

**Do not begin this transducer installation until you read the Installation Preparation in the Operation Guide. This chapter contains information critical to the correct installation of your transducer.**

**Due to the wide variety of boat hulls, only general instructions are presented in the installation manual. Each boat hull represents a unique set of requirements that should be evaluated prior to installation.**

## TRANSOM INSTALLATION for the 150sx

### Step One - Determine Where to Mount the Transducer

Begin the transducer installation by determining where on the transom to install the transducer. Consider the following to find the best location:

- It is very important to locate the transducer in an area which is relatively free of turbulent water. As a boat moves through the water, turbulence is generated by the weight of the boat, and the thrust of the propeller(s). This turbulent water is normally confined to areas immediately aft of ribs, strakes or rows of rivets on the bottom of the boat, and in the immediate area of the propeller(s) (Figure 1). On outboard or inboard/outboard boats it is best to stay at least 15" (40cm) to the side of the propeller(s).

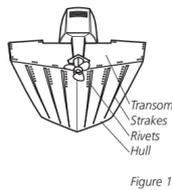


Figure 1

### Transom Mounting Location

- If possible, viewing the transom of the boat while the boat is moving will provide the best means of locating turbulence free water. If maximum high-speed operation is a high priority, this is the recommended method. If this is not possible, select a location on the transom where the hull forward of this location is smooth, flat and free of protrusions or ribs.

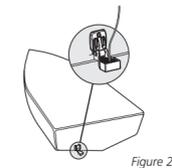


Figure 2

- Another consideration is the angle of deadrise. The transducer, when mounted, should point straight down. The design of the transducer will allow a deadrise of 15 degrees and remain pointed straight down. If the deadrise is greater than about 15 degrees it will be necessary to angle the transducer slightly (Figure 3). While this does not significantly degrade performance, you must keep in mind that the area you are viewing on-screen may be somewhat to one side of the boat.

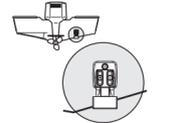


Figure 3

- On boats with stepped hulls, it may be possible to mount the transducer on the step. Never mount the transducer on the

transom behind a step, as this area of the transom will not be in contact with the water at high speed (Figure 4).

- If the propeller(s) is (are) forward of the transom, it may be impossible to find an area clear from turbulence, and a different mounting technique or transducer type should be considered.

### Step Two - Drill the Mounting Holes

- Remove the mounting template from the front of the Operations Manual. This template provides a means of ensuring that the deadrise of the transom falls within the allowable limits, and it locates the two mounting holes which must be drilled.
- Hold the template on the transom of the boat in the location where the transducer will be installed. Align the template vertically, ensuring the lower edge of the transom on either side of the template falls within the horizontal lines on the template. If not, tilt the template slightly so that the lower edge of the transom on both sides of the template falls within the allowable range (Figure 5).
- Using a pencil or punch, mark the two mounting holes onto the transom.
- Using a 3/32"(4mm) bit, drill the two holes to a depth of approximately 1" (3cm). On fiberglass hulls, it is best to start with a smaller bit and use progressively larger drill bits to reduce the chance of chipping or flaking the outer coating.

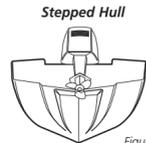
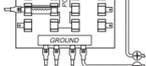
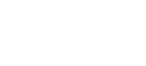
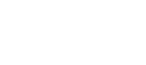
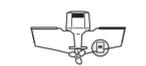


Figure 4

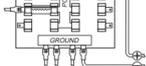
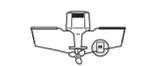
### Template alignment



### Step Three - Assemble the Transducer

- Attach the transducer body to the supplied bracket using the 3/8" long #8-32 allen-head screw, the headed pin, and the two toothed washers using the allen wrenches supplied (figure 6). Do not completely tighten the pivot screw at this time.

### Figure 4



## CONTROL HEAD INSTALLATION

### Step One - Determine Where to Mount

Begin the installation by determining where to mount the control head. Consider the following to determine best location:

- The cables for power, transducer and temp/speed accessories (if applicable) should be installed first and must reach the mounting location. Extension cables are available.
- There are two ways to route the cables to the unit: through a hole in the mounting surface underneath the mounting bracket, or from a hole outside the mounting bracket. Routing the cables down under the mount provides maximum weather protection; however this is not always feasible if the area under the fishfinder is inaccessible. In this case, route the cables through a hole at another location and cover with the supplied hole cover.
- The mounting surface should be adequately supported to protect the fishfinder from excessive wave shock and vibration, and provide visibility while in operation.
- The mounting area should allow sufficient room for the unit to pivot and swivel freely, and for easy removal and installation (Figures 17-18).

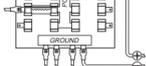
### Step Two - Connect the Power Cable to the Boat

A 6' (2m) long power cable is included to supply power to the fishfinder. You may shorten or lengthen the cable using 18 gauge multi-stranded copper wire.

