



RUDDER KIT – SOLO KAYAKS

IMPORTANT: Tandem models will require the Wildy Supplemental kit in addition to this kit. The Supplemental kit provides extension straps and extra footbraces that allow rudder positioning to be adjusted for solo or tandem paddling. The Supplemental kit can be purchased through a registered dealer.

If your kayak has a molded in rudder post hole on the stern that goes all the way through, you will need the Harmony Gear Solo Rudder Kit (plus the Harmony Supplemental Kit for tandems) with the “long pin” blade assembly.

Wilderness systems has been producing kayaks since the 1980's and in keeping with our unrelenting pursuit of improvement, we have used multiple rudder systems over the years, sometimes on same model kayaks which remained in production for many years. This kit is intended to allow the installation of a rudder system on as many Wilderness Systems kayak models as possible but no one kit can address every possible model. With older models, more creativity will be required though we have made efforts to include all components that might be needed to complete installation. It may be necessary to obtain additional hardware or fittings to complete a specific installation. It is also possible that you will have components or hardware left over after installation. This is the result of our intention to accommodate as many different kayak models as possible with this kit.

Terminology that will help during installation:

- **“Rudder Ready”** is a term used to describe kayak models with pre-existing parts or features that accommodate the installation of a rudder system. Many times, this refers to a molded in rudder post hole on the stern and/or pre-installed poly guide-tubing that accommodate steering cables. Wildy models produced from 2011 to the present will typically have “rudder ready” components.
- **“Non-Rudder Ready”** refers to kayak model that do not have rudder components, such as poly tubing, and will need these parts installed to accommodate a rudder system.




































Safety Notice: Installing a rudder on any kayak will require drilling holes in your hull and deck.
Proceed carefully and subscribe to the “measure twice / drill once” process.

(PLEASE CONTACT YOUR LOCAL DEALER or CUSTOMER SERVICE FOR WARRANTY INFORMATION)

Tools Required for Installation:

- #2 Philips head screwdriver
- 3/8” Box or open-end wrench
- Measuring tape or ruler
- Scissors or Knife
- Drill with 3/16” bit
- 5/16” bit (Threshers & ATAK models only)
- Rivet Gun (possible, depending on age & model)

RUDDER PARTS CHECKLIST – SOLO KIT
(Parts not to scale)

Rudder Blade Assembly w/ Liftline  QTY: 1	Footbrace Extrusion Aluminum  QTY: 2	Keepers XL Footbraces (Right&Left)  QTY: 2	Rudder Rest Assembly V Block  QTY: 1	Rudder Deployment Line (Turtle Line)  QTY: 1
Round Pad Eye  QTY: 5	Tarpon Deck Fitting  QTY: 1	Nylon Deck Loop  QTY: 1	J-Hook  QTY: 1	Socket Screw 1/4-20 x 5/8"  QTY: 2
Hex Head Key 3/16"  QTY: 1	Truss Head Screw 1/4-20 x 1"  QTY: 2	Truss Head Screw 1/4-20 x 5/8"  QTY: 4	Truss Head Screw 1/4-20 x 1/2"  QTY: 2	Locktooth Washer 410  QTY: 2
Rudder Split Ring 5/8"  QTY: 3	Rudder Bracket  QTY: 1	Truss Head Screw 10-32 x 3/4"  QTY: 2	Truss Head Screw 10-32 x 1/2"  QTY: 2	Rivet 1-3/16 x 3/16  QTY: 2
Cap Nut 10-32  QTY: 7	Rudder Swivel  QTY: 2	Flat Head Screw 10-32 x 1"  QTY: 6	Flat Head Screw 10-32 x 7/8"  QTY: 2	Flat Head Screw 10-32 x 3/4"  QTY: 1
Lock Nut 1/4-20  QTY: 4	Lock Nut 10-32  QTY: 4	Lock Washer 1/4"  QTY: 2	Combination Washer 1/4 x 5/8"  QTY: 2	Combination Washer 10 x 5/8"  QTY: 10
Neoprene Washer 1/4 x 5/8"  QTY: 6	Spectra Cord 1.8MM  QTY: 22 FT	Tubing, Nylon #11-5/32 x .106  QTY: 20 FT	Cable Clamp Nylon  QTY: 4	Rudder Swivel Set Screw  QTY: 2

INSTALLATION INSTRUCTIONS

IMPORTANT NOTE: The rudder kit hardware is separated into small bags, each labeled with a numbered sticker. The number on each bag corresponds with a step below (For example: parts in bag #1 will be used in step 1). It is recommended to lay out the hardware prior to starting the installation and confirming quantities provided.







STEP 1: ATTACH RUDDER BRACKET and RUDDER BLADE ASSEMBLY

Things to Consider before starting this Step:

- Some kayak models are designed with a rudder mounting hole already molded into the stern. For these models, the rudder bracket, socket screws, lock-washers and split rings listed below will not be needed. These parts will be left over once installation is complete. Only the Blade Assembly will be needed.

