

Old Town Sportsman 120 PRO Rudder Installation

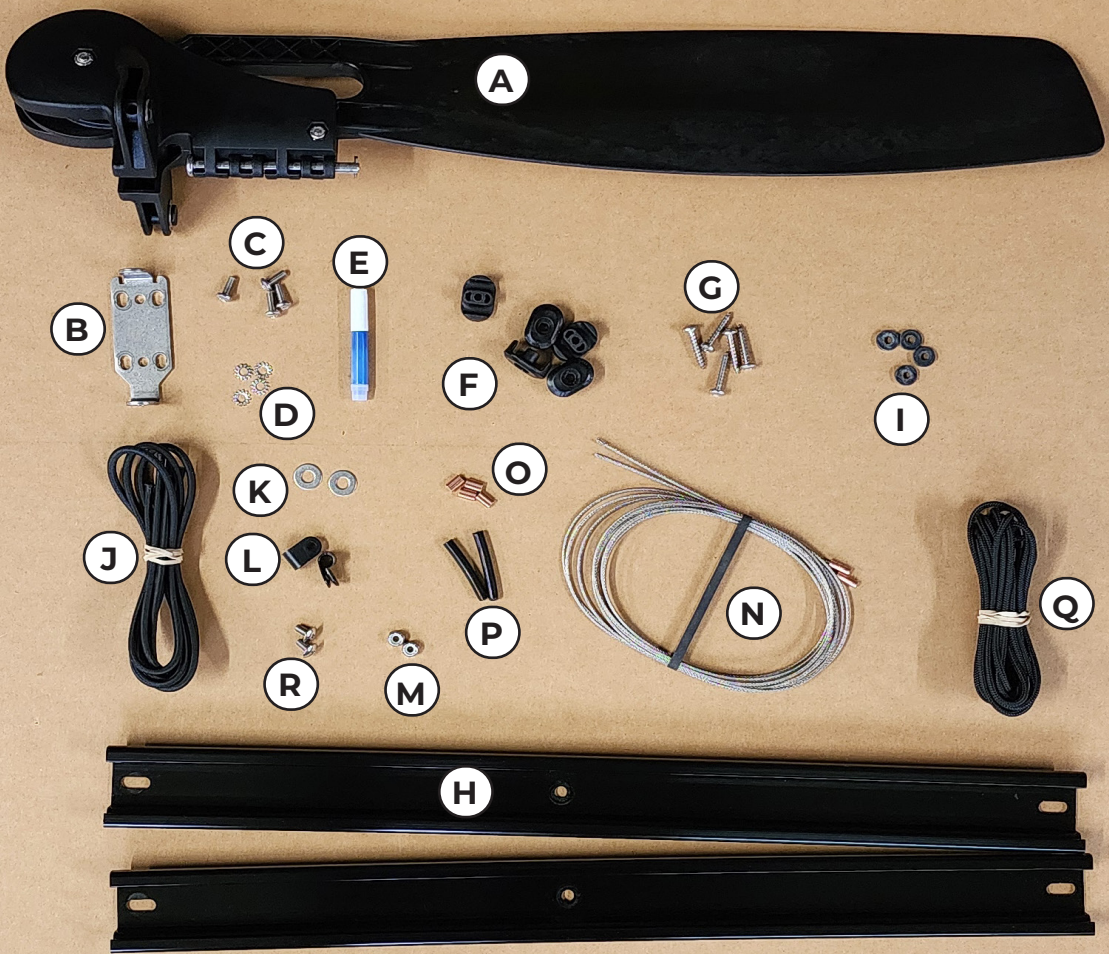
K-01.1331.2071



What's In the Box

 CAUTION

Before getting started, read and review all instructions thoroughly to prevent injury.
ALWAYS WEAR SAFETY GLASSES WHEN HANDLING TOOLS AND EQUIPMENT.



The images in this document may not look the same as your product but your unit will function in a similar way.

