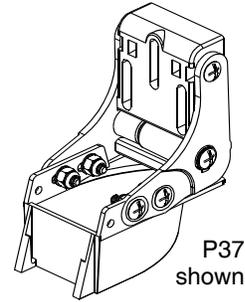


OWNER'S GUIDE & INSTALLATION INSTRUCTIONS

Transom Mount *with* Release Bracket 20-039 Transducer *or* TRIDUCER® Multisensor

Model: P52



P37
shown

Applications

- Not recommended for boat with large inboard engine(s).
- Good operation up to 40kn (46MPH).
- Vertically orients the sound beam on hull with deadrise angle up to 22°
- Adjusts to transom angles of up to 20°

Assembly

1. Attach the left release arm to the bracket back by first inserting a hex nut into the recess in the back of the bracket. Place the arm firmly against the bracket back and insert a #10-32x5/8" screw with a flat washer through the holes. Tighten it in place (see Figure 1). Repeat this procedure with the right release arm.
2. Slide the flat washer and spring onto the #10-32x2" screw and insert it into the hole in the left release arm. Insert a nylon-insert lock nut in the right release arm hole with the nylon side facing outward. Tighten the screw until the spring is flush with the surface of the release arm. **Do not over-tighten.**
3. P52—Attach the sensor to the bracket by placing the bracket inside (see Figure 2). Use four #10-32x5/8" screws and flat washers. Fasten them in place with nylon-insert lock nuts, nylon side facing outward. Tighten the screws, so the sensor remains in place but can be adjusted.

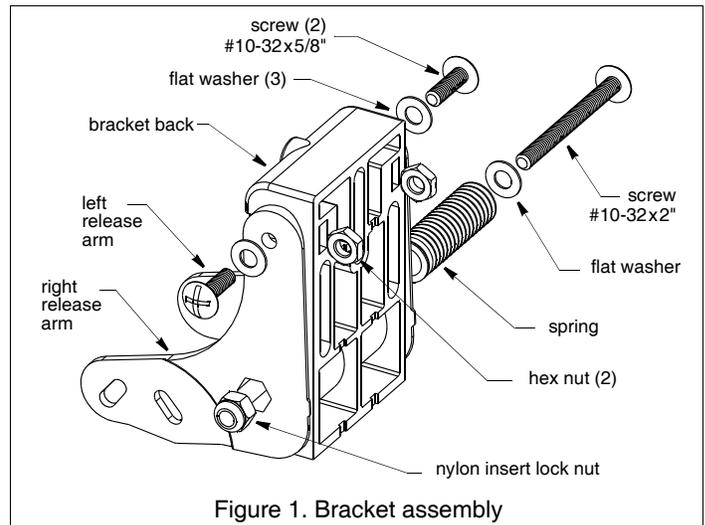


Figure 1. Bracket assembly

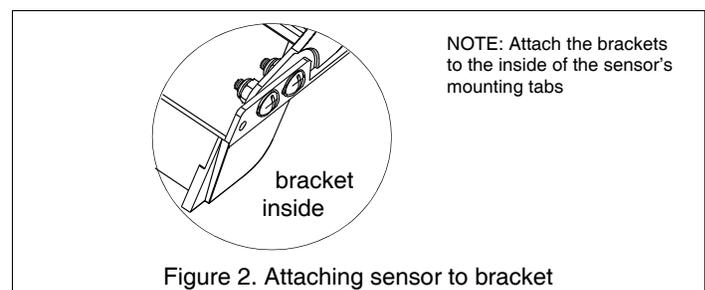


Figure 2. Attaching sensor to bracket

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: This is an impact release bracket only. Attempting to manually release the bracket may cause damage.

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.

Tools & Materials

Safety goggles

Dust mask

Screwdrivers

Wrenches

Scissors

Masking tape

Electric drill

Drill bits and hole saw *or* spade bit:

Bracket holes	4mm, #23, <i>or</i> 9/64"
Fiberglass hull	chamfer (preferred), 6mm, <i>or</i> 1/4"
Transom hole (optional)	19mm <i>or</i> 3/4"
	20mm <i>or</i> 13/16" (Furuno)
Cable clamp holes	3mm <i>or</i> 1/8"

Marine sealant (suitable for below waterline)

Straight edge

Pencil

Zip-ties

Water-based antifouling paint (**mandatory in salt water**)

Identifying Your Model

The model name is printed on the cable tag.

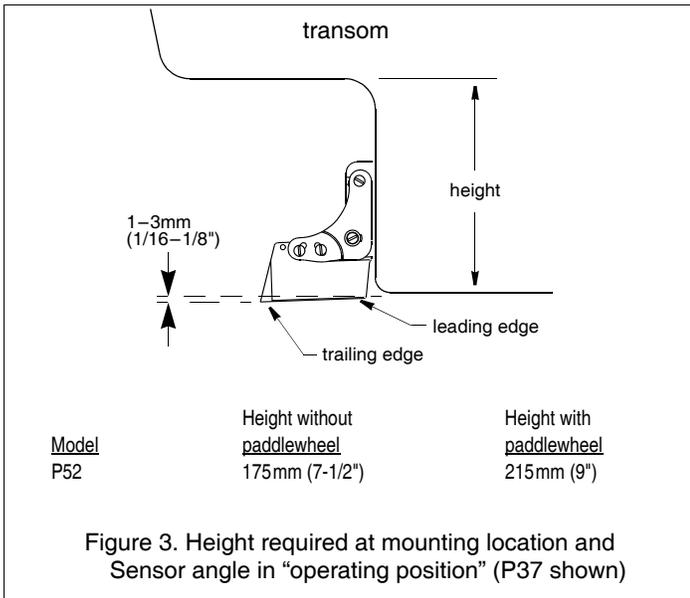


Figure 3. Height required at mounting location and Sensor angle in "operating position" (P37 shown)

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.

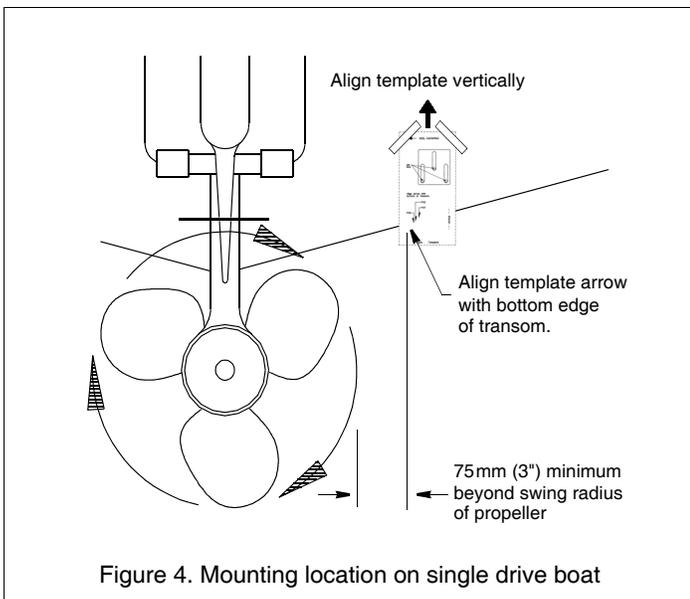


Figure 4. Mounting location on single drive boat

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.

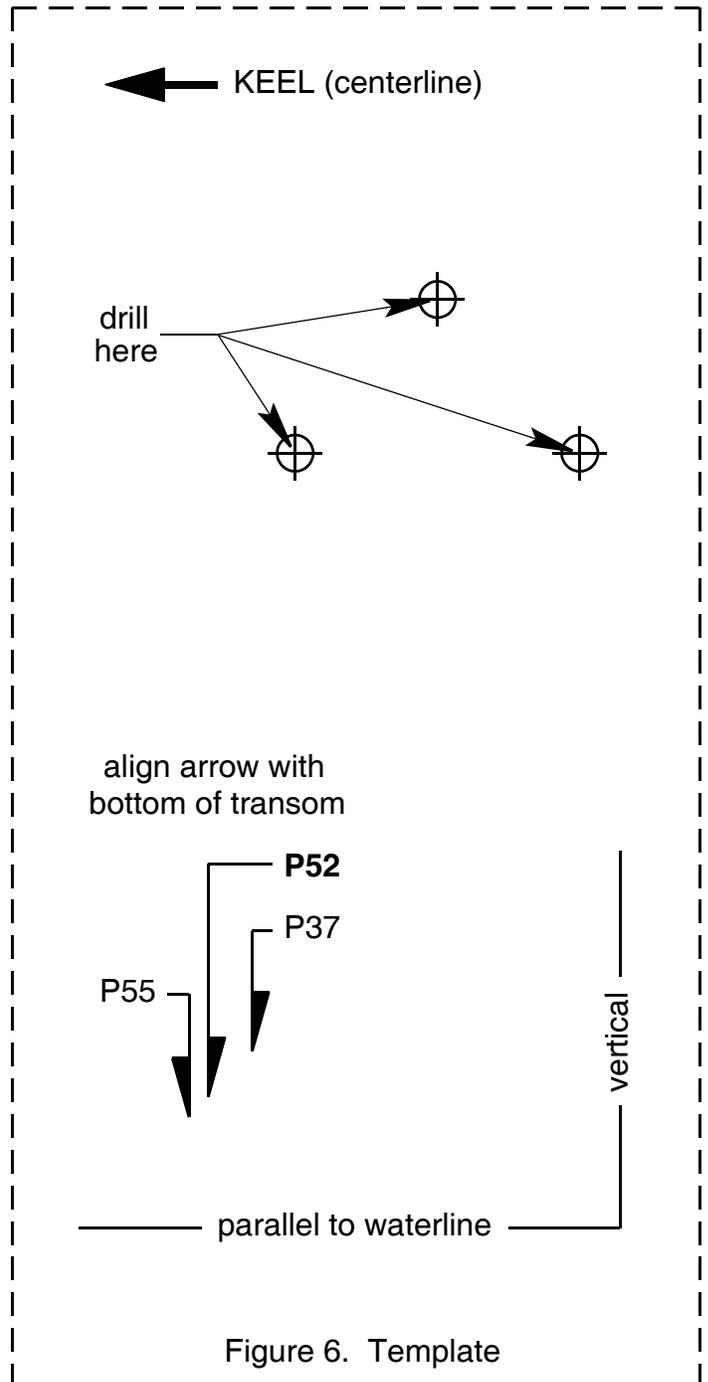


Figure 6. Template

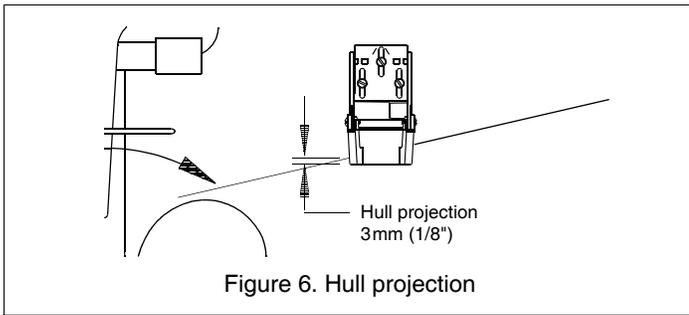


Figure 6. Hull projection

Mounting & Adjusting

1. Cut-out the template (see Figure 5).
2. At the location selected, position the template so the arrow is aligned with the bottom edge of the transom. *Being sure the template is parallel to the waterline, tape it in place* (see Figure 4).
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 #10 x 1-3/4" self-tapping screws to prevent water seepage into the transom. Slide a flat washer onto each screw and fasten the bracket 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 3mm (1/8") (see Figure 6).
6. Adjust the angle of the sensor on the bracket. Using a straight edge, sight the underside of the sensor relative to the underside of the hull (see Figure 7). For best results, 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 (see Figure 3). Tighten the screws.

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 through the transom, 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 the hole using the appropriate hole saw or spade bit (to accommodate the connector).
2. Route the cable(s) over or through the transom.
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 mounting hole with a pencil (see Figure 8).
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. The cable cover can accommodate two cables when there are separate 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 #6x1/2" self-tapping screws to prevent water from seeping into the transom. If you have drilled a hole in the transom, apply marine sealant to the space around the cable where it passes 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(s) when passing it through the bulkhead(s) and other parts of the boat. To reduce electrical interference, separate the sensor

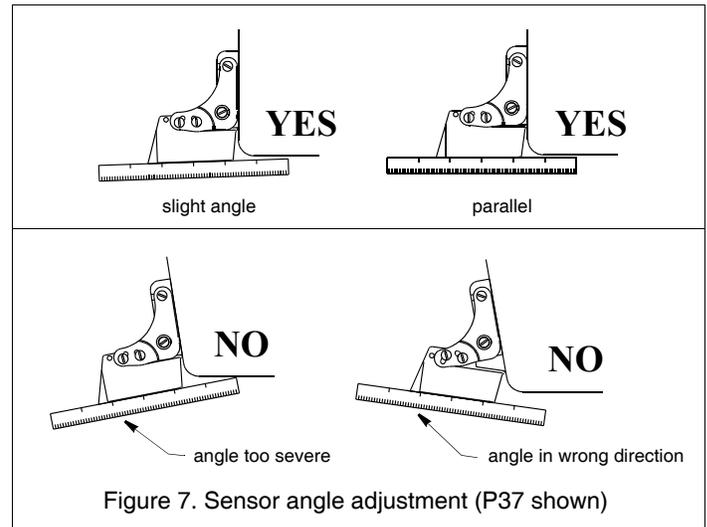


Figure 7. Sensor angle adjustment (P37 shown)

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).

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.

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. Reapply paint every 6 months or at the beginning of each boating season.

Operation

CAUTION: Do not attempt to manually release the bracket. Prying the release arms may cause fractures resulting in bracket failure.

The bracket releases immediately upon impact. To reset, push down on the release arms until they snap into place. The arms are then locked in the operating position.

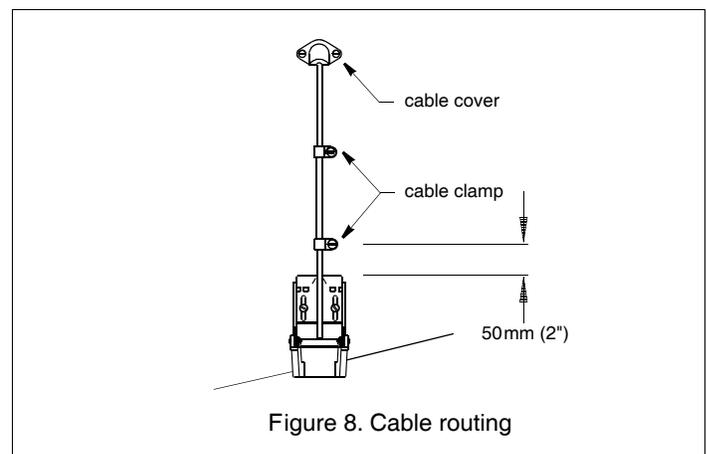
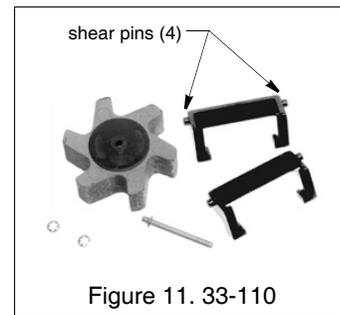
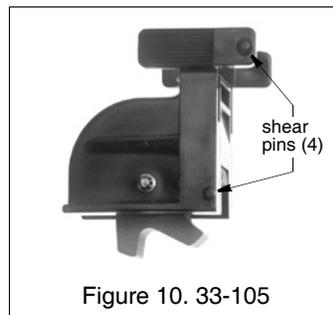
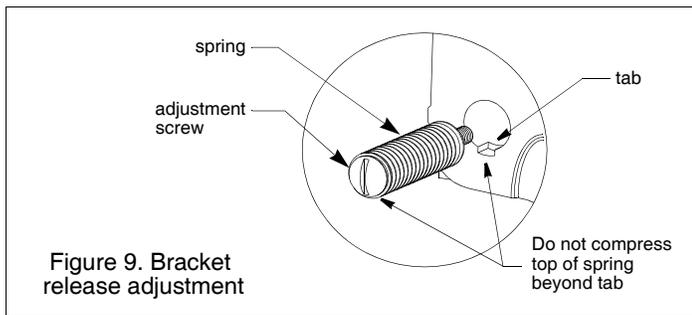


Figure 8. Cable routing



Setting the Bracket Release Point

CAUTION: Never compress the top of the spring below the tab, because the bracket will be locked in place and will not release. When the spring is even with the tab, the release force is maximum at about 100lb. (450N).

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.

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 sensor creates more drag as does a higher boat speed. For example, the drag at 40kn (46MPH) is four times that at 20kn (23MPH). The correct bracket release setting has been found when the sensor remains in the "down" (operating) position under normal operating conditions.

The factory setting is 40lb. (180N). The adjustment screw may need tightening if the top speed of the boat is more than 30kn (34MPH).

Gradually increase the boat speed and observe the echosounder. When the bracket releases, there will be an instantaneous loss of echo. If the bracket releases before reaching top boat speed, reset the bracket in the "down" (operating) position and turn the adjustment screw clockwise one or two full turns (see Figure 9). Repeat the test until the desired result is obtained.

NOTE: One turn equals 10lb. (45N).

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 transducer'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.
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.

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

Maintenance, Repair, & Replacement

Speed Sensor

Remove the paddlewheel assembly 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 (11 MPH)] and 2 years on high-speed vessels. Some depth/temperature units can be upgraded by adding a speed sensor.

For a replacement paddlewheel carrier without a cable, order the Snap-In Paddlewheel Carrier 33-105 (see Figure 11); for an assembly with a cable, order Transom Paddlewheel Kit 33-110 (see Figure 12) from your marine dealer or echosounder manufacturer.

Airmar offers a stainless steel Kick-Up Bracket 20-035-2 which rotates the sensor up when excessive force is applied. This bracket allows the user to manually release the sensor to protect it when trailering, beaching, or hauling the boat. Both brackets use 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