



Installation Instruction Manual

SS Series- Bow Manual Rev 2

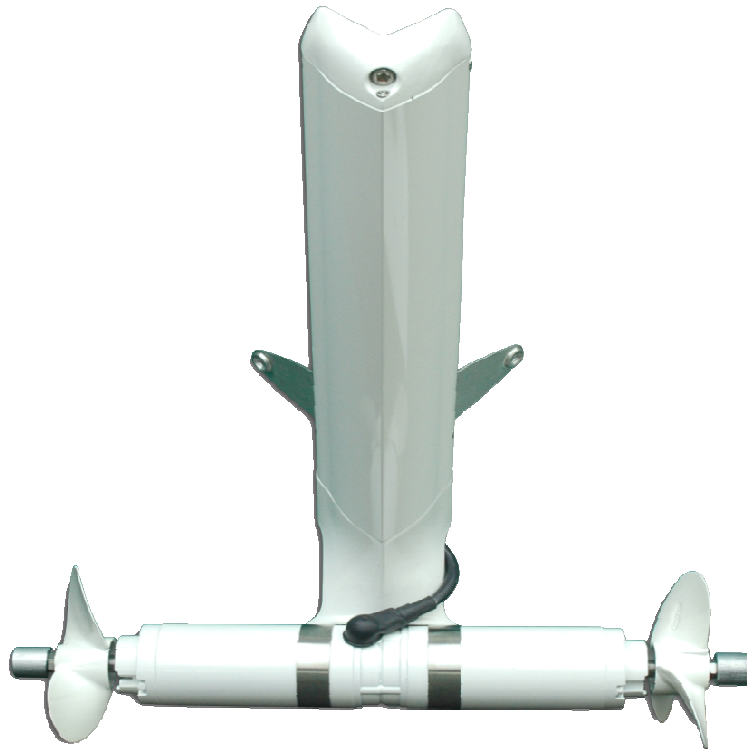


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Supplied Parts in your Kit and Required Tool List

Upper Section with Top Cast Cap Installed	Bow Thruster Base with Motor	Clamp Strap Assembly	Hull Insert Epoxy Kit	Joystick (Single or Dual)
		 *SS380 models require two clamp strap assemblies		
Tube of Anti-Seize	Motor Controller	Hull Insert & Bolts	1/0 Compression Terminals	1&2 Gauge Compression Terminals
		 *SS380 kits have 4 hull inserts & 4 hull insert bolts		
Top Through Bolt Assembly	Side Screws	Heat Shrink Tubes	Terminal Protectors	2/0 Compression Terminals
				

Additional Material Requirements: Marine Battery Cable; for SS230 1/0 Marine Battery Cable, for all other units 2/0 Marine Battery Cable, 16Ga Primary Wire to install joysticks

Tools you may require for installation: Cordless DC Drill, Heat Gun, 3/8" Drive Torque Wrench, Phillips #2 Screwdriver, Wire Strippers, Wire Crimpers, 7/8" Socket, SAE Wrench Set 3/8" to 3/4" , Pliers, 1 1/2" Joist Drill Bit, 1/2" or 13mm Drill Bit, Drill Bits up to 1/2 ", 3/16" Hex Socket Driver, Sikaflex or Equivalent Sealant, Caulking Gun, Hacksaw



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Step By Step Installation Instructions

1. Determine Water Line

Installation of the SS series thruster can be performed in water or on land. Determining the water line is easier while the boat is in the water. The water line should be determined with an empty boat in order to get the highest point of float. The upper most tip of the prop should be no less than 5" (12 cm) below the surface of the water.

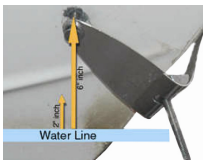
2. Remove Two-Sided Tape



Remove the two sided tape on the back of the clamp strap. The two sided tape is there to hold this part to the boat while you drill the pilot holes.

3. Positioning Clamp Strap

Carefully position the clamp strap holes within the guidelines shown in the photo below. Position the clamp strap bolt dead center. Push the strap tightly to the bow. The distance from the side clamp strap holes to the water line should be between 2" and 6" (5 to 15 cm). For the SS380, position the second strap under the first strap. Repeat steps #4 – 7.



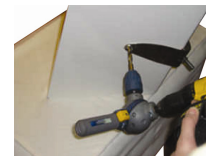
IMPORTANT! The insert system is designed to work in situations where there is no access to the inside of the boat. If you are not sure what is on the inside check with the manufacturer of the boat before drilling.