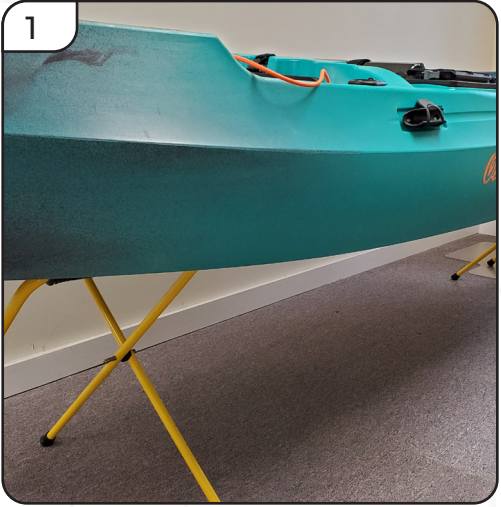
Ref.	Part	Part Number	Qty.
A	Double Rudder Assembly	01.1315.0754	1
B	Rudder Bracket	01.1315.0607	1
C	10-32x1/2" PPHMS	07.2136.0000	4
D	#10 Star Washers	01.1315.0280	4
E	Blue Threadlocker	01.1315.0762	1
F	Rudder Park Guide	01.1315.3653	5
G	#10x1" PPHMS	01.1315.0108	5
H	Aluminum Footbrace Rails	01.1315.0728	2
I	#10 Neo-bond Washers	01.1315.0016	4
J	3/16x24" Bungee	01.1315.0790	3
K	1/4"x5/8" OD Washer	07.2000.0686	2
L	P-Clips	01.1315.0354	2
M	10-32 Nylock Nut	07.2116.0000	2
N	Rudder Cable w/ terminal crimps	01.1315.0357	2
O	Copper Crimps Double	07.2507.0000	4
P	Heat Shrink Tubing - 1.5"	07.2776.0000	2
Q	Rudder Lift Line	01.1331.0824	1
R	10-32x3/8" TPHMS	07.2794.0000	2

120 PRO Rudder Kit

These work instructions will guide you through the installation of the foot-steered rudder assembly onto your **Old Town 120 Paddle PRO**.

This kit is **not designed for attaching foot-steered motors** to your 120 PRO. Installation needs and hardware of those kits vary widely. However, a base foot-steering control kit is available as an option.

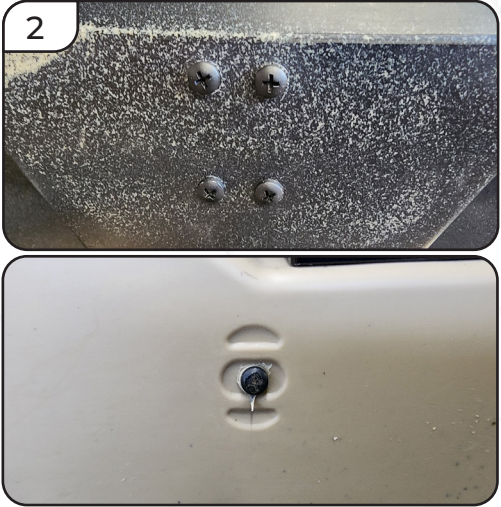
✓	TOOLS REQUIRED:
	Safety Glasses
	#2 Phillips Head Screwdriver
	Ruler or tape measure
	Spring clamp or C-clamp
	Diagonal Cutters
	Crimpers, Pliers, or Vise Grips
	Lighter or Torch



Work Area Prep

Place the kayak on a stable work surface at a comfortable working height.

All work in this installation is performed from the outside of the kayak. You should not need to reach inside the hatches.



Nylon Screw Removal

Carefully remove the nylon screws from:

- **4** rudder bracket inserts at the **rear (stern)**
- **5** rudder line guides along the **right gunwale and chine**.

These nylon screws will not be reused.

If a nylon screw head breaks off during removal, the threaded portion must still be removed before continuing. See **Troubleshooting** at the end of this document.



Footrail Removal

Remove the left and right plastic footbraces (3 screws per side).

Save all parts for reuse.



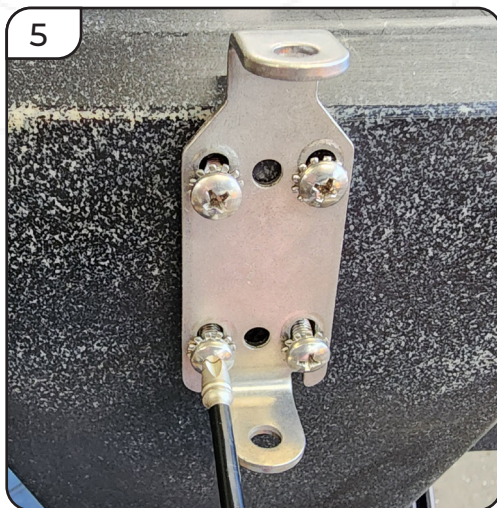
120 PRO Rudder Kit



Bracket Screw Prep

Place one #10 star washer **(D)** onto each of the four of the 10-32x1/2" screws **(C)**.

Apply one drop of blue threadlocker **(E)** to the threads of each screw.



Rudder Bracket Install

Position the rudder bracket **(B)** with the **narrow end facing up** and attach using the prepared screws.

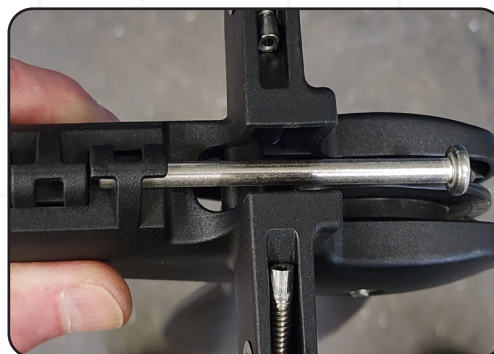
Start all four screws before fully tightening any.



Rudder Assembly Prep

Remove the split ring from the lower end of the rudder pin on the rudder assembly **(A)**.

Swing the rudder blade to the deployed position and remove the rudder pin from the rudder assembly.



Rudder Assembly Install

Place the hinge inside the rudder bracket. Reinsert the pin through the bracket and hinge, making sure the **pin passes through the lower hole** in the bracket.



120 PRO Rudder Kit

4

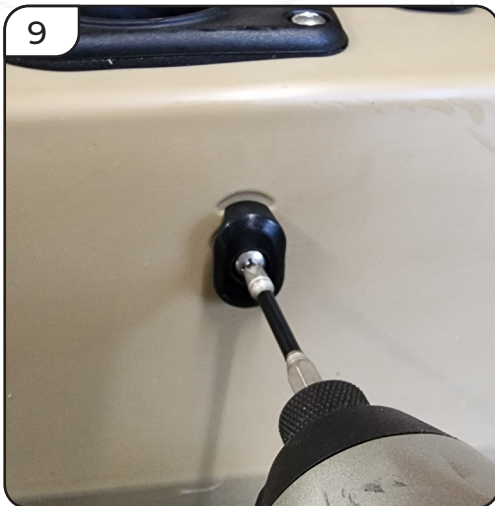
8



Reinstall Split Ring

Reinstall the split ring through the lower end of the rudder pin to lock it in place.

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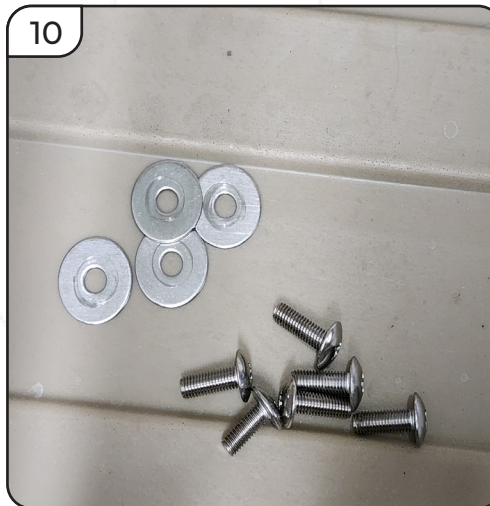
Rudder Line Guides

Insert one #10x1" screw (G) through the flat side of each rudder line guide (F). Repeat until all five line guides are assembled.

Install the line guides at the five mounting locations on the right side of the stern deck and gunwale.



