Raymarine®

REALVISION™

RV-100 3D Transom Transducer Installation instructions

English (en-US)
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Software updates

Check the Raymarine website for the latest software releases for your product.
www.raymarine.com/software

Product documentation

The latest versions of all English and translated documents are available to download in PDF format from the website: www.raymarine.com/manuals.
Please check the website to ensure you have the latest documentation.

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Contents

Chapter 1: Important information

Certified Installation

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: 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 voltages

This product may contain high voltages. Do NOT remove any covers or otherwise attempt to access internal components, unless specifically instructed in the documentation provided.

Warning: Positive ground systems

Do not connect this unit to a system which has positive grounding.

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: Service and maintenance

This product contains no user serviceable components. Please refer all maintenance and repair to authorized Raymarine dealers. Unauthorized repair may affect your warranty.

Declaration of conformity

Raymarine UK Ltd. declares that this product is compliant with the essential requirements of EMC directive 2004/108/EC.

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

Water ingress

Water ingress disclaimer

The waterproof rating capacity of this product meets the stated IPX standard referred to in the product's *Technical Specification*.

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.

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 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.

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.

Technical accuracy

To the best of our knowledge, the information in this document was correct at the time it was produced. However, Raymarine cannot accept liability for any inaccuracies or omissions it may contain. In addition, our policy of continuous product improvement may change specifications without notice. As a result, Raymarine cannot accept liability for any differences between the product and this document. Please check the Raymarine website (www.raymarine.com) to ensure you have the most up-to-date version(s) of the documentation for your product.

Chapter 2: Document and product information

Chapter contents

2.1 Document information

This document contains important information related to the installation of your Raymarine product.

The document includes information to help you:

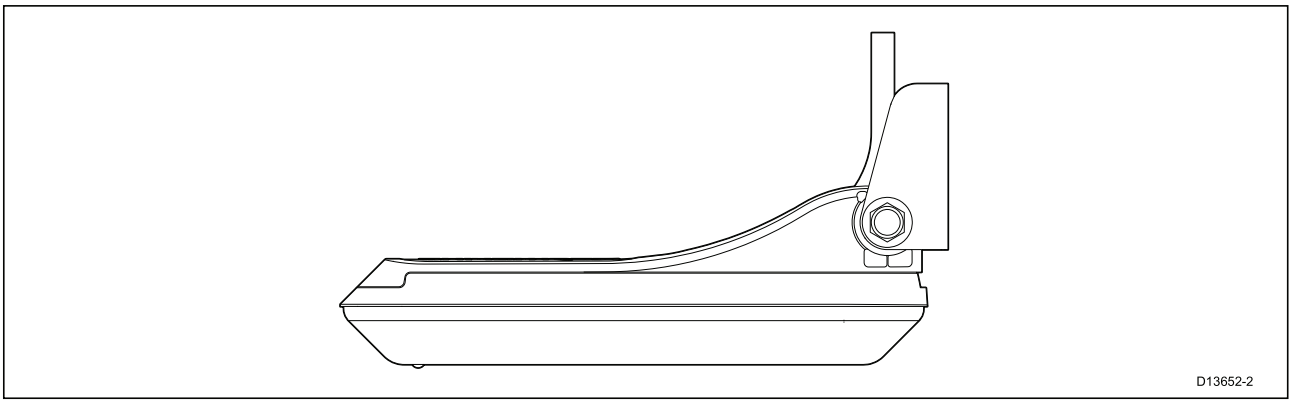
- plan your installation and ensure you have all the necessary equipment;
- install and connect your product as part of a wider system of connected marine electronics;
- troubleshoot problems and obtain technical support if required.

This and other Raymarine product documents are available to download in PDF format from www.raymarine.com/manuals.

Applicable products

This document is applicable to the following products:

RV–100 RealVision™ 3D Transom Mount Transducer



Part number	Description	Construction
A80464	**RV-100** RealVision™ 3D Transom Mount Transducer	Plastic

- The **RV-100** is a RealVision™ 3D transducer, capable of producing 3D sonar images.
- The transducer can be connected to RealVision™ 3D variant MFDs running LightHouse™ 3 software.

Note: Additional mounting options are available for the RV-100 RealVision™ 3D transducer. These include:

- Part number A80479: RealVision™ 3D Transducer Step Mount
- Part number A80480: RealVision™ 3D Transducer Jack Plate Mount
- Part number A80482: RealVision™ 3D Transducer Jack Plate Spacer Kit

For further mounting information, refer to the documentation supplied with these products.

