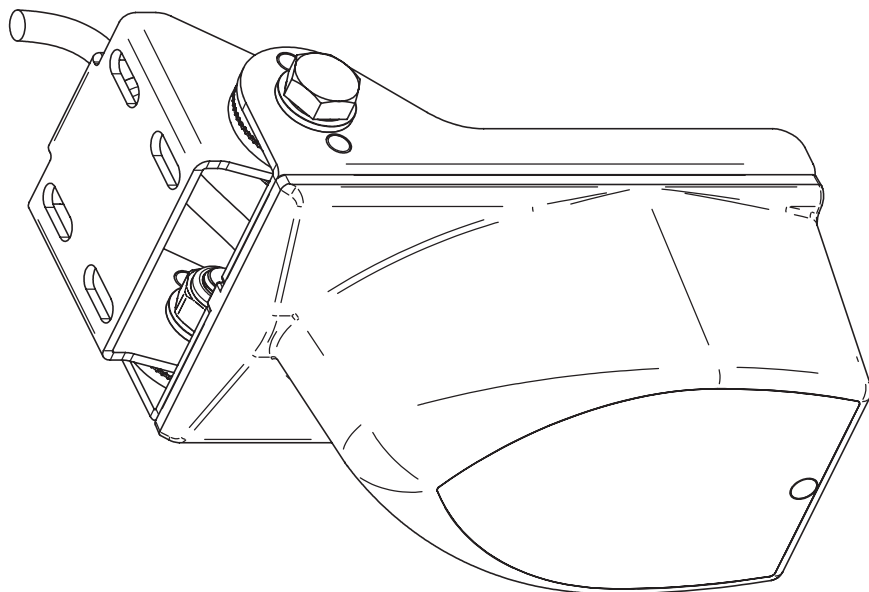




MMTTMXXAE010



TM70xxx / TM87xxx series

WARNING AND INSTALLATION MANUAL

1. Warranty and Warnings

AvMap Srl warrants every unit to be free from defects in material and workmanship under normal use and service for a period of 36 months from original retail purchase. During the warranty period, AvMap Srl will repair or replace any component which fails in normal use without charges for parts or labour. Technological developments, modifications and upgrades of software are not covered by warranty (except commercial decision). To receive warranty service, contact your local authorized dealer for shipping instructions. The product should be securely packed with its tracking code clearly written on the outside of the package, shipping to be paid by the customer. Include a copy of the original sales receipt as the proof of purchase. This limited warranty does not extend to any product which has been subjected to misuse, neglect, accident, incorrect wiring or improper installation. AvMap Srl reserves the right to repair or replace the device at its sole discretion.

For more warranty information please see the website: **www.echonautics.com**

For technical advice or assistance contact:

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IMPORTANT: Please read the installation manual completely before first operation and follow the precautions and instructions for the highest performance of the transducer and to reduce the risk of property damage or personal injury. If you have any questions, please contact customer service or your local dealer.

WARNING: Check the installation manual of the Echosounder or Fish Finder system you connect the transducer to for product warnings and other important information.

WARNING: Always wear proper safety gear during transducer installation.

WARNING: Always respect the transducers power rate when selecting the transducer type on the sounders system menu. Selecting a different power rate might damage the transducer and sounder equipment.

CAUTION: Risk of electric shock! Do NOT connect or disconnect the transducer before completely powering down your Echosounder or Fish Finder system. Failure to power down may result in electric shock and/or damage to your equipment since transducers employ powerful electrical impulses.

CAUTION: Always operate the transducer in water. Operating in air will overheat and damage the transducer.

CAUTION: Do not install the transducer near the engine or other heat sources. The transducer may fail if it overheats.

CAUTION: Do not pull, carry, or hold the transducer by its cable; this may sever the internal connections and damage the transducer.

CAUTION: Never use solvents. Cleaners, fuel, sealant, paint and other products may contain solvents that can damage transducer parts.

2. Product description

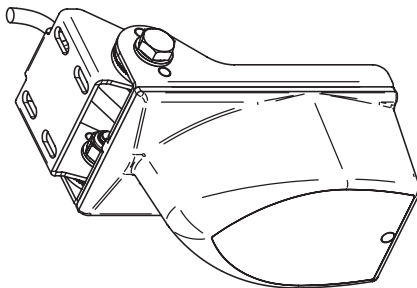


Fig. 2 — TM70xxx / TM87xxx series transom mount transducer

Echonautics TM70xxx / TM87xxx series are transom-mount transducers with an adjustable stainless steel bracket that attaches to the outside of the boat transom, holding the transducer element below the hull and ensuring continuous water contact during operation.

Echonautics transducers connect to compatible Echosounders and Fish Finders to send and receive signals in order to feature bottom depth, detecting fish and water temperature.

The transducer is the heart of an Echosounder or Fish Finder system that changes electrical pulses into sound waves or acoustic energy and back again. On command of the Echosounder or Fish Finder system the transducer sends out the sound waves and then receives the echoes, so the Echosounder / Fish Finder can interpret or “detect” what is below the surface of the water.

For more product details go to website **www.echonautics.com**

2.1 Content of the package

- 1 × Transducer body (TM70xxx / TM87xxx model) with 9 meter (29.5 ft) signal cable and connector.
- 1 × Stainless steel transom bracket
- 4 × Self-tapping screws M4.8×22 PH (stainless steel) for mounting bracket to transom
- 4 × Flat washers (stainless steel) for mounting bracket to transom
- 2 × Bolts (stainless steel) for pivot assembly (transducer to bracket)
- 4 × Washers (stainless steel) for pivot assembly (transducer to bracket)
- 2 × Nuts, stainless steel — for pivot assembly (transducer to bracket)
- Warning & Installation Manual
- Additional product label sticker

3. Connection to the Echosounder / Fish Finder system

WARNING: Refer to the Echosounder or Fish Finder system installation manual for product warnings and important information before connecting the transducer.

WARNING: Always match the transducers power rate when selecting the transducer type on the Echosounder or Fish Finder system menu. Selecting a different power rate might damage the transducer and Echosounder or Fish Finder equipment.

CAUTION: Do NOT connect or disconnect the transducer before completely powering down your Echosounder or FishFinder system. Failure to power down may result in electric shock and/or damage to your equipment since transducers employ powerful electrical impulses.

Each Echosounder and Fish Finder brand/model uses their specific connector for transducer connection.

Check the installation manual of your Echosounder or Fish Finder system for the PIN connector that is required for transducer connection and ensure the PIN connector of your Echonautics transducer matches the Echosounder or Fish Finder system.

IMPORTANT: Echonautics transducers do not feature a transducer ID for automatic model recognition by the Echosounder or Fish Finder. Consult the manual of your Echosounder or Fish Finder to manually select the transducer type with the same characteristics of your connected Echonautics transducer:

- Power rate (300W, 600W, 1kW)
- CHIRP or traditional CW
- Frequency range (LOW CHIRP, MEDIUM CHIRP, HIGH CHIRP, DUAL 50/200 kHz CW)

NOTE: For more detailed instructions see the Echonautics “Transducer Setup Guide” supplied together with the Echonautics transducer.

4. Pre-installation

4.1 Tools and materials needed

- Electric drill with depth-stop collar or masking tape
- Drill bit Ø 3.8 mm (pilot hole for M4.8 self-tapping screw)
- Phillips screwdriver PH2 or matching bit
- Straight edge or ruler
- Pencil or marking tool
- Masking tape
- Marine-grade sealant (polyurethane or polysulfide)
- Waterproof electrical tape
- Grommets (optional)
- Water-based anti-fouling paint (recommended in salt water)
- Cable ties

4.2 Mounting location

The transducer must be in a location that ensures smooth, bubble-free flow of water across the face of the transducer, even at high speeds. Aerated or turbulent water will degrade sonar performance. When determining a location be aware of acoustic noise. Acoustic noise comes from the propellers, shafts and other moving machinery.

Water Flow — “Clean Water” Requirement

The transducer face must be in contact with smooth, non-turbulent water at all times.

- Do not mount behind strakes, struts, fittings, water intake/discharge ports, or any hull irregularity that creates air bubbles or turbulence.
- To find a clean water zone, observe the flow off the transom while the boat is underway before committing to a location.

Position Relative to the Hull

- Mount the transducer as close to the centerline (keel) as possible, to keep the face in the water during turns.
- The transducer face should project 0–3 mm (0–1/8”) below the bottom edge of the hull — no more than necessary, to minimize drag, spray, and water noise.
- Mount the transducer parallel to the waterline.
- Make sure the trailing edge of the transducer sits about 1–6 mm (0–1/4”) lower than the leading edge; never position the leading edge lower, as this causes aeration.

NOTE: If the transom surface is not flat (e.g. curved or uneven hull), use appropriate shims (not included) between the bracket base and the transom to ensure full, stable contact before tightening. Without a flat seating surface the bracket may flex or work loose over time.

Propeller Clearance

- On single-drive boats, never mount in the path of the propeller.
- Maintain at least 38 cm (15") from the propeller on outboard/inboard-outboard motors.
- Maintain at least 15 cm (6") beyond the propeller's swing radius.
- Mount on the side where propeller blades are moving downward.
- On twin-drive boats, mount between the drives.

CAUTION: On single-drive boats, never mount in the path of the propeller. Cavitation can damage the propeller and degrade boat performance.

Physical & Structural Constraints

- Allow sufficient vertical space above the bracket for the release mechanism to rotate the transducer upward if it strikes an obstruction.
- Do not mount where the boat may rest or be supported during trailering, launching, hauling, or storage (impact risk).
- On a stepped transom, mount on the lowest step, ensuring enough vertical clearance above the bracket.

Once you have identified the best location, verify that there is sufficient room to tighten the mounting hardware and route the cable.

4.3 Cable routing

When routing cable to the Echosounder or Fish Finder system do not place it near or parallel to other electrical cables, and especially avoid the ignition and alternator wiring. Take extra caution when routing cable through bulkheads and other parts of the boat. Try to avoid tearing the cable jacket and exposing the wiring to rough and harsh environments, which can damage the transducer. Use grommets to protect the cable if it passes through the bulkhead or other parts of the Vessel. Use zip ties or other suitable fastening equipment to secure the cable where necessary to protect it from damage. Avoid over-tightening zip ties and compressing the cable.

NOTE: Any pass-through hole in the transom must be drilled well above the waterline.

5. Installation

IMPORTANT: Installation should be performed by a trained technician. If not installed properly it can lead to water leakage and/or premature failure.

IMPORTANT: When you have determined a proper location, and before drilling any holes, inspect the location from the inside of the boat to make sure that installation will not interfere with bulkheads, plumbing or other obstacles

5.1 Choose the Mounting Location (STEP 1)

Correct bracket placement is critical for accurate depth readings and minimal turbulence. Ensure the bracket mounting plate sits flat against the transom surface.

CAUTION: Mount the transducer away from the engine, propeller wash, and any hull features (strakes, trim tabs, keel) that generate turbulence. Aerated or turbulent water will degrade sonar performance.

1. Position the bracket against the transom so the transducer face extends 0–3 mm (0–1/8") below the bottom of the hull.
2. Ensure the bracket mounting plate sits flat against the transom surface.

NOTE: If the transom surface is not flat (e.g. curved or uneven hull), use appropriate shims (not included) between the bracket base and the transom to ensure full, stable contact before tightening. Without a flat seating surface the bracket may flex or work loose over time.

3. With the bracket held in position, mark the four mounting hole locations on the transom with a pencil.

NOTE: Mark the center of each bracket slot opening, not the top or bottom edge. Drilling in the center of the slot gives the maximum range of vertical adjustment — allowing the bracket to be slid up or down after installation to fine-tune the transducer depth.

NOTE: On fiberglass hulls: to minimise gelcoat cracking, start the drill in reverse until the gelcoat is fully penetrated before switching to forward.

5.2 Drill the Mounting Holes (STEP 2)

CAUTION: To prevent drilling too deeply, wrap masking tape around the drill bit at 18 mm from the tip. Stop drilling when the tape reaches the transom surface. The transom mounting screws are 22 mm long — a pilot hole of 18 mm leaves sufficient material for the screw to grip firmly.

1. Wrap masking tape around the Ø 3.8 mm drill bit at exactly 18 mm from the tip to act as a depth stop.
2. Drill the four marked holes to the 18 mm depth (stop when the tape touches the surface).
3. Clear away all chips and dust. On fiberglass, wipe the holes clean of gelcoat fragments.

5.3 Mount the Bracket to the Transom (STEP 3)

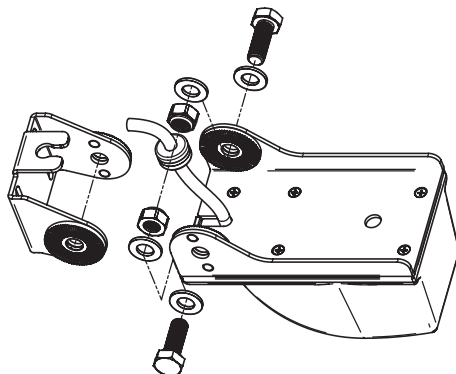


Fig. 5.3 — Exploded view: transducer body, cable, bracket arms, pivot bolts, washers and nuts

NOTE: The stainless steel bracket must be electrically isolated from a metal hull to prevent galvanic corrosion. Place non-metallic insulating washers between the bracket and a metal transom.

1. Apply a bead of marine-grade sealant to the threads of each of the four M4.8×22 screws and into each drilled hole. This prevents water ingress into the hull.
2. Place a flat washer onto each screw before inserting it through the bracket slot.
3. Insert the four screws with washers through the bracket slots and into the drilled holes. Hand-tighten only at this stage - do not fully tighten yet. The slotted holes allow vertical position adjustment in the next step.

5.4 Install Transducer and Set Depth / Angle (STEP 4)

CAUTION: Do not position the transducer deeper in the water than necessary. Excessive depth increases drag, spray, and water noise, and reduces boat speed.

1. Attach the transducer body to the bracket by inserting the two pivot bolts through the holes in the bracket arms and the transducer support, adding washers on both sides of each bolt and securing with the nuts — hand-tight for now (see Fig. 2).
2. With the transducer in the operating position, use a straight edge to sight the underside of the transducer relative to the bottom of the hull. The trailing edge of the transducer face should be 1–6 mm (1/16–1/4") lower than the leading edge.
3. Using the slotted holes in the bracket, slide the entire assembly up or down until the bottom of the transducer protrudes 0–3 mm (0–1/8") below the hull bottom.
4. To compensate for transom angle: loosen the pivot bolt, rotate the transducer body on the bracket until the transducer face points straight downward (perpendicular to the waterline), then retighten the pivot bolt firmly.
5. Once satisfied with both depth and angle, tighten the four M4.8×22 bracket screws fully with a PH2 screwdriver

5.5 Route the Cable (STEP 5)

1. Before routing the cable along the transom, secure it to the bracket using the cable grommet on the dedicated cable holder slot on the bracket arm (as shown in Fig. 2). This prevents the cable from pulling directly on the transducer connection and absorbs vibration.
2. Route the cable along the transom and into the boat interior, avoiding sharp bends and moving parts (engine, steering).
3. Secure the cable with cable clips or ties at regular intervals to prevent chafing and vibration fatigue.
4. If passing the cable through the transom, use a dedicated cable gland or existing waterproofed conduit entry. Seal around the cable exit with marine sealant.

NOTE: Any pass-through hole in the transom must be drilled well above the waterline.

5. Connect the cable to the Echosounder or Fish Finder system using the supplied connector.

6. On-Water Verification

CAUTION: After completing installation, do not leave the boat unattended for several hours. Place the vessel in the water and check for leaks at all hull penetrations immediately. Small leaks may not be immediately visible.

After installation, test the transducer as follows:

1. Power on the instrument with the engine off. Verify a depth reading in still water.
2. Bring the boat to low speed (approx. 4 knots / 8 km/h) and observe sonar performance. There should be no sudden loss of signal, bottom tracking or sonar return.
3. Gradually increase speed. A gradual, progressive degradation at high speed is normal. A sudden loss of depth reading at a specific speed indicates turbulence or aeration - see the Troubleshooting section below.
4. If performance improves when turning toward the side where the transducer is installed, the transducer is likely in aerated water — try moving it slightly deeper or toward the centreline.

Troubleshooting

If performance is poor at speed, try the following in order:

- Increase the transducer's tilt angle (trailing edge slightly deeper than leading edge).
- Lower the transducer by 3 mm (1/8") increments until performance stabilises.
- Move the transducer position laterally, closer to the boat centreline.
- Check that no hull features (strakes, keel bolts, water pickups) are creating turbulence ahead of the transducer.

NOTE: Seal any unused drilled holes with marine-grade sealant to prevent water ingress.

7. Maintenance

7.1 Anti-fouling paint

When operating a vessel that spends a lot of time in the water, coat the transducer and mounting components with a water-based anti-fouling paint to prevent the build-up of marine growth.

1. Lightly sand the transducer and mounting components with fine-grit sandpaper.
2. Clean the transducer and mounting components with isopropyl alcohol.
3. Apply water-based anti-fouling paint to the transducer and mounting components.

IMPORTANT: Use water-based anti-fouling paint only.

CAUTION: Never use ketone- based paint, because ketones attack many types of plastic and could damage the transducer.

7.2 Cleaning the transducer

Aquatic fouling accumulates quickly on the transducer's surface and can reduce its performance. Remove the fouling with a soft cloth and mild detergent. If the fouling is severe, use a non-metallic scouring pad to remove growth. Wipe the transducer dry.

CAUTION: To avoid possible transducer damage or personal injury, use care when cleaning the transducer, particularly when attempting to remove severe fouling.

IMPORTANT: To prevent permanent damage to the surface of the transducer, do not use solvents such as mineral spirits, acetone, Methyl Ethyl Ketone (MEK), or similar products when cleaning. Do not use a power sander or pressure washer to clean the transducer.

WARNING: Do not use solvents on the face of the transducer. Solvents will damage the transducer.

8. Safety information

AvMap disclaims any liability deriving from an improper use or installation of the product in a way that may violate the regulations and safety. It is highly recommended that the installation of the product will be performed by a qualified maintenance technician. Consult the Installation manual for a correct installation procedure.

9. Technical specifications



Stick the product label
provided in the package here:



www.echonautics.com

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