

OWNER'S GUIDE & INSTALLATION INSTRUCTIONS

Transom Mount TRIDUCER® Multisensor with Integral Release Bracket

Model P58

U. S. Patents: 4,555,938; 4,644,787; 5,606,253; 5,719,824
Canadian Patent 1,233,341

17-404-01 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

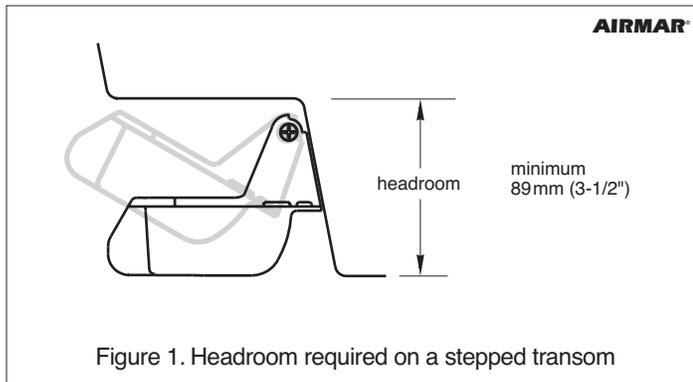
Cleaners, fuel, paint, sealants, and other products may contain strong solvents, such as acetone, which attack many plastics greatly reducing their strength.

Applications

- Not recommended for boats with large or twin screw inboard engine(s)
- Requires 89mm (3-1/2") of headroom to install
- Good operation up to 44kn (50MPH)
- Vertically orients sound beam on hull with deadrise angle up to 30°
- Accommodates transom angles from 2°–22°
- Bracket protects multisensor from frontal impact only

Tools & Materials

- Screwdrivers
- Pencil
- Safety goggles
- Dust mask
- Electric drill
- Drill bits:
 - Bracket holes 4mm, #23, or 9/64"
 - Transom hole (optional) 18mm, 11/16", or 3/4"
 - Cable clamp holes 3mm or 1/8"
- Masking tape
- Marine sealant
- Straight edge
- Zip-ties
- Water-based antifouling paint (**mandatory in salt water**)



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

Part No. _____ Date _____ Frequency _____ kHz



Pretest Speed & Temperature Functions

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

Mounting Location

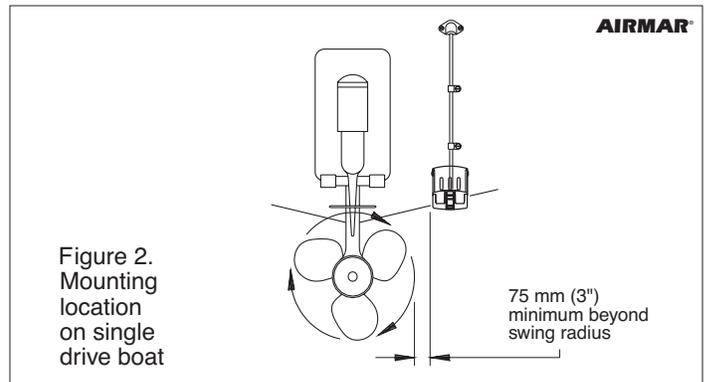
For the best performance, the multisensor *must* be in contact with aeration-free and turbulence-free water. Mount the multisensor on the transom as close to the centerline (keel) of the boat as possible. On slower heavier displacement hulls, positioning it farther from the centerline is acceptable.

Headroom—Allow space above the bracket for it to release and rotate the multisensor 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 multisensor where the boat may be supported during trailering, launching, hauling, or storage.

