

OWNER'S GUIDE &

INSTALLATION INSTRUCTIONS

Transom Mount *with Integrated Release Bracket*

Depth Transducer

Depth or Depth & Temperature Model: **P23**
TRIDUCER® Multisensor: **P32**

Patent <http://www.airmar.com/patent.html>

04/08/19

17-122-rev.10

D-17-122-rev.10

Follow the precautions below for optimal product performance and to reduce the risk of property damage, personal injury, and/or death.

WARNING: Always wear safety glasses, a dust mask, and ear protection when installing.

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 sensor by the cable as this may sever internal connections.

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

CAUTION: The bracket protects the sensor from frontal impact only.

CAUTION: Never use solvents. Cleaner, fuel, sealant, paint, and other products may contain solvents that can damage plastic parts, especially the transducer's face.

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

Tools & Materials

Safety glasses

Dust mask

Ear protection

Scissors

Masking tape

Electric drill

Drill bits and hole saws:

Bracket holes 4 mm, #23, or 9/64"

Transom hole (optional) 2 mm or 1/16" larger than connector Ø

Cable clamp holes 3 mm or 1/8"

Angle finder

Straight edge

Wire cutters (some installations)

Marine sealant (suitable for below waterline)

Screwdrivers

Pencil

Grommet(s) (some installations)

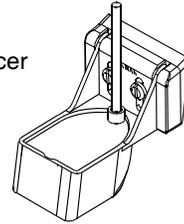
Cable ties

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

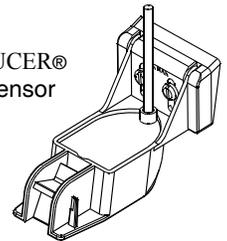
Record the information found on the cable tag for future reference.

Part No. _____ Date _____ Frequency _____ kHz

P23
transducer



P32
TRIDUCER®
Multisensor



Applications

- Recommended for boats up to 7m (22')
- Not recommended for boats with inboard engine(s)
- Not recommended for a stepped hull
- Adjusts to *transom* angles from 3° – 20°
- Vertically orients sound beam on hull with *deadrise* angle up to 28°
- Good operation up to 44kn (50MPH)

Pretest Temperature & Speed Functions

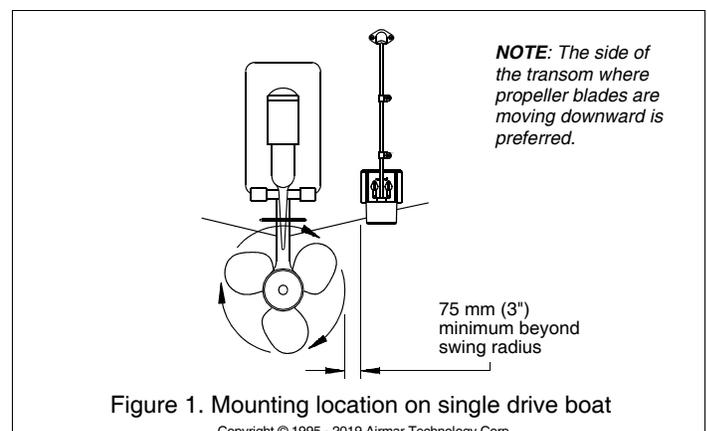
Connect the sensor to the instrument and spin the paddlewheel. Check for the approximate air temperature and a speed reading. If there is no reading(s) or it is inaccurate, check the connections and test again. If there is still a problem, return the product to your place of purchase.

