

OWNER'S GUIDE & INSTALLATION INSTRUCTIONS

Transom-Mount, TRIDUCER® Multisensor with Integral Release Bracket

Model P58

U. S. Patents: 5,606,253; 5,719,824

12/14/10
17-404-01 rev. 04

WARNING: Always wear safety goggles and a dust mask when installing to prevent personal injury.

WARNING: When the boat is placed in the water, immediately check for leaks around the screws and any other holes drilled in the hull.

CAUTION: Never pull, carry, or hold the transducer by the cable as this may sever internal connections.

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

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.

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

Applications

- Not recommended for boats with large inboard engine(s)
- Not recommended for stepped transoms, as multisensor will be difficult to adjust
- Good operation up to 44kn (50MPH)
- Vertically orients sound beam on hull with deadrise angle up to 22°
- Adjusts to transom angles from 2°–22°
- Requires 89mm (3-1/2") of headroom to install
- Bracket protects multisensor from frontal impact only

Tools & Materials

Safety goggles

Dust mask

Screwdrivers

Pencil

Electric drill

Drill bits:

Bracket holes	4 mm, #23, or 9/64"
Transom hole (optional)	18 mm, 11/16", or 3/4"
	21 mm or 13/16" (Furuno only)
	24 mm or 15/16" or 1" (Raymarine only)
Cable clamp holes	3 mm or 1/8"

Masking tape

Angle finder

Marine sealant (suitable for below waterline)

Straight edge

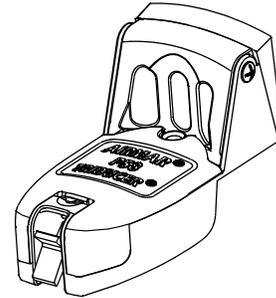
Grommets (some installations)

Cable ties

Water-based anti-fouling paint (**mandatory in salt water**)

Record the information found on the cable tag for future reference

Part No. _____ Date _____ Frequency _____



Mounting Location

CAUTION: Do not mount in an area of turbulence or bubbles: near water intake or discharge openings; or behind strakes, struts, fittings, or hull irregularities

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

- For the best performance, the multisensor must be in contact with smooth water. To identify an area of "clean" water, observe the water flow off the transom while the boat is underway.
- Allow headroom space above the bracket for it to release and rotate the multisensor upward (see Figure 1).
- Mount the multisensor as close to the centerline (keel) of the boat as possible to ensure the sensor remains in the water when the boat is turning.
 - **Single drive boat**—Mount at least 75 mm (3") beyond the swing radius of the propeller (see Figure 2). The starboard side where the propeller blades are moving downward is preferred.
 - **Twin drive boat**—Mount the multisensor between the drives.

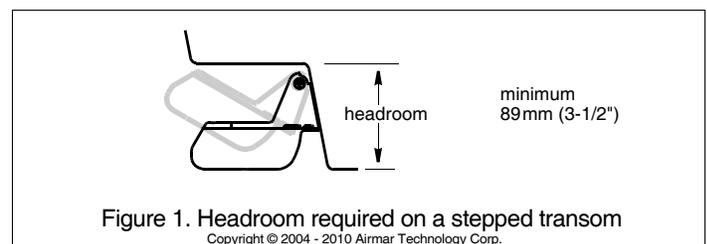


Figure 1. Headroom required on a stepped transom

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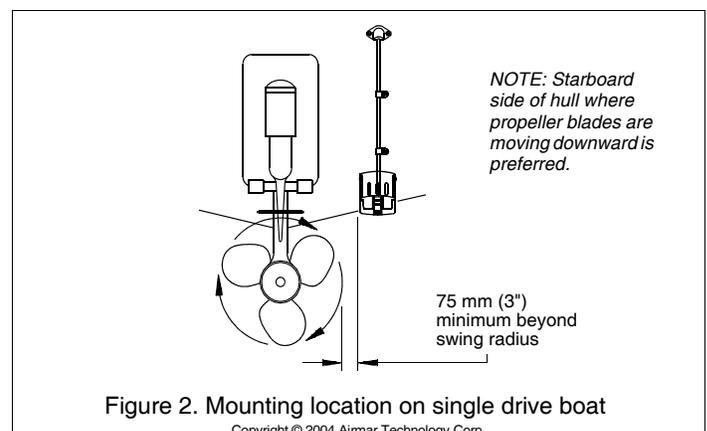