10



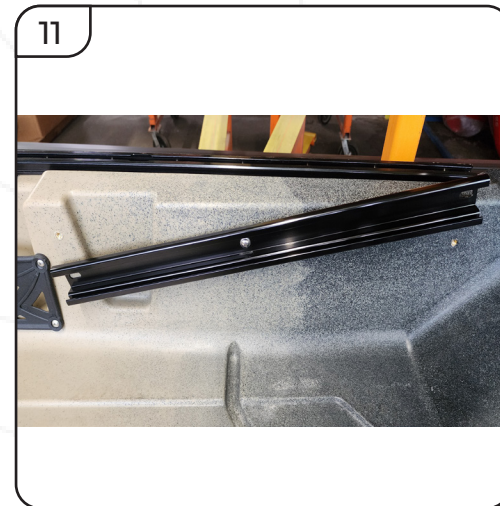
Footbrace Rail Prep

Retrieve four of the 10-32x5/8 screws removed with the original plastic footbrace.

Install one #10 neo-bonded Washer (I) on each screw, with the shiny side of the washer facing the screw head.



11



Footbrace Rail Install

Hold one aluminum footbrace rail (H) up to the mounting inserts at the footrail location. Confirm all three inserts align with the rail holes. If not, flip the rail end-over-end.

Install the center screw with a neo-bonded washer first. Leave it snug but not fully tightened.

Angle the rail so the bow end is raised.



Footbrace Bungee Prep

Install a 1/4"x5/8" OD washer **(K)** onto one bungee **(J)**.

Tie an overhand stop knot at one end of the bungee, leaving a 1/2" tail.

Slide the washer down to the stop knot.



Footbrace Bungee Install

Insert the free-end of one bungee through the slot at the stern end of the removed plastic footbrace, feeding it from front to back.

Pull the bungee through until the stop-knot prevents further travel.



Add P-Clip

Slide one p-clip **(L)** onto the free end.

Tie an overhand stop knot, leaving a 1/2" tail.

Repeat steps 12-14 for the second plastic footbrace.



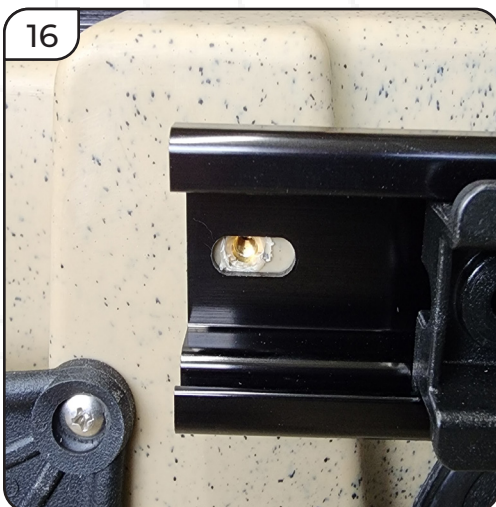
Footbrace Install

Confirm you have the correct footbrace for each side of the boat.

Pull the front end of the bungee and p-clip near the front end of the plastic footbrace.

Align the stern end of the plastic footbrace with the front end of the aluminum rail.

Slide the footbrace fully into the rail **while holding the bungee and p-clip.**



Rotate Rail Back Down

Rotate the aluminum rail back to horizontal.

Check that the **molded-in inserts in the kayak are visible** through the slots at each end of the rail.



Front P-Clip Install

Insert one of the original 10-32x5/8" screws through the p-clip hole.

Align the screw and p-clip with the forward molded-in insert, then tighten until snug.

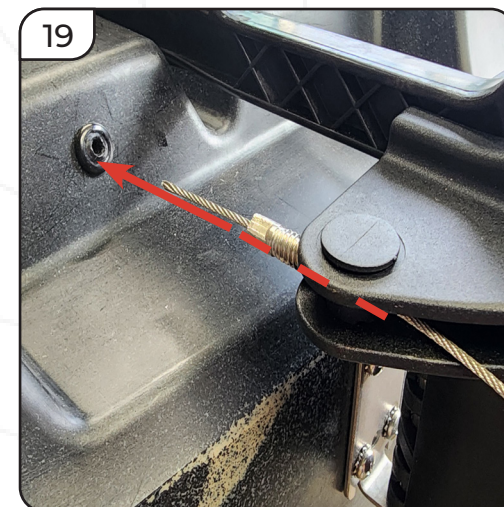


Rear Rail Fastener Install

Retrieve one of the remaining 10-32x5/8" screws with a neo-bonded Washer.

Install it in the rear insert at the stern end of the aluminum rail and tighten until snug.

Repeat steps 15-18 for the other side.



Rudder Cable Install

Uncoil both rudder cables **(N)**.

From the stern end, feed the cut end of each cable **through the non-adjustment side** of the clevis nut pin on the rudder body, then through the matching rudder tube opening.

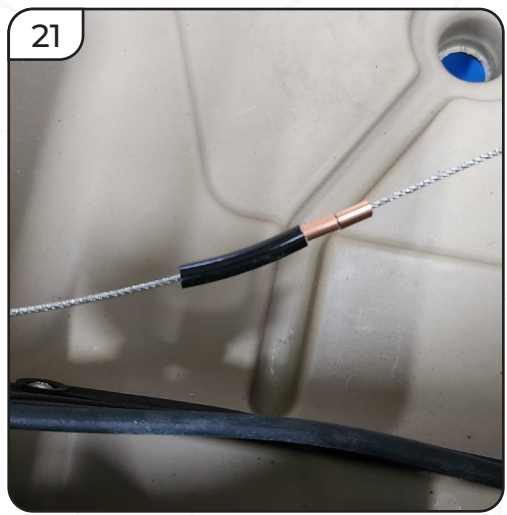
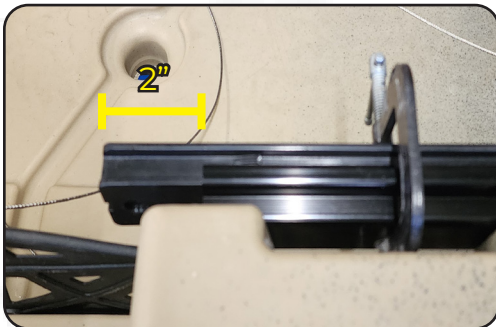




Clamp Footbrace Position

Return rudder to stowed position and secure under the bungees.

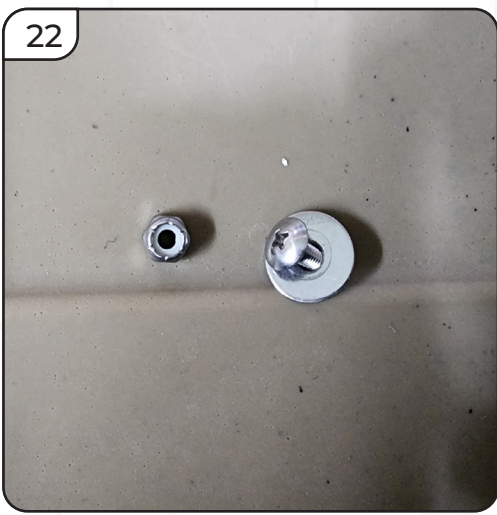
Slide each plastic footbrace rearward until it extends 2" past the stern end of the aluminum rail. Clamp each footbrace in place with a spring clamp or c-clamp.



Prep Cable Loop

Slide one piece of heat shrink **(P)** and two double crimps **(O)** onto the end of the cable.

Route the cable into and back out of the D-shaped opening at the end of the footrail. **Adjust the loop size to fit within the footbrace sidewalls.**

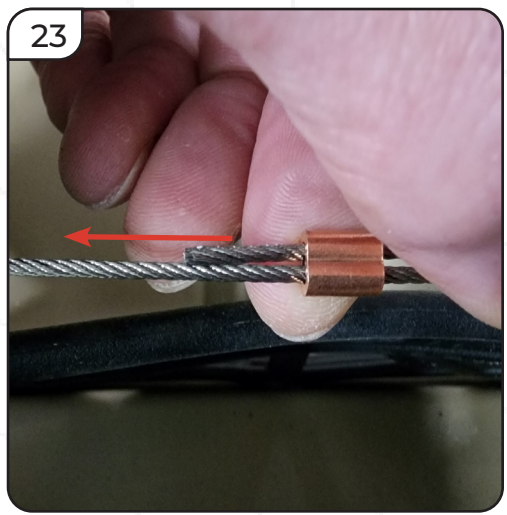


Cable Loop Install

Install one 10-32x3/8" bolt **(R)** through the original #10 fender washer removed with the footbrace.

Pass the bolt through the cable loop and through the rear most hole in the footrail.

Place one 10-32 nylock nut **(M)** in the rear detent of the footrail and **leave loose for adjustment.**

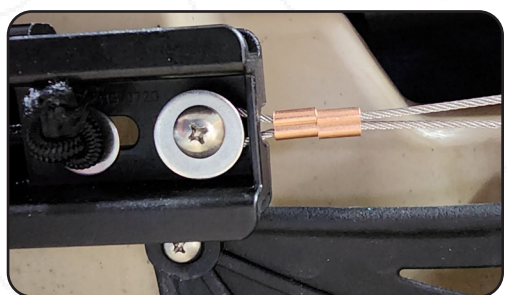


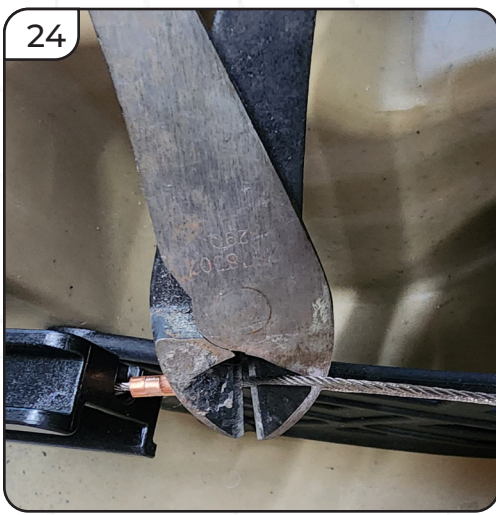
Set Cable Tension

Feed the cable end back through both double crimps.

Pull out slack by routing the cable through the crimps, around the bolt, and back through the crimps until the loop is properly sized.

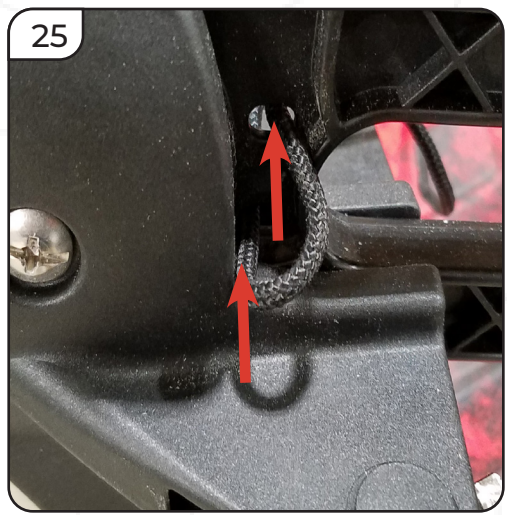
Slide the crimps up against the footrail and crimp both securely.





Finish Cable Ends

Trim the cable tail **as close to the second crimp** as possible. Slide the heat shrink tubing over both crimps until it rests against the footrail, then shrink it with a lighter or heat gun. **Repeat steps 21-25 on the other side, then remove both clamps.**



Rudder Lift Line Install

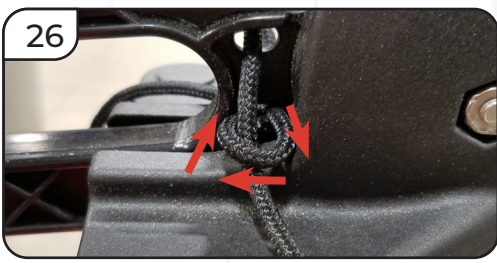
Uncoil Rudder Lift Line (Q).

If either end is blunt or frayed, use heat to taper for easier threading. Fold the line in half.

From the **right side of the rudder blade (facing forward from the stern)**:

- Feed one strand through the **top hole**.
- Feed the other strand through the **bottom hole**.

Pull through until a small loop remains on the right side.



Lock Line At Blade

On the **left side of the blade**:

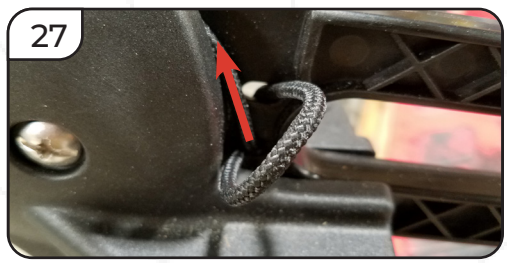
- Take the **lower line** and cross it **over the upper line**.
- Feed the lower line back through the bottom hole (**left --> right**).

(Top picture)

Tighten

Pull the lower line tight from the right side.

This should cinch the upper line tightly against the blade. (Bottom picture)



Route Around Pivot Point

On the **right side of the blade**:

- Take the **lower line** and route it **up through the loop** you created earlier.
- Guide it **up and over the rudder pivot point**.

Pull both lines evenly to tighten.

Both crossing points should now be snug against the blade with no slack.



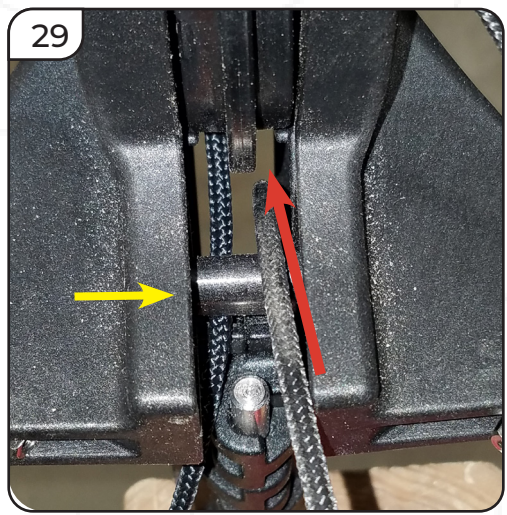
Position Rudder

Rotate the rudder blade to a **vertical position** (inset top left photo).

Route Right-Side Line

Take the **right-side line end**. Feed it **from back to front** through the **half-circle hole beneath the pivot**.

Pull all slack through to the front of the rudder body (inset top right photo).

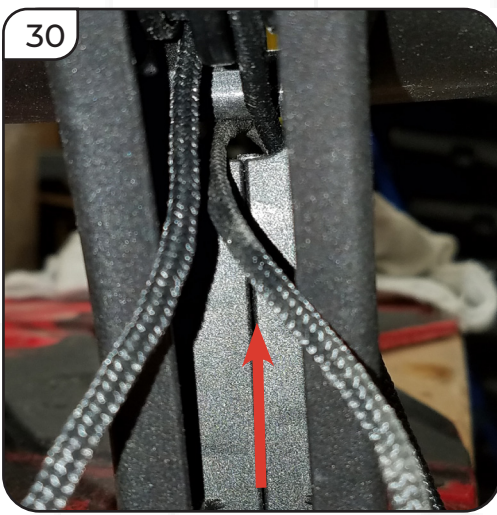


Route Left-Side Line

Check that the rudder blade is **still in the vertical position**.

From the **front side of the rudder**:

- Route the remaining left-side line **down between the crossbar and the blade pivot**.

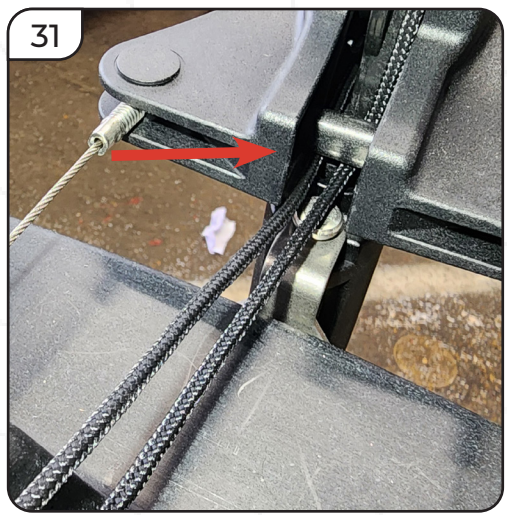


Route Left-Side Line

From the rear:

- Feed it from back to front through the **same half-circle hole in Step 28**.