4. Drilling Through Hull



Knowing that there is nothing your drill will damage on the inside, drill your pilot holes using a 5/16" (8 mm) drill bit (see picture bottom left). Then remove the clamp strap and proceed to drill full size holes using a 1/2" (13mm) drill bit.

IMPORTANT! To prevent electrocution, use a DC cordless drill if you are working in the water! An angle drill for "in water" installation might be necessary depending on the angle of the hull



5. Epoxy on Hull Insert



The epoxy kit is made to be used with a regular caulk gun. Please refer to the instructions supplied with the epoxy kit for proper use. NOTE: If the epoxy has not set in the recommended time, please try the other supplied nozzle or manually mix the epoxy.



Insert the hull insert bolt just part way into the hull insert to allow for easier installation while applying the epoxy.

Spread the epoxy about 1/16" (1.5mm) thick on both the insert surface and the inside of the hole.



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Step By Step Installation Instructions (con't)

6. Install Hull Insert



Push the hull insert into the predrilled hole. The outside of the hull insert should be flush with the outside of the hull. Wipe excess epoxy off. Please refer to the epoxy instructions for drying time.

7. Install Clamp Strap



Apply the supplied Anti-Seize to the threads of the tapered head hull insert bolts. Apply Sikaflex under clamp strap to ensure a sealed joint. Using the 3/16" hex socket driver, torque the hull insert bolts to 10 foot pounds. If the center bolt is not quite center, loosen the jam nut and adjust it to center and retighten.

8. Attach Thruster Base to Boat



Hold the thruster base with motor against the boat keeping one wire on each side of the clamp strap bolt. Also keep the air line on one side. Install the clamp strap, nut and washer loosely, (do not overly tighten) just tight enough to hold the thruster to the boat.

IMPORTANT: Install the thruster making sure the upper most tip of the prop is at least 5" (12cm) below the surface of the water.

9. Feed Wires and Air Line through Hull



Drill holes to feed the wires through the hull about 3-6" (7.5 to 15 mm) above the top of the thruster base.

Using the same drill bit that was used for the hull inserts 1/2" (13mm), drill holes and insert the wires and air line. Seal the holes with Sikaflex or equivalent sealant.

IMPORTANT! If you are not sure what is on the inside of the hull check with the manufacturer of the boat before drilling.

10. Install the Upper Section and Torque down the Clamp Strap Nut



Slide the upper section onto the thruster base about 1/2" (1.5 cm) then proceed to torque down the clamp strap nut to 10 foot pounds..

For the SS380, torque both nuts alternately until they are both at 10 foot lbs. If the bolt is not long enough use the supplied longer threaded rod. If the bolt is protruding above the surface of the nut please cut off the excess material.



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Step By Step Installation Instructions (cont'd)

11. Install Upper Section



Push the upper section all the way down and tighten the side screws.

12. Install the Top Through Bolt



Drill the hole for the "top through bolt" using the hole in the cap as a template.



Insert the bolt, install the nut and washer on the inside, and tighten.

13. Air Line Positioning

IMPORTANT! The air line is a vent tube for the motor. The open end(s) of the air tube must be positioned in the boat in a dry location. Please ensure air line is in good condition; not bent, crimped or damaged in any way. Please check frequently.

14. Wiring

Locate the best place for the motor controller, we recommend you install as far front in the bow as possible. Also consider that you may have to reset the circuit breakers so choose an easily accessible location, the compartments in the V berth are best. If required cut the cables to the desired length in order to hookup the thruster to the motor controller.

Motor Controller Terminals Hookup

- Motor 1* for thrust one way.
- Motor 2* for thrust the other way. If the direction needs to be opposite just reverse the two motor leads.
- Bat. Pos.* for battery positive.
- Bat. Neg.* for battery negative.
- Switch 1* Connected to the joystick at the helm. Activates the motor for thrust in one direction.
- Switch 2* Connected to the joystick at the helm. Provides thrust the other way. If direction needs to be opposite just reverse the two switch leads.

IMPORTANT! The joystick assembly at the helm needs to be powered with 12 or 24 volts positive only when the motor is running. There should be no power when the motor is off for safety. If using auxiliary batteries to run your thruster, whether they are 12 or 24 volt, you will need to have a common ground with the batteries that the joystick is running on. See Battery Requirements.



