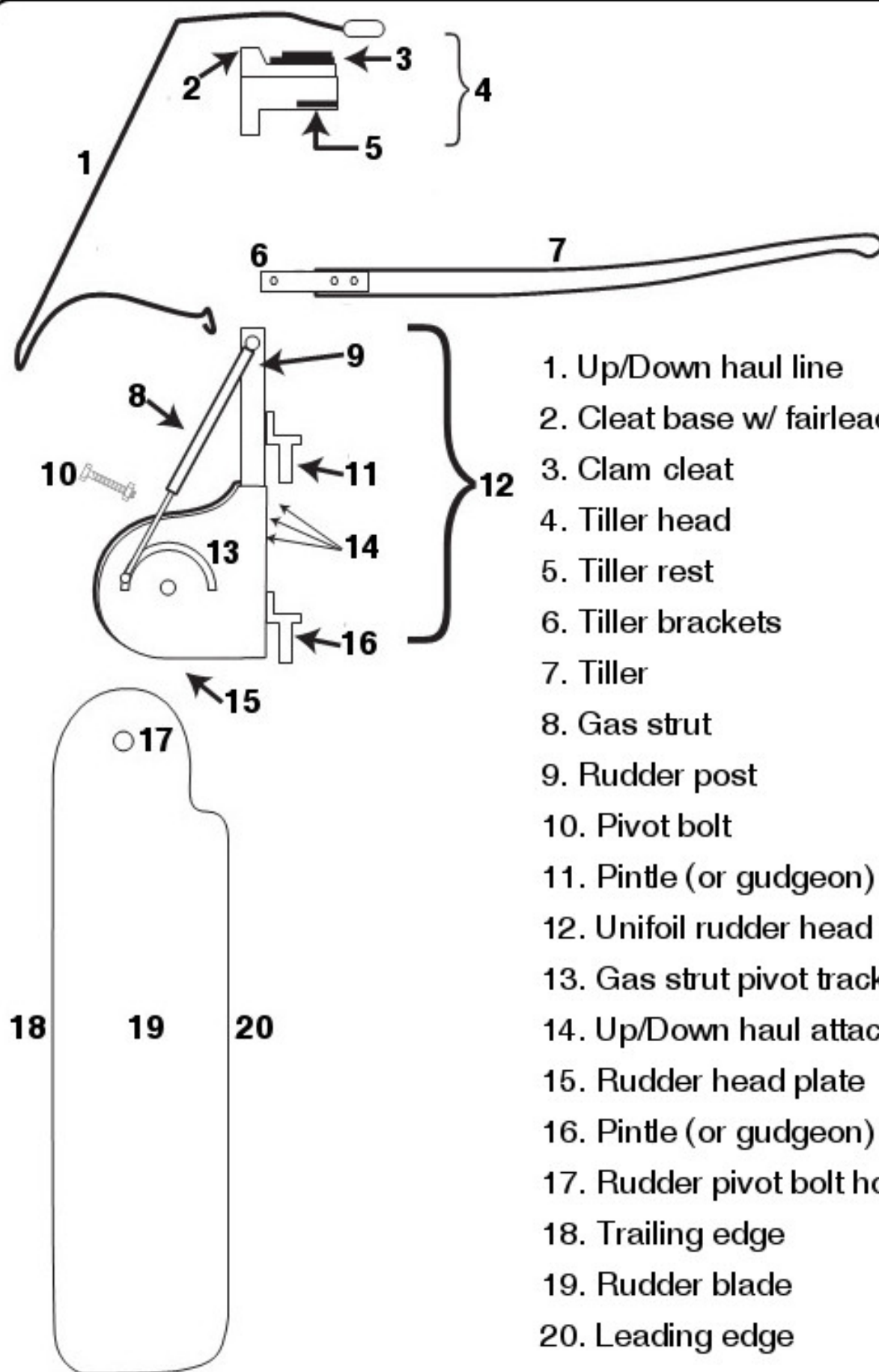
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Basic Terms and Definitions

