

MEMBER  
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Setting Standards for Safer Boating

# INSTALLATION INSTRUCTIONS AND OWNERS MANUAL

Part # IS-4400, Rev 2, 08/2013

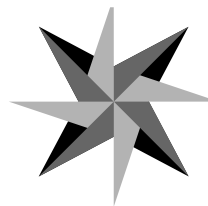
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CH4451P

CH4481P

TWO LEVER TOP MOUNT CONTROLS  
CH4400 SERIES



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*Before you do it your way,  
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*ch2200  
ch2300  
mt3  
osprey  
pro-trim  
single s  
twin s  
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MARINE ACQUISITION INCORPORATED  
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U.S.A.

# TWO LEVER TOP MOUNT CONTROLS

## CH4400 SERIES

### NOTICE

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

*These instructions show how to install CH4400 Series top mount controls for throttle and shift in single or twin engine boats. These controls are available with either straight or raked (curved) handles.*

#### **Optional Equipment**

*Neutral Start Switch: CA68075P*

*Two Station Kit (one kit for each engine): CA68065P*

*Engine Connection Kit: Refer to SeaStar Solutions Catalog.*

*For a complete system, the following control cables are required: 3300/33C size cables.*

- *Single engine, Single station: 2 required.*
- *Single engine, Dual station: 4 required.*
- *Twin engine, single station: 4 required.*
- *Twin engine, dual station: 8 required.*

### NOTICE

*Cable installation and connections must be made in accordance with the motor manufacturer's instructions.*

*To insure best performance, free operation of all linkages and the remote control is essential. Follow the manufacturer's recommended procedures for adjustment and lubrication.*

*All specifications and features are subject to change without notice.*

### ⚠ 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.**

### NOTICE

*SeaStar Solutions highly recommends the installation and usage of an engine shut off switch as a important emergency safety feature for boats. This switch should be connected by a cord to the boat driver. Should the driver be thrown from the helm position, the engine will automatically shut off.*

*This shut off switch is not a standard part of this control. It can, however, be obtained from most marine dealers and distributors.*

## Preparation for Installation

**STEP 1.** Select a location which allows convenience of operation and full travel of control handles in both directions. Ensure that handles clear windshield, steering wheel and other equipment on the dashboard. Make sure that there is sufficient clearance under the mounting surface for the control body and cable routing. See Figure 1.

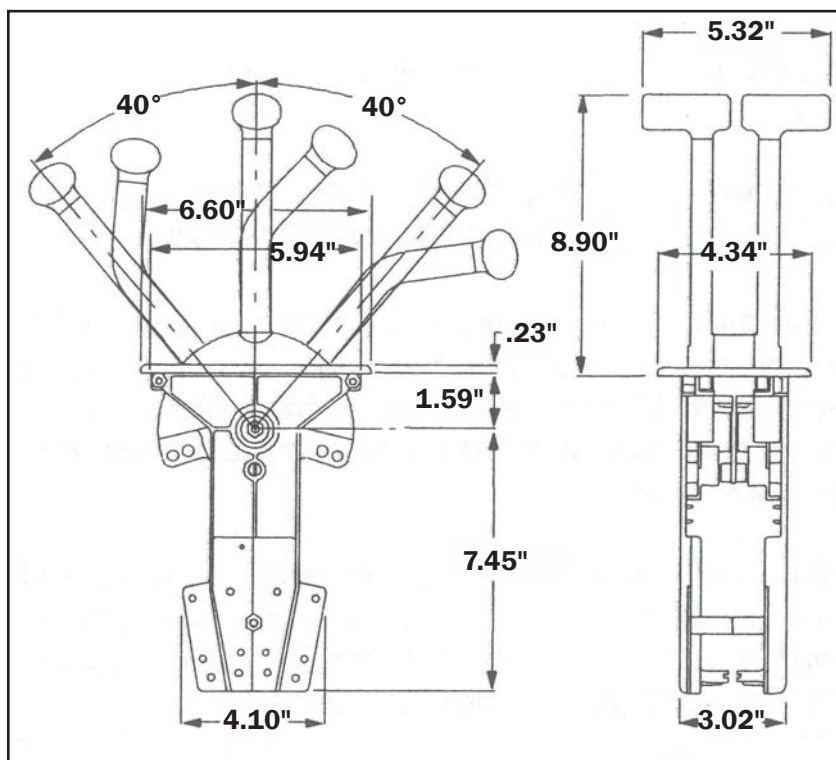


Figure 1.