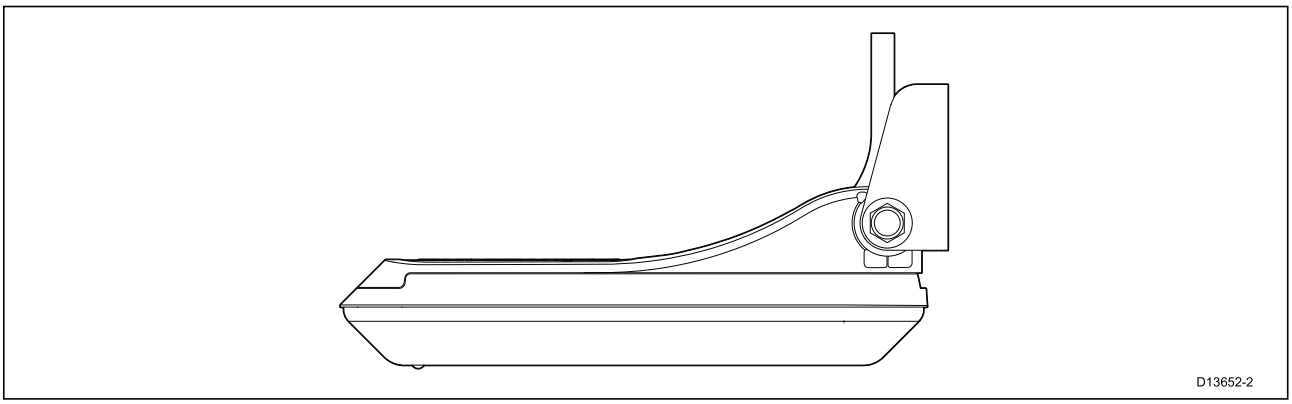
Document illustrations

Your product may differ slightly from that shown in the illustrations in this document, depending on product variant and date of manufacture.

All images are provided for illustration purposes only.

2.2 Product overview

The RV-100 is a transom-mounted RealVision™ 3D sonar transducer capable of producing realistic 3D representations of the objects below your vessel, to help you identify underwater structures and locate fish.



- 4 sonar channels: DownVision™, SideVision™, CHIRP, and RealVision™ 3D sonar technology combined in a single unit.
- Powerful and practical sonar operating ranges:
  - CHIRP sonar = 0.6 M (2 ft) to 274 m (900 ft)
  - DownVision™ = 0.6 M (2 ft) to 183 m (600 ft)
  - SideVision™ = 0.6 M (2 ft) to 91 m (300 ft)
  - RealVision™ 3D = 0.6 M (2 ft) to 91 m (300 ft)
- Built-in AHRS (Attitude and Heading Reference System) sensor helps to stabilize the sonar imaging, automatically compensating for vessel motion.
- Compact unit and transom mounting method for easy and flexible installation.
- Includes 8 m (26.2 ft) cable.
- Waterproof to IPX6, IPX7, IPX8.

2.3 Product documentation

The following documentation is applicable to your product:

All documents are available to download as PDFs from www.raymarine.com/manuals

Documentation

Description	Part number
Installation instructions (this document)	87337
RV-100 Transducer Mounting template	87294
RV-100 Hull / Step Bracket Installation instructions	87305
RV-100 Jack Plate Mount and Spacer Kit Installation instructions	87306
LightHouse™ 3 Basic Operation instructions. Includes basic operation instructions for the Sonar application on your MFD.	81369
LightHouse™ 3 Advanced Operation instructions. Includes advanced operation instructions for the Sonar application on your MFD.	81370

Operation instructions

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

LightHouse™ 3 MFD Operation instructions

For operation instructions for your MFD please refer to the LightHouse™ 3 MFD Operation instructions.

	The Basic (81369) and Advanced (81370) LightHouse™ 3 Operation Instructions can be downloaded from the Raymarine website: www.raymarine.com/manuals

Chapter 3: Planning the installation

Chapter contents

3.1 Installation checklist

Installation includes the following activities:

	Installation Task
1	Plan your system.
2	Obtain all required equipment and tools.
3	Site all equipment.
4	Route all cables.
5	Drill cable and mounting holes.
6	Make all connections into equipment.
7	Secure all equipment in place.
8	Power on and test the system.