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



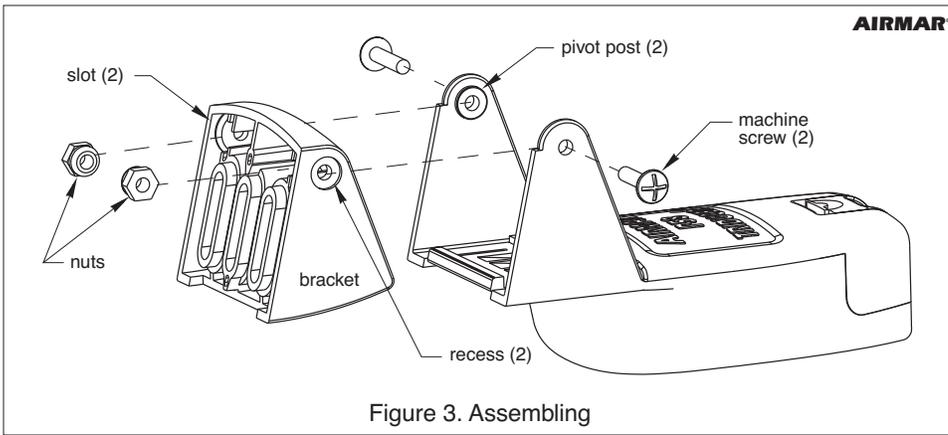


Figure 3. Assembling

Installation

Assembling

1. Insert the multisensor's pivot posts into the recesses on the sides of the bracket (see Figure 3).
2. Press the two nuts into the slots in the back of the bracket.
3. Align the holes in the multisensor, bracket, and nuts. Insert the two machine screws capturing the nuts. Tighten the machine screws until the multisensor will stay in the "up" (released) position unaided.

Marking & Hole Drilling

1. At the selected location, position the multisensor, so it projects 3mm (1/8") below the bottom edge of the transom (see Figure 4).
2. *Being sure the bottom of the multisensor is parallel to the waterline*, mark the location of the screw holes with an "X" in the center of the two outer most slots.

Warning: Always wear safety goggles and a dust mask.

3. Using a 4mm, #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 running the drill in reverse until the gelcoat is penetrated.

Plastic Shims

- **Standard transom** (13° transom angle)—The bracket is designed for a standard 13° transom angle. The 9° shim is *not* needed for this installation. If your boat is capable of speeds above 20kn (28MPH), install the bracket with the 4.5° shim, taper *down* (see Figure 5). This ensures that the paddlewheel will be in contact with the water at high speeds.
- **Stepped transom and jet boats** (3° transom angle) —Use the 9° shim with the taper *down*. If your boat is capable of speeds above 20kn (28MPH), install the bracket with both the 9° and 4.5° shims, taper *down* (see Figure 5). This ensures that the paddlewheel will be in contact with the water at high speeds. Install the 4.5° shim against the transom after shaving the interfering portion of the rails and lower bump. Place the 9° shim and bracket assembly on top.
- **Small aluminum and fiberglass boats** (20° transom angle)—Use the 9° shim with the taper *up*. If your boat is capable of speeds above 20kn (28MPH), install the bracket with only the 4.5° shim, taper *up*.
- **If you are unsure about using the shim(s)**, do one of below:
 - Measure the transom angle of your boat using a digital level or bubble level and protractor. Then follow the instructions for your transom angle.
 - Experiment with the shims by following the instructions "Mounting & Adjusting".

Mounting & Adjusting

1. Apply marine sealant to the threads of two, #10 x 1-1/4", self-tapping bracket screws to prevent water seepage into the transom. *Be sure* the nuts are in the slots in the back of the bracket and any shim(s) is in place (see Figure 3). Screw the multisensor to the hull (see Figure 4). *Do not tighten the screws completely at this time.*

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

2. Using a straight edge, sight the underside of the multisensor relative to the underside of the hull (see Figure 5).

The stern of the multisensor should be 1–6mm (1/16–1/4") below the bow of the multisensor.

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

3. Using the vertical adjustment space in the bracket slots, slide the multisensor up or down until the bottom left corner of the multisensor projections 0–3mm (0–1/8") below the bottom of the hull (see Figure 4). When you are satisfied with the position of the multisensor, tighten the two bracket screws.

Testing on the Water

1. Become familiar with your echosounder's performance at a speed of 4kn (5MPH).
2. Gradually increase the boat speed and observe the gradual decline in performance due to turbulent water flowing over the multisensor's active surface.
3. If the decline in performance 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.