Figure 2. Mounting location on single drive boat

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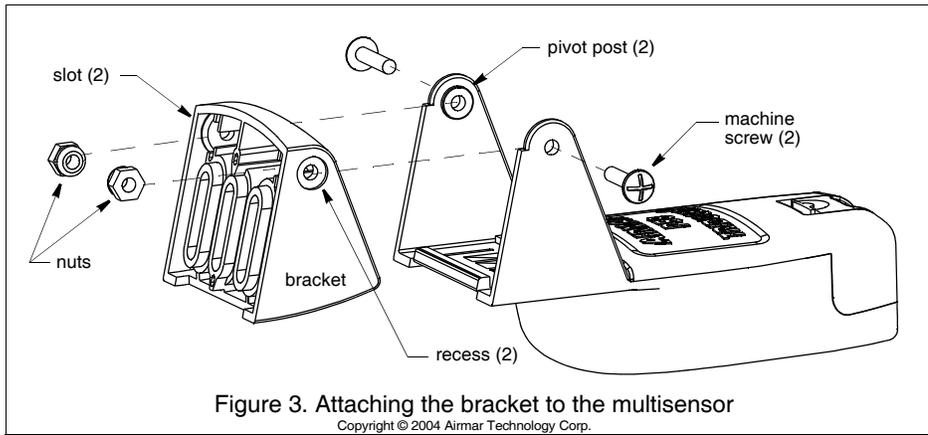


Figure 3. Attaching the bracket to the multisensor

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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(s) or it is inaccurate, check the connections and repeat the test. If there is still no reading(s) or it is inaccurate, return the product to your place of purchase.

Installation

Attaching the Bracket to the Multisensor

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.

Hole Drilling

CAUTION: 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.

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.
3. Using a 4mm, #23, or 9/64" drill bit, drill two holes 22mm (7/8") deep at the locations indicated.

Compensating for Transom Angle—Shims

CAUTION: For boats capable of speeds above 20kn (28MPH)—The trailing edge of the multisensor must be deeper in the water than the leading edge. This will ensure that the paddlewheel is in contact with the water at high speeds.

For the best performance, the transducer beam must be aimed straight at the bottom. Since the transom of most boats is angled, the bracket must compensate for it. Measure the transom angle of the boat with an angle finder.

- **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).
- **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). 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 the 4.5° shim, taper up.
- **Deadrise angles greater than 16°**—The hull projection will be zero.
- **If you are unsure about using the shim(s)** Experiment with the shims by following the instructions "Mounting & Adjusting."

Mounting & Adjusting

CAUTION: Do not position the leading edge of the multisensor lower than the trailing edge because aeration will occur.

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

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.*
2. Using a straight edge, sight the underside of the multisensor relative to the underside of the hull (see Figure 5). The trailing edge of the multisensor should be 1–6mm (1/16–1/4") below the leading edge.
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.