Schematic diagram

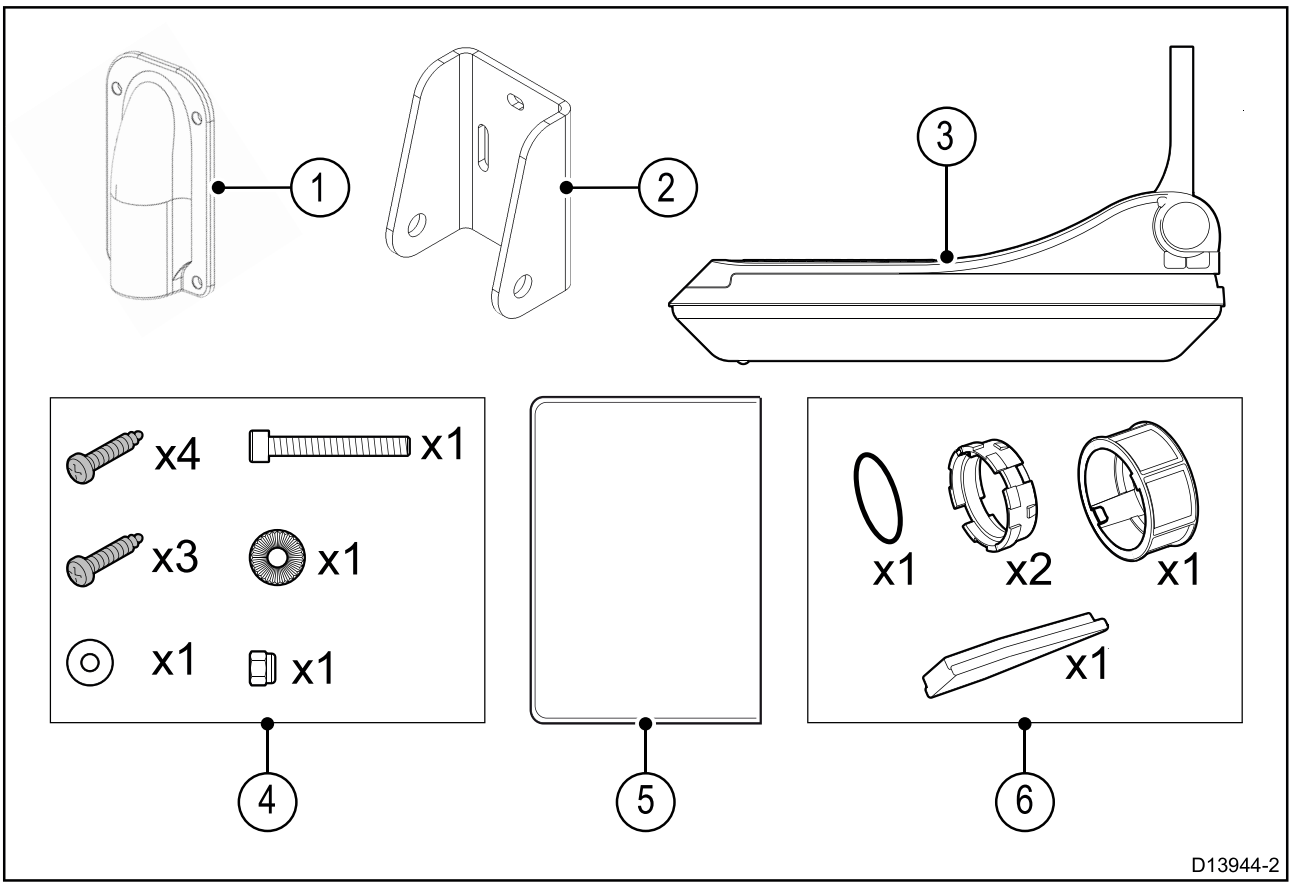
A schematic diagram is an essential part of planning any installation. It is also useful for any future additions or maintenance of the system. The diagram should include:

- Location of all components.
- Connectors, cable types, routes and lengths.

Warnings and cautions

Important: Before proceeding, ensure that you have read and understood the warnings and cautions provided in the Chapter 1 **Important information** section of this document.