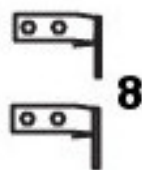
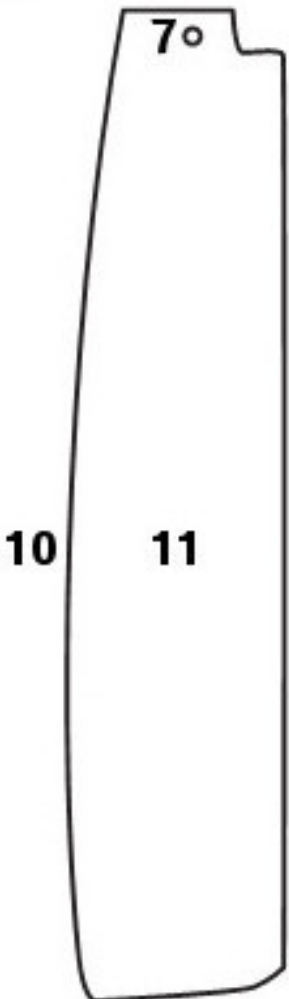
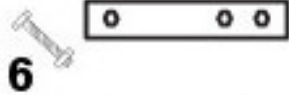
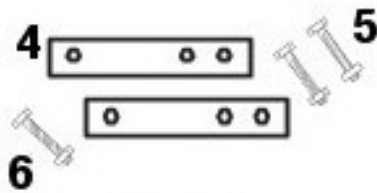
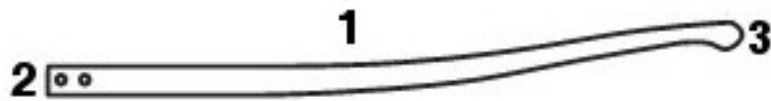


Unifoil Kick-Up Rudder Assembly Parts Guide



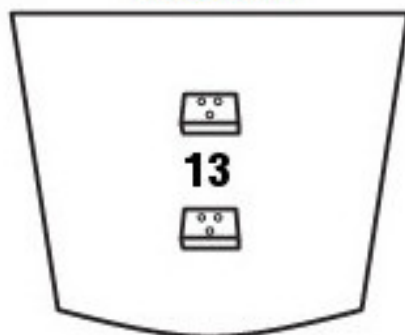
1. Up/Down haul line
2. Cleat base w/ fairlead
3. Clam cleat
4. Tiller head
5. Tiller rest
6. Tiller brackets
7. Tiller
8. Gas strut
9. Rudder post
10. Pivot bolt
11. Pintle (or gudgeon)
12. Unifoil rudder head
13. Gas strut pivot track
14. Up/Down haul attachment point
15. Rudder head plate
16. Pintle (or gudgeon)
17. Rudder pivot bolt hole
18. Trailing edge
19. Rudder blade
20. Leading edge

Unifoil Fixed Rudder Parts Guide



- 1. Tiller
- 2. Tiller butt end
- 3. Tiller handle
- 4. Tiller bracket
- 5. Tiller attachment bolts
- 6. Tiller pivot bolt
- 7. Tiller pivot hole
- 8. Fixed blade pintles
- 9. Retaining pin or ring
- 10. Trailing edge
- 11. Rudder blade
- 12. Leading edge
- 13. Transom side gudgeons/pintles

Transom



Safety

•Transporting Your Rudder

- When carrying the rudder assembly, be sure the rudder blade is either in the fully up or fully down position. Leaving the rudder blade in a partially folded/unfolded position is inherently unsafe, as the rudder is designed to force itself into the fully up or fully down position. ***Carrying a kick-up rudder assembly in a partially folded/unfolded position will pose a risk of causing bodily harm.***

•Outboard

- Exercise care when using your outboard or other auxiliary motor. With the auxiliary or outboard motor in the down position the rudder can be damaged if turned far enough to contact the propeller blades. ***Outboard/Auxiliary motor damage is not covered under the Rudder Craft warranty.***

