

# OWNER'S GUIDE &

# INSTALLATION INSTRUCTIONS

## Transom Mount *with* Kick-up Bracket 20-035 Transducer *or* TRIDUCER® Multisensor

Model: P52

P52 TRIDUCER® Multisensor



04/12/11

17-002 rev. 04

**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 goggles and a dust mask 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:** The bracket protects the sensor from frontal impact only.

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

**CAUTION:** Never strike the sensor.

**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 boat with large inboard engine(s).
- Good operation up to 40kn (46MPH).  
Requires experimentation at higher speeds.
- Vertically orients the sound beam on hull with deadrise angle up to 22°
- Adjusts to transom angles up to 20°.

## Tools & Materials

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

## Identifying Your Model

The model name is printed on the cable tag.

## Antifouling Paint

Aquatic 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 antifouling 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 transducer. It may be easier to apply paint before installing the sensor, but allow drying time. Reapply paint every 6 months or at the beginning of each boating season.

## Assembling

1. The bracket is shipped in the "up" (released) position. Before attaching the sensor, set the bracket in the "down" (operating) position by grasping the cross bar and pulling outward in an arc (see Figure 1).
2. Run the cable through the bracket **between the cross bar and the transom** (see photo on front page).
3. Attach the sensor to the bracket with the four #10-32 x 5/8" machine screws, washers, and lock nuts. Tighten the screws so the sensor remains in place, but can be adjusted (see Figure 2).  
**P52**—Place the bracket inside the mounting tabs (see photo on front page).

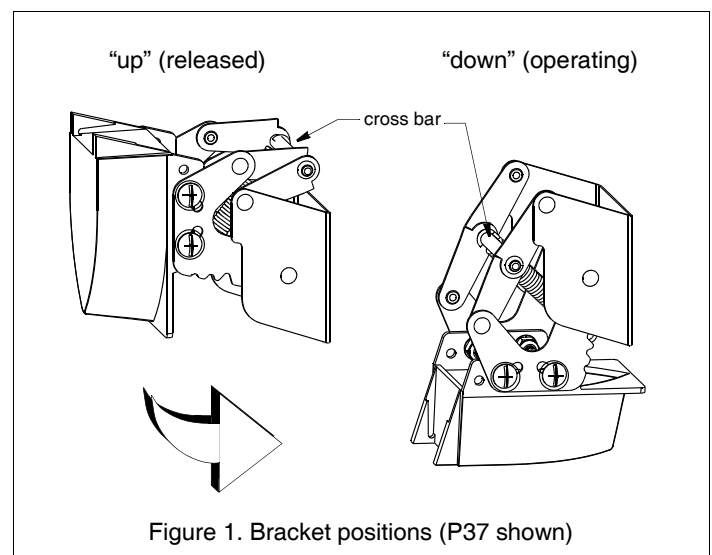
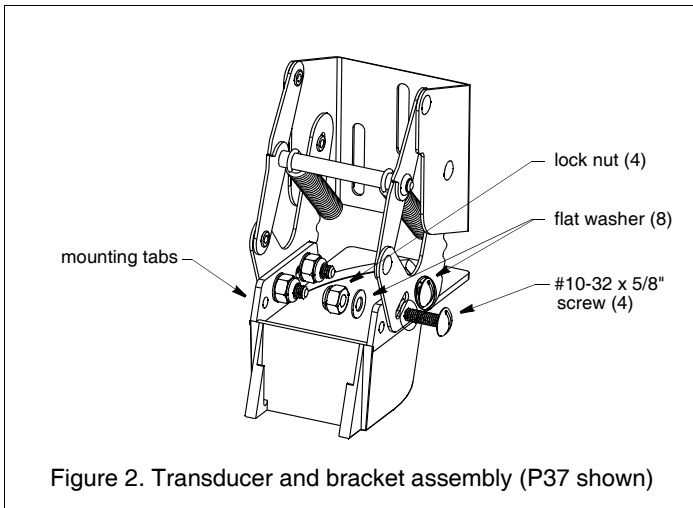


Figure 1. Bracket positions (P37 shown)



## Mounting Location

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

**CAUTION:** Avoid mounting the sensor 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 headroom space above the bracket for it to release and rotate the sensor upward (see Figure 3).
- 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 at least 75mm (3") beyond the swing radius of the propeller (see Figure 4). The starboard side where the propeller blades are moving downward is preferred.
  - **Twin drive boat**—Mount the sensor between the drives.