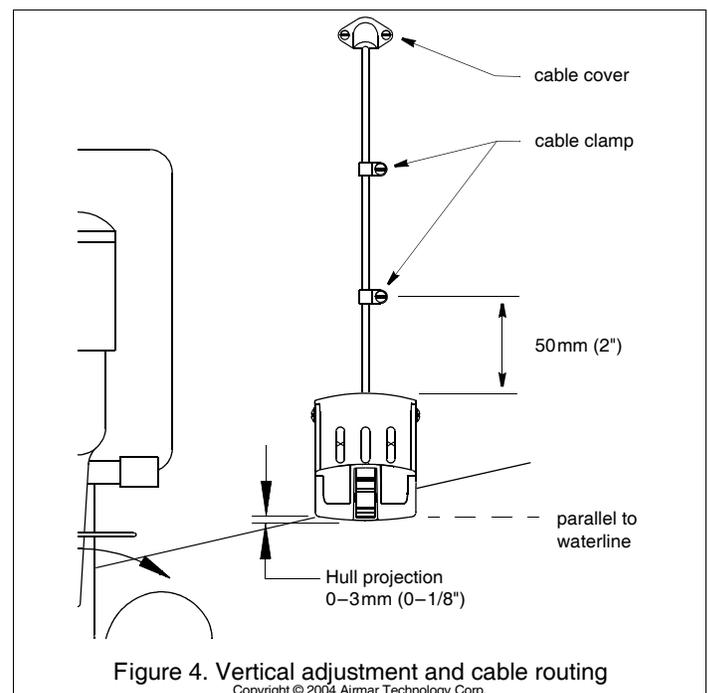
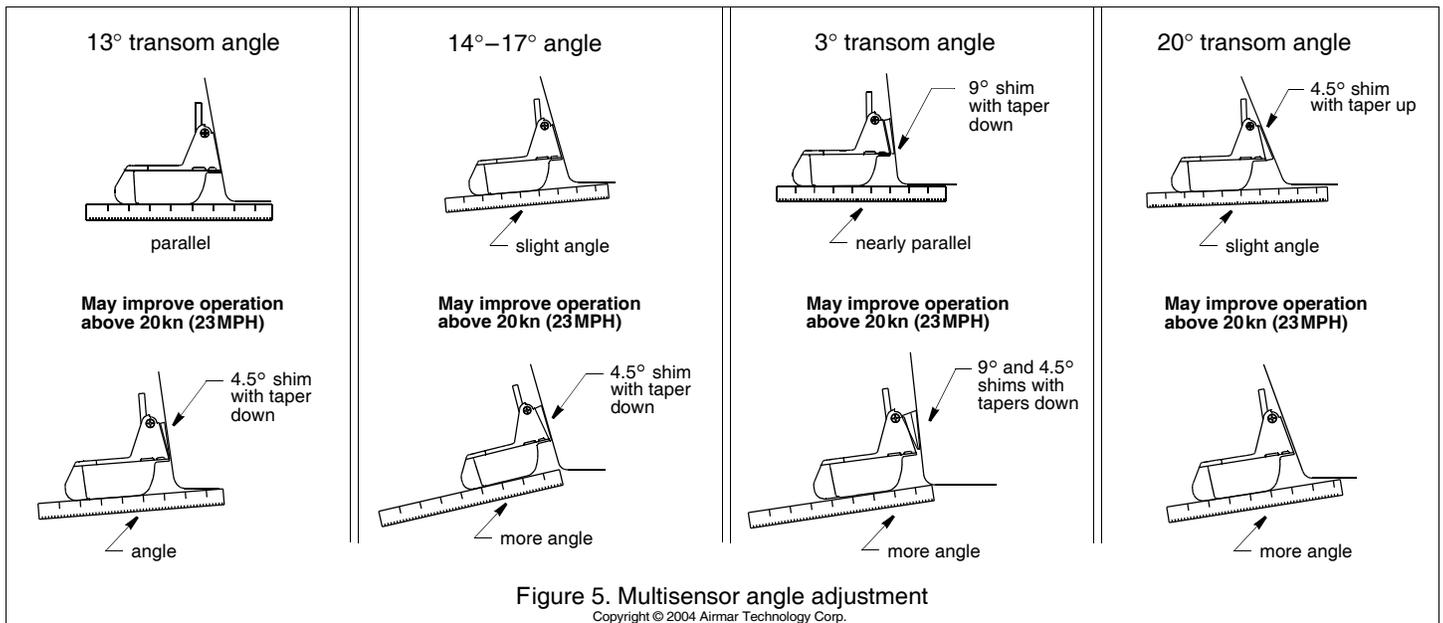


Figure 4. Vertical adjustment and cable routing

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Testing on the Water

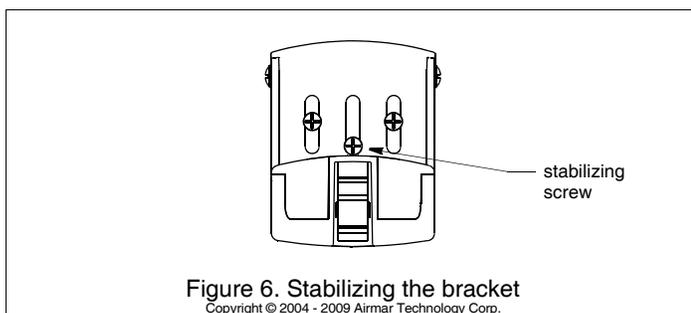
1. Become familiar with your echosounder's performance at a speed of 4 kn (5MPH).
2. Gradually increase the boat speed and observe the gradual decline in performance due to turbulent water flowing over the multisensor's face.
3. If the decline in performance is sudden (not gradual), identify the boat speed at which the onset occurred. Return the boat to this speed, then gradually increase speed while making moderate turns in both directions.
4. If the performance improves while turning toward the multisensor side, 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 "Compensating for Transom Angle—Shims" and see Figure 5.
- b. Move the multisensor deeper 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.

NOTE: High-speed operation [above 35kn (40MPH)] may require less projection in the water to improve performance.

5. **Calibration**—To match the speed shown on the display to the actual speed of the boat, you may need to calibrate the instrument. Refer to your instrument owner's manual.



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.

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 & Connecting

CAUTION: Do not remove the connector to ease cable routing. If the cable must be cut and spliced, use Airmar's splash-proof Junction Box No. 33-035 and follow the instructions provided. Removing the waterproof connector or cutting the cable, except when using a water-tight junction box, will void the sensor warranty.

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

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 through 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.
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.