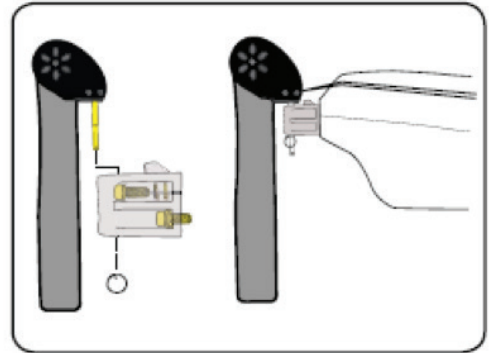
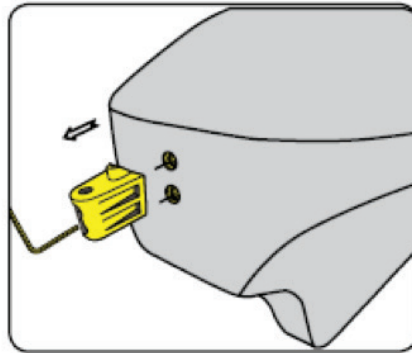
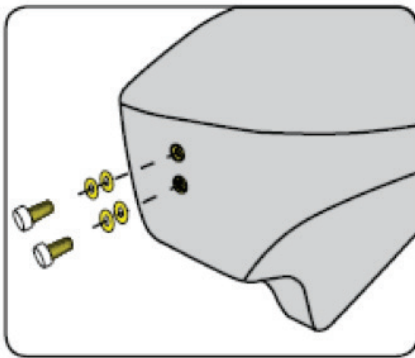
Scenario #1: For kayaks *WITHOUT* molded-in rudder post holes on the stern:

Parts Needed:

IMAGE	Part Description	QTY
	Rudder Bracket	1
	Socket Head Screws 1/4-20 x 5/8"	2
	Lock Washer, 1/4"	2
	Hex Key Wrench	1
	Rudder Split Ring	1
	Rudder Blade Assembly	1


1. Remove filler screws from inserts at stern of kayak and discard.
2. Position mounting bracket so that the raised knob is on top and align with inserts in stern.
3. Place 1/4" lock washer on each socket head screw and partially thread one screw into insert using hex key wrench; do not tighten fully..
4. Position bracket so that the rudder pin hole is vertical and hold bracket in this position while fully tightening both screws..
5. Unwrap lift lines from rudder assembly. If rudder split ring is attached to post, remove ring.

6. Insert silver rudder post into vertical hole in bracket and install split ring in small hole at base of post.

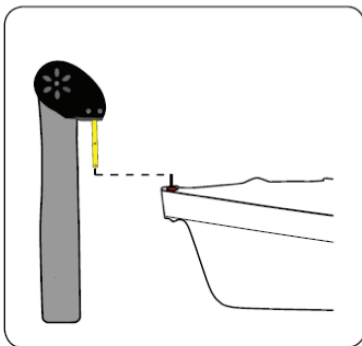


Scenario #2: For kayaks WITH a molded-in rudder mounting hole on the stern:

Parts Needed:

IMAGE	Part Description	QTY
	Rudder Blade Assembly	1





1. Insert assembly into rudder mounting hole on kayak stern.



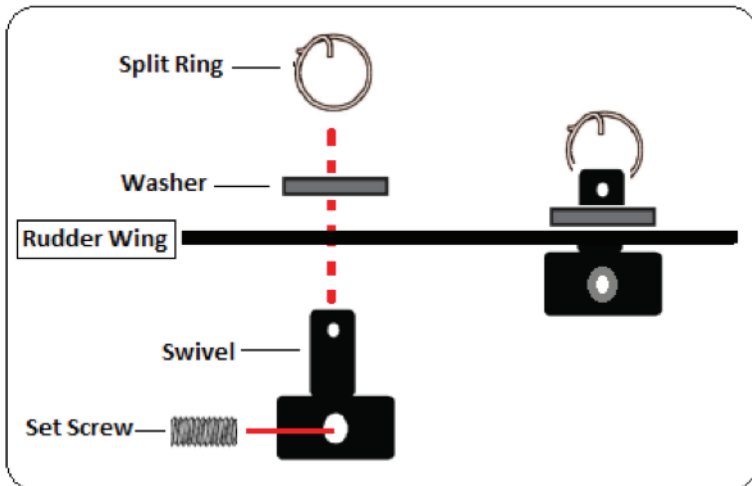
2. Rotate assembly 180° to the left to lock rudder in place

STEP 2: ATTACH SWIVELS TO BLADE ASSEMBLY

Parts Needed:

IMAGE	Part Description	QTY
	Rudder Swivel	2
	Rudder Swivel Set Screw	2
	Neoprene Washer	2
	Split Ring	2

1. Insert the Rudder Swivels from the bottom of the holes located on the aluminum wings of the rudder blade assembly.
2. Next, snap a rubber washer over the top of the exposed swivel nubs that are visible on the top side of the rudder wings.
3. Thread the split rings through each of the small holes located on the side of each nub but above each rubber washer. Once the rings are in place, the swivels should be secured to the wings.
4. Insert the small set screws in the threaded holes at the bottom of the swivels. Get them started but you will not tighten all the way until later in the installation.









STEP 3: INSTALL RUDDER REST and TIE DOWN SYSTEM

Things to Consider before starting this Step:

- The “rudder rest” and “tie-down” systems hold the rudder blade in a fixed position on the deck of the kayak when it is not deployed or when in transport.
- Not all kayaks require a rudder rest and/or tie down system to be installed.
 - Some kayak models have factory molded grooves on their stern that act as a rudder rest. These models may or may not have a tie-down system or recessed area for a tie-down fitting.
 - Some Sit-On-Top models with factory molded rudder rests may not require a tie-down system since the tankwell bungee can often be used to restrain the rudder blade. Simply lift the rear cross bungee up and over top of rudder blade to secure in place.
- If your kayak already features both a rudder rest and tie-down system, skip this step and move directly to Step 4.
- If your kayak model **DOES NOT** have one or both features listed above, please continue with Step 3.