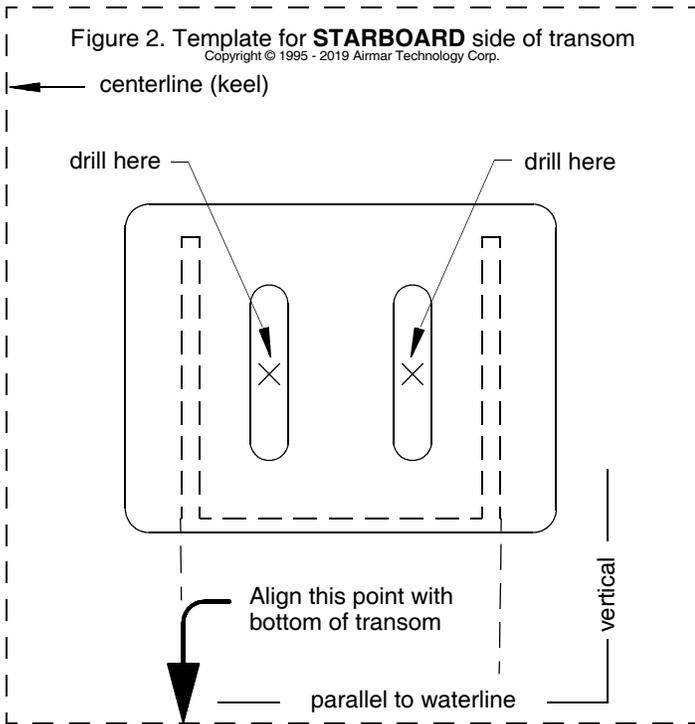
Mounting Location

CAUTION: Do not mount the sensor in line with or near water intake or discharge openings or behind strakes, fittings, or hull irregularities that may disturb the water flow.

CAUTION: Do not mount the sensor in a location where the boat may be supported during trailering, launching, hauling, or storage.

- For the best performance, the sensor 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 vertical space above the bracket for it to release and rotate the sensor upward.
- Mounting the sensor on the side of the transom where the propeller blades are moving downward is preferred (Figure 1).
- Mount the sensor 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 the sensor at least 75 mm (3") beyond the swing radius of the propeller.
 - **Twin drive boat**—Mount the sensor between the drives.





- **Trim tabs**—Mount the sensor inside the trim tab, space permitting.
- **Stepped transom**—Mount the sensor on the lowest step being sure there is enough space above the bracket for it to release and rotate the sensor upward.

Installation

Assembling & Positioning

1. Insert the top of the sensor's pivot posts into the slots on the top back of the bracket. Rotate the bracket down until the bottom snaps onto the sensor.
2. Cut out the template (Figure 2).
3. At the selected location on the starboard side of the hull, position the template so the arrow at the bottom is aligned with the bottom edge of the transom (Figure 3). *Being sure* the template is parallel to the waterline, tape it in place.

Hole Drilling

CAUTION: To prevent drilling too deeply, wrap masking tape around the bit 22mm (7/8") from the point.