3.2 Parts supplied



Item	Description	Quantity
1	Escutcheon plate.	1
2	Transducer mounting bracket.	1
3	Transducer, including 8 m (26.2 ft.) cable.	1
4	Fixings, consisting of:	
	Self tapper screw (pan head), for mounting the escutcheon plate.	4
	Self tapper screw (pan head), for mounting the transducer bracket.	3
	Plain washer.	1
	M10 bolt.	1
	Locking nut (for M10 bolt).	1
	Ratchet plate (for M10 bolt).	1
5	Documentation pack.	1
6	Locking collar kit (for transducer cable connector), consisting of:	
	“O” Ring	1
	Split ring (includes spare).	2
	Locking collar.	1
	Split ring fitting tool.	1

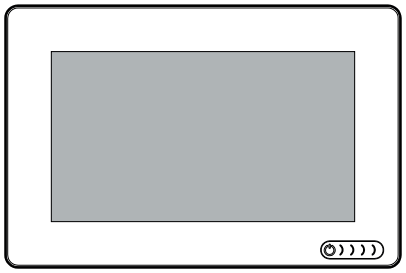
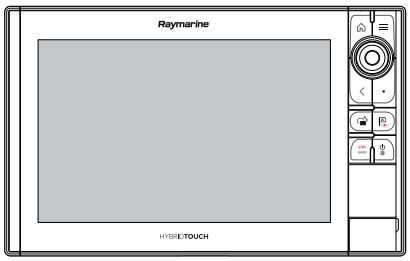
3.3 Required additional components

This product forms part of a system of electronics and requires the following additional components for full operation.

- Compatible RealVision™ 3D sonar-capable device. Refer to **Compatible RealVision™ 3D products**, for a list of compatible products.
- For longer cable runs, a transducer extension cable will also be required. Refer to Chapter 10 **Spares and accessories**, for suitable cables.

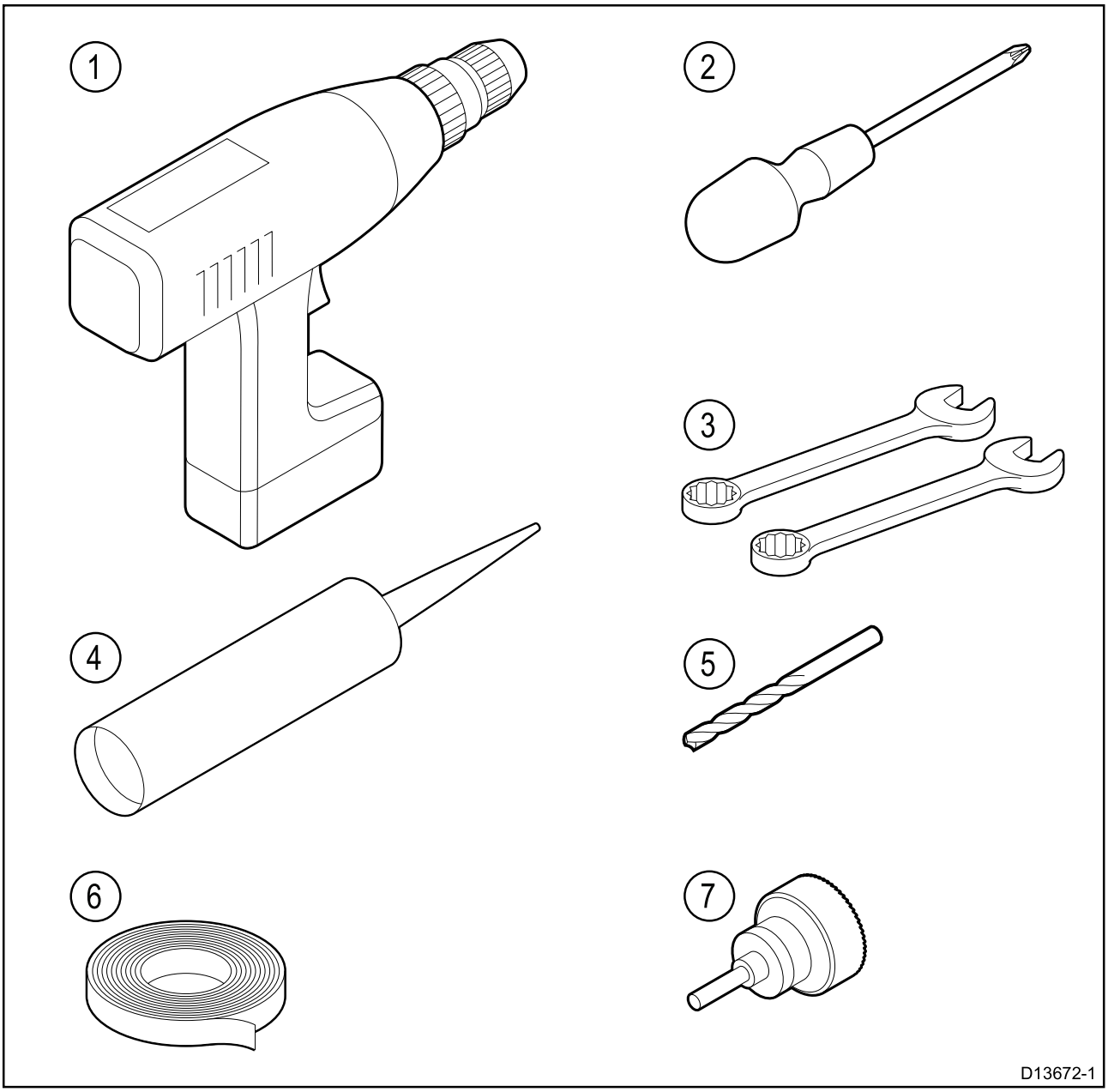
Compatible RealVision™ 3D products

The transducer must be connected to a RealVision™ 3D sonar-capable device. The following RealVision™ 3D sonar-capable products are compatible with the transducer.

	Description	Part number(s)
	Axiom™ 7 RV 3D variants	E70365, E70365–03, E70365–DISP
	Axiom™ 9 RV 3D variants	E70367, E70367–02, E70367–03, E70367–DISP
	Axiom™ 12 RV 3D variants	E70369, E70369–3, E70369–DISP
	Axiom™ Pro 9 RVX	E70371
	Axiom™ Pro 12 RVX	E70372
	Axiom™ Pro 16 RVX	E70373

3.4 Tools required

The following tools are required to install the transducer.



1. Power drill
2. Pozidrive screwdriver
3. Pair of 14 mm wrenches
4. Marine-grade neutral cure polyurethane sealant (non-acetate and non-silicone based)
5. 3.5 mm drill bit *
6. Adhesive tape
7. 25 mm (1 inch) Hole saw (only required if you are routing the cable through a bulkhead.)

Note:

* Depending on the thickness and material of the mounting surface, you may require a different diameter drill bit.

Screws supplied are: stainless-steel tapping DIN 7049-ST, with diameter 4.2 mm (equivalent to a No. 8 screw, diameter 0.164 inch). Three screws of length 18 mm are provided for attaching the mounting bracket; four screws of length 13 mm are provided for attaching the escutcheon plate.

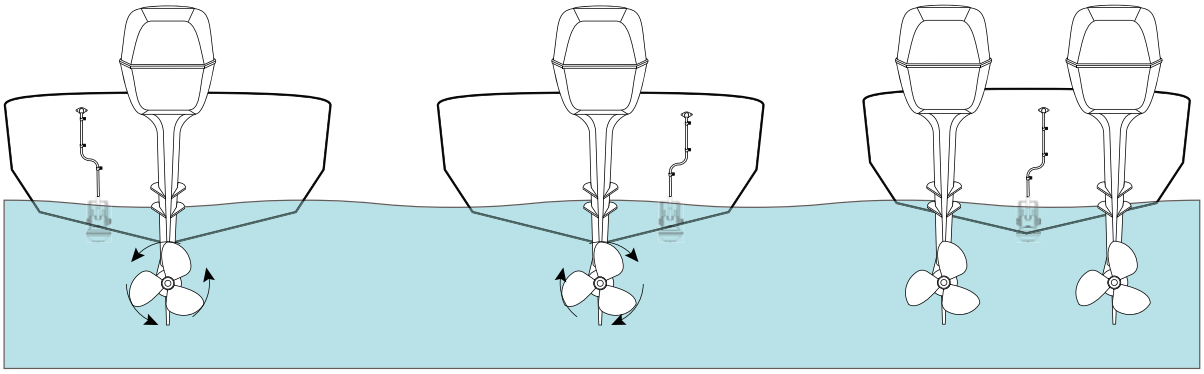
3.5 Selecting a location for the transducer

The guidelines below should be followed when selecting a location for the transducer.