## Installation

**CAUTION:** Do not position the leading edge of the sensor 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.

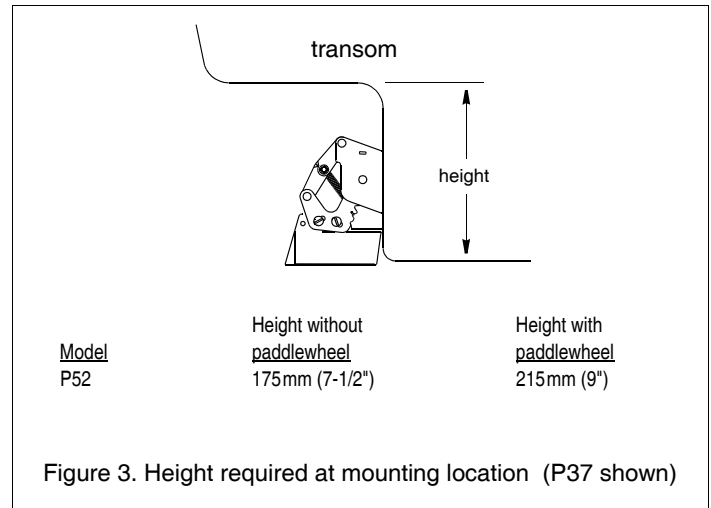
**CAUTION:** To prevent drilling too deeply, wrap masking tape around the bit 22mm (7/8") from the point.

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

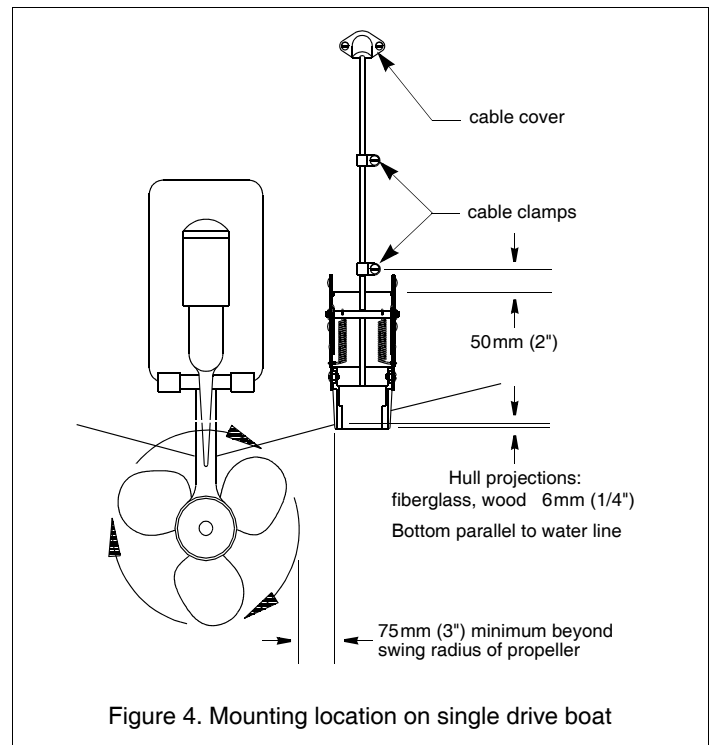
## Mounting & Adjusting

1. Position the assembly at the selected location with the transducer face parallel to the water. Good results can be achieved on most boats when the bottom of the transducer is about 6mm (1/4") below the bottom of the hull and parallel to the waterline (see Figure 4).
2. With a pencil, mark the outline of the bracket slots on the hull. Mark the screw location at the bottom of each slot to allow for adjusting the bracket (see Figure 5).

2



3. Using a 4mm, #23, or 9/64" bit, drill three holes 22mm (7/8") deep at the locations indicated.
4. Apply marine sealant to the threads of the three #10 x 3/4" self-tapping screws to prevent water seepage into the transom. Slide a flat washer onto each screw and fasten the assembly to the hull. *Do not tighten the screws completely at this time.*
5. Using the vertical adjustment space on the bracket slots, slide the sensor up or down to provide a projection of 6mm (1/4") (see Figure 4). Tighten the screws.
6. Using a straight edge, adjust the angle of the transducer on the bracket. Sight the underside of the transducer relative to the underside of the hull (see Figure 6). Adjust the sensor on the bracket so it is parallel to the bottom of the hull or at a slight angle. For best results set the trailing edge of the transducer 1-3mm (1/16-1/8") below the leading edge (see Figure 7). Tighten the screws.



