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INSTALLATION INSTRUCTIONS AND OWNERS MANUAL

Part # IS-SHX7606, Rev 4, 07/2013

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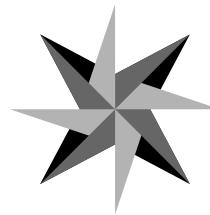


xtreme

Mechanical Steering for
Outboard Powered Vessels

XTREME™ NFB™ HELM SHX7606

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rack
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*Before you do it your way,
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U.S.A.

XTREME™ NFB™ HELM

SHX7606

(Patents Pending)

NOTICE

Installer: these instructions contain important safety information and must be forwarded to the boat owner.

These instructions describe how to install the Xtreme™ NFB™ HELM and steering system. Helm part number SHX7606. XTREME™ NFB™ or No Feed Back helms have a clutch mechanism to prevent engine torque at the steering wheel. This reduces operator fatigue by eliminating the constant fighting of the wheel. Instructions for installing steering cables are also included.

In addition to this kit the following components are required for a complete system:

- Bezel Kit SBX76061 (90°)
- SSCX64xx Cable (where xx is length in feet)
- Engine Connection Kit (refer to SeaStar Solutions catalog)
- Steering Wheel (refer to SeaStar Solutions catalog; Maximum wheel diameter 16", Maximum wheel dish 5")

⚠ DANGER

If steering cable is stiff in operation, it is unsafe to use and must be replaced immediately.

⚠ WARNING

Before starting installation read these instructions and engine makers instructions thoroughly. Failure to follow either of these instructions or incorrect assembly can result in loss of control and cause property damage, injury, or death.

⚠ WARNING

DO NOT substitute parts from other manufacturers, they may cause a safety hazard for which SeaStar Solutions cannot accept responsibility. Use only SeaStar Solutions SSCX64 Xtreme™ steering cable with this helm.

⚠ WARNING

To avoid excessive steering loads, and to get the best steering performance, the outboard motor or outdrive trim tabs and tilt position must be adjusted as instructed in the motor manufacturers operation manual. Failure to do so can effect the performance of the boat and its safe operation which may cause property damage, injury, or death.

⚠ WARNING

DO NOT attach any electrical ground wires to the helm. This would result in an electrolytic reaction to the steering system that may result in system failure or greatly reduced service life.

⚠ WARNING

Helms must not be disassembled for any reason. Failure to reassemble correctly may lead to total failure of the system, which could result in property damage, injury, or death.

NOTICE

When replacing an existing steering system it is recommended that you stay with the style (rotary or rack) the boat manufacturer installed. Never change your steering from a dual cable to a single cable system, as this could cause an unsafe boating condition.

NOTICE

Helms and cable assemblies are supplied lubricated ready for installation, do not add any lubricant to either assembly. Use of other lubricants can cause damage to the steering cable, resulting in the cable seizing or premature wear. Keep the cable and drive assembly clean during installation. Dirt will damage the system and cause premature wear. Do not take the plastic sleeve off the end of the cable until you are ready to install it into the helm.

This notice does not include the engine output ram end of the cable.

Preparation for Installation

Before the steering cable can be installed, the helm, bezel, and steering wheel must be fully installed as shown in the bezel kit instructions.

Steering Cable Routing

The helm assembly can be mounted for either port or starboard cable routing. Steering cables, if possible, should be routed to the starboard side of the boat in order to balance engine torque.

When routing the steering cable, select a path with the minimum number of bends, making the bends as large as possible. **DO NOT MAKE BENDS OF LESS THAN 8" RADIUS.** Sharp or frequent bends will result in hard steering and premature cable wear. When it is necessary to pass through a bulkhead, a 1-1/2" diameter hole is required. The cable should be loosely clamped or tied for support at regular intervals.

⚠ CAUTION

Cables must not be bundled together with electrical wiring.
Cables must not rest on sharp edges which can cause chafing.

Helm Installation

Refer to Bezel Kit (SBX76061) instructions.

Steering Cable Installation

Before the steering cable is installed the steering wheel should be positioned as shown in figure 1, so that it is in the correct orientation when the installation is completed.

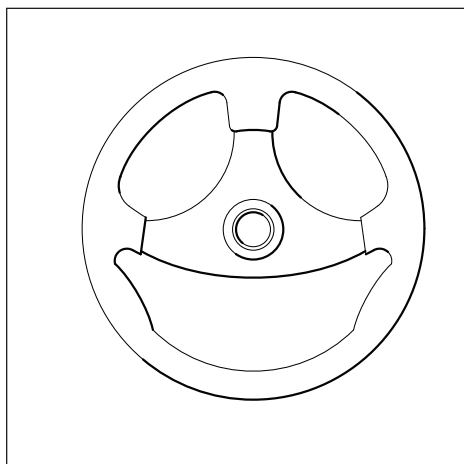


Figure 1.