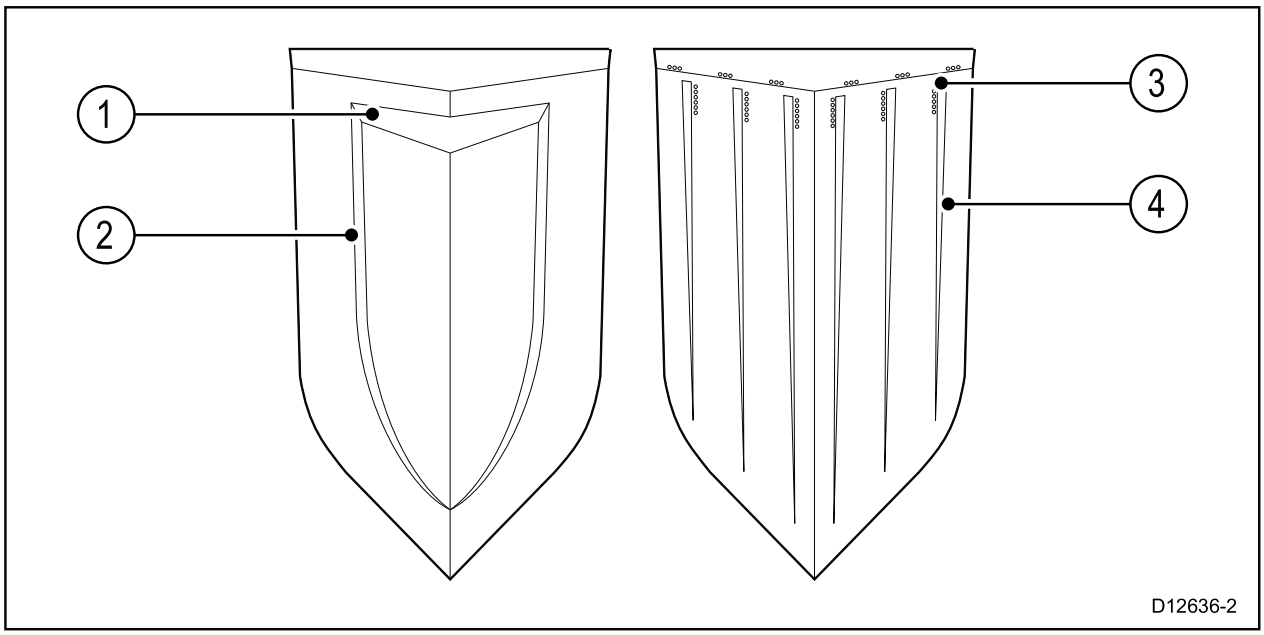
Note: The transducer is not suitable for mounting on vessels where the transom is aft of the propeller(s).

For best performance the transducer must be installed in a location with the least turbulence and aeration. The most effective way to determine this is by checking the water flow around the transom whilst underway.

- Mount close to the keel (centerline), in a position where the transducer element will be fully submerged when the vessel is planing and turning.
- Mount a suitable distance from the propeller(s) to avoid wake.
- Mount in a location where no load will be applied to the transducer during launching, lifting, trailering and storage of the boat.