•Launching & Retrieving

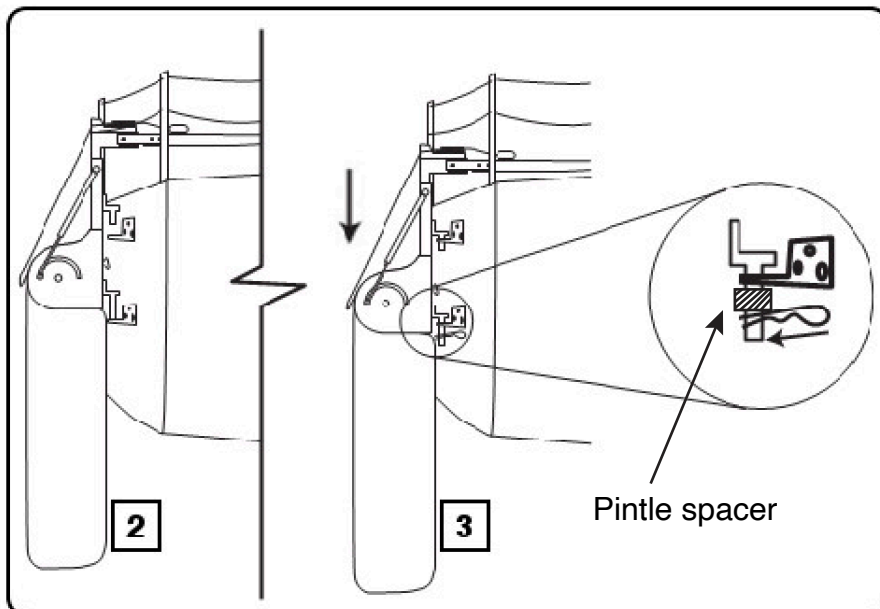
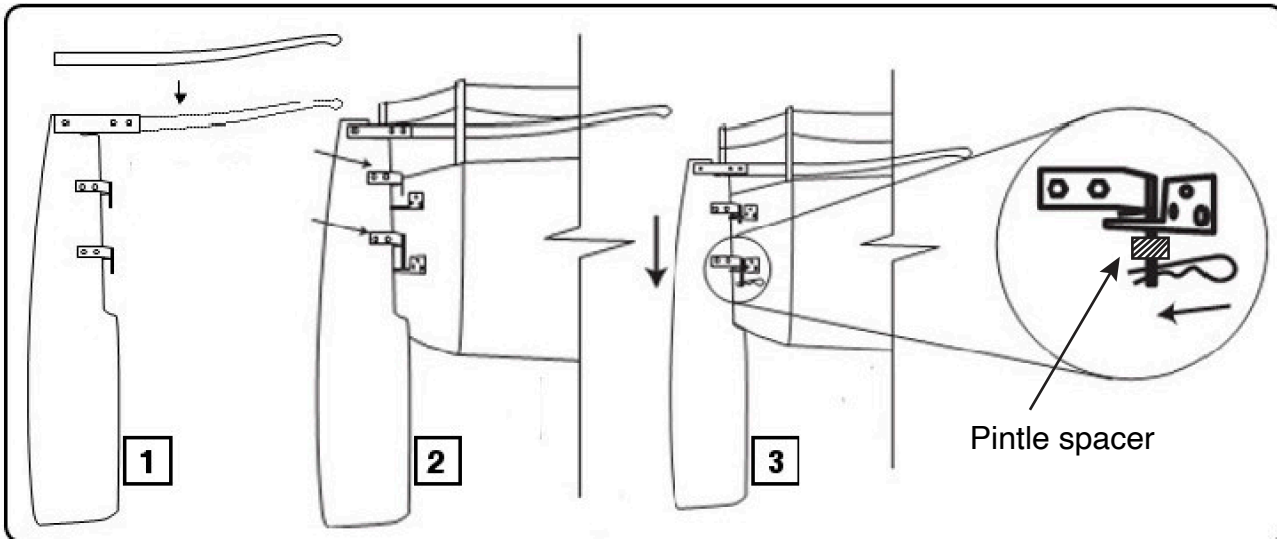
- Before launching your boat please follow these simple steps:
 - Mount the rudder to your transom.
 - If you have a kick-up assembly, keep the rudder secured in the raised/up position before mounting the rudder to your transom.
 - Insert the retaining pin or spring ring in either pintle.
 - Properly installing the keeper pin will prevent the rudder from lifting itself off of the transom side hardware in certain conditions, preventing total loss of the rudder assembly.
 - Launch your boat as you traditionally would.
 - Once the boat is floating, pull the single line mounted to the top of your rudder assembly to kick the rudder into the down position.
 - Do not lower the rudder blade with the boat out of the water. The integrated gas spring carries enough force to cause damage to any person or property in it's path. When the boat is in the water, ensure the area below the rudder is clear before kicking it down.
- When retrieving your boat, please follow these simple steps:
 - Bring your boat up to your dock, and tie up the dock lines.
 - Pull the single line mounted to the top of your rudder assembly to kick the rudder into the up position.
 - Do not raise the rudder blade with any hardware, lines, or appendages in it's path. The integrated gas spring carries enough force to cause damage to anything in it's field of motion. If you have a Blue Water rudder, the rudder may make slight contact with the rudder head/tiller head as it finishes it's upward swing.
 - Seat your boat on your trailer and remove it from the water.
 - OPTIONAL:** Remove any keeper pins/spring rings used to keep the rudder assembly on your transom.
 - OPTIONAL:** Remove the rudder assembly from your transom, and stow it for trailering.