**STEP 2.** Detent kits are provided for use on the shift lever. See Figure 3. For single engine use, install as shown. For twin engine use, install detent kits from both controls into the control which will have both shift levers. In two station systems, detents are used in the lower station controls only. **DO NOT INSTALL DETENTS IN UPPER STATION OF TWO STATION SYSTEMS.**

**STEP 3.** If neutral start switches are to be installed, they should be installed at this time. Follow the instructions packed with the Neutral Start Switch Kit.

**STEP 4.** Carefully lift the top bezel (A) from the control. If the bezel is black it will snap off, if the bezel is chrome it will lift off. The control is now ready for installation.

**STEP 5.** At each control location, position the template (Figure 5) and carefully mark the holes and cut-out. Recheck the location and clearances, and, if they are correct, drill the holes and make the cutout.

**STEP 6.** You should now route the cables through the boat from the control station to the engine. Do not connect the cables to the engine at this time. Select a path as straight as possible and with as few bends as possible. Cable bends must not be less than 8" (203mm) radius.

**STEP 7.** With the control prepared for installation, the dashboard prepared and the cables installed in the boat, you are now ready to install the control.

## Single Station Installation Single Engine

**STEP 1.** Feed the cables up through the dashboard until about two feet protrudes through the dashboard.

**STEP 2.** Screw pivots (12) onto the threaded ends of the cables.

**Do not leave more than 3/8" of thread protruding through the pivot.**

### ⚠ CAUTION

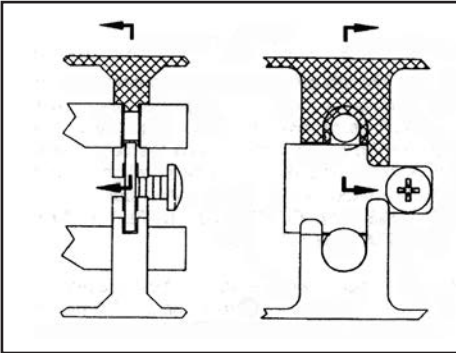


Figure 2.

**STEP 3.** Determine if the cables should be push or pull to open the throttle and whether push or pull to select forward gear. Cables attach to the front of the control arms for push operation, to the rear of the control arms for pull operation.

**STEP 4.** Place the cables in the correct slots in the control, put the cable clamp lock plate (9) in position, turn the screw (10) fully home to lock the plate in position. Check that the plate is locked. See Figure 2.

**STEP 5.** Place the bushing (13) in the outermost holes in the control arms, insert the pivots in the bushings, and retain the pivots in place with cotter pins (14). See Figure 3.

**STEP 6.** Place the control in position in the cutout and secure in place using screws (15), washers (16) and locknuts (17).

**STEP 7.** Check that the control moves freely from full forward to full reverse position. The handle friction can be adjusted by means of turning the screw (B) in the top of the control body. See Figure 3. Increase friction by turning screw clockwise, decrease friction by turning the screw counterclockwise.

### ⚠ CAUTION

**Friction must be removed from shift lever in order to feel detents.**

**STEP 8.** Replace the top bezel and attach it to the control body using screws (11) for chrome bezels or by snapping it on for black bezels. Install knobs (2) to the handles using knob screws (3). Snap caps (4 & 5) into handles, the red cap with a raised "T" is for the throttle. Make sure that the cap is aligned with the contour of the knob. If it is necessary to remove the caps, insert a small screwdriver into the hole under the knob and push gently.

**STEP 9.** Connect the cables to the engine as instructed in the engine maker's installation instructions. The cables should now be clamped loosely or tied for support at regular intervals, but not closer than 36" (914mm) from the base of the control.