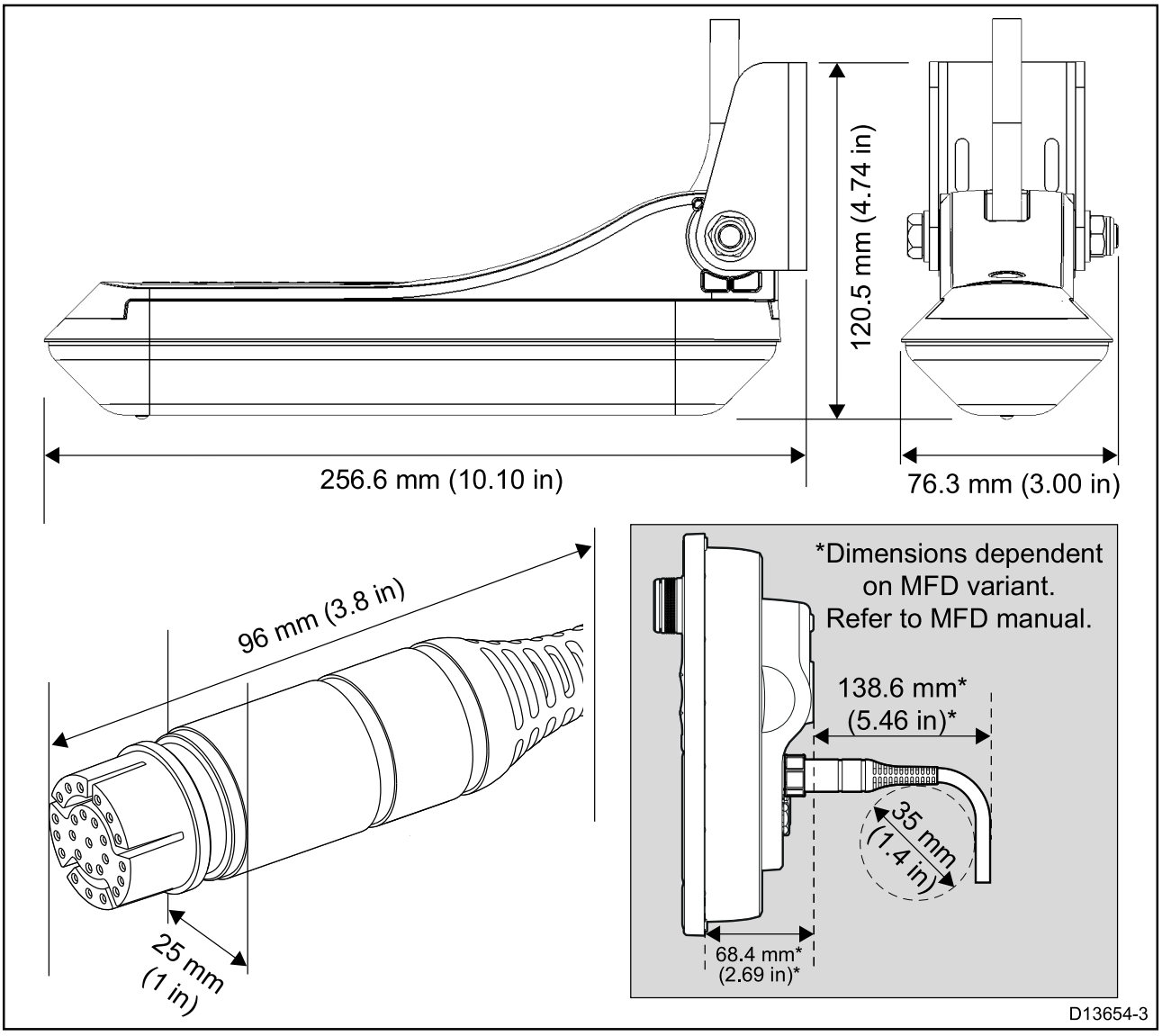
- For clockwise rotating propellers, mount the transducer on the starboard side, for counter-clockwise, mount on the port side.
- On a twin engine vessel mount the transducer between the engines.
- Turbulence can be caused by a number of other factors such as steps (1), ribs (2), rows of rivets (3) and strakes (4). The turbulence appears aft of these locations.



- Air trapped under the front of the vessel can travel under the hull and appear as aeration aft.

Note: Optimum transducer location will vary depending on vessel type. Optimum transducer height and angle should be obtained by testing the transducer with the vessel in the water.

3.6 Transducer dimensions — RV-100



- **RV-100** cable length: 8 m (26.2 ft).

Note: For installations where space behind the display is limited, a right-angled transducer cable adaptor is available (A80515).

Chapter 4: Cables and connections

Chapter contents

4.1 General cabling guidance

Cable types and length

It is important to use cables of the appropriate type and length

- Unless otherwise stated use only standard cables of the correct type, supplied by Raymarine.
- Ensure that any non-Raymarine cables are of the correct quality and gauge. For example, longer power cable runs may require larger wire gauges to minimize voltage drop along the run.

Strain relief

Ensure adequate strain relief is provided. Protect connectors from strain and ensure they will not pull out under extreme sea conditions.

Cable shielding

Ensure that all cables are properly shielded and that the cable shielding is undamaged.

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.

4.2 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.

Important: The transducer cable's connector is supplied with a separate locking collar assembly, used to secure the cable firmly to a RealVision™ 3D sonar-capable device (e.g. Axiom RV multifunction display). Ensure that you route the cable all the way to the 3D sonar-capable device **before** attaching the locking collar.