•Encountering Underwater Obstructions

- The gas spring on your Kick-Up assembly is designed to keep the rudder in the down position while underway. In case of encountering underwater obstructions, the rudder will kick up from the force of the obstruction before causing damage to the transom or gudgeons. The gas spring will then return the rudder to the down position once it has cleared the obstruction, without any intervention from you.
- The warranty does not cover the rudder against damage caused by underwater obstructions, launch ramps, groundings, or other impacts to the rudder system.

Tiller and Rudder Installation

- After you receive your new rudder or rudder assembly, there are a few quick measurements you must do to properly install the steering equipment to your boat.
 - Remove your rudder, any tiller, tiller brackets, and hardware kit from the package you received. Thoroughly inspect the box, as the parts and equipment might shift around during shipment.
 - Install any tiller brackets to your pre-drilled tiller using the supplied 1/4" bolts and nylock nuts. Tighten this hardware until snug.
 - Place the assembled tiller over the rudder head and secure in place with the supplied 3/8" bolt and nylock nut (place any supplied washers between the bolt and/or nut and tiller bracket.). Tighten this hardware until the threads of the bolt are past the nut by at least a single thread. You can continue to tighten or loosen this hardware up to make pivoting the tiller more difficult or easier (See: 1).
 - Install your now assembled rudder onto your boat by lowering the pintles/gudgeons into your transom side hardware. (See: 2)
 - If your transom has stern mounted lifelines or a stern pulpit, ensure that the tiller passes under or through this hardware in it's normal resting position.
 - Before using your new rudder, insert the retraining hitch or cotter pin into either pintle. If your rudder came with pintles from the rudder manufacture, they will have a track for the supplied hitch pin or a hole for the supplied cotter pin. (See: 3)