### ⚠ CAUTION

**Cables must not be bundled together with electrical wiring or steering cables.**

## Single Station Installation Twin Engine

Repeat the instruction for single engine for both controls, but ensure that the control used for gearshift has both sets of detents installed, and the control used for throttle has both red knob caps.

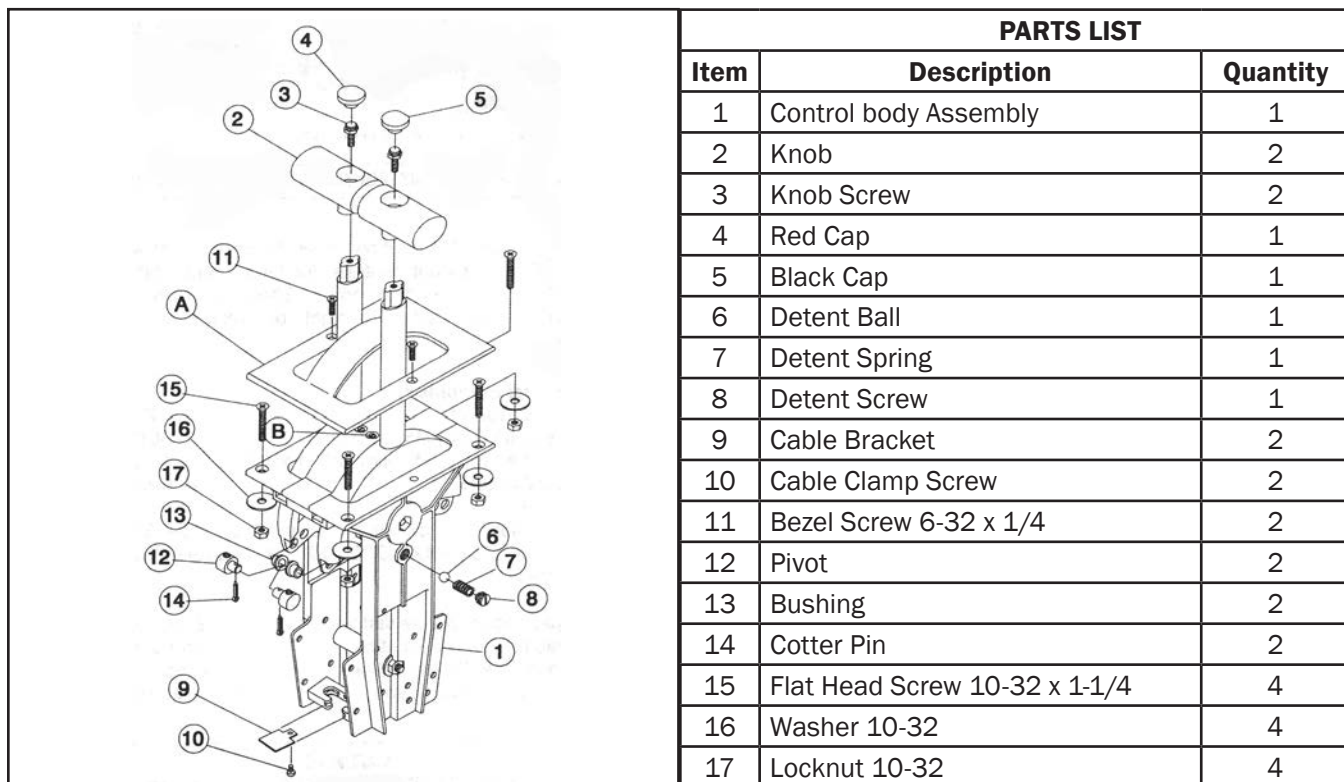


Figure 3.

## Two Station Installation Single Engine

**STEP 1.** Prepare both locations for the controls, and position cables in the boat to run from UPPER control to LOWER control and LOWER control to engine. Do not attach the cables to controls.

**STEP 2.** Following the single station installation instructions, fully install the control nearest to the engine, but do not fasten the control in place. Connect cables to the engine and check that the operation is correct. REMOVE ALL FRICTION FROM THIS CONTROL.

**STEP 3.** Using the parts from a two station kit, attach the cables from the UPPER station to the LOWER station control.