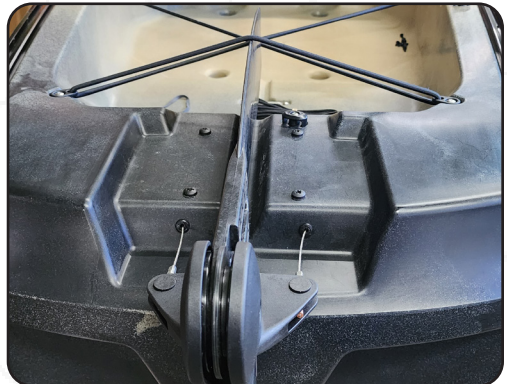
Pull all slack through to the front of the rudder body.



Confirm Routing

Verify that the **two lines do not cross**. When correctly routed, **both lines should exit forward beneath the crossbar**.

Return the **rudder blade to the stowed position**.



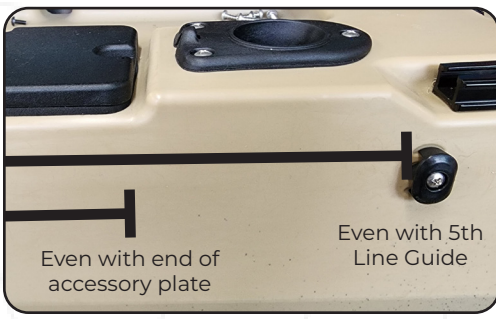


Route Through Guides

Route both rudder lift lines forward, through four rudder line guides, keeping the lines parallel.

Stop after the fourth guide.

Trim the two lift line ends to the lengths shown. Carefully melt the cut ends to prevent fraying.



Tie Lower Line To Bungee

Retrieve remaining 24" bungee **(J)**.

Tie a double fisherman's knot to connect one end of the bungee to the end of the lower rudder lift line.

Route the free end of the bungee through remaining rudder line guide.



Tie Upper Line to Bungee

Tie a double fisherman's knot to connect the free end of the bungee to the end of the upper rudder lift line.

Trim the knot tails to 1/2". Carefully melt the cut ends to prevent fraying.



Check System

To operate the rudder:

- Pull the **lower line to deploy the rudder.**
- Pull the **upper line to stow the rudder.**

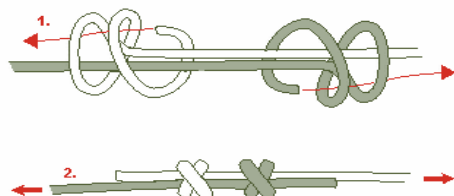
If there is too much friction and stowing/deploying the rudder is too difficult to lift, see **Troubleshooting** at the end of this document.

Troubleshooting Steps:

What if a head snaps off one of the nylon screws during removal?

The remnants are best removed by gently melting the tip of a small screwdriver or rod into the nylon. Cool without moving, then attempt to unscrew the nylon.

How do I tie a double fisherman's knot?



Why won't the rudder move when I try to stow and/or deploy it?

Most of the lift-line friction occurs at the sharpest bends in the routing path. If needed, remove the middle rudder line guide to reduce two of those bends.

Why is the rudder still hard to lift after removing the middle rudder line guide?

Option 1: If the rudder is turned to one side while being raised or lowered, it can increase the tension in the lift line. To avoid this, apply even pressure to both footbraces - so they are even - when deploying or stowing the rudder.

Option 2: The screw holding the rudder sides together can be over tightened, causing too much friction. To avoid this, check if the rudder blade has any free float by lifting it up by hand and letting go. If the rudder remains upright, loosen the screw a quarter turn at a time, checking for the free float.

Note: Loosening this screw too much could cause the rudder line to fall into the pivot and bind. Be sure to check that the rudder line is still routed correctly.