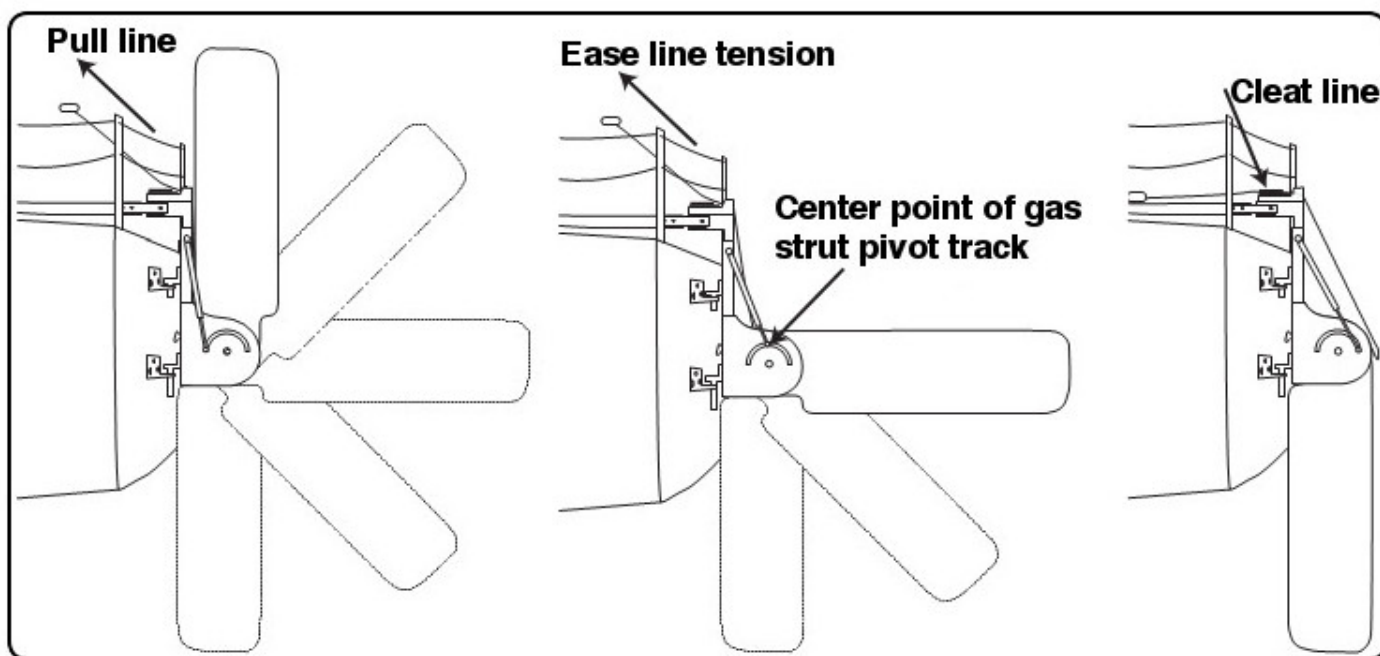


Please install the pintle spacer below the gudgeon but above the keeper hairpin on pintle equipped rudders. The spacer can be installed on either the upper or lower pintle/gudgeon. This spacer helps prevent the rudder from riding up on the length of the pintle pin, which can put destructive stress on the pintle pin and weldment over time.