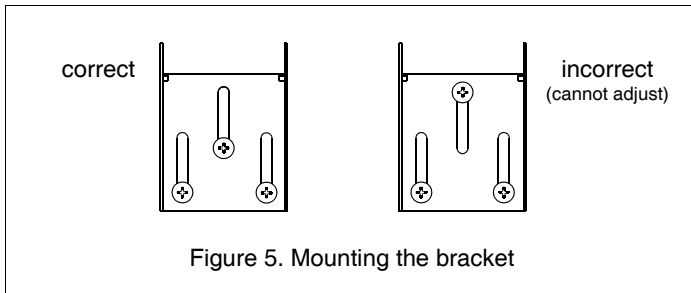


Figure 5. Mounting the bracket

### Setting the Bracket Release Point

There is considerable force on the bracket during normal operation. The amount of force is proportional to the drag which is created by the:

- **Sensor**—shape, size, weight, and amount of projection below the transom.
- **Speed**—the square of the speed of the boat.

A larger and heavier transducer or TRIDUCER® multisensor creates more drag as does a higher boat speed. For example, the drag at 40kn (46MPH) is 4 times that at 20kn (23MPH).

Set the springs in the appropriate notches on the pivot arms (see Figure 7).

- Middle or lower notches if the top speed of the boat is more than 30kn (34MPH).

### Release Line

**CAUTION:** Be sure that **both** ends of the line are well secured to eliminate the possibility of becoming entangled in the propeller.

To facilitate raising the sensor to the “up” (released) position, a line can be attached to the bracket’s crossbar (see Figures 7 and 1). An upward jerk on this line will release the bracket.

### Cable Routing

**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 sensor cable(s) 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, choose a location **well above the waterline**. Check for obstructions such as trim tabs, pumps, or wiring inside the hull. Mark the location with a pencil. Drill a hole through the transom using a 20mm or 13/16” hole saw or spade bit (to accommodate the connector).
2. Route the cable(s) over or through the transom. *Be sure* the cable is **between the cross bar and the transom** (see photo on page 1).
3. On the outside of the hull secure the cable(s) against the transom using the cable clamps. Position a cable clamp 50mm (2”) above the bracket and mark the screw hole with a pencil (see Figure 4).
4. Position the second cable clamp halfway between the first clamp and the cable hole. Mark this mounting hole. If there are two cables, repeat this step.
5. If a hole has been drilled through the transom, open the appropriate slot(s) in the cable cover (see Figure 8). The cable cover can accommodate two cables when there are separate

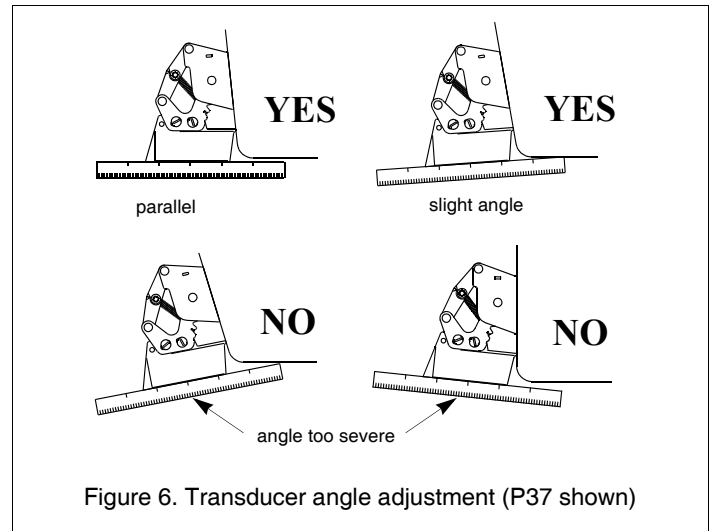


Figure 6. Transducer angle adjustment (P37 shown)

cables for depth and speed/temperature functions. Position the cover over the cable(s) 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” (13mm) self-tapping screws to prevent water from seeping into the transom. If a hole has been drilled through the transom, apply marine sealant to the space around the cable leading through the transom.
8. Position the two cable clamps and screw them in place. If used, push the cable cover over the cable(s) and screw it in place.
9. Route the cable(s) to the instrument(s), 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(s) from other electrical wiring and sources of noise. Coil any excess cable and secure it in place with zip-ties to prevent damage.
10. Refer to the echosounder owner’s manual(s) to connect the sensor to the instrument(s).