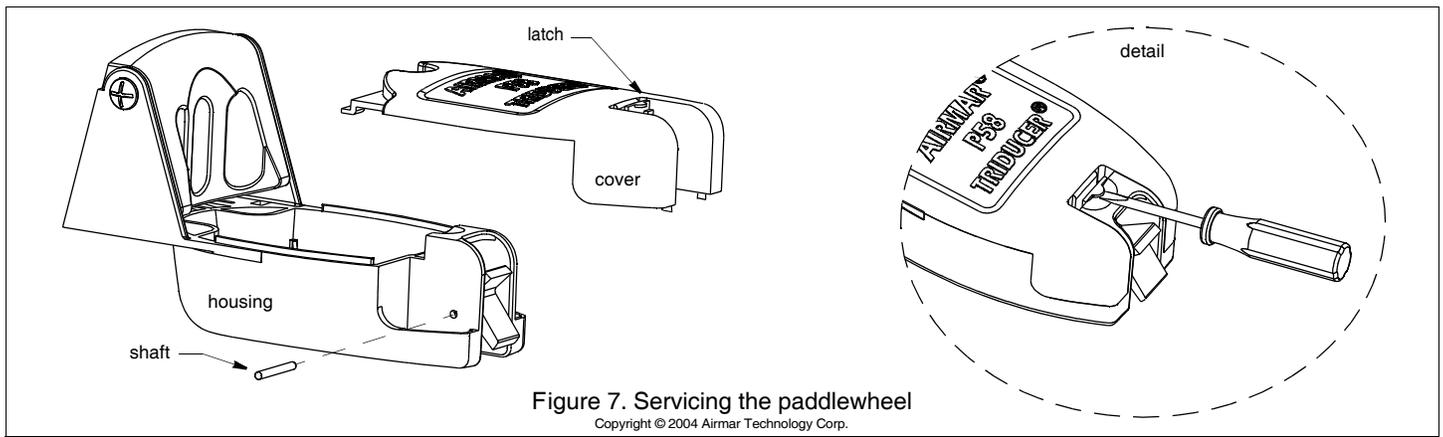


Figure 7. Servicing the paddlewheel
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9. Route the cable to the instrument being careful not to tear the cable jacket when passing it through the bulkhead(s) and other parts of the boat. Use grommets to avoid chafing. To reduce electrical interference, separate the multisensor cable from other electrical wiring and the engine(s). Coil any excess cable and secure it in place with cable ties to prevent damage.
10. Refer to your echosounder owner's manual to connect the multisensor to the instrument.

Checking for Leaks

When the boat is placed in the water, **immediately** check for leaks around the screws and any other holes drilled in the hull. Note that very small leaks may not be readily observed. Do not leave the boat in the water unchecked for more than three hours.

Operation & Maintenance

Releasing the Multisensor

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. Do not strike the paddlewheel.

Anti-fouling 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** anti-fouling 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.

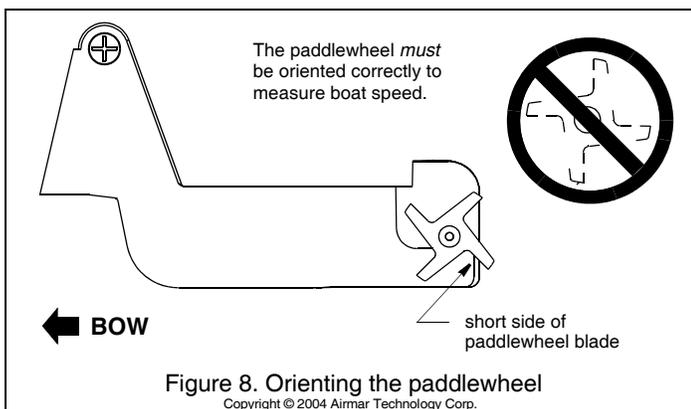


Figure 8. Orienting the paddlewheel
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Cleaning

Clean the transducer's surface with a Scotch-Brite® scour pad and mild household detergent taking care to avoid making scratches. If the fouling is severe, lightly wet sand with fine grade wet/dry paper.

If the paddlewheel becomes fouled or inoperable, remove it for cleaning. Remove the multisensor's cover by inserting the blade of a **small** screwdriver under the latch (see Figure 7). Then push forward while prying upward. Use a small finish nail to push out the paddlewheel shaft.

Servicing the Paddlewheel

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 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 & Shaft 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.

Obtain parts from your instrument manufacturer or marine dealer.

Gemeco (USA)	Tel: 803-693-0777 Fax: 803-693-0477 email: sales@gemeco.com
Airmar EMEA (Europe, Middle East, Africa)	Tel: +33.(0)2.23.52.06.48 Fax: +33.(0)2.23.52.06.49 email: sales@airmar-emea.com