Raising and Lowering Kick-Up Rudders

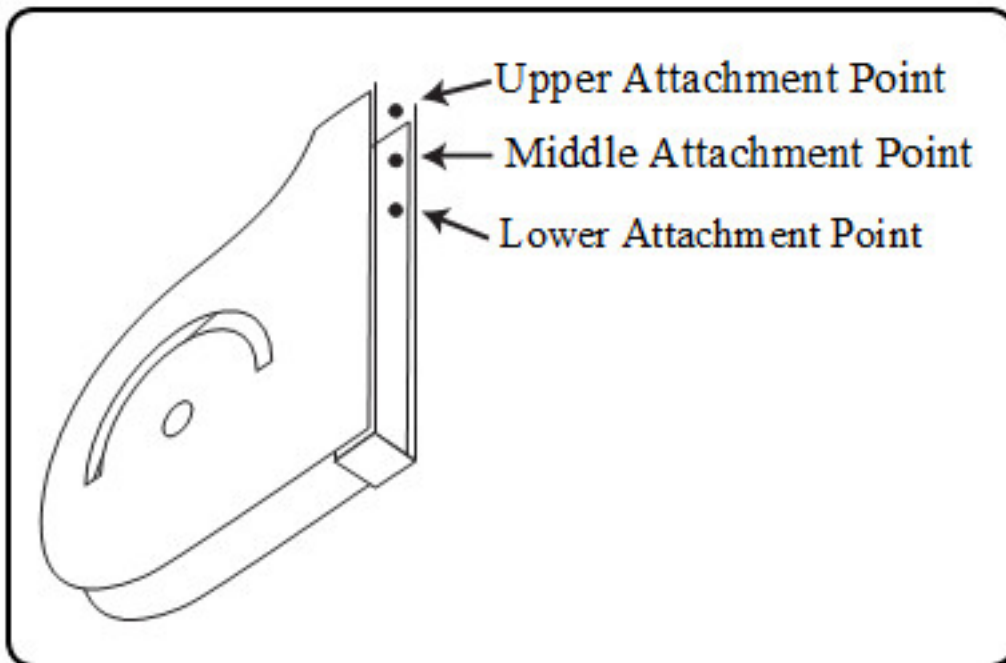
•Raising and Lowering

- Your Kick-Up rudder is raised and lowered with a single up/down haul line, mounted to the top of your rudder assembly.
- On Blue Water or heavy duty rudder assemblies, you may need to exert considerable force to get the rudder to kick up or down.
- If your rudder assembly exhibits sticking, hanging, or slow kick up/down action, please contact us for assistance diagnosing and repairing the issue.
- To lower the rudder blade:
 - Securely install the rudder to your transom using the previous installation instructions.
 - Ensure that the area under the rudder is clear of people and obstructions.
 - Make a single forceful pull on the up/down haul line mounted to the top of your rudder, with the intent of bringing the rudder past the center point of the gas spring pivot track (this track/slot is cut into one side of the steel plating on your rudder head.).
 - Once the gas spring is past the center point of it's track, ease the tension of your up/down haul line and allow the gas spring to push the rudder into the down position. Do not simply drop the up/down haul line, as it may cause bodily harm or otherwise damage your boat as the rudder kicks down and pulls sharply on the up/down haul line.
- To raise the rudder blade:
 - Follow the same instructions as above. Pulling forcefully at first, and ensuring that the rudder's path is clear of people and property.
 - Once the rudder is out of the water and the gas spring is past the center point of it's track, ease the tension of the up/down haul line and let the rudder naturally raise into the up position.
- Once the rudder is in the desired position, pull any slack out of the up/down haul line and secure it into the clam cleat mounted to the top of the tiller head.



Adjustable Up/Down Haul Line Attachment Point

- There are three holes on the forward edge of the rudder head which are used to attach the up/down haul line and adjust the force required to raise or lower your rudder.
 - **Upper Attachment Point**
 - This attachment point aids in lowering the rudder blade. With the up/down haul line attached to the upper hole, you are able to more easily bring the rudder from the up position to the down position.
 - **Middle Attachment Point**
 - The middle hole is the default attachment point when your rudder is assembled. This attachment point allows the rudder to be raised or lowered with approximately equal force.
 - **Lower Attachment Point**
 - The lower hole aids in raising the rudder blade. With the up/down haul line attached to the lowest hole, it may be easier for you to bring the rudder into the up position.



Maintenance and Care

•Plastic Rudders

- If you have a plastic rudder, either fixed or kick-up, it is built from High Density Polyethylene or HDPE. HDPE is universally virgin material, made especially for our applications. It is designed to perform well in the marine environment and has ultraviolet inhibitors and stabilizers. It is naturally resistant to fouling and other marine growth, however, given enough time fouling or growth may occur on an HDPE rudder.
- In order to ensure a long and healthy life for your rudder, you should scrub your rudder after every couple of outings with fresh water and a sturdy brush or scrubbing sponge. A light cleaning is all that is required, as you're simply washing away any microbes trying to take hold and foul your rudder.
- It is important that you keep your HDPE rudder out of direct sunlight while in an unnatural position, with the blade supporting the weight of the assembly, or with the blade cantilevered out over empty space.

•Lubrication

- If your Kick-Up rudder becomes hard to raise and lower, you can simply apply any silicone based lubricant (e.g. Sailkote, silicone spray, etc.) to the pivoting areas.
- Kick-Up rudder assemblies can cause injury if used without lubricant. A stuck rudder becoming unstuck during an attempt to repair may cause bodily harm. Use caution when applying lubricant to any moving parts.