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Step By Step Installation Instructions (con't)

14. Wiring (con't)

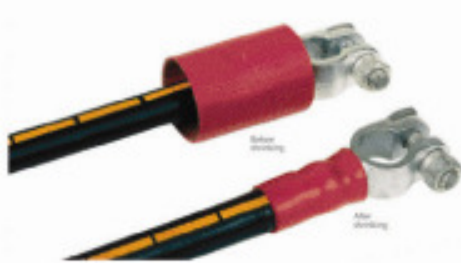
Compression Connectors

Strip 7/8" (22 to 25 mm) from the end of the cable. Slip tubing on cable before installing connector. Insert exposed wire into the compression nut until it seats. Copper wire should be flush or extended slightly beyond the compression nut. Compression terminals are supplied; tighten securely and pull to test. This test is important to prevent high resistance.

IMPORTANT! Connector must match the size of wire you are using. Wire size is printed on every nut. Grip the compression nut with a wrench and turn the connector onto the nut until it seats firmly.

Heat Shrink Tubing

The shrink tube must be installed over the joint between the wire and the terminal for water proofing.



After the connector is installed, position the tube over the junction of the connector and the cable. Shrink the tube using an electric heat gun or a torch. An electric heat gun is safer than a torch. **USE INDIRECT HEAT ONLY. DO NOT OVERHEAT.** Heat shrinkable tubing seals connectors against corrosion and provides strain relief for the cable.

IMPORTANT: NEVER USE AN OPEN FLAME NEAR BATTERIES OR ANY EXPLOSIVES.

Terminal Protectors

Install terminal protector and heat shrink tube on the cable before installing connector. Slip the terminal protector up and over the connector so it fits snug.

Sideshift Battery Requirements

Model	Battery Size	Battery Description	Qty	Configuration	Voltage
SS230	850CCA	BCE Group 31- Threaded Post	1	Parallel	12
SS340	850CCA	BCE Group 31- Threaded Post	2	Parallel	12
SS350	850CCA	BCE Group 31- Threaded Post	2	Series	24
SS380	850CCA	BCE Group 31- Threaded Post	4	Series	24

IMPORTANT: Ensure batteries are fully charged before operating your thruster. The use of a deep discharge or deep cycle battery will limit the performance of your thruster.



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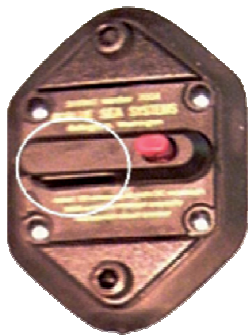
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Operation

Operating a vessel equipped with a Sideshift bow thruster is a great feeling of control and freedom. Instant power is right at your finger tips. Just push the joystick to the right or left. Letting go of the joystick returns the thruster to neutral.

REMEMBER:

- Ensure batteries are fully charged before operating your thruster.
- Be sure you know where the resettable breakers are located (on motor controller)
- Like all electric bow thrusters, intermittent use is intended. Sideshift thrusters can be used approximately 30 seconds with a 15 second cool down.
- It is not recommended to repeatedly extend thruster use to the limit. Doing so will promote premature wear.
- Always take your time while docking.



<- When the lever in the circuit breaker is closed or complete the thruster should operate.



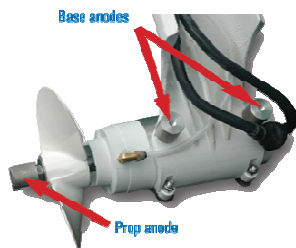
<- When the lever in the circuit breaker is out or open the thruster will not operate.

**For assistance please call our toll free help line.
1-877-325-4787**

Maintenance

DO IT YOURSELF MAINTENANCE

To maintain and protect your investment replace the anodes once a year. In addition, if the bottom of your boat and outdrive components need anti-fouling paint, we recommend coating the section of the thruster which is under the water with the same anti-fouling paint. Check that your air line is in good condition. Ensure batteries are fully charged.



Remove: grasp the anode with pliers and turn counter clockwise.