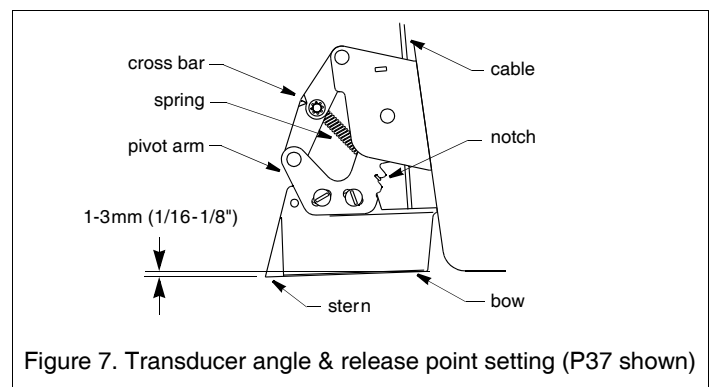


Figure 7. Transducer angle & release point setting (P37 shown)

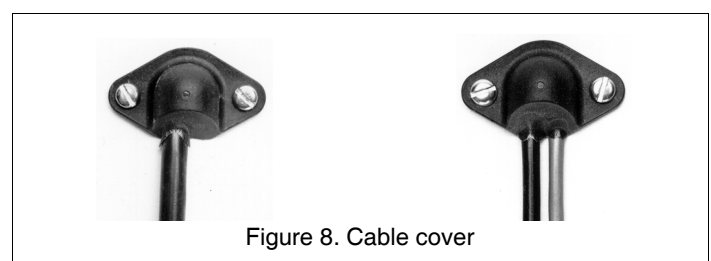


Figure 8. Cable cover

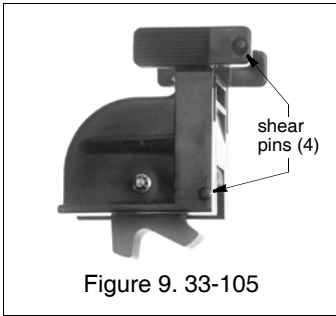


Figure 9. 33-105

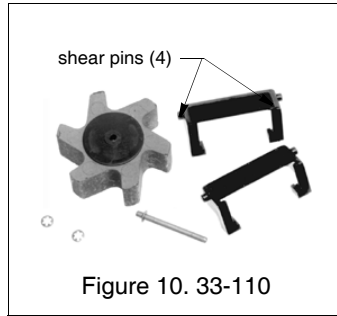


Figure 10. 33-110

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

- Increase the sensor's angle in the water.
  - Move the sensor deeper into the water in increments of 3mm (1/8").
  - 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 and reduce the chance that water pressure will cause the bracket to release.**

## Checking for Leaks

When the boat is placed in the water, **immediately** check for leaks around the screws that fasten the sensor to 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.

## Testing on the Water

### Bracket Release Point

**CAUTION:** Do not set the bracket to withstand more force than the minimum required to hold the sensor in the "down" (operating) position, since this increases the chance that the bracket will not release when the sensor is struck.

The correct bracket release setting has been found when the sensor remains in the "down" (operating) position under normal operating conditions. Gradually increase the boat speed and observe the echosounder. When the bracket releases, there will be an instantaneous loss of echo. Depending on conditions, the bracket may either partially release and reset itself or fully release rotating the sensor through an arc of 105°.

If the bracket releases before reaching top boat speed, set the springs in the next lower notches and reset the bracket in the "down" (operating) position. Repeat the test until the desired result is obtained.

### Echosounder Performance

- If there is a temperature sensor, allow a few minutes for it to respond to a major temperature change from the air to the water. Check for an accurate reading.
- 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 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.
- 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.

## Maintenance, Repair, & Replacement

### Speed Sensor

Be sure to place the bracket in the "up" (released) position before beaching, trailering, or hauling the boat since these are the main causes of speed sensor breakage.

### 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, unsnap the paddlewheel assembly from the main housing for cleaning. Severe cases may require removal of the paddlewheel. Using a small screwdriver, remove the paddlewheel shaft retainers. (If a retainer is lost, a dab of RTV caulk on the end of the shaft will secure it.) If necessary, use a stiff brush or putty knife to remove the growth being careful to avoid scratching the transducer's face. Wet sanding is permissible with fine grade wet/dry paper.

### 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 in kHz.

Replace broken or worn parts immediately. The speed sensor shear pins are designed to fracture upon impact. The water lubricated paddlewheel bearings have a life of up to 5 years on low-speed boats [less than 10kn (11MPH)] and 2 years on high-speed vessels. For a replacement paddlewheel carrier without a cable, order the Airmar Snap-in Paddlewheel Carrier 33-105 (see Figure 9); for an assembly with a cable, order a Transom Paddlewheel Kit 33-110 (see Figure 10) from your marine dealer or echosounder manufacturer.

This stainless steel bracket interchanges with the Plastic Release Bracket 20-039 using the same mounting holes.

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

**AIRMAR**®  
TECHNOLOGY CORPORATION

35 Meadowbrook Drive, Milford, New Hampshire 03055-4613, USA

www.airmar.com

Copyright © 1995 - 2011 Airmar Technology Corp. All rights reserved.