

CPT-S In-hull Transducer Installation sheet



Warning: Product installation and operation

- This product must be installed and operated in accordance with the instructions provided. Failure to do so could result in personal injury, damage to your vessel and/or poor product performance.
- Raymarine recommends certified installation by a Raymarine approved installer. A certified installation qualifies for enhanced product warranty benefits. Contact your Raymarine dealer for further details, and refer to the separate warranty document packed with your product.



Warning: High voltage

This product contains high voltage. Do NOT remove covers or attempt to access internal components, unless specifically instructed in the documentation provided.



Warning: Switch off power supply

Ensure the vessel's power supply is switched OFF before starting to install this product. Do NOT connect or disconnect equipment with the power switched on, unless instructed in this document.



Warning: Transducer operation

Only test and operate the transducer in the water. Do NOT operate out of water as overheating may occur.



Warning: Marine-grade sealant

Only use marine-grade neutral cure polyurethane sealants. Do NOT use sealants containing acetate or silicone, which can cause damage to plastic parts.

Caution: Transducer cable

- Do NOT use the transducer cable to lift or suspend the transducer; always support the transducer body directly during installation.
- Do NOT cut, shorten, or splice the transducer cable.
- Do NOT remove the connector.

If the cable is cut, it cannot be repaired. Cutting the cable will also void the warranty.

Disclaimer

Raymarine does not warrant that this product is error-free or that it is compatible with products manufactured by any person or entity other than Raymarine.

Raymarine is not responsible for damages or injuries caused by your use or inability to use the product, by the interaction of the product with products manufactured by others, or by errors in information utilized by the product supplied by third parties.

Declaration of Conformity

FLIR Belgium BVBA declares that the **CPT-S In-hull Transducer** (part number A80691) is in compliance with the EMC Directive 2014/30/EU.

The original Declaration of Conformity certificate may be viewed on the relevant product page at www.raymarine.com/manuals.

Product disposal

Dispose of this product in accordance with the WEEE Directive. The Waste Electrical and Electronic Equipment (WEEE) Directive requires the recycling of waste electrical and electronic equipment which contains materials, components and substances that may be hazardous and present a risk to human health and the environment when WEEE is not handled correctly.



Equipment marked with the crossed-out wheeled bin symbol indicates that the equipment should not be disposed of in unsorted household waste. Local authorities in many regions have established collection schemes under which residents can dispose of waste electrical and electronic equipment at a recycling center or other collection point.

For more information about suitable collection points for waste electrical and electronic equipment in your region, refer to the Raymarine website: www.raymarine.eu/recycling.

IMO and SOLAS

The equipment described within this document is intended for use on leisure marine boats and workboats NOT covered by International Maritime Organization (IMO) and Safety of Life at Sea (SOLAS) Carriage Regulations.

Warranty registration

To register your Raymarine product ownership, please visit www.raymarine.com and register online.

It is important that you register your product to receive full warranty benefits. Your unit package includes a bar code label indicating the serial number of the unit. You will need this serial number when registering your product online. You should retain the label for future reference.

Product overview

- Conical CHIRP sonar beam.
- Easy installation.
- The product comes ready to be fitted to common 20° deadrise hulls.
- The transducer tube can be cut to be fitted to a hull with a 0° or 12° deadrise.
- Connects directly to Axiom™ 7 DV, Axiom™ Pro S, Element™ S variant MFDs, and CP100 sonar module.
- Compatible with Axiom™ RV, Axiom™+ RV, Axiom™ Pro RVX MFDs when using adaptor cable (A80490).
- Compatible with Element™ HV MFDs when using adaptor cable (A80559).
- Connects directly to DownVision™ variant aSeries and eS Series legacy MFDs.

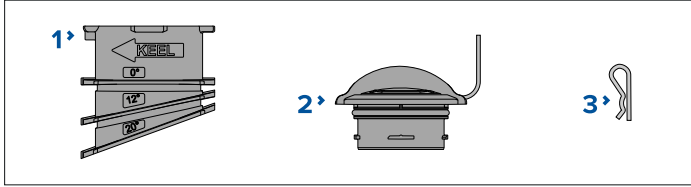
Operation instructions

For detailed operation instructions for your product, refer to the documentation that accompanies your display.

Parts supplied

The following parts are supplied in the box.

Unpack your product carefully to prevent damage or loss of parts. Check the box contents against the list below. Retain the packaging and documentation for future reference.



1. In-hull transducer tube
2. In-hull transducer
3. R-clip

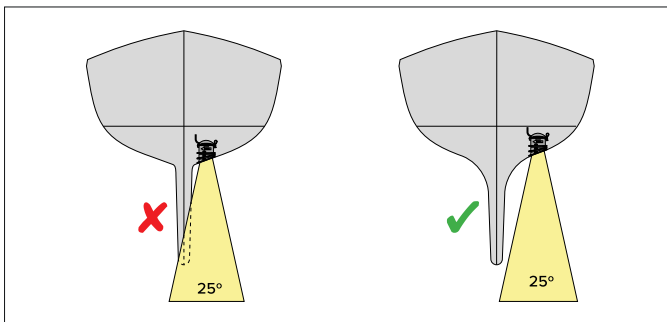
Location requirements

It is important to ensure that the transducer is installed in a location that provides optimum performance. Follow the guidance below to ensure you choose a suitable location.

For best performance, transducers should be installed in a location with the least turbulence and aeration.

The Transducer should be installed:

- on a solid section of a fiberglass hull that has no coring or air gap
- with the transducer keel arrows pointing towards the center line of the vessel
- on the deadrise of the hull as close as possible to the vessel's center line
- perpendicular to the vessel's center line
- in a location where the hull will always be in contact with the water
- in a location where water flowing under the hull is least turbulent
- in a location where the transducer's beam will not be obstructed or reflected by the keel, or propeller shafts. The transducer has a 25° conical beam width:



- away from any equipment or devices that may cause interference such as high voltage cables or other transducers.

Important:

Do NOT install the transducer:

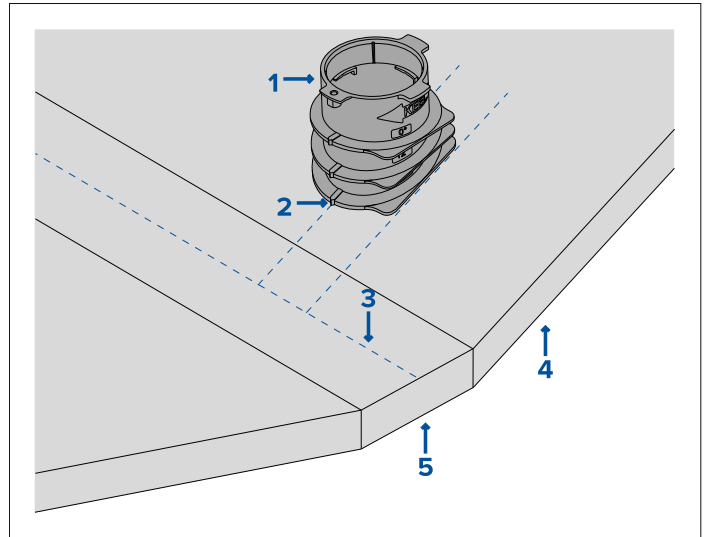
- close to or inline with engine intake or discharge ports.
- over any protrusions such as ribs and strakes.
- on the cored section of a fiberglass hull.

Transducer tube orientation

The transducer tube must be installed perpendicular to the keel (center line) of the vessel. The transducer tube includes markings which should point towards the keel.

Note:

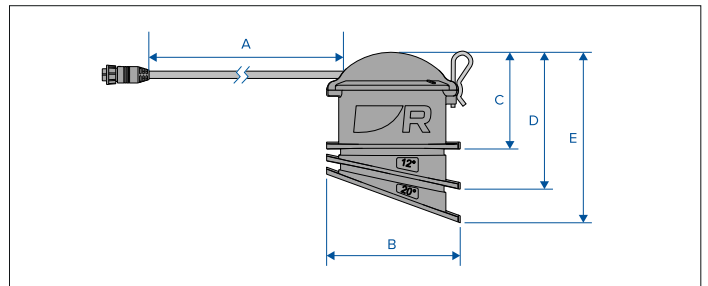
Incorrect positioning can affect transducer performance.



1. Transducer tube.
2. Keel arrows.
3. Vessel center line.
4. Hull deadrise
5. Keel

The top of the transducer tube should be level. This should be checked using a spirit level.

Product dimensions



A — 6 m (19.69 ft) Cable length

B — 76 mm (2.99 in) Ø

C — 58 mm (2.28 in) 0°

D — 80 mm (3.15 in) 12°

E — 99 mm (3.90 in) 20°

Tools and equipment

The following tools and equipment are required to install your transducer.

Note:

The list of tools and equipment below are required for the recommended installation as detailed in this document.

1. Angle finder
2. Saw (fine tooth)
3. Plastic bag
4. Twist ties

5. Carpenter's square
6. Marker pen
7. Mild detergent
8. Sandpaper
9. Disc sander (may be required)
10. Rubbing alcohol
11. File
12. Marine-grade neutral cure polyurethane sealant
13. Spirit level
14. Fiberglass resin
15. Marine antifreeze (Propylene glycol based non-toxic)

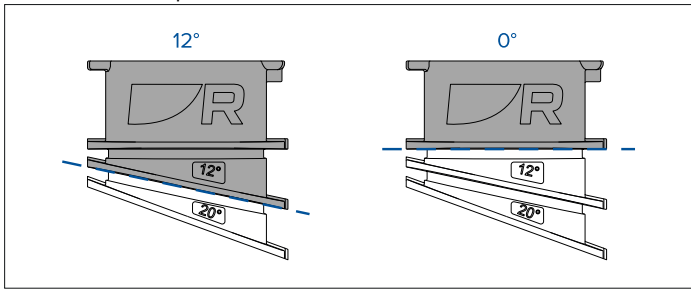
Cutting the transducer tube

For vessels with a a 0° or 12° deadrise, the transducer tube requires cutting. A digital angle finder can be used to identify the deadrise angle required.

Note:

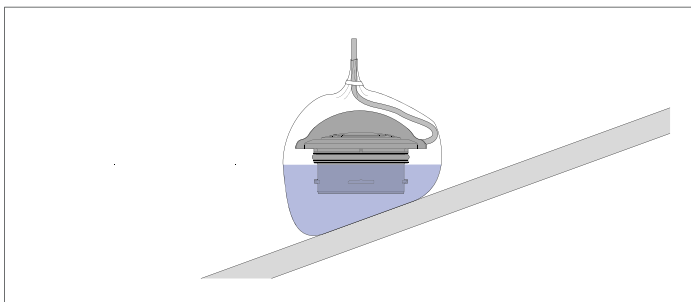
The transducer tube does not require cutting when installing on a 20° deadrise.

1. The cut must be made as close to the bottom of the relevant tube flange as possible. The dotted lines illustrated below show the respective cut locations.



Testing the transducer

It is recommended that transducer performance is tested prior to installation. It is recommended that for the test the vessel is taken out to the deepest waters it will be expected to operate in.



1. Ensure your display has the latest version of software.

Check the Raymarine website for the latest software for your products: www.raymarine.com/software

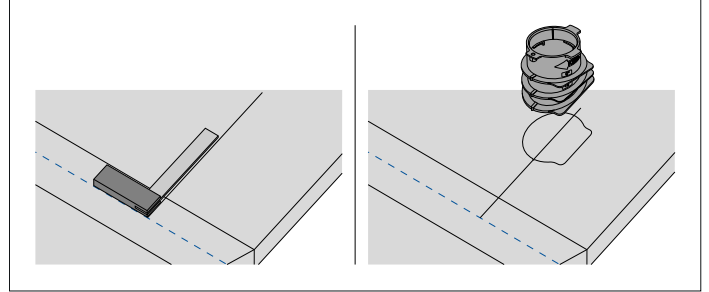
2. Decide on the best location for your transducer based on the location requirements provided.
3. Place the transducer in a sealed plastic bag that is half full of water.
4. Ensure that the transducer face is completely submerged in the water.
5. Connect the transducer to your display/sonar module.
6. Hold the transducer in a 0° position with the transducer's keel arrow pointing towards the keel.

7. Assess the performance of the transducer using your display's Fishfinder/Sonar application.
8. Reposition and retest if necessary.

Preparing the hull and transducer tube

Note:

Ensure that the chosen location meets the location requirements for the product: [Location requirements](#)



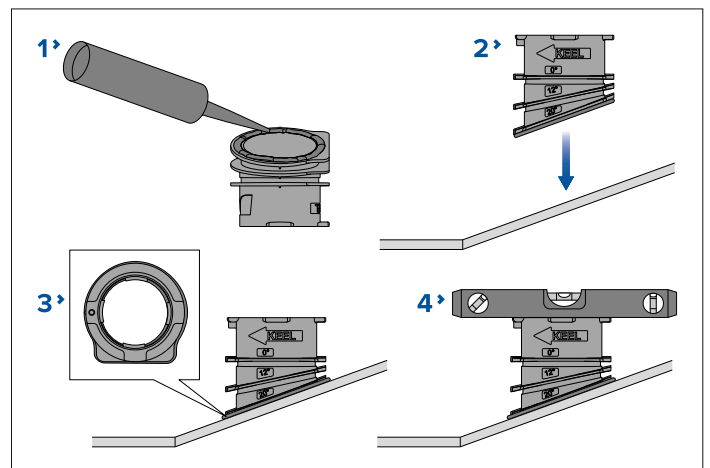
1. Clean the area using a mild detergent to remove any dirt or grease.
2. Using a carpenter's square and marker pen, draw a perpendicular line from the keel through the center of the transducer tube's desired location.
3. Place the transducer tube at the desired location ensuring the keel arrows on the transducer tube are aligned with the line drawn on the hull and that the top of the transducer tube is level.
4. Hold the transducer tube in place and draw around the transducer tube with a marker pen.
5. Sand an area slightly larger than the marked area to remove any debris and enable good adhesion.

For very rough hulls, it may be necessary to use a disc sander to smooth the hull surface.

6. Clean the area with rubbing alcohol and allow to dry.
7. If necessary, redraw the lines on the hull.
8. If the transducer tube has been cut, sand or file any burrs so that the bottom surface of the tube is flat.
9. Sand the bottom surface of the transducer tube to enable good adhesion.
10. Clean the bottom surface of the tube with rubbing alcohol and allow to dry.

Mounting the transducer tube

Follow the steps below to mount the transducer tube.



1. Apply a continuous thick bead of marine-grade neutral cure polyurethane sealant around the bottom flange of the transducer tube.

For 20° deadrise installations, the bottom of the transducer tube has a recess that should also be completely filled with marine-grade neutral cure polyurethane sealant.

2. Ensuring correct alignment, place the transducer tube in position on the prepared surface.
3. Gently apply pressure to the transducer tube so that the sealant protrudes from the edges of the transducer tube.

Important:

Applying too much pressure may result in an ineffective seal.

4. Using a spirit level, ensure that the top of the transducer tube is level; adjust if necessary.
5. Smooth the sealant around the inside and outside edge of the transducer tube.
6. Allow specified curing time for the marine-grade sealant.

Curing time will be dependent on the sealant being used, but can in some cases be 24 to 36 hours. Ensure you read the sealant instructions carefully, and allow the full curing time.

Note:

For increased rigidity it is recommended that fiberglass resin is used to strengthen the tube-to-hull bond.

Cored fiberglass hull mounting

The transducer is intended to be mounted in a solid non-cored section of the hull.

Important:

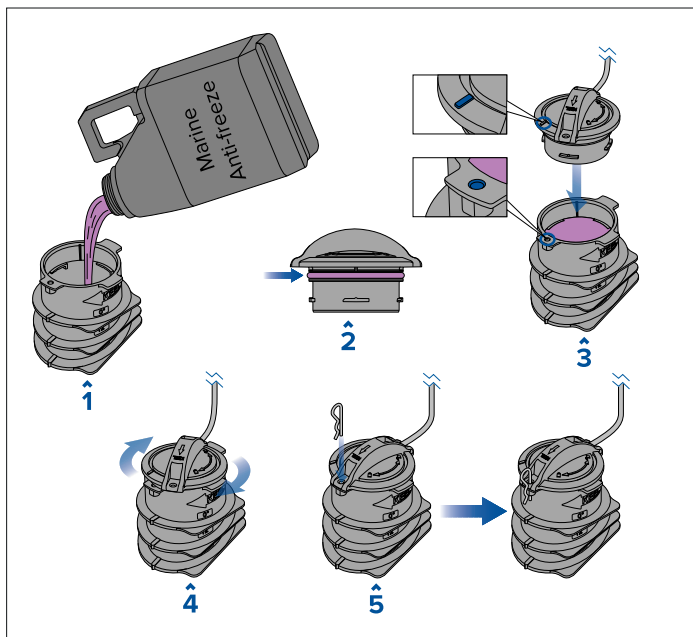
If your vessel hull type requires the transducer to be installed in a cored section of the hull then this should only be carried out by a competent marine installer.

Inserting the transducer

The transducer is fitted and locked into the transducer tube.

Important:

Ensure that the sealant has completely cured before attempting to fill the transducer tube.



1. Fill the transducer tube to the fill line with a Propylene glycol-based non-toxic marine anti-freeze.
2. To aid transducer insertion, apply a small amount of the marine anti-freeze to the transducer's O-ring.

3. Align the mark on the top of the transducer with the locking hole on the transducer tube and slowly insert the transducer into the transducer tube.

A small amount of anti-freeze may spill over the top of the tube when the liquid is displaced by the transducer.

4. Hold the transducer tube securely with one hand, and using your other hand turn the transducer 45° into the locked position.

Be careful when turning the transducer; ensure that the transducer is inserted fully and that the transducer tube is held securely in place to prevent the transducer tube from twisting and damaging the seal.

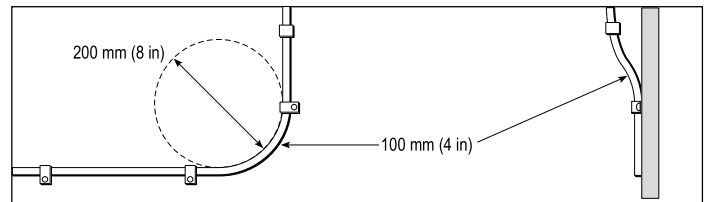
5. Insert the R-clip into the locking holes.

Cable routing

Cable routing requirements for the transducer cable.

Important: To avoid interference, the cable must be routed as far away from VHF radio antenna devices and cables as possible.

- Check that the cable is long enough to reach the display it will be connected to. Optional extension cables are available, if required.
- Ensure there is enough slack in the transducer cable, at the transducer end, to allow the transducer to be inserted and removed from the transducer tube.
- Secure the cable at regular intervals using the supplied cable clips.
- Any excess cable should be coiled up at a convenient location.
- Do NOT bend cables excessively. Wherever possible, ensure a minimum bend diameter of 200 mm (8 in) / minimum bend radius of 100mm (4 in).



Making connections

Follow the steps below to connect the cable(s) to your product.

1. Ensure that the vessel's power supply is switched off.
2. Ensure that the device being connected to the unit has been installed in accordance with the installation instructions supplied with that device.
3. Ensuring correct orientation, push the cable connector fully onto the corresponding connector on the unit.
4. Turn the locking collar clockwise to secure the cable.

Conformance specification

This product has been tested to meet or exceed the following Standards:

BS EN ISO 8846:2017 (supersedes BS EN 28846:1993)

Note: For a list of additional applicable Standards, refer to the manual applicable to the connected sonar module or multifunction display.