

## CH5600 SERIES TWO LEVER TOP MOUNT CONTROLS WITH LOCKING THROTTLE INSTRUCTIONS

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**INSTALLER: THESE INSTRUCTIONS CONTAIN IMPORTANT SAFETY INFORMATION AND MUST BE FORWARDED TO THE BOAT OWNER.**

THE 5600 CONTROL IS A NEW TELEFLEX PRODUCT AND IS DISSIMILAR TO OTHER EXISTING CONTROLS. CONSEQUENTLY, INSTALLATION OF THIS CONTROL IS DIFFERENT FROM THAT OF STANDARD DUAL LEVER TOP MOUNT CONTROLS. THEREFOR, IT IS IMPERATIVE THAT THESE INSTRUCTIONS ARE CAREFULLY FOLLOWED. FAILURE TO DO SO CAN RESULT IN LOSS OF CONTROL AND CAUSE DAMAGE OR INJURY.

These instructions show how to install CH5600 Series top mount controls for throttle and shift in single or twin engine boats. A second sheet of instructions, similar to these, have been attached to a control arm to assist in attaching the cables to the controls and should only be opened at the time when this is performed. THE ATTACHED INSTRUCTION SHEET IS NOT INTENDED TO REPLACE THESE INSTRUCTIONS; THIS SHEET SHOULD STILL BE FORWARDED THROUGH ALL STAGES OF ASSEMBLY AND TO THE BOAT OWNER. These controls incorporate a mechanism to prevent throttle creepback. **When using this feature in two station applications, the controls MUST BE installed in series.** For a complete system the following control cables are required: either 3300 size or 4300 size.

Single engine, Single station	2 required
Single engine, Dual station	4 required
Twin engine, Single station	4 required
Twin engine, Dual station	8 required

### Optional Equipment

Neutral Start Switch	CA69009
Two Station Kit (one kit for each engine)	CA69015
4300 Cable Kit (one kit for each control handle)	CA69016
Engine Connection Kit	See Catalog

### WARNING

- BEFORE STARTING INSTALLATION, READ THESE INSTRUCTIONS AND THE ENGINE MAKER'S INSTRUCTIONS THOROUGHLY. FAILURE TO FOLLOW BOTH INSTRUCTIONS OR INCORRECT ASSEMBLY CAN RESULT IN LOSS OF CONTROL AND CAUSE DAMAGE OR INJURY.**

- DO NOT SUBSTITUTE PARTS FROM OTHER MANUFACTURES. THEY MAY CAUSE A SAFETY HAZARD FOR WHICH TELEFLEX, INC. (USA) CANNOT ACCEPT RESPONSIBILITY.**
- CABLE INSTALLATION AND CONNECTIONS MUST BE MADE IN ACCORDANCE WITH THE ENGINE MANUFACTURER'S INSTRUCTIONS.**
- TO ENSURE BEST PERFORMANCE, FREE OPERATION OF ALL ENGINE LINKAGES IS ESSENTIAL. FOLLOW THE ENGINE MANUFACTURER'S RECOMMENDED PROCEDURES FOR ADJUSTMENT AND LUBRICATION.**

### PREPARATION FOR INSTALLATION

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 fig 1.

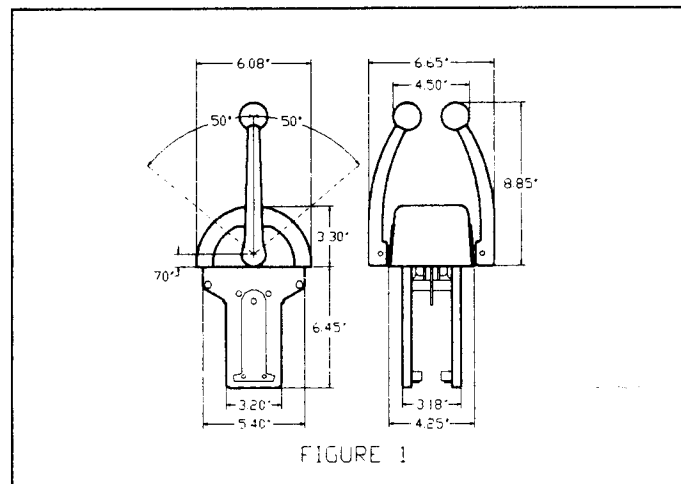


FIGURE 1

2. A Detent kit is provided with each control for use on the shift lever. See figure 2. 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 controls only. **DO NOT INSTALL DETENTS IN UPPER STATION OF TWO STATION SYSTEMS.**

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.

4. At each control location, position the template (figure 4) 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.

5. 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.

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

**NOTE:** THE FOLLOWING INSTRUCTIONS DESCRIBE HOW TO USE THE ANTI-CREEPBACK FEATURE OF THESE CONTROLS. **THE OUTER (BLACK) ARMS ARE INTENDED FOR THROTTLE CABLE CONNECTION, FROM ENGINE TO CONTROL, ONLY. IF THE ANTI-CREEPBACK FEATURE IS NOT USED, ALL CABLES SHOULD BE ATTACHED TO THE INNER (YELLOW) ARMS.**

## SINGLE STATION INSTALLATIONS

### SINGLE ENGINE

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

2. Insert nuts (17) into pivots (15) and screw pivots onto the threaded ends of the cables. CAUTION: DO NOT LEAVE MORE THAN 3/8" OF THREAD PROTRUDING THROUGH THE PIVOT.

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 in hole marked "A" in figure 2 to the front of the control arms for push operation, to the rear of the control arms for pull operation.

4. Place the cables in the cable retainers and secure in place with "U" bolts(19) and nuts(18) ensuring that the "U" bolt is fitted into the proper groove in the cable.

5. Each handle operates two levers. **THE OUTER LEVER, COLORED BLACK, PROVIDES THE ANTI-CREEPBACK FEATURE AND IS USED FOR THROTTLE ONLY.** The inner lever, colored yellow, is direct drive and is used for gearshift. Place pivots (15) into the hole marked "A" of the appropriate lever, and retain in place with cotter pins (16). Refer to Figure 2.

6. Install handles onto shafts. Check that the control moves freely from full forward to full reverse positions and ensure that the handle travel is equal in both forward and reverse directions. Refer to Figure 1. Secure in place using screw (11). If handle friction is desired, assemble friction spring (20) and set screw (12).

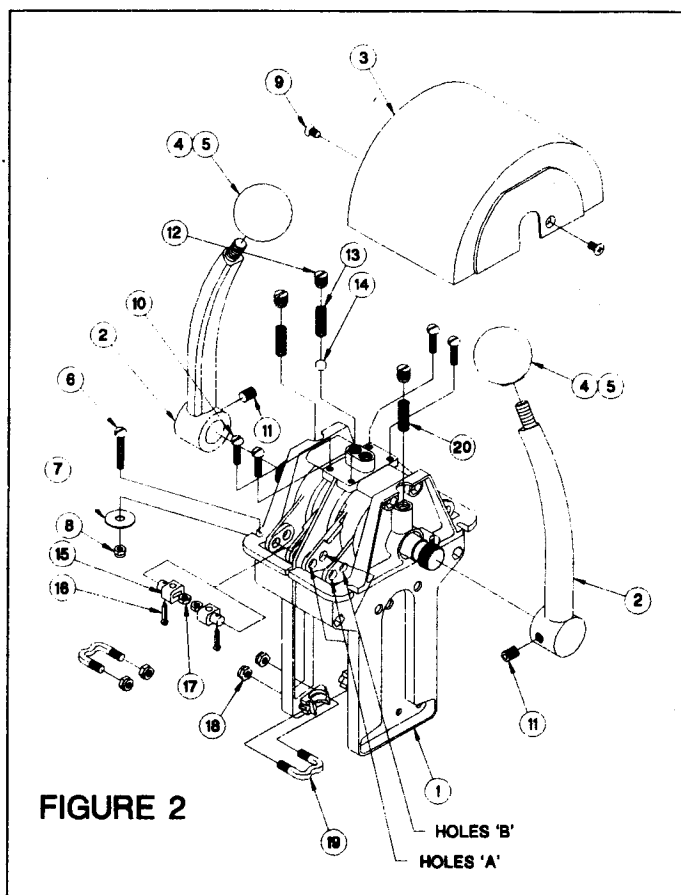
7. Fasten the control in position in the cut-out, using screws (6), washers (7), and nuts (8). Refer to Figure 2.

8. Connect the cables to the engine following the engine maker's instructions. Make all adjustments at the engine. The cables should now be supported at regular intervals, but not closer than 36 inches (91.44 CM) from the control. CAUTION: DO NOT BUNDLE CABLES TOGETHER WITH ELECTRICAL WIRING OR THE STEERING CABLE.

9. For the shift handle, install the shift detent ball (14), spring (13) and screw (12). Adjust the screw to give a comfortable feel to the shift handle. Start with the screw flush with the surface of the control; NOTE: EXCESSIVE TIGHTENING OF THE SCREW MAY LEAD TO CONTROL MALFUNCTION. Install the four stop screws (10) and adjust them so that the lever just touches the stop screw at the extremes of travel. Install the top dome (3) using screws (9), and install black knob on the shift handle and the red knob on the throttle handle. The control is now ready for test and use. Refer to the last page of these instructions.

### TWIN ENGINE

Two controls can be installed as separate controls for each engine by following the instructions for single engine installation for each control. Alternatively, the controls can be installed with one control operating both throttles with the other control operating both gearshifts. In that case, follow the instructions for single engine installation except install both throttle cables into one control, ensuring that both cables are attached to the outer (black) levers, if the anti-creepback feature is wanted, with red knobs on the handles. Install both gearshift cables and detents in the other control, ensuring that both cables are installed onto the inner (yellow) levers, with black knobs on both handles. Refer to figure 3.



**FIGURE 2**

### TWO STATION INSTALLATIONS

**Note!** In these installations the upper control handles will not move as far as the lower control handles. Adjust upper handle stops to suit travel.

### SINGLE ENGINE

Install both controls as described in steps 1 through 7, including cables from upper control to lower control. **DO NOT** connect cables from upper control to lower control at this time. Connect cables to engine as described in instructions for single station installations and make all necessary adjustments. Connect cables from upper control to holes marked "B", **ON YELLOW ARM**, in figure 2. Make any adjustments at this point. **DO NOT ADJUST LOWER CONTROL TO SUIT UPPER CONTROL.**

### TWIN ENGINE

Install all controls as described in steps 1 through 7, including cables from upper controls to lower controls. **DO NOT** connect cables from upper controls to lower controls at this time. Connect cables to engine as described in the instructions for single station twin engine installation, with one control operating both throttles and one control operating both gearshifts if required, and make all necessary adjustments. Refer to figure 3. Cables connecting upper to lower controls must use holes marked "B" on **YELLOW ARMS**, for shift or throttle. **DO NOT ATTACH TO BLACK ARMS**; this will cause the control to become

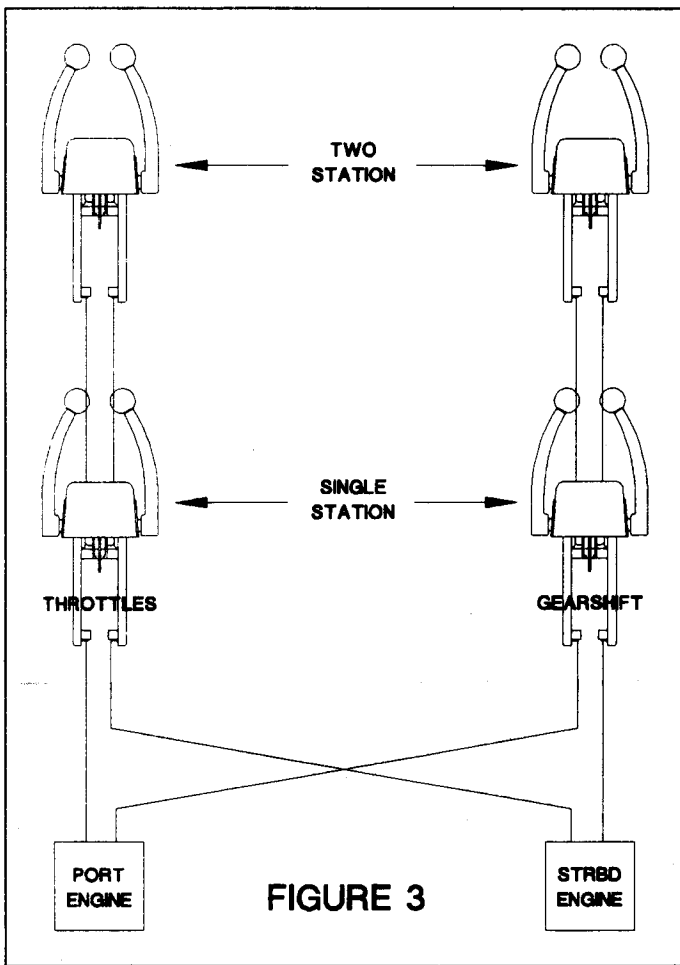
inoperative. Having set engine/control adjustments at hole marked "A" per paragraph 8, any further adjustments should be made at the hole marked "B" for the upper cable connections only. Do not readjust lower cables.

### FINAL SYSTEM CHECKOUT

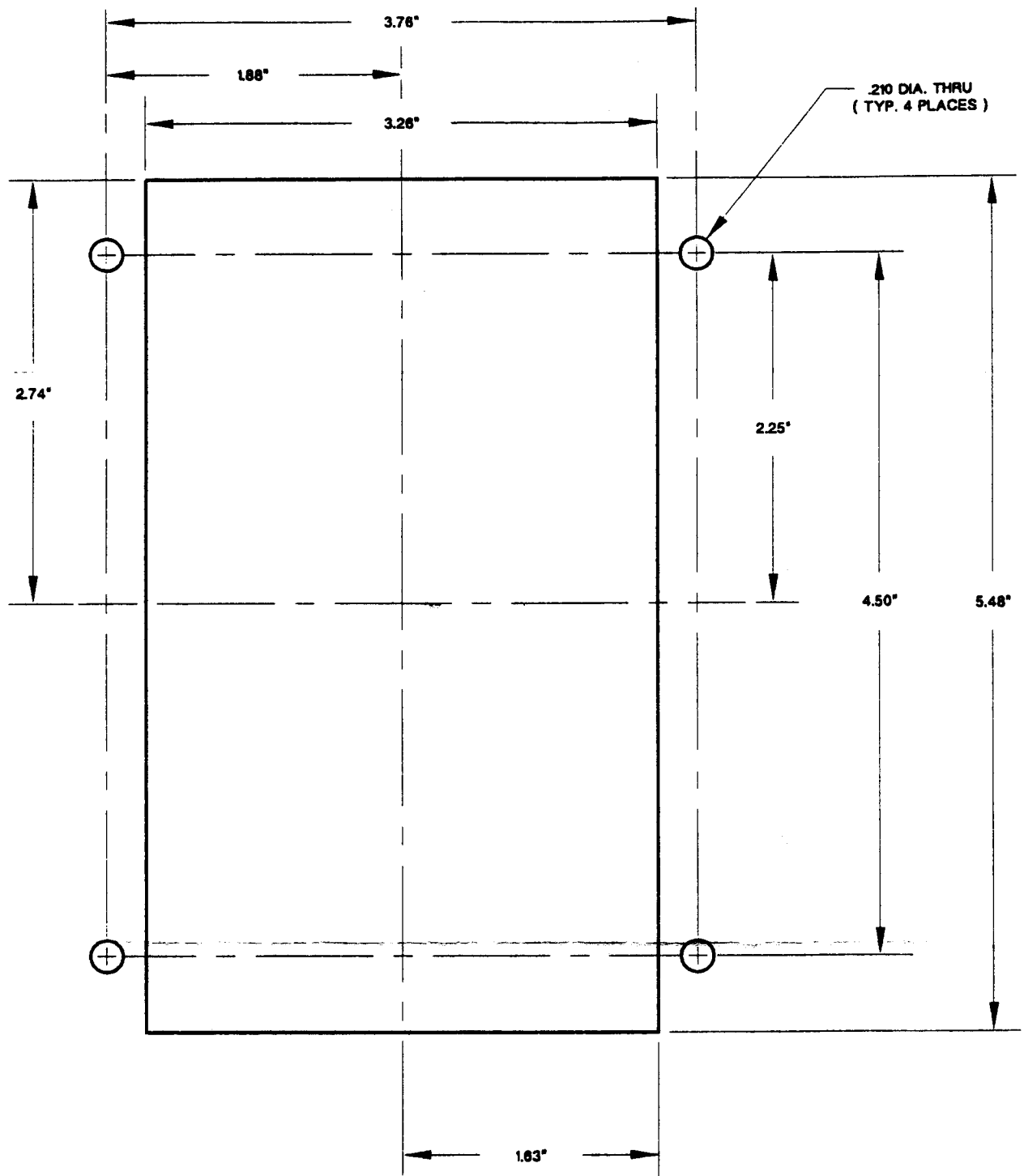
Final system checkout must be made with the boat in the water and with engines running. Observe all boat and engine maker's recommendations for operation. Operate the boat with extreme caution until the control system installation is proven satisfactory.

**WARNING: WHEN OPERATING SHIFT CONTROL ENSURE THAT THE THROTTLES ARE AT IDLE. WHEN CHECKING THROTTLES ENSURE THAT GEARSHIFTS ARE IN NEUTRAL TO AVOID SUDDEN MOVEMENT OF THE BOAT.** When the control is fully 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. ALSO, DO NOT INSTALL DETENTS IN BOTH STATIONS OF A TWO STATION INSTALLATION.**

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



<b>PARTS LIST</b>		
Item	Description	QTY
1	Control Body Assembly	1
2	Handle	2
3	Dome	1
4	Red Knob	1
5	Black Knob	1
6	Rd. Hd. Screw 10-32 x 1-1/4	4
7	Washer	4
8	Locknut 10-32	4
9	Dome Screw	2
10	Stop Screw	4
11	Handle Screw	2
12	Set Screw	2
13	Detent Spring	1
14	Detent Ball	1
15	Cable Pivot	2
16	Cotter Pin	2
17	Cable Nut 10-32	2
18	Locknut 1/4-28	4
19	Cable Clamp	2
20	Friction Spring	1



MOUNTING TEMPLATE  
 ( DOME TOP MOUNT CONTROL )

FIGURE 4