### NOTICE

*These cables must be attached to the innermost hole on the control arms. See Figure 4.*

Fasten the LOWER control in place.

**STEP 4.** At the UPPER control attach the cables to the control using the outermost holes in the control arms. Operate the control in both directions a number of times to check free operation. Place LOWER control throttle in idle and the shift handle in neutral. Adjust the pivots on the UPPER control to synchronize the handle position with the LOWER control. DO NOT ADJUST THE LOWER CONTROL OR THE CABLES GOING BACK TO THE ENGINE. When adjustments are correct, fasten both controls in place.

### NOTICE

*You may find that the handles on the UPPER control do not travel as far as the handles on the LOWER control. This is normal and is necessary to ensure that LOWER control gives full travel at the engine.*

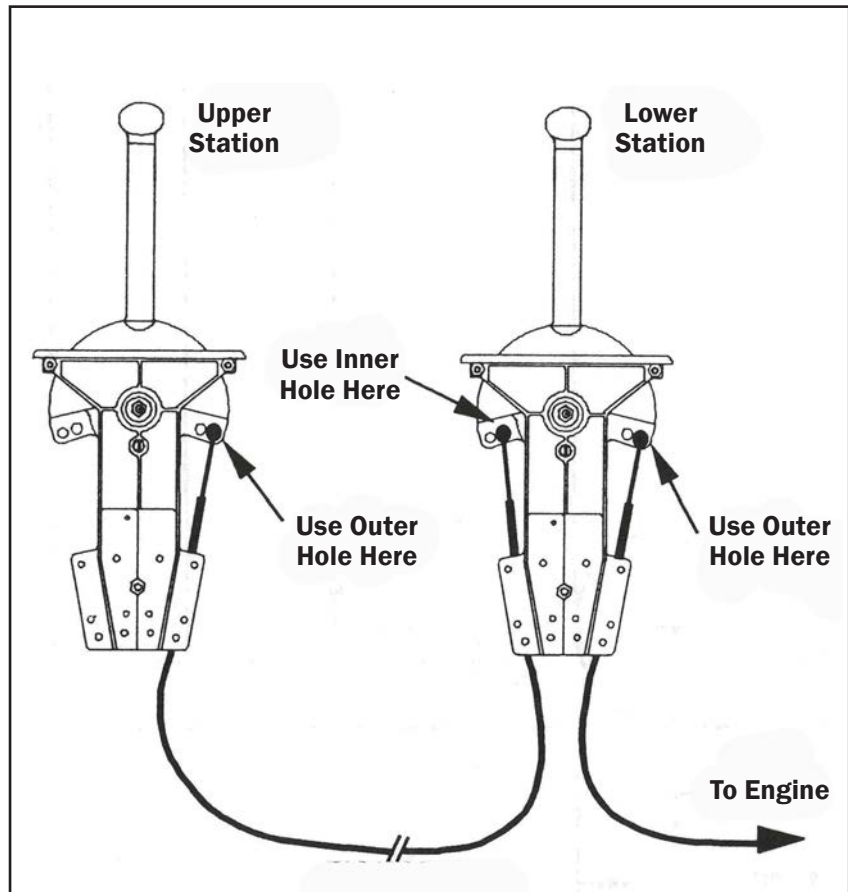


Figure 4.

## Two Station Installation Twin Engine

Repeat the instructions for single engine for both sets of controls, but ensure that the controls used for gearshift have both sets of detents installed and the controls used for throttle have both red knob caps installed. Take care that the cables are attached to the correct controls. It helps to mark them with tape for their function, i.e. port throttle, port shift etc.

## Final System Checkout

Final system checkout must be made with the boat in the water and with engines running. Observe all boat and engine maker's requirements for operation. Operate the boat with extreme caution until the control system installation is proven satisfactory.

### **⚠ WARNING**

**When checking shifts, ensure that the throttles are in idle position. When checking throttles ensure that gearshifts are in neutral to avoid sudden movement of the boat.**

When the control is fully installed and tested, adjustments can be made to the friction and detents to give comfortable feel to the controls. **DO NOT APPLY FRICTION TO THE LOWER STATION OF TWO STATION CONTROLS.**

After a few hours of running time, check all components and hardware for security; recheck at regular intervals thereafter.