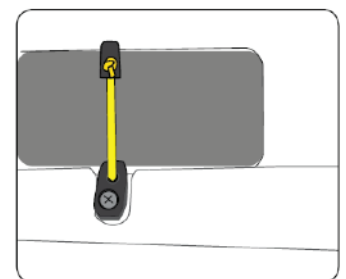
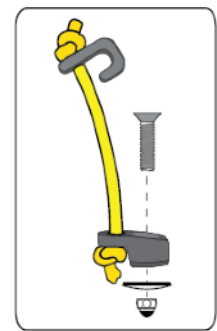
Scenario #1: *If a molded channel rest exists but a tie-down system does not*

Parts Needed:

IMAGE	Part Description	QTY
	Tarpon Deck Fitting	1
	Flat Head Screw, 10-32 x 3/4"	1
	Combination Washer, 10 x 5/8"	1
	Cap Nut, 10-32	1
	J-Hook Fitting	1
	Shock Cord, 3/16" x 1'	1 FT.



STEPS:

1. Look to the side of the molded channel and identify a molded recess in deck that can be within 5" of stern of kayak to 15" forward of stern (position will vary depending on model). Some models may have an insert in place. If so, remove filler screw and skip #2 below)
2. Use 3/16" bit and drill hole at center of recess. Access under side of deck via stern hatch where needed.
3. Before attaching the deck fitting, thread bungee cord through top of the fitting and tie off with overhand knot.
4. Insert screw into fitting and secure to deck with washer and cap nut on underside of deck if no insert or directly to insert. Position washer so that the black neoprene side is on top in contact with deck. Tighten fully.
5. Slide J-hook over opposite end of bungee cord.
6. Stretch bungee up alongside rudder blade and allow to retract until the J-hook captures top edge of rudder blade and bungee cord is under sufficient tension to hold blade firmly against deck. 5" of bungee is usually a workable length but confirm on your kayak before cutting.
7. Tie off bungee at this point with an overhand knot and cut off excess bungee cord. Singe ends with flame to prevent fraying.



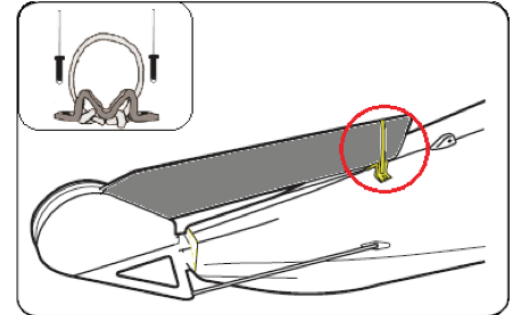
Scenario #2: *If neither molded rest nor tie-down system exists*

Parts Needed:

IMAGE	Part Description	QTY
	Rudder Rest, V Block (older models)	1
	Aluminum Rivets (older models)	2

STEPS:

1. If there is no molded groove in deck, align rudder blade straight and parallel to keel line.
2. Place the Rudder Rest “V” under the blade, approximately 3-4” from end of blade. Check to make sure it sits well on deck and that there is enough play in the bungee to slide up and over rudder blade to secure to deck.
3. Mark the holes in base and drill 3/16” holes at marks.
4. Secure rudder rest with Aluminum Rivets provided.



STEP 4: Install Lift Line Control

Things to Consider before starting this Step:

- On some kayak models - a recess or molded-in area for the Lift-Line Control fitting may already exist on the right (starboard side) next to cockpit to indicate the location.

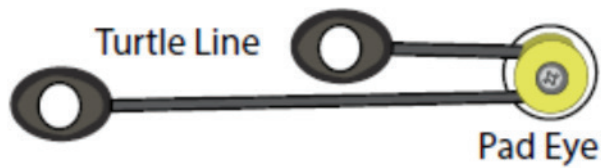
OR

- On some kayak models - a recess or molded-in area may already exist and have a Deck Fitting or Pad-Eye for the Lift-Line Control already installed by the factory.

OR






- Some kayak models have no markings at all to indicate the fitting location for the lift-line control.
- Regardless of the setup, the lift-line control should be positioned in-line or just behind your hips and within an easy reaching distance when seated in or on the kayak.

IMPORTANT: *Both a round Pad-Eye and a Deck Loop fitting are provided in this kit. Pad Eyes tend to work best when a round recess exists but either can be used based on personal preference.*








A. If using Round Pad-Eye:

Parts Needed:

IMAGE	Part Description	QTY
	Round Pad Eye	1
	Flat-Head Screw, 10-32 x 1"	1
	Combination Washer, 10 x 5/8"	1
	Cap Nut, 10-32	1
	Rudder Deployment Line "Turtle Line"	1

B. If using Deck Loop Fitting:

Parts Needed:

IMAGE	Part Description	QTY
	Deck Loop	1
	Flat-Head Screw, 10-32 x 1"	2
	Combination Washer, 10 x 5/8"	2
	Cap Nut, 10-32	2
	Rudder Deployment Line "Turtle Line"	1

Scenario #1: If deck fitting is not in place:

STEPS:

1. If no recess or fittings exist, determine location by sitting in boat and finding a comfortable position to pull forward or backwards on line extending from rudder.
2. Drill 3/16" hole(s) at desired position.
3. Thread bungee of Turtle assembly through chosen fitting (Deck Loop or Pad-Eye) then install using 10-32 x 1" Flat-Head screw or screws.
4. Secure fitting with interior backing hardware if possible (i.e. Combination Washer and Cap Nut).

REMINDER: *If access to the interior of the hull is limited and using backing hardware is not possible, rivets (not included) can be used instead of the 10-32 x 1" Flat-Head Screw to install deck fitting.*

5. Tighten fully and test to make sure Turtle assembly will slide back and forth and is not pinched by pad eye.

Scenario #2: If Deck Fitting or Filler Screw already exist:

STEPS:

1. Loosen and remove stern most screw on two screw fittings or loosen center screw if a single screw fitting sufficiently to allow 3/16" bungee cord to slide under fitting.
2. Slide the bungee on the Turtle Assembly under end of fitting and position so that it can slide forwards and back.
3. Tighten loosened screw(s).





STEP 5: INSTALLING GUIDE FITTINGS FOR THE RUDDER LIFT-LINE

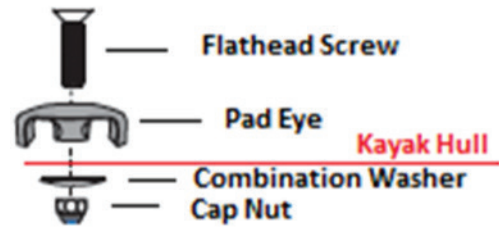
Things to Consider before starting this Step:

- The total number of Round Pad-Eyes used for the Lift-Line System and their locations will vary depending on kayak model and length.
- Threaded inserts and/or hardware on models with pre-existing (factory installed) Lift-Line fittings, should already be in the optimal position to eliminate guess work.
- If factory installed fittings, inserts and/or hardware DO NOT exist, the positioning and spacing of each fitting will need to be determined by selecting the best path between the Rudder Blade assembly and the Lift-Line Control.
- Once placement for fittings has been determined, drill 3/16" holes at each location and secure with interior, backing hardware (washer & cap-nut), if possible.
- On some models, access to the interior of the hull may be so limited that installing backing hardware is not possible. For example, many SOT models do not have adequate access points for installing backing hardware. If this is the case, rivets (not included) can be used to attach the fittings.

IMPORTANT: *Lift-Line fittings should be positioned above the kayak's "parting-line." This is the line that separates the hull (bottom) from the deck (top).*

Parts Needed (quantities will vary by model):

IMAGE	Part Description	QTY
	Round Pad Eye	4
	Flat-Head Screw, 10-32 x 1"	4
	Combination Washer, 10 x 5/8"	4
	Cap Nut, 10-32	4



Scenario #1: If Molded-in Locations w/ Inserts & Hardware Exist:

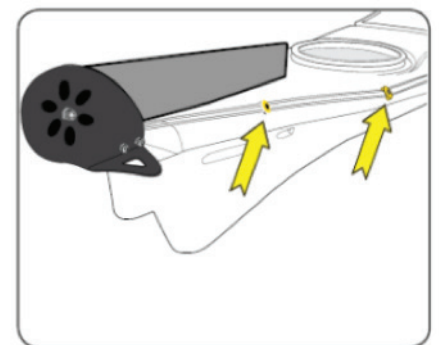
1. Unwrap the rudder lift-line from the blade assembly at the stern and run it down the hull to the “turtle line” or “lift-line control” (installed in step 4) so that it follows an un-obstructed path where the pad eyes will be attached.
2. Locate molded in recesses along the right side of the deck along the “parting-line” that separates the hull from the deck.
3. If locations have pre-existing threaded inserts with filler screws, back out screws and set aside.



4. Secure a round pad eye at each recess using the 10-32 x 1 Flat-Head screws, and if possible, the interior/backing hardware (Combination Washers and Cap Nuts).

Scenario #2: If Molded-in Locations w/ Inserts & Hardware DO NOT Exist:

1. Unwrap the rudder lift-line from the blade assembly and run it down the hull to the “turtle line” or “lift-line control” (installed in step 4) so that it follows an un-obstructed path where the pad eyes will be attached.
2. Position and mark pad eye locations so that the line channels are oriented parallel to the keel line and above the parting line of the kayak, allowing the line to run straight and true from rudder blade assembly forward.
3. Once the location for each Pad-Eye has been determined and marked, drill the mounting holes for each fitting with 3/16” drill bit and install Pad-Eyes using the 10-32 x 1” Flat-Head Screws and backing hardware (Combination Washer & Cap-Nut), if possible.



REMINDER: *If access to the interior of the hull is limited and using backing hardware is not possible, rivets (not included) can be used instead of the 10-32 x 1” Flat-Head Screw to install deck fitting.*

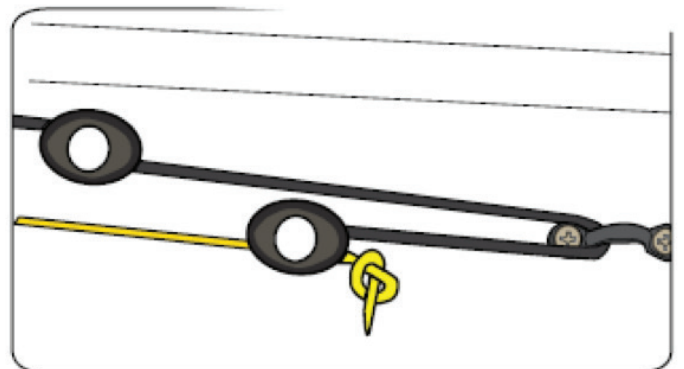
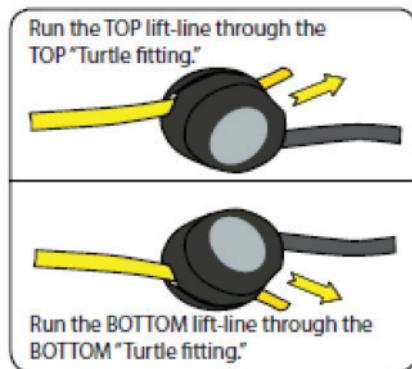
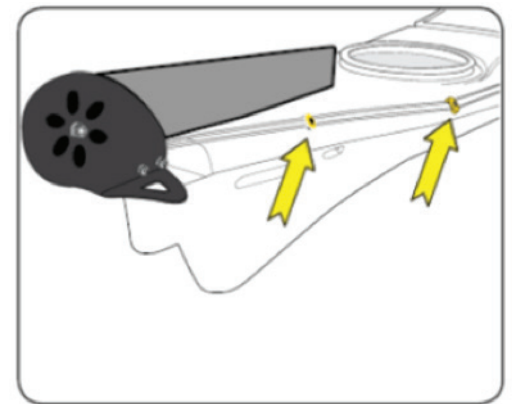
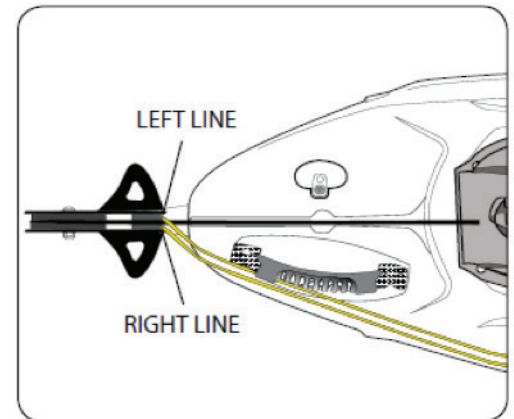
STEP 6: INSTALL RUDDER LIFT-LINES