STEP 1. Remove the pin from the cable entry spigot of the helm. **DO NOT REMOVE THE TAG FROM THE PIN.** The back of the helm is marked for typical installation.

STEP 2. Remove the protective sleeve from the cable end, making sure that no dirt gets on the lubricated cable end. Feed the cable into the UPPER helm spigot until it contacts the internal gears.

Then turn steering wheel Counter Clockwise to draw the cable fully into the helm. Continue turning the wheel after the cable end enters the helm spigot, you will feel some pressure then hear a click. Keep turning past that point until you can not turn any further.

That click you heard was the locking mechanism engaging with the cable end.

Turn the steering wheel fully in the opposite direction until you can not turn any further, and check that the cable end fitting is retained inside the entry spigot.

STEP 3. Replace the pin as shown in Figure 3, making sure that it is fully seated. **DO NOT REMOVE TAG FROM PIN.** This tag must be left in place for vessel safety during future steering maintenance.

STEP 4. Turn the steering wheel fully to both extremes of rotation and check that the cable fitting is retained in the entry spigot.

STEP 5. Feed spent travel tube (item 2, Figure 2) over the exposed cable end until you hear it click into place in the helm spigot. Then insert pin as shown in Figure 2 until it is fully seated.

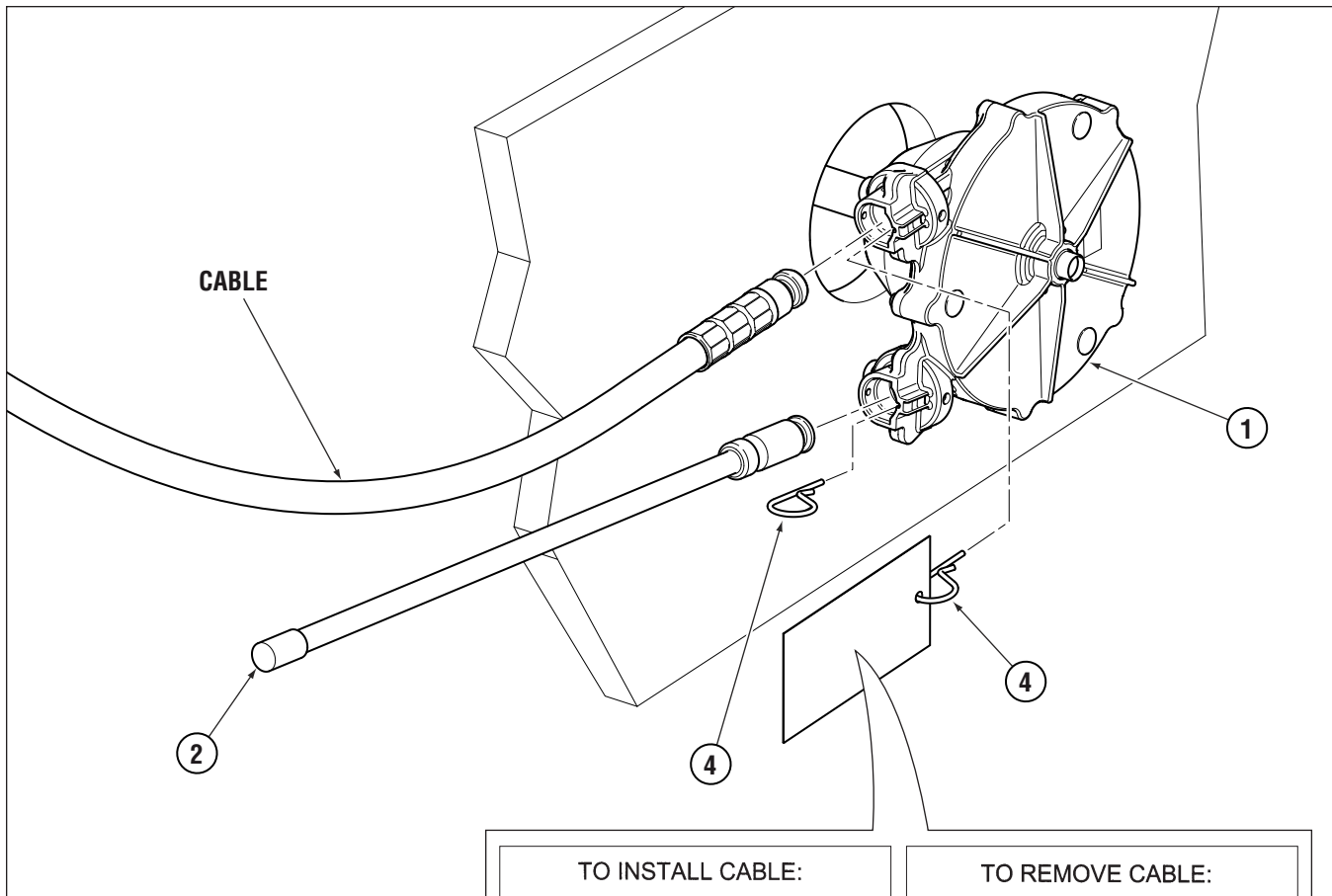


Figure 2.