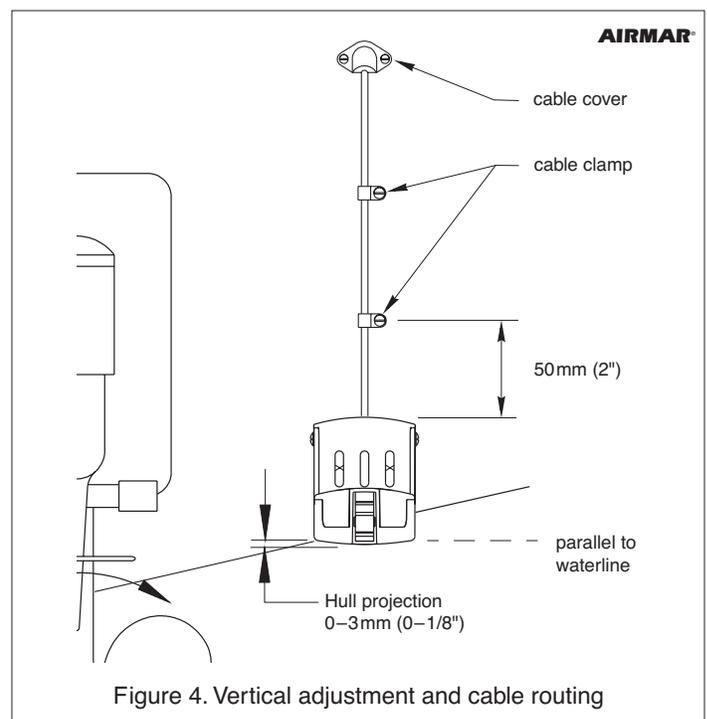


Figure 4. Vertical adjustment and cable routing

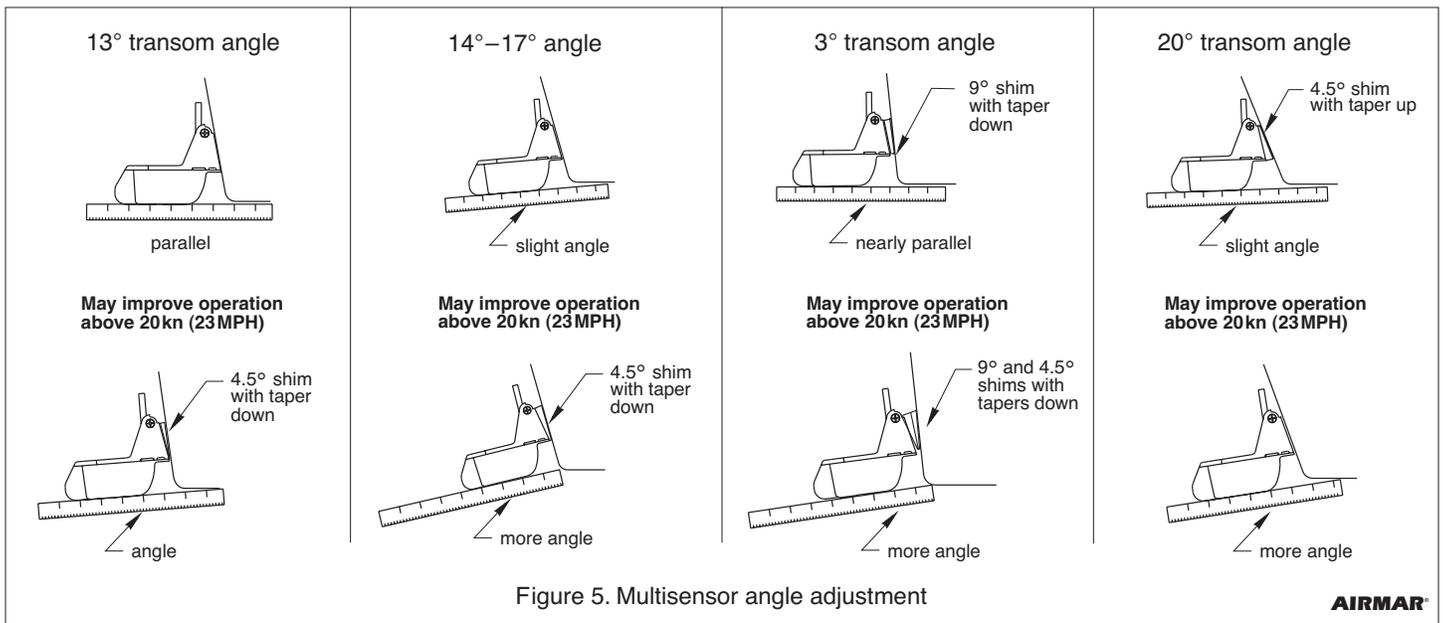


Figure 5. Multisensor angle adjustment

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4. If the performance improves while turning to the side on which the multisensor is installed, its position probably needs adjustment. The multisensor is probably in aerated water.