STEPS:

1. Using the Rudder Tie-Down system installed in Step 3, fix the rudder blade in centered position on deck.
2. Thread lift-lines from rudder assembly forward through round pad eyes, inserting the Left side (i.e. Port) line through the top Pad-Eye channels and the Right side (i.e. Starboard) line through the bottom Pad-Eye channels.

IMPORTANT: Do not twist lines. They need to run clean through pad eyes and be easily pulled forward and back.

3. Connect loose ends of Lift-Lines to Lift-Line Control installed in STEP 4 by threading the top Lift-Line through the open hole in the top Turtle.
4. Tie lift-line off with an overhand knot, then pull the knot into the hole in the Turtle to lock it in.
5. Thread the bottom lift-line through the bottom hole in the bottom Turtle.
6. Slide bottom Turtle towards the stern until there is tension in the bungee. Then, secure Turtle in that position via an overhand knot in the lift-line and pull line back into Turtle.
7. Trim off excess line from each Turtle and sear the raw ends of the lift-lines to prevent fraying.
8. Make sure rudder blade is released from hold-down and test the lift-line action. By pulling the stern most Turtle forward, the rudder blade should deploy to vertical position. By pulling the opposite Turtle, the blade should raise up to the resting position on the kayak's deck.









STEP 7: INSTALLING ALUMINUM FOOTBRACE EXTRUSIONS






Things to Consider before starting this Step:

- Installing the sliding footbrace system for the rudder will be slightly different on sit-inside models versus sit-on-top models.
- Please reference section (A) in this step if you have a Sit-Inside kayak and section (B) if you have a Sit-On-Top kayak.

Parts Needed:

IMAGE	Part Description	QTY
	Aluminum Footbrace Extrusions	2
	Truss-Head Screw, 1/4-20 x 1/2"	2
	Neoprene Washer, 1/4 x 5/8"	4
	Lock Nut, 1/4-20	4
	Combination Washer, 1/4 x 5/8"	2
	Truss Head Screw, 1/4-20 x 5/8" (Qty. 4 needed for ATAK models)	2

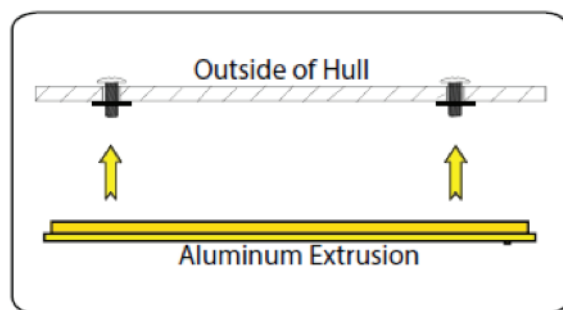
The hardware listed above should work on most models but some models may have 10-32 threaded inserts rather than 1/4-20. The alternate hardware listed below should cover most other setups and can be substituted as needed. Simply test thread inserts to identify correct screw and hardware sizes.

	Truss Head Screw, 1/4-20 x 1" (Thresher model only)	2
	Truss-Head Screw, 10-32 x 3/4" (only on specified models)	2
	Truss-Head Screw, 10-32 x 1/2" (only on model types specified below)	2
	Combination Washer Washer, 10 x 5/8" (Thresher models only)	4
	Lock Nut, 10-32 (only on specified models)	4

STEPS:

A. Sit-Inside Kayak Models:

- Secure rudder in centered position on stern deck.
- Remove existing footbraces from hull.
- Install metal extrusions using methods listed below:
- Using existing holes from factory footbraces, insert 1/4-20 x 1/2" screws into the holes closest to the bow (front) of the kayak and 1/4-20 x 5/8" screws into the holes closest to the stern (back) of the kayak.
- Place (1) black neoprene washer over each screw head on the interior side of the hull so that they hold the screws in place.



- Attach the black aluminum extrusion rails to the inside of the hull.

NOTE: *Holes in extrusions are tapped to accept 1/4-20 threaded screws so backing nuts will NOT be needed.*

B. Sit-on-Top Kayak Models (see section “C” below for Threshers and ATAК models):’

Things to Consider before starting this Step:

- Some SOT models have molded-in threaded inserts for attaching the footbraces while others rely on installing internal washers and nuts (depends on the access to interior of hull).
- Some older models of the Ride have 10-32 threaded inserts rather than 1/4-20. Test thread of insert to identify correct screw.