•Painting

- HDPE is naturally non-adhesive to most paint or paint-analog products. Under most conditions you do not need to paint your HDPE rudder to prevent fouling, simply clean it regularly.
- If you store your boat in the water and the rudder is going to be submerged regularly and for long periods of time, you may want to paint the lower section of the rudder with anti-fouling paint to further reduce maintenance.
- To apply anti-fouling paint to your rudder:
 - Clean the surface of the rudder, freshly shipped rudders are thoroughly cleaned before being packed for shipment.
 - Prepare the surface of the area you intend to paint (traditionally this is from the water line down) by sanding the area with 180 or 220 grit sandpaper.
 - Apply anti-fouling paint. The manufacture of the rudder recommends VC-17 or Micron-17. Apply according to paint manufacturer's instructions.

•Tillers

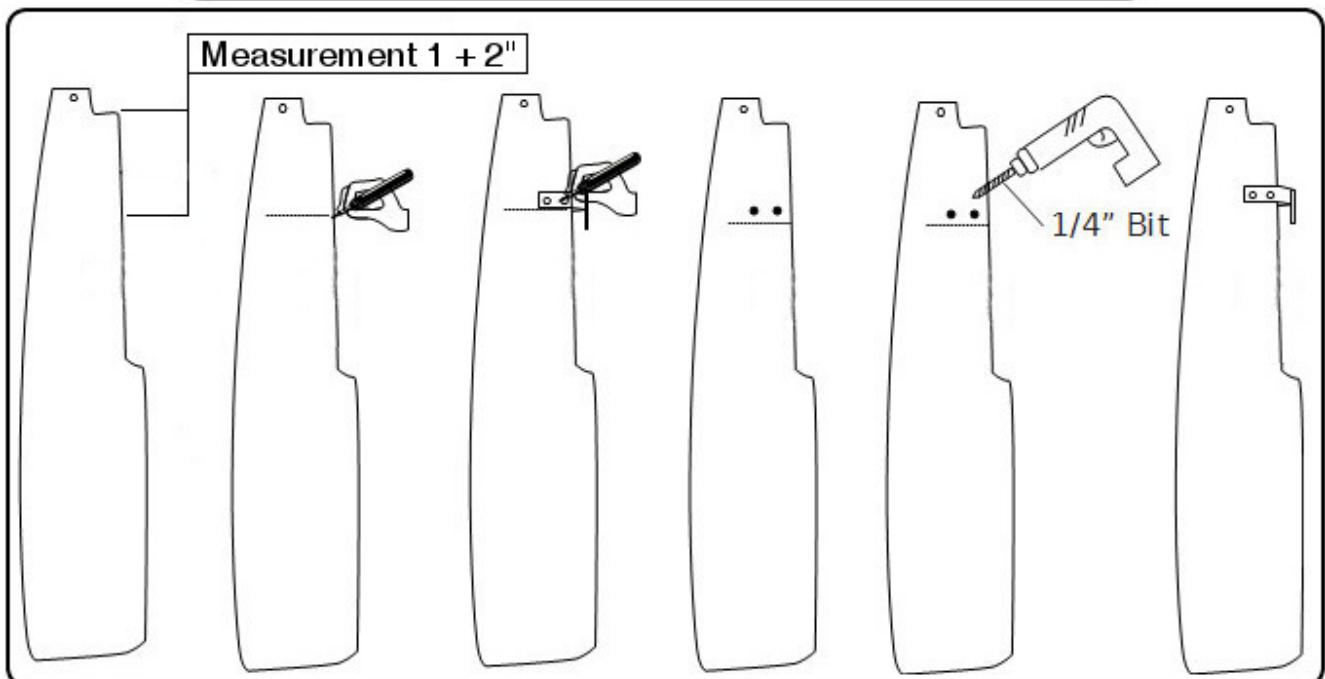
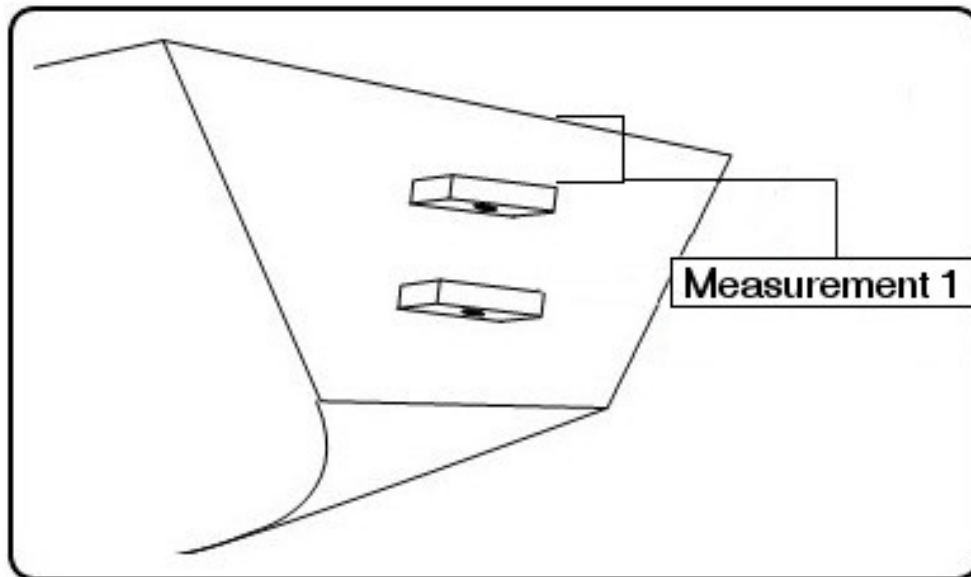
- If you ordered a varnished tiller, your tiller is ready to be installed the moment you receive it.
 - To prepare your tiller for varnish, lightly sand with 320 grit sandpaper
 - Apply marine quality spar varnish according to the varnish manufacturer's instructions. We recommend several coats of spar varnish applied in close succession. This will properly seal the tiller and provide an attractive finish.
- When not in use, keep your tiller covered with a tiller cover. This will keep the sun and other natural elements from wearing and damaging the tiller's finish.
 - We can provide a tiller cover at the time you purchase your tiller, or after your initial order.
- To maintain the quality of your tiller and extend it's life, the manufacture recommends you refinish your tiller once a year before or after your sailing season.