To improve performance, try the following *one at a time* in the order given.

- A. Increase the multisensor's angle in the water. Review "Plastic Shims" and see Figure 5.
- B. Move the multisensor farther into the water in increments of 3mm (1/8") (see Figure 4).
- C. Move the multisensor closer to the centerline of the boat. Fill unused screw holes with marine sealant.

Stabilizing the Bracket

Stabilize the bracket by installing the third bracket screw at the bottom of the center slot (see Figure 6). Using a 4 mm, #23, or 9/64" drill bit, drill a hole 22mm (7/8") deep. To prevent drilling too deeply, wrap masking tape around the bit 22mm (7/8") from the point.

Fiberglass hull—Minimize surface cracking by running the drill in reverse until the gelcoat is penetrated.

Apply marine sealant to the threads of the third #10 x 1-1/4" self-tapping screw to prevent water seepage into the transom. Tighten the screw.

Cable Routing

Route the multisensor 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.

1. 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.
2. Route the cable over or through the transom.
3. On the outside of the hull, secure the cable against the transom using the cable clamps. Position one cable clamp 50mm (2") above the bracket and mark the mounting hole with a pencil.
4. Position the second cable clamp halfway between the first clamp and the cable hole. Mark this mounting hole.

5. 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.

6. 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.

7. 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.

8. Position the two cable clamps and fasten them in place. If used, push the cable cover over the cable and screw it in place.

9. 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.