**CAUTION: Some boats have 24 or 36 volt electric systems. Be sure your unit is connected to a 12 VDC power supply.**

The Power can be connected to the boat's electrical system at two places: a fuse panel usually located near the console, or directly to the battery.

### Figure 4



### Step Four - Mount the Transducer to the Transom

- Apply silicone sealant to the mounting holes drilled into the transom.
- Align the transducer assembly with the drilled holes in the transom (Figure 7).
- Mount the transducer assembly to the transom with two of the supplied phillips type screws as shown. Do not fully tighten the mounting screws in order to vertically adjust the transducer.

**NOTE:** The transom installation, which is the most widely used, places the transducer on the outside of the boat hull. This technique produces the least signal loss, and provides a way to adjust the transducer during installation.

### Step Five - Adjust the Running Position of the Transducer

The bracket allows height and tilt adjustment, the pivot screws allow angular adjustment. Initially, adjust the transducer as described in the following paragraphs. Further adjustment may be necessary to refine the installation after high speed testing.

- First, adjust the pivot angle of the transducer body, so its length is parallel with the length of hull of the boat. Then pivot the transducer down so the rear is about 1/4 inch (6mm) lower than the front (Figure 8).
- Fully tighten the two pivot screws using the Allen wrenches. It may be necessary to re-tighten the pivot screws after the initial use as the plastics may still be seating to the lock washers.
- Adjust the vertical position so that the transducer body is 3/16" (4.5mm) beneath the hull of the boat (Figure 8). Mark the position of the mounting bracket on the transom with a pencil.
- Assure that the transducer location has not changed, then carefully hand tighten the two screws. (Figure 9).
- After the final testing and adjustments have been completed refer to Figure 9. Using a 3/32"(4mm) bit, drill a third hole at the top of the bracket and hand install the third mounting screw.

**Confirm the pivot angle has not changed.**



### Hand Tighten Only

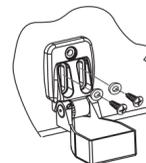


Figure 7

### Running Position Adjustment

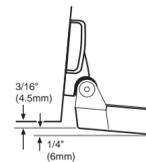


Figure 8

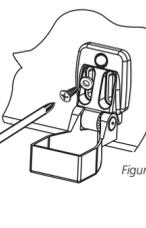


Figure 9

If a fuse terminal is available, use crimp-on type electrical connectors (not included) that match the terminal on the fuse panel. Attach the black wire to ground, and the red wire to 12 VDC power (Figure 19). Be sure to use a one amp fuse in the connection. If you must wire the control head directly to a battery, be sure to install an inline fuse holder and one amp fuse (not included) for the protection of the unit (Figure 20). Humminbird is not responsible for over voltage or over current failures.

In order to minimize the potential for interference with other marine electronics a separate power source (such as a second battery) may be necessary.

### Step Three - Drill the Mounting Holes

- Set the mounting bracket in place on the mounting surface. Mark the four mounting screw locations with a pencil or punch.
- Set the mounting bracket aside, and drill the four mounting screw holes using a 3/64" (3.6mm) bit.

### Step Four - Run the Cables

- If the cables must pass through a hole underneath the mounting surface, mark and drill a 1" (25mm) hole centered between the four mounting holes (Figure 21).

**Note: If the cables must pass through the mounting surface at a different location, drill the 1" (25mm) hole at that location and pass the cables through from underneath. Also, you must break-out the tabs on the rear of the mounting base using needle nose pliers (Figures 23-24).**

- Insert all cables through the 1" (25mm) hole from beneath the mounting surface.
- Pass the cables through the grommet (if the cable hole is underneath the mounting bracket) then press the grommet in place around the cables and into the 1"(25mm) hole.
- Pass the cables through the mounting base, out the top of the mounting bracket.

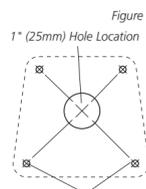


Figure 21

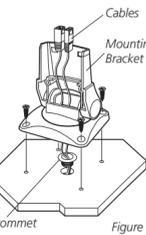


Figure 22

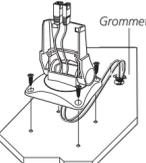


Figure 23



Figure 24

**Note: A third screw location is provided for the mounting bracket. Drill this hole and install the screw after final testing and adjustments have been completed.**

### Step Six - Route the Cable

There are several ways to route the transducer cable to the area where the control head will be installed. The most common procedure routes the cable through the transom into the boat.

Inside the boat there is often a channel or conduit used for other wiring that the cable can be routed along. Do not cut or shorten the transducer cable, and try not to damage the cable insulation. Route the cable as far as practical from the VHF radio antenna cables or tachometer cables to reduce the possibility of interference.

If the cable is too short, extension cables are available to extend the transducer cable up to a total of 50' (15m).

Follow these steps to route the cable through the transom:

- Drill a 1/2" (13mm) hole above the water line. Route the cable through the hole.
- Fill the hole with silicone sealant.
- Place the escutcheon plate over the hole and attach with the two #8 x 3/8" (16mm) screws.
- Secure the cable by attaching the cable clamp to the transom, using a #8 x 3/8"(16mm) screw.

**Note: The transducer will pivot up to 90 degrees in the bracket. Allow enough slack in the cable for this movement. It is best to route the cable to the side of the transducer during movement.**

### Route the Cable

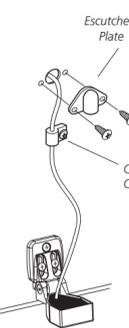


Figure 10

### Connector Holder

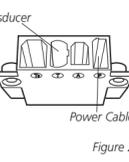


Figure 25

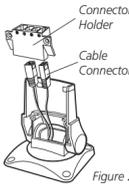


Figure 26

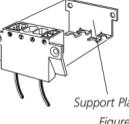


Figure 27

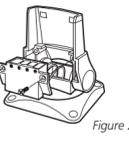


Figure 28



Figure 29

- Place the mounting bracket on the mounting surface aligned with the drilled holes. Insert the four flathead wood screws into the mounting holes and tighten fully (Figure 22).

### Step Five - Assembling the Connector Holder

- Insert the cable connectors into the connector holder. The cable connectors are labeled, and there are corresponding labels on the connector holder (Figure 25). The slots for the connectors are keyed to prevent reverse installation, so do not force the connector into the holder.
- Carefully pull the excess cable from beneath the mounting surface so the connector holder aligns with the mounting holes on the front of the mounting bracket (Figure 26).
- Snap the support plate to the rear of the connector holder (Figure 27).
- Insert the connector holder into place and use the two #6-32 x 3/4" (19mm) screws to fasten it to the mounting bracket (Figure 28).
- Install the control head by sliding it onto the mounting bracket until it is fully seated. To remove the unit simply depress the latch on the rear of the unit and lift (Figure 29).

**Your Humminbird is now ready for operation.**

## INSIDE THE HULL INSTALLATION

**Inside the hull installation requires the mount system and control head be installed and operational. See Control Head Installation for instruction on installing the unit.**

Inside the hull mounting generally produces good results in single thickness fiberglass-hulled boats. Humminbird cannot guarantee depth performance when transmitting and receiving through the hull of the boat, since some signal loss occurs. The amount of loss depends on hull construction, hull thickness and the installation.

This installation requires slow-cure two-part epoxy. Do not use silicone or any other soft adhesive to install the transducer, as this material reduces the sensitivity of the unit. Five minute epoxy has a tendency to cure before all the air bubbles can be purged.

### Step One - Determine the Mounting Location

Begin the transducer installation by determining where inside the hull to install the transducer. Consider the following to find the best location:

- Observe the outside of the boat hull to find the areas that are mostly free from turbulent water. Avoid ribs, strakes and other protrusions as these create turbulence (Figure 12).
- As a general rule, the faster the boat can travel, the further aft and closer to the centerline of the hull the transducer has to be located to remain in contact with the water at high speeds (figure 13).

### Step Two - Test the Mounting Location

There is no opportunity for adjustment after the transducer is glued in place. Therefore, it is best to perform a trial installation on inside the hull transducers first, and run the boat at high speeds to determine the best mounting area.

- At the identified mounting location, lay the transducer body face down with the pointed end towards the bow.

### Transducer Mounted Inside the Hull



Figure 11

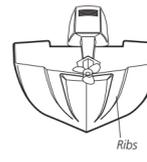


Figure 12

### Preferred Mounting Area

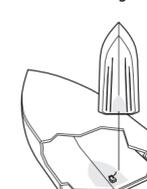


Figure 13

## TEST THE INSTALLATION

Testing should be performed with the boat in the water, however, you can initially confirm basic operation with the boat trailered.

Press POWER once to turn the unit on. There will be an audible chirp when any button is pressed to confirm the button press. If the unit does not power-up, ensure the unit is fully seated on the mount and that power is available.

The first screen provides three options: Start-Up, Simulator and Diagnostic. A message at the bottom of the screen indicates the transducer connection. If no transducer is detected (or one is not connected), the message will indicate this and the unit will go into simulator after the initial screen times out.

**Note: the transducer must be submerged in water for reliable transducer detection.**

If a transducer is detected, the unit will enter "Start Up" or normal operation unless you choose another option. If you do not press any button before the timer reaches "0" the normal operation screen is displayed. If the boat is in water, sonar data appears.

If the bottom is visible on-screen with a digital depth readout, the unit is working properly. Ensure the boat is in water greater than 2' but less than the depth capability of the unit, and the transducer is fully submerged. Remember the sonar signal cannot pass through air.

If the unit is working properly, gradually increase the boat speed to test high-speed performance. If the unit functions well at low speeds but begins to skip or miss the bottom at higher speeds, the transducer requires adjustment. Refer to the appropriate transducer installation section for more detail.

**Note: it is often necessary to make several incremental transducer adjustments before optimum high speed performance is achieved.**

Important: For Transom Mount transducer installations, install the third mounting screw after the final transducer adjustments.