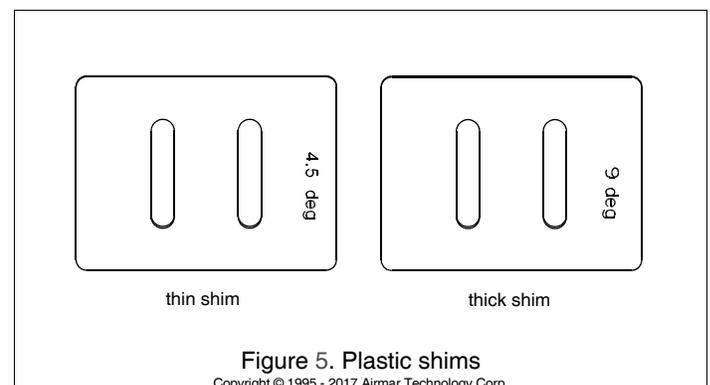
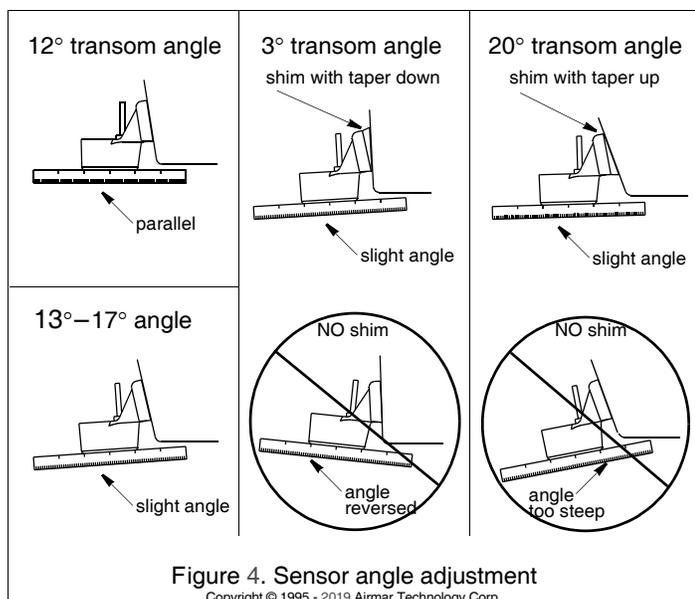
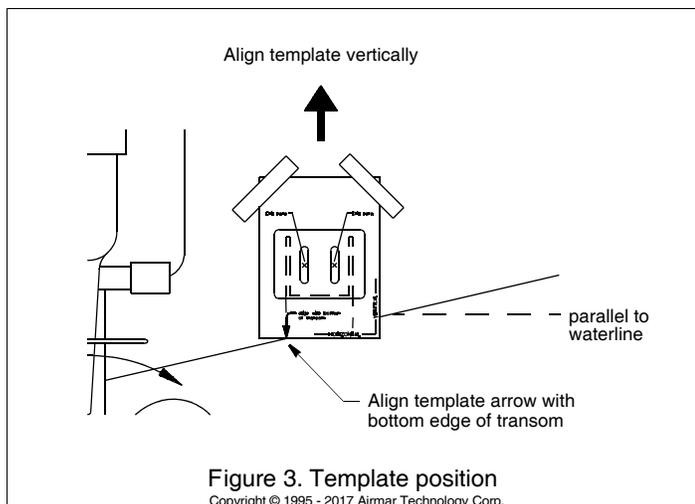
NOTE: Fiberglass hull—Minimize surface cracking by running the drill in reverse until the gelcoat is penetrated.

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

Compensating for the Transom Angle: Shims

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** (12° transom angle)—The bracket is designed for a standard 12° transom angle. The *9 degree* shim is *not* needed for this installation. If your boat is capable of speeds above 35kn (40MPH), install the bracket with the *4.5 degree* shim, taper *down* (Figures 4 and 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 degree* shim with the taper *down* (Figures 4 and 5).
- **Small aluminum and fiberglass boats** (20° transom angle)—Use the *9 degree* shim with the taper *up* (Figures 4 and 5).
- **If you are unsure about using the shims**—To determine if the *9 degree* shim is needed, position the sensor at the selected location. Using a straight edge, sight the underside of the sensor relative to the underside of the hull (Figures 4 and 5). The trailing edge of the sensor should be 1–3mm (1/16–1/8") below the leading edge of the sensor or parallel to the bottom of the hull.



Mounting & Adjusting

CAUTION: Do not position the leading edge of the sensor deeper in the water 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. Align the posts on the shim with the two holes in the bracket. Snap the shim into place.

High-speed operation [above 35kn (40MPH)]—It may be necessary to install the bracket with both shims to ensure that the paddlewheel will be in contact with the water at high speeds. Remove the posts from the 4.5 degree shim with wire cutters. Place the 4.5 degree shim, taper *down*, behind the 9 degree shim.

2. Apply a marine sealant to the threads of the two #10 x 1-1/4" self-tapping bracket screws to prevent water seepage into the transom. With the shim(s) in place, screw the bracket to the hull. *Do not tighten the screws completely at this time.*
3. Using a straight edge, sight the underside of the sensor relative to the underside of the hull (Figure 4). The trailing edge of the sensor should be 1–3mm (1/16–1/8") below the leading edge of the sensor or parallel to the bottom of the hull.
4. Using the vertical adjustment space in the bracket slots, slide the sensor up or down until the bottom left corner of the sensor projections 3mm (1/8") below the bottom of the hull (Figure 6). When you are satisfied with the position of the sensor, tighten the 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 under the transducer'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 to the side on which the sensor is installed, the transducer's position probably needs adjustment. It is probably in aerated water.

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

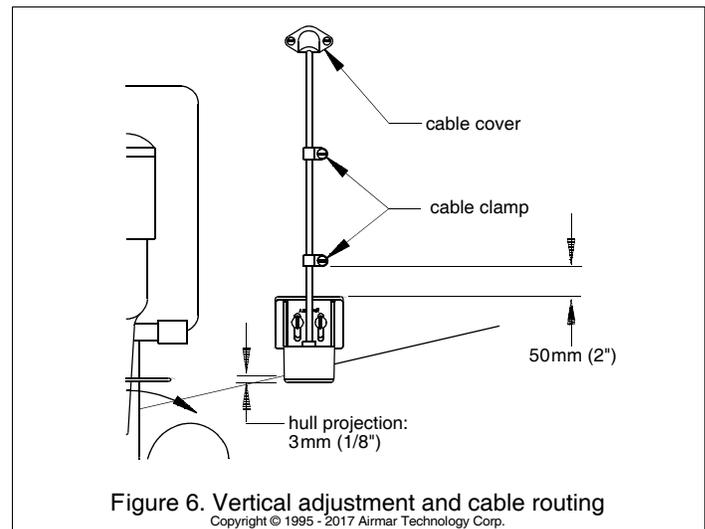
- a. Increase the sensor's angle in the water. Install the 4.5 degree shim with the taper *down* (Figures 4 and 5).
- b. Move the sensor deeper into the water in increments of 3mm (1/8") (Figure 6).
- c. Move the sensor closer to the centerline of the boat. Fill unused screw holes with marine sealant.

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

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's warranty.

Route the sensor 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** (Figure 6). 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. Use grommets to prevent chafing. 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 cable ties to prevent damage.
10. Refer to your echosounder owner's manual to connect the sensor to the instrument.

Checking for Leaks

When the boat is placed in the water, **immediately** check for leaks around the screws and any 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.

Maintenance

Anti-fouling Paint

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

Aquatic growth can accumulate rapidly on the sensor's surface reducing performance within weeks. Clean the transducer's face 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.

Servicing the Paddlewheel

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

If the P32 paddlewheel becomes fouled or inoperable, it can be removed for cleaning. Gently push back one retaining arm and slide the shaft out.

Orient the short side of the paddlewheel blades correctly (Figure 7). Reinsert the shaft in the lower set of holes by pushing back on the retaining arms. *Be sure the shaft ends are secure in the retaining arm notches.*

Sensor Replacement & Parts

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

Lost, broken or worn parts should be replaced 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. Obtain parts from your instrument manufacturer or marine dealer.

Gemeco

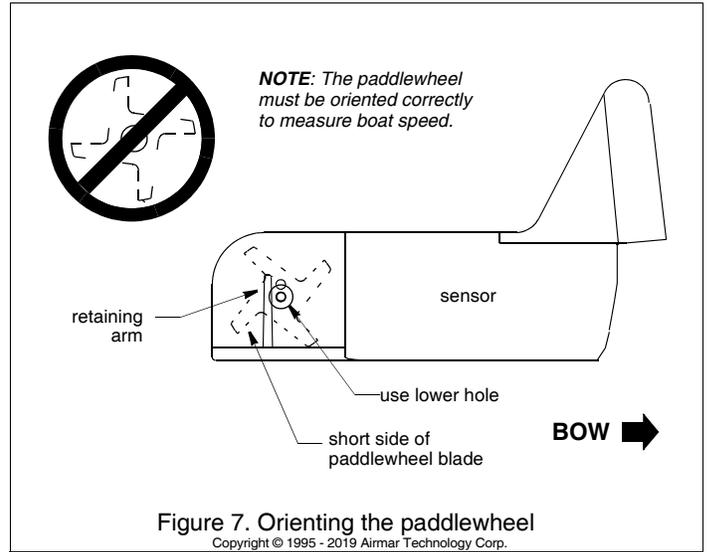
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