TO INSTALL CABLE:			TO REMOVE CABLE:		
1. REMOVE PIN	2. INSTALL CABLE	3. REPLACE PIN & TAG AS SHOWN	1. REMOVE PIN	2. INSERT PIN IN HOLE, PUSH DOWN AND HOLD.	3. PULL CABLE OUT
WARNING: REFER TO MANUAL FOR COMPLETE INSTRUCTIONS DO NOT REMOVE THIS TAG			WARNING: REFER TO MANUAL FOR COMPLETE INSTRUCTIONS DO NOT REMOVE THIS TAG		

STEP 6. Rotate the steering wheel several times from stop to stop, and watch the movement of the Steering Cable output ram. On starboard routed cables, turning the steering wheel clockwise should cause the ram to extend. On port routed cables, turning the steering wheel clockwise should cause the ram to retract.

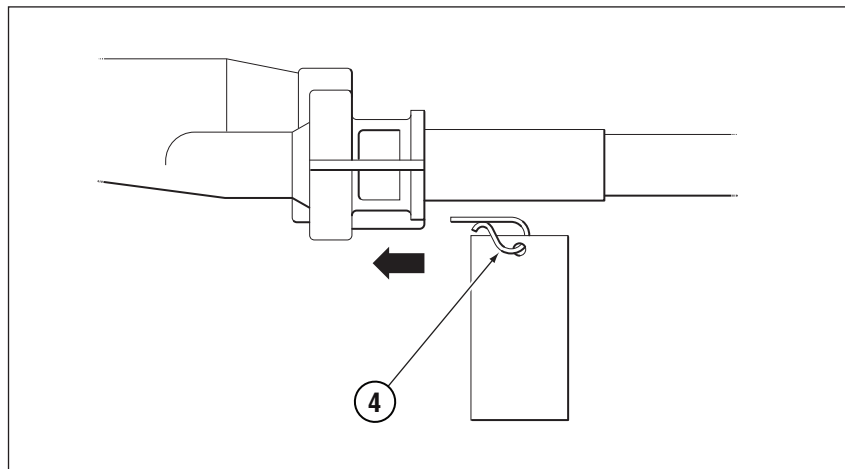


Figure 3.

Connection to Engine

For engine-mounted steering systems, slide the output ram through the engine support tube. Thread the cable coupler nut fully onto the support tube.

For a boat-mounted steering system, attach the cable to the boat and engine in accordance with the instructions furnished with the connection kit.

CAUTION

The output ram end of the steering cable should be lubricated with a good Waterproof Marine Grease before being inserted into the support tube.

CAUTION

Ensure that the cable output end is not bent when installing into the engine. If necessary remove the engine from the boat.

NOTICE

The coupler nut has a locking ring in the threads. Make sure the nut is drawn up fully and its internal plastic locking ring is engaged. If you do not tighten this nut fully there will be excessive play in the steering system. Connect the cable output ram to the engine tiller arm as shown in the instructions packed with the connection kit.

Helm Parts List

ITEM	QTY	DESCRIPTION
1	1	Helm
2	1	Spent Travel Tube
3*	3	1/4 x 3/4" Long Hex Bolt
4	2	Pin

* Pictured in bezel kit instructions.

Operation & Maintenance Notes

CAUTION

It is possible to over trim the engine and increase the steering torque to the point that the steering wheel cannot be turned, even though the torque is not felt at the wheel. This may give the impression that the steering is “locked”. This condition can occur more when jack plates are used to raise the engine on the transom, and can only be overcome by reducing the boat speed or engine trim out position. Until you are completely familiar with the boat and the effects of power trim, make all adjustments of trim with extreme caution.

1. After a few hours of operation and at frequent intervals thereafter, check all fasteners and the complete steering system for security and integrity.

DANGER

Loosening or loss of one or more fasteners may cause failure of the steering system, resulting in loss of steering control and could cause property damage, injury, or death.

2. Keep all moving parts free from build-up of salt and other foreign material. This will affect their operation and create steering problems. Periodically remove the cable, clean support tube and telescopic end of cable thoroughly and lubricate with a **waterproof marine grease**.
3. Periodically inspect for corrosion. Any parts affected by corrosion must be replaced. When replacing hardware, self-locking hardware as originally supplied must be used.
4. Periodically inspect steering cable for cracks or other damage. If any is found the cable must be replaced.

DANGER

If steering cable is stiff in operation, it is unsafe to use and must be replaced immediately.

DANGER

DO NOT cover cracks with tape or other sealants, this will create a hazard in which the cable can fail suddenly without warning, resulting in property damage, injury, or death.

NOTICE

Boat builder and boat dealer, please supply these Installation Instructions and Owner's Manual with the delivery of boat. Boat owner keep these instructions with your boat for future reference. Boat owner consult with your boat builder, boat dealer, or SeaStar Solutions if you have any questions regarding these instructions.

Mounting Template

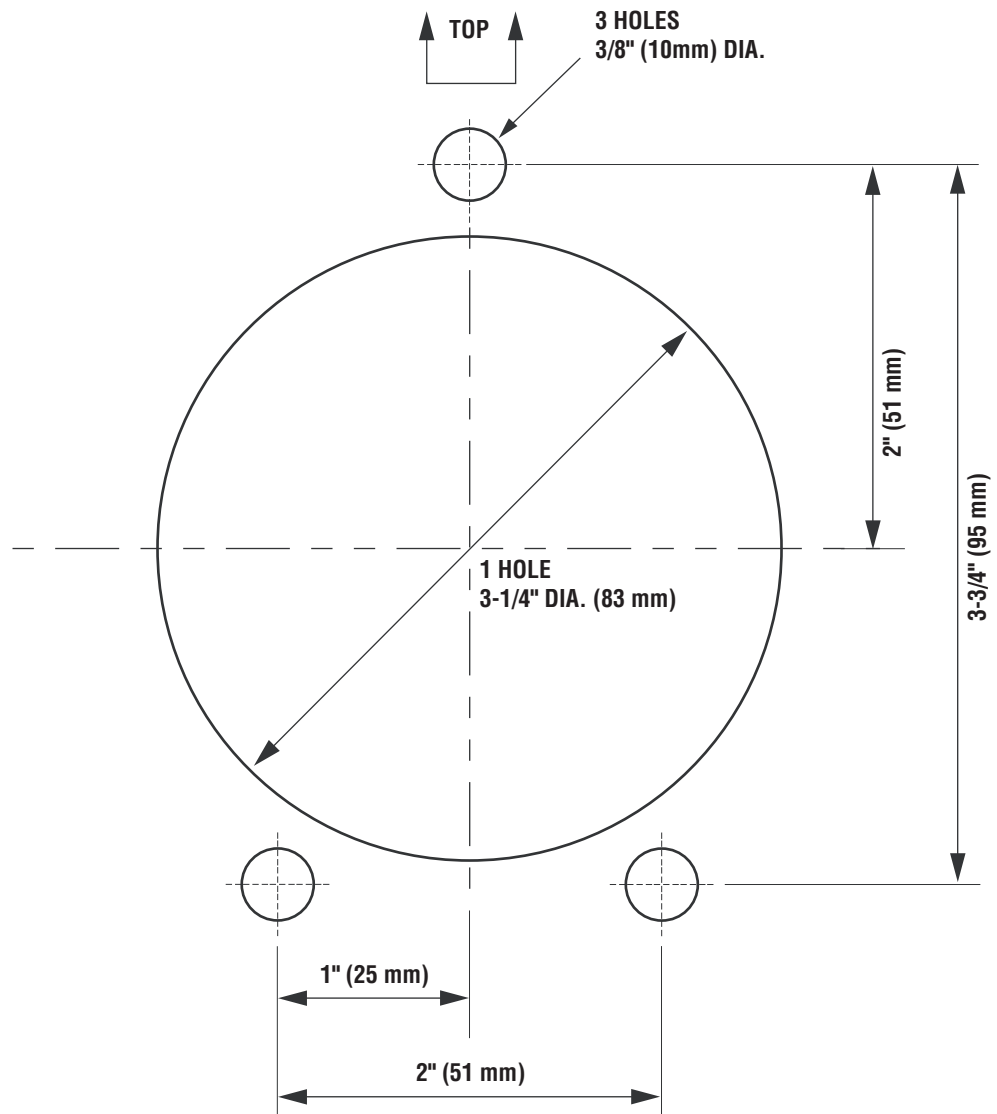


Figure 4.

NOTICE

If you must photocopy this mounting template for use, check ALL measurements using a measuring device prior to using as a template.





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PART # IS-SHX7606 07/2013 Rev. 4