# Mounting Template Top Mount Control

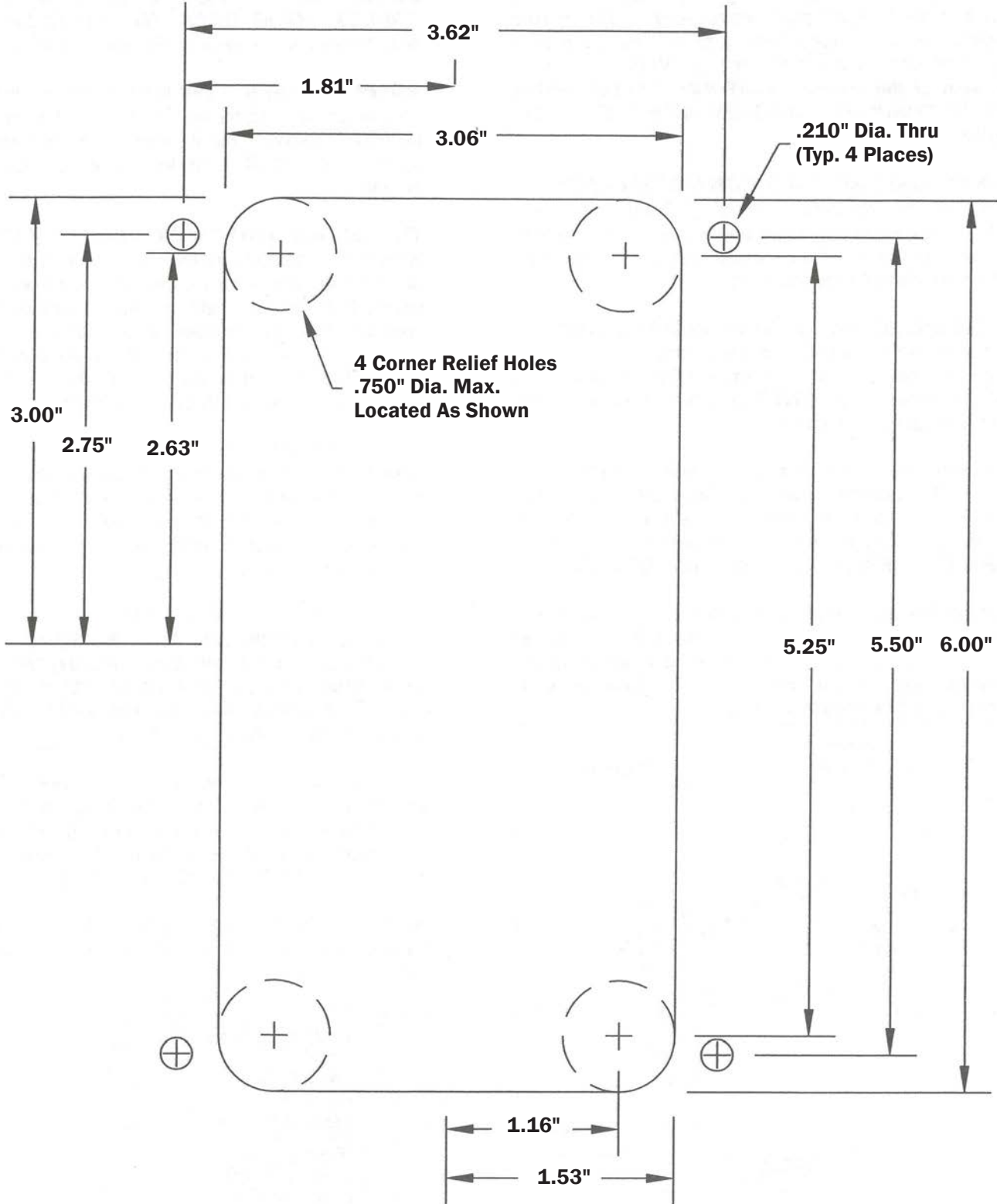


Figure 5.

**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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