10. Refer to your echosounder owner's manual to connect the multisensor to the instrument.

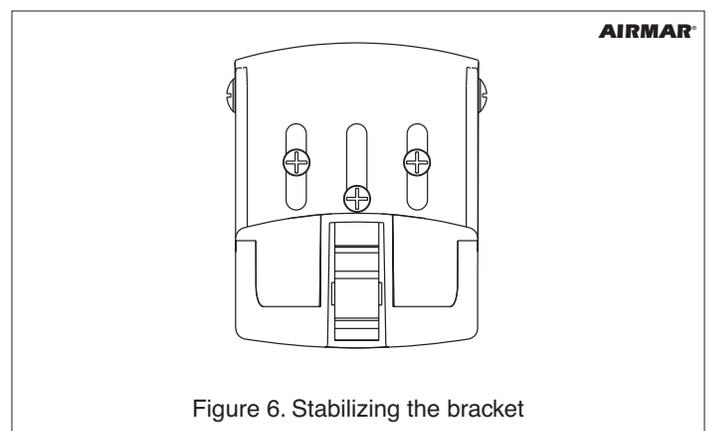


Figure 6. Stabilizing the bracket

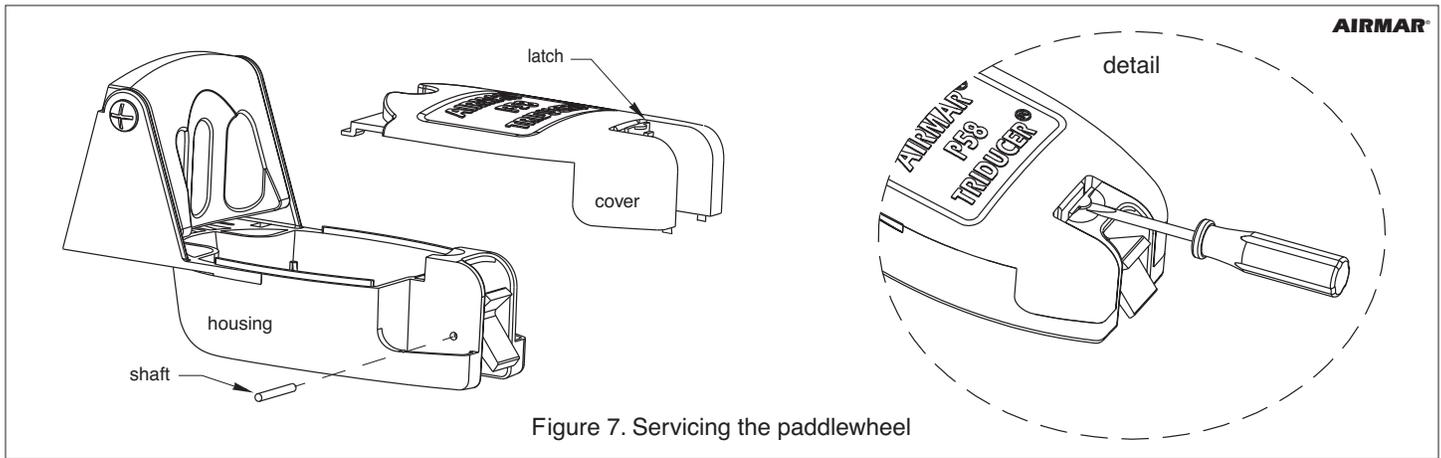


Figure 7. Servicing the paddlewheel

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 multisensor and leave the boat in the water unchecked for several days.

Operation & Maintenance

Releasing the Multisensor

Caution: Never strike the multisensor with anything except the palm of the hand. Never strike the paddlewheel.

The multisensor releases easily when it is fastened to the hull. Give a sharp blow to the bottom of the multisensor using the palm of the hand.

Antifouling Paint

Aquatic growth can accumulate rapidly on the multisensor'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** antifouling paint only. Never use ketone-based paint, since ketones can attack many types of plastic possibly causing damage to the multisensor. Apply paint every 6 months or at the beginning of each boating season.

Cleaning

Clean the multisensor with a soft cloth and mild household detergent. If fouling occurs, use a Scotch-Brite® scour pad to remove the growth *being careful* to avoid scratching the multisensor's face. In severe cases, wet sand the paddlewheel with fine grade wet/dry paper.

Servicing the Paddlewheel

If the paddlewheel becomes fouled or inoperable, remove it for cleaning. Insert the blade of a **small** screwdriver under the cover's latch (see Figure 7). Push forward while prying upward to release the latch and remove the cover. Using a small finish nail, push the paddlewheel shaft out.

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

Orient the short side of the paddlewheel blades as shown in Figure 8. Slide the shaft through the holes in the housing and

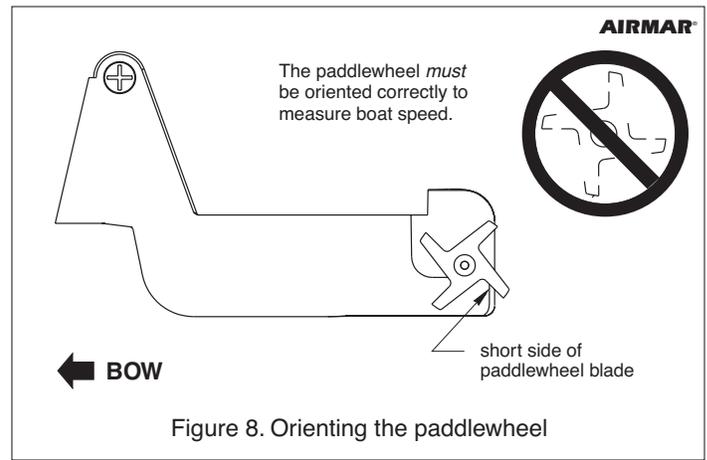


Figure 8. Orienting the paddlewheel

paddlewheel (see Figure 7). *Be sure* the ends of the shaft are flush with the housing. Insert the forward tabs of the cover into the housing. Press down on the back of the cover until the latch snaps into place. (If necessary, use a **small** blade screwdriver to depress the tabs on either side of the latch until they snap under the housing.)

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. Purchase parts from your marine dealer or instrument manufacturer.

Paddlewheel Kit	33-492-01
Bracket & Wedge Kit	33-491-01

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. For convenient reference, record this information on the top of page one.