STEPS:

- Secure rudder in centered position on stern deck.
- Remove existing footbraces from hull.
- Install metal extrusions using methods listed below:
- Position extrusion and secure front end with 10-32 x 1/2” Phillips Truss Head screw, #10 x 5/8” combination washer, and 10-32 lock nut.
- Secure end closest to seat with 10-32 x 3/4” Phillips Truss Head screw set into insert if present. No washer required.

C. Thresher and ATAК:

- ATAК:
 - Drill out threaded holes in aluminum extrusions with a 5/16” drill bit. Secure foot brace extrusions using 1/4-20 x 5/8” screws for each insert.
 - Tighten hardware securely to secure extrusions to hull.

5. Thresher:


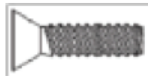

- Drill out threaded holes in aluminum extrusions with a 5/16” drill bit.
- At insert locations closest to bow, secure extrusions with 1/4-20 x 5/8” screws.
- At stern locations without inserts, use 1/4-20 x 1” screws and secure on the interior of hull with 1/4” Combination Washers and 1/4-20” Lock Nuts provided. This can be done by using the center storage hatch as an access point.
- Tighten hardware securely to secure extrusions to hull.

STEP 8: INSTALLING FOOTBRACES

Things to Consider before starting this Step:

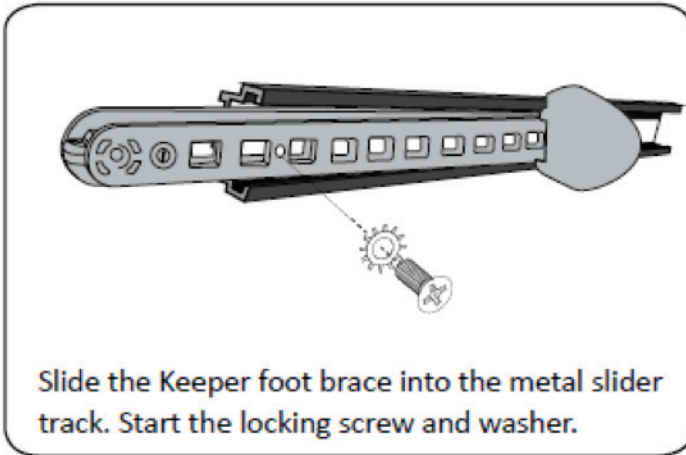
- When installing system on “sit-inside” models, it’s easier to attach the Spectra cord to the footbraces before inserting them into the metal extrusions. You will first need to install the Guide Tubing and Spectra Cord in STEPS 9 and 10 before doing so.

Parts Needed:

IMAGE	Part Description	QTY
	Keepers Footbraces (Right & Left)	1 ea.
	Flat Head Screw, 10-32 x 7/8” (specified model types only)	2
	Lock Tooth Washer (specified model types only)	2

STEPS:

1. Secure rudder centered in rudder rest.
2. Identify the raised stopper molded onto one end of each Keeper footbraces.
3. Slide footbrace rails (with pedals installed) into extrusions so that the stopper is at front end or bow end of extrusion.



NOTE: Some model designs will allow the foot brace runner to slide out of stern end of the extrusion (example: Ride 135). Test your boat by lifting the bow and watching to see if foot brace slides out of the extrusion. If so, this can be prevented by installing a toothed washer onto a 10-32 x 7/8" Phillips Flat Head screw. Insert screw & washer into recessed hole in center of each footbrace rail and tighten until snug. This will act as a brake to prevent the runner from sliding out of extrusion.

STEP 9: INSTALLING THE GUIDE TUBING

Things to Consider before starting this Step:

- If your kayak is "rudder-ready" (produced from 2011 forward), the poly tubes that guide the Spectra cord may already be installed. If so, follow the instructions below in Scenario #1 for "Rudder Ready Kayaks."
- If your kayak is older than 2011 or NOT "rudder-ready," it may be necessary to first install the guide tubes. If this is the case, follow the steps below in Scenario #2 for "Non-Rudder Ready Kayaks."



Scenario #1 Rudder-Ready Kayak Models:

STEPS:

1. If your kayak is rudder ready with the guide tubing already installed, remove the plugs or filler screws at each end of rudder tubing (at stern of kayak and behind the seat on each side), then follow the instructions for running the Spectra Cord below in STEP 10.
2. Guide tubing and nylon tube clamps will not be needed and will be left-over parts.

Scenario #2 Non-Rudder Ready Kayaks:

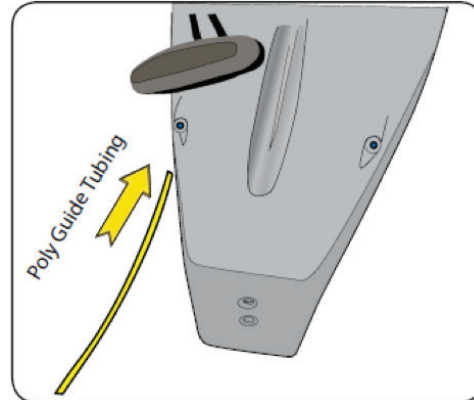
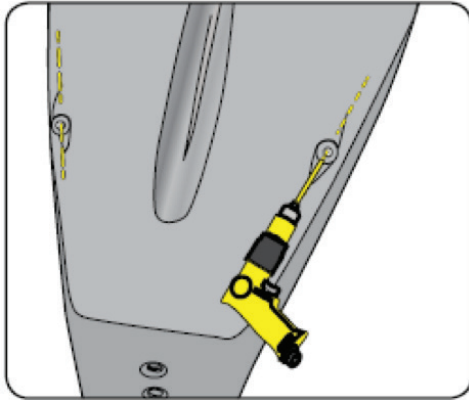
Parts Needed:

IMAGE	Part Description	QTY
	Tubing, NYLON, #11, 5/32 x .106	20 FT
	Nylon Cable Clamp	4

STEPS:

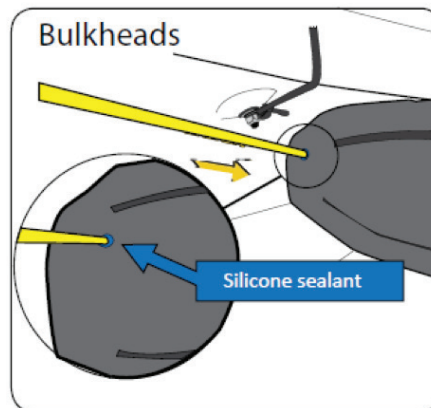
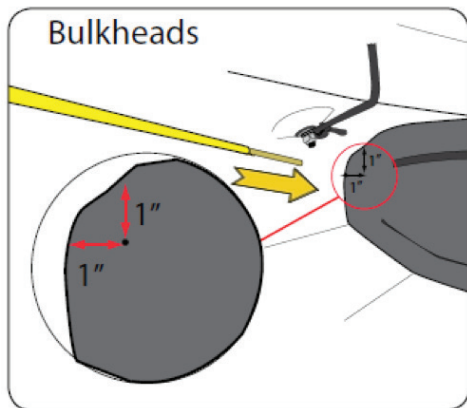
1. Inspect the stern of the kayak and look for any raised "bumps" or recessed flat surfaces, one on each side of hull or deck of kayak. These are the stern cable ports and need to be drilled out with 3/16" bit so that the guide tubing can be inserted.
2. Insert tubing into port and push/pull forward. You want to run a tube on both sides of the underside of the deck on either side of hatches, etc. Be careful pulling the tubing forward so that you don't pull it through the stern port accidentally.

IMPORTANT: The “run” of the tubing should be as straight as possible with no sharp angles or bends.

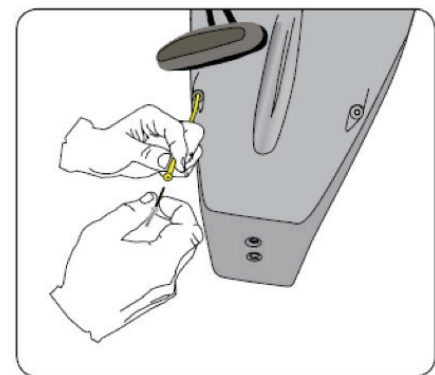
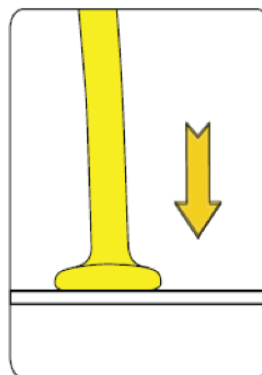


BULKHEADS:

3. On Sit-Inside kayaks with stern bulkheads, you need to drill a 3/16” hole on each side of bulkhead to route the tubing through the bulkhead. Drill through the stern bulkhead approximately 1 inch from the side of the hull and 1 inch from the top of the hull. Do Not put any extreme angles on the tubing.
4. Using a silicone based sealant, seal around tubing on the compression slot side of bulkhead (side facing towards stern) where the tubing enters the bulkhead.

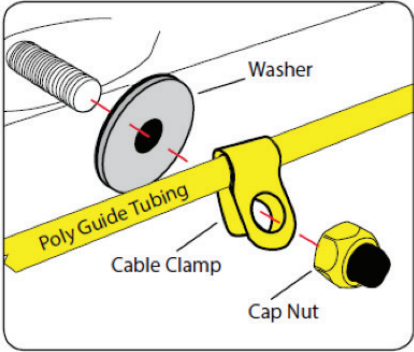


1. Before pulling guide tubing all the way through, use a lighter to heat the stern end until it is soft and pliable.
2. While the end of tubing is still hot, press it against a cool flat surface so that the end of the tubing mushrooms out to form a flange.
3. Use a paper clip or something similar to make sure the hole in the tubing is open and not melted shut.




- At the cockpit on Sit-On-Top kayaks, you will drill a 3/16" hole in the rear of cockpit on each side aligned as close as possible with the stern end of the footbraces. Remember to position holes so that the tubing "run" is as straight and level as possible.
- Attach the poly tubing using the cable clamps and hardware.

NOTE: Cable clamps are supplied with this kit to hold the tubing on the underside of the deck, using existing deck fitting screw locations to guide the tubing forward. It may be necessary to replace the existing screw with a longer screw (not included in kit) or add additional cable clamps, depending on length of kayak. You don't want the tubing to sag noticeably but it does not have to be drum tight either.

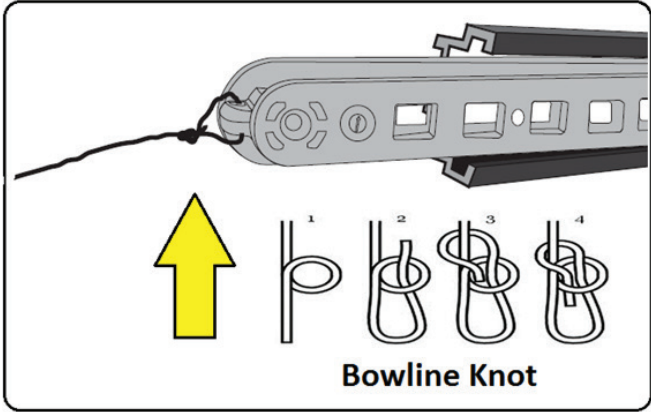


STEP 10: INSTALLING THE SPECTRA CORD

Parts Needed:

IMAGE	Part Description	QTY
	SPECTRA CORD, 1.8MM	22 FT

- Once the Guide Tubing has been installed, insert Spectra cord into the tube opening in cockpit area and feed it through. Continue pushing until end of cord emerges from tubing close to the rudder blade assembly at the kayak rear/stern.
- Go ahead and tie Spectra Cord ends to footbraces using a bowline knot.

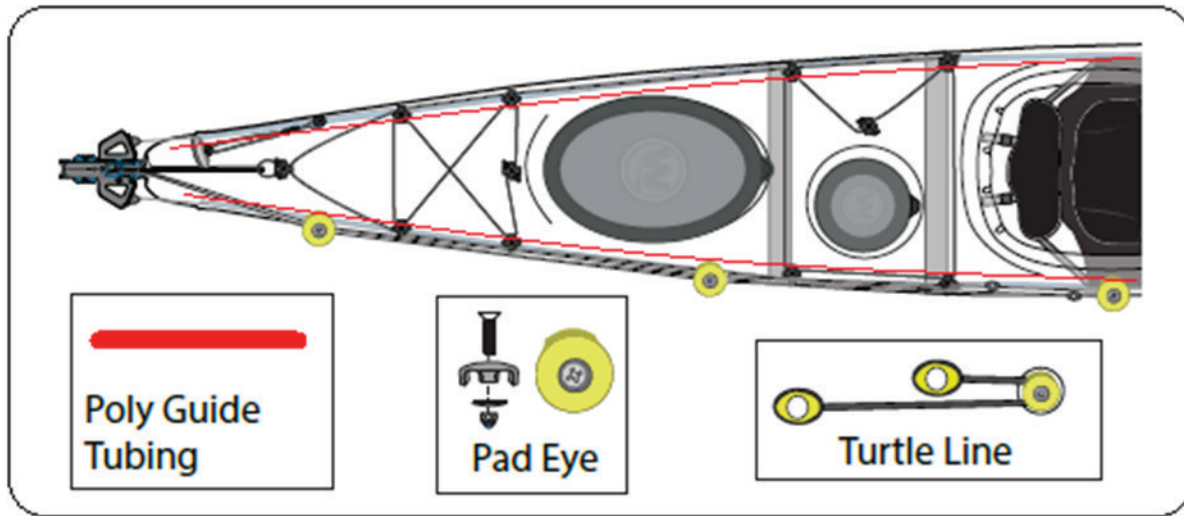


- Once cord ends are secure, slide one footbrace as far forward as possible pulling the Rudder Cord forward as well. In same step, turn the Rudder Blade Assembly so that it is in the correct position according to the footbrace position (for example: if sliding left footbrace forward, Rudder Blade should be positioned to the left).

NOTE: The wing on the rudder head should not contact the stern of the kayak when the footbrace is fully extended.

- Once rudder position is acceptable, run Spectra cord back to the appropriate swivel fitting located on the Rudder wing for that specific side (i.e. connect Spectra cord running down Left side of kayak to swivel on Left wing of rudder blade assembly).
- Insert loose cord ends into pilot holes on Swivel fittings and pull to remove slack.
- Hold footbrace in forward position while pulling cord to keep pressure on line (help from a friend may be needed on this step for longer kayaks).
- While holding cord taught with slack removed, tighten "set screw" on Rudder Swivel to lock cord in place.

8. Extra cord can be trimmed off but leave a few inches of excess to allow adjustments later if needed.
9. Tie double over hand knot in the cord ends to serve as a safety stops.
10. Repeat for opposite side.



Installation Complete!!!

Final Step: TESTING THE RUDDER SYSTEM

Test the lift line system operation while sitting in kayak to familiarize yourself with relative positioning of the Turtles and the rudder blade. You should be familiar enough with system to be able to tell rudder position by feeling the Turtles and not having to turn around and visually confirm rudder positioning.

Test the steering system while sitting in kayak, pushing one pedal forward and then the other. If you are new to paddling a ruddered boat, you'll need to get used to a fluid foot pedal system as compared to the fixed position system you likely had prior. Get used to the feeling of pushing forward with one foot while allowing the other to move close to your seat. To brace the kayak, you'll need to get used to applying equal pressure on each foot pedal.

With this rudder system, the foot pedal and footbrace runner move together, sliding within the metal extrusion. Most paddlers adjust the foot pedal position so that it is in a centered position when the rudder is also centered.

User Cautions:

- Always secure rudder blade in stowed position when transporting your kayak and always remember to release rudder blade from tie down prior to launch.
- The rudder is designed to kick up if it encounters an obstruction but it still makes sense to be cautious when approaching the shore or in shallow water. The more impact the blade encounters with an obstacle, the increased chances the blade could be bent or damaged before it can kick up.
- The addition of a rudder makes handling the stern of the kayak more awkward when moving the kayak. Make sure the rudder blade is secured in stowed position and that access to carry handles is not impeded. Beware of sharp edges on the blade or rudder head assembly.
- The addition of a rudder to a kayak positioned upside down on a vehicle roof lowers the clearance below the kayak by about 5 to 6". Check for clearance while walking behind vehicle or opening trunk or hatchback.
- The biggest threat to proper operation is potential for sand and grit to accumulate in the foot brace extrusions. Periodic rinsing of these areas with fresh water will eliminate this issue.

Please visit the Wilderness Systems website for more information or contact our Customer Service Department with any questions.