Install: install the new anode by turning it clockwise to the bottom and then give it an extra half turn

Replacement Anode Kit Part Numbers

AK-S-1; SS230 Salt Water

AK-S-2; SS340/350 Salt Water

AK-S-4; SS380 Salt Water

AK-F-1; SS230 Fresh Water

AK-F-2; SS340/350 Fresh Water

AK-F-4; SS380 Fresh Water

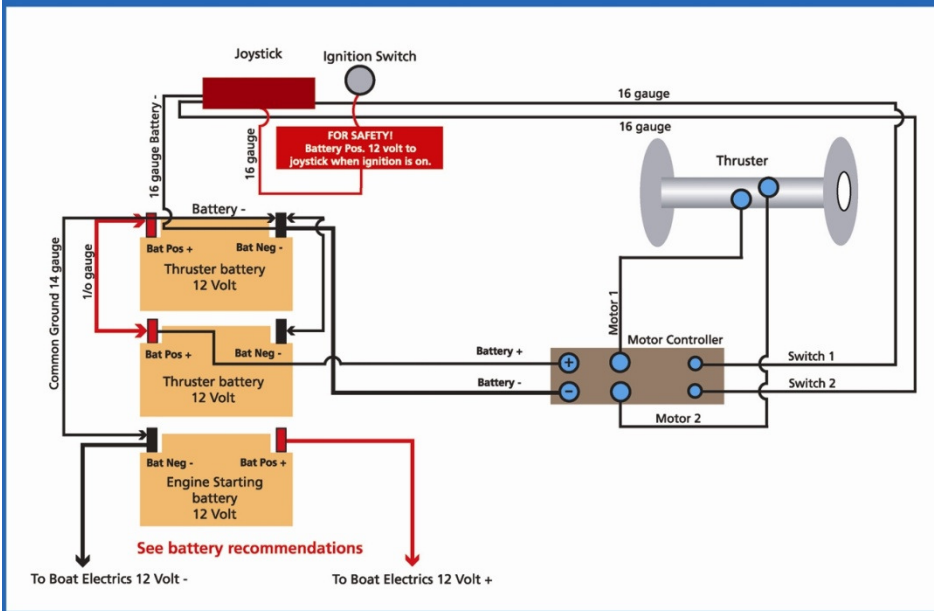


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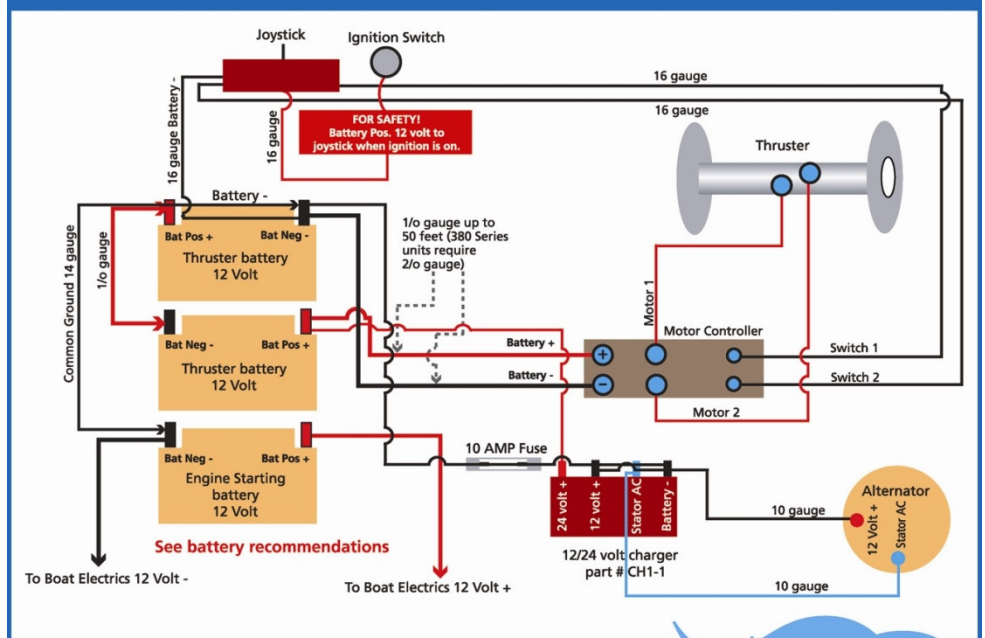
Wiring Diagrams

TRIGGER LOGIC: 12 Volt for models SS230 BOW / SS340 BOW / ST340 STERN



ATTENTION: SS380 Models require 4 thruster batteries

TRIGGER LOGIC: 24 Volt for models SS350 BOW / SS380 BOW / ST350 STERN / ST380 STERN





SIMPLE DOCKING FOR EVERY BOAT



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Maintenance Record

Model

Place of Purchase

Serial Number

Date of Purchase

Notes: