

OWNER'S GUIDE & INSTALLATION INSTRUCTIONS

Transom Mount Transducer orTRIDUCER® Multisensor

with Integral Release Bracket

Model P39

U. S. Patents: 4,555,938; 4,644,787; 5,606,253; Des. 334,335
Canadian Patent 1,233,341

17-297-01 rev.01

IMPORTANT: Please read the instructions completely before proceeding with the installation. These instructions supersede any other instructions in your instrument manual if they differ.

CAUTION: NEVER USE SOLVENTS

Cleaners, fuel, paint, sealants, and other products may contain strong solvents, such as acetone, which attack many plastics greatly reducing their strength.

Applications

- *Not* recommended for boats with large or twin screw inboard engine(s).
- Good operation up to 44kn (50MPH)
- Vertically orients sound beam on hull with deadrise angle up to 30°
- Adjusts to transom angles from 2°–22°
- Bracket protects sensor from frontal impact only

Tools and Materials

- Pencil
- Safety goggles
- Dust mask
- Electric drill
- Drill bits:
 - Bracket holes 4mm, #23, or 9/64"
 - Fiberglass hull chamfer, countersink, 6mm, or 1/4"
 - Transom hole (optional) 20mm or 13/16"
 - Cable clamp holes 3mm or 1/8"
- Masking tape
- Marine sealant
- Screwdrivers
- Straight edge
- Zip-ties
- Water-based antifouling paint (**mandatory in salt water**)

Headroom without speed sensor
109mm (4-5/16")

Headroom with speed sensor
130mm (5-1/8")

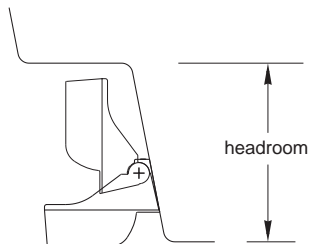
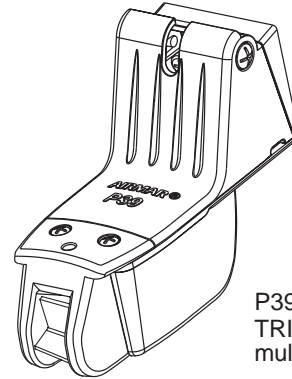


Figure 1. Headroom required at mounting location

Record the information found on the cable tag for future reference.

Part No. _____ Date _____ Frequency _____ kHz



P39
TRIDUCER®
multisensor

Pretest

Connect the sensor to the instrument and spin the paddlewheel. Check for a speed reading (and the approximate air temperature if applicable). If there is no reading or it is inaccurate, return the instrument to your place of purchase.

Mounting Location

To ensure the best performance, the sensor *must* be in contact with aeration-free and turbulence-free water. Mount the sensor on the transom as close to the centerline (keel) of the boat as possible. On slower heavier displacement hulls, positioning it farther from the centerline is acceptable.

Headroom—Allow adequate space above the bracket for it to release and rotate the sensor upward (see Figure 1).

Caution: Do not mount in an area of turbulence or bubbles:
*Near water intake or discharge openings;
Behind strakes, struts, fittings, or hull irregularities;
Behind eroding paint (an indication of turbulence).*

Caution: Avoid mounting the sensor where the boat may be supported during trailering, launching, hauling, or storage.

- **Single drive boat**—Mount the sensor on the starboard side at least 75mm (3") beyond the swing radius of the propeller (see Figure 2).
- **Twin drive boat**—Mount the sensor between the drives.

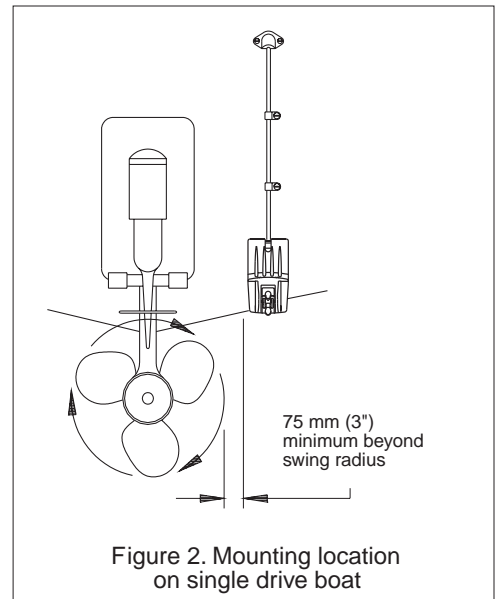


Figure 2. Mounting location on single drive boat

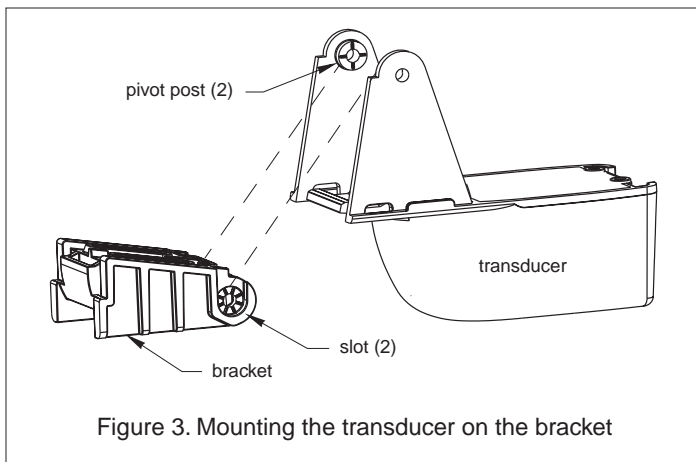


Figure 3. Mounting the transducer on the bracket

Installation

Attaching the Transducer to the Bracket

1. Insert the transducer's pivot posts into the slots in the back of the bracket (see Figure 3).
2. With the screw holes aligned, rotate the transducer until it snaps onto the bracket.

Marking and Hole Drilling

1. At the selected location on the starboard side of the hull, position the sensor, so the bottom left corner of the transducer projects 3mm (1/8") below the bottom edge of the transom (see Figure 4).
2. *Be sure the bottom of the transducer is parallel to the waterline.* Using a pencil, trace the bottom of the bracket and both corners onto the hull.
3. Remove the transducer and hold the shim against the outline you have drawn. Mark an "X" in the center of each slot for the screw holes.

Warning: Always wear safety goggles and a dust mask.

4. Using a 4 mm, #23, or 9/64" drill bit, drill two holes 22mm (7/8") deep at the locations indicated. To prevent drilling too deeply, wrap masking tape around the bit 22mm (7/8") from the point. **Fiberglass hull**—Minimize surface cracking by chamfering the gelcoat. If a chamfer bit or countersink bit is not available, start drilling with a 6 mm or 1/4" bit to a depth of 1 mm (1/16").

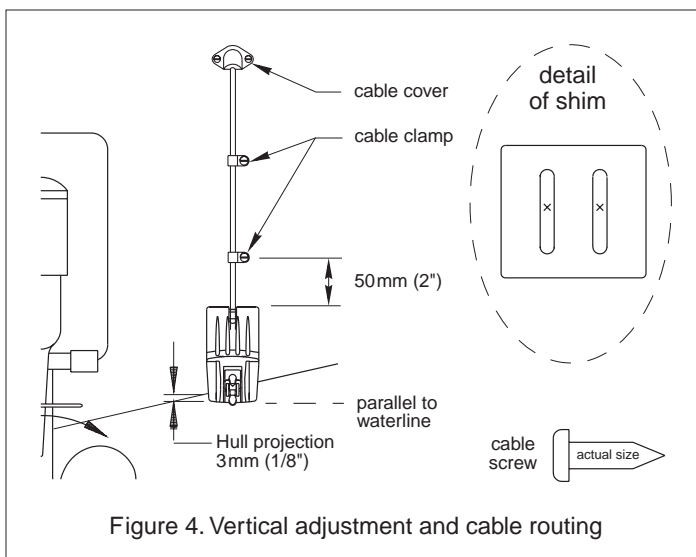


Figure 4. Vertical adjustment and cable routing

Plastic Shim

- **Standard transom (13° transom angle)**—The bracket is designed for a standard 13° transom angle. The shim is not needed for this installation. Skip to "Mounting the Bracket".
- **Stepped transom and jet boats (3° transom angle)** —Use the shim with the tapered end *down*. Place the nuts in the slots in the back of the bracket (see Figure 5). Snap the shim into place.
- **Small aluminum and fiberglass boats (20° transom angle)**—Use the shim with the tapered end *up* (see Figure 5). Place the nuts in the slots in the back of the bracket. Snap the shim into place.
- **If you are unsure about using the shim**, do one of the following:
 - Measure the transom angle of your boat using a digital level or bubble level and protractor. Then follow the instructions above for your transom angle.
 - Experiment with the shim by following the instructions "Mounting the Bracket" and "Checking the Transducer Angle and Projection".

Mounting the Bracket

1. Insert the two nuts in the slots in the back of the bracket if this has not been done (see Figure 5).
2. Apply marine sealant to the threads of the two, #10 x 1-3/4", self-tapping screws to prevent water seepage into the transom.
3. Screw the bracket (with the shim if needed) to the hull. *Do not tighten the screws at this time.*

Checking the Transducer Angle and Projection

Caution: Do not position the bow of the sensor lower than the stern because aeration will occur.

Caution: Do not position the sensor farther into the water than necessary to avoid increasing drag, spray, and water noise and reducing boat speed.

1. Using a straight edge, sight the underside of the sensor relative to the underside of the hull (see Figure 6). The stern of the sensor should be 1–3mm (1/16–1/8") below the bow of the sensor or parallel to the bottom of the hull.
2. Using the vertical adjustment space in the bracket slots, slide the sensor up or down (see Figure 4). *Be sure* the bottom left corner of the sensor projects 3mm (1/8") below the bottom of the hull.
3. When you are satisfied with the position of the sensor, *tighten the bracket screws.*

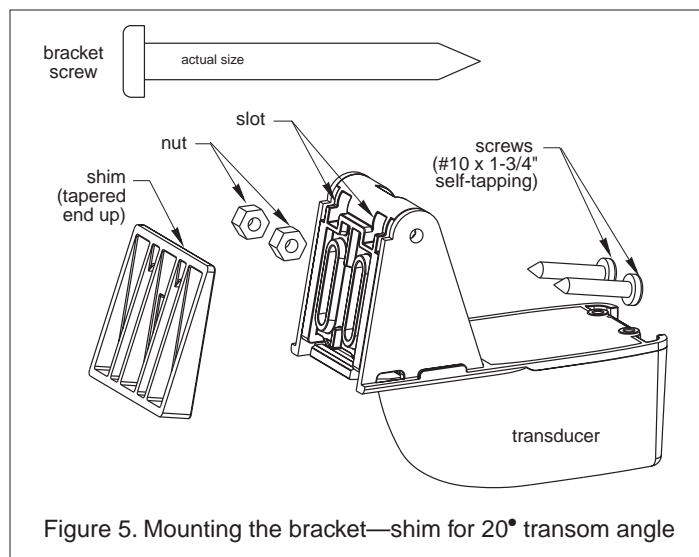


Figure 5. Mounting the bracket—shim for 20° transom angle

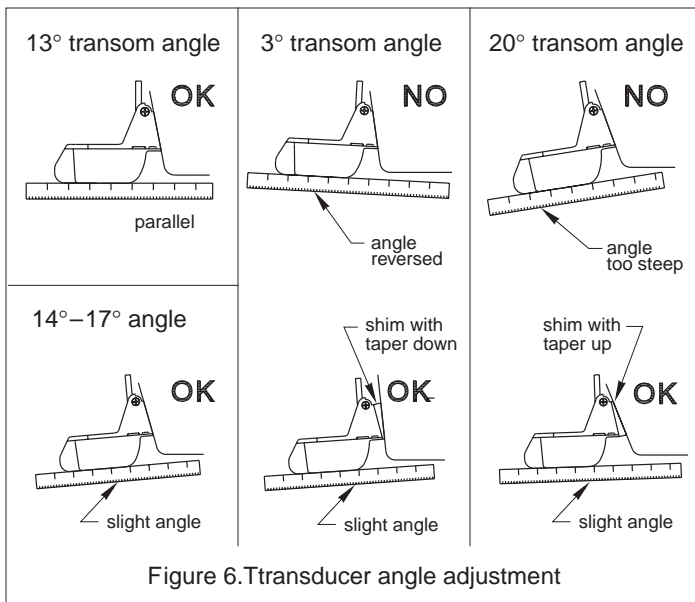


Figure 6. Transducer angle adjustment

Assembling

- Place the cover on the transducer (see Figure 7). Align the holes in the cover with the holes in the transducer and bracket.
TRIDUCER® multisensor (with speed sensor)—*Be sure* the tab on the cover fits under the speed sensor. This will help to lock the cover in place.
- Insert the two machine screws capturing the nuts in the slots in the back of the bracket. Tighten the machine screws until the transducer will stay in the “up” (released) position unaided.
- Transducer without speed sensor**—Insert the side rails of the blank into the channels on the back of the transducer. Slide the blank downward. Fasten it in place with the two, #6 x 5/8", self-tapping screws. *Be sure* to capture the tab on the cover. This will help to lock the cover in place.
TRIDUCER® multisensor (with speed sensor)—Fasten the speed sensor to the transducer with the two, #6 x 5/8", self-tapping screws.

Testing on the Water

- Become familiar with your echosounder’s performance at a speed of 4kn (5MPH).
- Gradually increase the boat speed and observe the gradual decline in performance due to turbulent water flowing over the transducer’s active surface.
- If the degradation is sudden (not gradual), identify the boat speed at which the onset occurred. Return the boat to this speed, then gradually increase speed while making moderate turns in both directions.
- If the performance improves while turning, the transducer’s position probably needs adjustment. It is probably in aerated water. Move the transducer farther down into the water in increments of 3mm (1/8"). If the performance does not improve satisfactorily, move the transducer closer to the centerline of the boat. Fill unused screw holes with marine sealant.

High-speed operation (above 40MPH) may require less projection in the water to improve performance.

Cable Routing

Route the sensor cable over the transom, through a drain hole, or through a new hole drilled in the transom **above the waterline**.

Caution: Never cut the cable or remove the connector; this will void the warranty.

Warning: Always wear safety goggles and a dust mask.

- If a hole must be drilled through the transom, choose a location **well above the waterline** (see Figure 4). Check for obstructions such as trim tabs, pumps, or wiring inside the hull. Mark the location with a pencil. Drill a hole using the appropriate size bit to accommodate the connector.
- Route the cable over or through the transom.
- On the outside of the hull, secure the cable against the transom using the cable clamps. Position a cable clamp 50mm (2") above the bracket and mark the mounting hole with a pencil.
- Position the second cable clamp halfway between the first clamp and the cable hole. Mark this mounting hole.
- If a hole has been drilled in the transom, open the appropriate slot in the cable cover. Position the cover over the cable where it enters the hull. Mark the two mounting holes.
- At each of the marked locations, use a 3mm or 1/8" bit to drill a hole 10mm (3/8") deep. To prevent drilling too deeply, wrap masking tape around the bit 10mm (3/8") from the point.
- Apply marine sealant to the threads of the #6 x 1/2" self-tapping screws to prevent water from seeping into the transom. If you have drilled a hole through the transom, apply marine sealant to the space around the cable where it passes through the transom.
- Position the two cable clamps and fasten them in place. If used, push the cable cover over the cable and screw it in place.
- Route the cable to the instrument *being careful* not to tear the cable jacket when passing it through the bulkhead(s) and other parts of the boat. To reduce electrical interference, separate the sensor cable from other electrical wiring and the engine(s). Coil any excess cable and secure it in place with zip-ties to prevent damage.
- Refer to your echosounder owner’s manual to connect the sensor to the instrument.

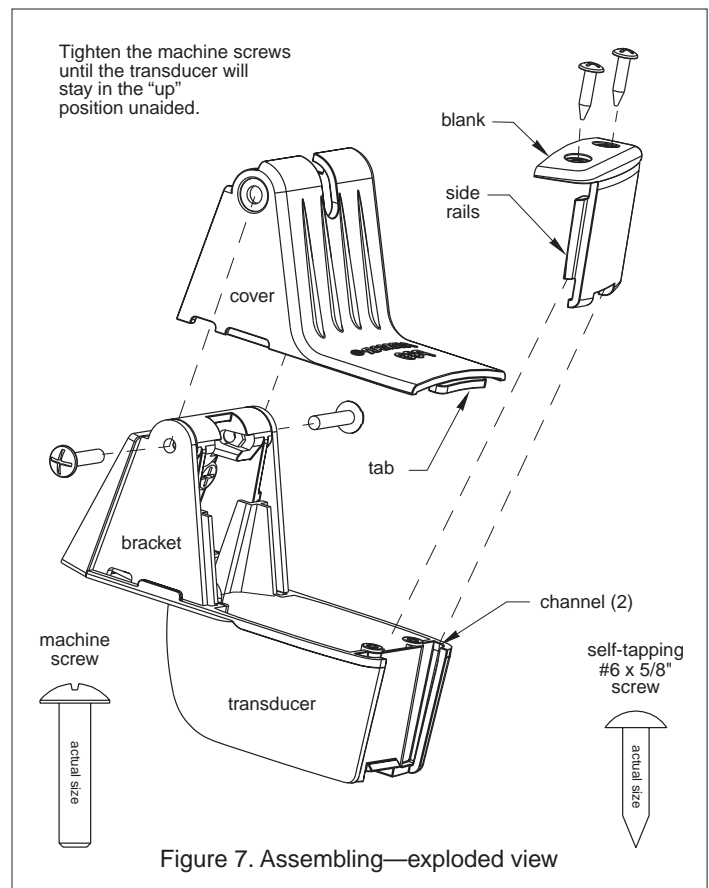
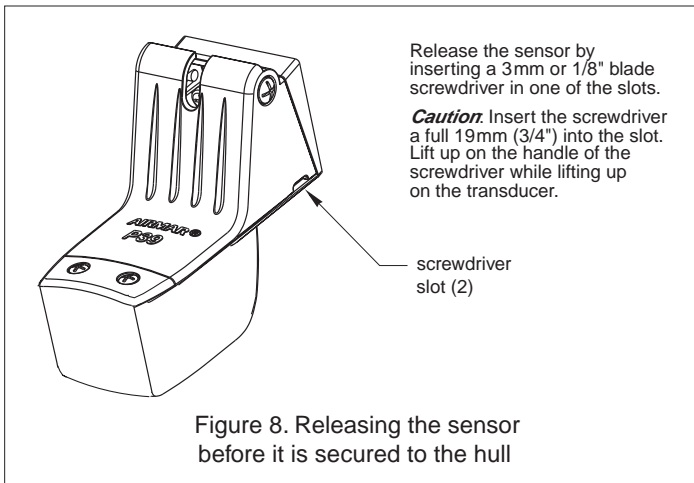


Figure 7. Assembling—exploded view



Checking for Leaks

Warning: When the boat is placed in the water, **immediately** check for leaks around the screws and any holes drilled in the hull. Never install a sensor and leave the boat in the water unchecked for several days.

Operation, Maintenance, Repair, & Parts

Releasing the Sensor

- **Before installation**—If the sensor is snapped onto the bracket but not secured to the hull, use this method. Release the sensor upward by inserting a 3mm or 1/8" blade screwdriver into one of the slots on the side of the sensor (see Figure 8). *Be sure* to insert the screwdriver a full 19mm (3/4") into the slot. Lift up on the handle of the screwdriver while lifting up on the transducer.

Caution: The blade of the screwdriver must not exceed 3mm or 1/8". A larger screwdriver can not be inserted far enough to prevent damage to the transducer housing.

- **After installation**—The sensor releases easily when it is fastened to the hull. Give a sharp blow to the bottom of the transducer using the palm of the hand.

Caution: Never strike the transducer with anything except the palm of the hand. Never strike the speed sensor.

Antifouling Paint

Marine growth can accumulate rapidly on the sensor's surface reducing performance within weeks. Surfaces exposed to salt water that do not interlock, *must* be coated with anti-fouling paint. Use **water-based** anti-fouling paint only. *Never* use ketone-based paint, since ketones can attack many types of plastic possibly causing damage to the transducer. Apply paint every 6 months or at the beginning of each boating season.

Cleaning

Clean the transducer with a soft cloth and mild household detergent. If fouling occurs, use a stiff brush or putty knife to remove the growth *being careful* to avoid scratching the transducer's face. In severe cases, wet sand the paddlewheel with fine grade wet/dry paper.

Servicing the Speed Sensor

If the paddlewheel becomes fouled or inoperable, it can be removed for cleaning. Remove the two screws from the speed sensor (see Figure 9). Slide the speed sensor upward to remove it from the transducer housing. Grasp the paddlewheel and pull to access the shaft.

Caution: The paddlewheel must be oriented correctly to measure boat speed.

After cleaning, slide the paddlewheel onto the shaft (see Figure 7). *Orient the short side of the paddlewheel blade as shown on the side view.* Fit the shaft into the holes in the retaining bars. Slide the assembly into the speed sensor housing. Re-attach the speed sensor.

Parts

Replace broken or worn parts immediately. The water-lubricated paddlewheel bearings have a life of up to 5 years on low-speed boats [less than 10kn (11 MPH)] and 2 years on high-speed vessels. Some depth/temperature units can be upgraded by adding a speed sensor. Purchase parts from you marine dealer or instrument manufacturer.

Part	Part Number
Paddlewheel Kit	33-473-01
Bracket Kit	33-477-01
Speed Sensor Kit	33-478-01

Sensor Replacement

The information needed to order a replacement sensor is printed on the cable tag. *Do not* remove this tag. When ordering, specify the part number, date, and frequency in kHz.