Loose Rudder Hardware Installation

- If you've ordered a rudder without pintles, or you're installing a set of heavy duty pintles, we recommend following these instructions to ensure that your rudder properly sits on your transom side hardware.

○ Upper Hardware:

- To install the upper rudder side hardware, begin by measuring the distance from the top of your transom, to the top side of your transom side hardware (Measurement 1).
- Add two inches to Measurement 1 to provide enough clearance for your tiller to clear the top of your transom, transfer your new measurement (Measurement 1 + 2") to your rudder. Measure down from the tiller rest notch, and mark a line on your rudder.
- Place your hardware on your rudder with the bottom edge at your marked point for Measurement 1 + 2", and mark the hole location for the fixture bolts.
- Remove your rudder side hardware, and drill your marked bolt holes.
 - **RECOMMENDED:** Chamfer the edges of your bolt holes with a countersink bit before installing the rudder side hardware. This will reduce the stress on the bolts.
 - **RECOMMENDED:** Use a drill press if available to ensure the holes are plumb.
- Place your hardware on the rudder, and install your fixture bolts.



Loose Rudder Hardware Installation

- If you've ordered a rudder without pintles, or you're installing a set of heavy duty pintles, we recommend following these instructions to ensure that your rudder properly sits on your transom side hardware.

○ Lower Hardware:

- To install the lower rudder side hardware, begin by measuring the distance from the top of your top transom side hardware, to the top of your bottom transom side hardware (Measurement 2).
- Transfer Measurement 2 to your rudder. Measure down from the bottom of your upper rudder side hardware, and mark a line on your rudder.
- Place your hardware on your rudder with the bottom edge at your marked point for Measurement 2, and mark the hole location for the fixture bolts.
- Remove your rudder side hardware, and drill your marked bolt holes.
 - **RECOMMENDED:** Chamfer the edges of your bolt holes with a countersink bit before installing the rudder side hardware. This will reduce the stress on the bolts.
 - **RECOMMENDED:** Use a drill press if available to ensure the holes are plumb.
- Place your hardware on the rudder, and install your fixture bolts.