- Check that the cable is long enough to reach the equipment it will be connected to. The following optional extension cables are available if required:
  - RealVision™ transducer extension cable 3 m (9.8 ft) (part number A80475)
  - RealVision™ transducer extension cable 5 m (16.4 ft) (part number A80476)
  - RealVision™ transducer extension cable 8 m (26.2 ft) (part number A80477)
- Ensure there is enough slack in the transducer cable, at the transducer end, to allow the transducer to pivot up and down.
- Secure the cable at regular intervals using cable clips (not supplied).
- Any excess cable should be coiled up at a convenient location.

RealVision™ 3D transducer extension cable

For best performance, cable runs should be kept to a minimum. However, for some installations it may be necessary to extend the transducer cable.

- 3 m (9.8 ft), 5 m (16.4 ft), and 8 m (26.2 ft) transducer extension cables are available (part numbers: 3 m - A80475, 5 m - A80476, 8 m - A80477).
- It is recommended that a maximum of two cable extensions are used, with the total cable length not exceeding 18 m (59 ft).

Chapter 5: Mounting

Chapter contents

5.1 Pre-installation test

Testing the transducer

Transducer operation should be checked before installation.

1. Connect the transducer to the transducer connection of a RealVision™ 3D sonar-capable device (e.g. Axiom RV multifunction display).
2. Fully submerge the transducer in water.
3. Power up the RealVision™ 3D sonar-capable device, and / or multifunction display.
4. Open a Fishfinder (Sonar) application on your multifunction display.
5. If required, select the relevant transducer / channel from the Channel selection page (**Menu > Channel**).
6. Check that accurate depth and temperature readings are displayed.
7. If you experience difficulties obtaining readings then contact Raymarine Technical Support.

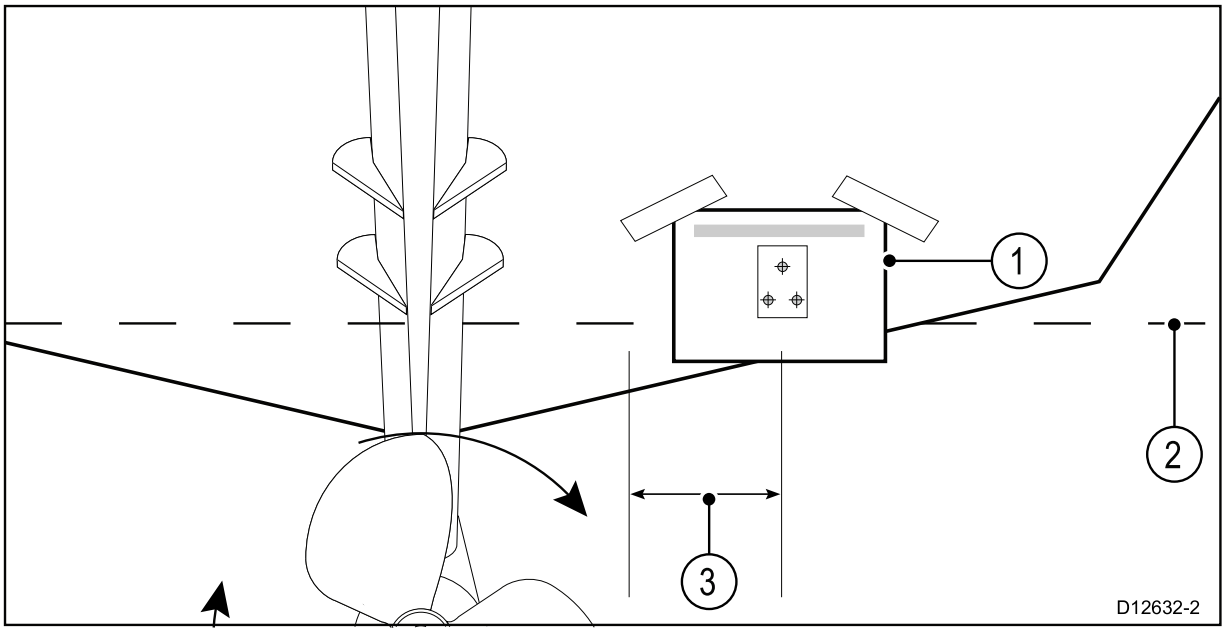
Warning: Transducer operation

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

5.2 Mounting the transom mount bracket

The transducer must be mounted on the transom using the mounting bracket provided. The steps below describe the initial mounting steps required in order to test your transducers performance. After testing the transducer you must finish the mounting following the instructions in the *Finishing the transducer mounting* section.

1. Fix the transducer mounting template to the selected location, using masking or self-adhesive tape.



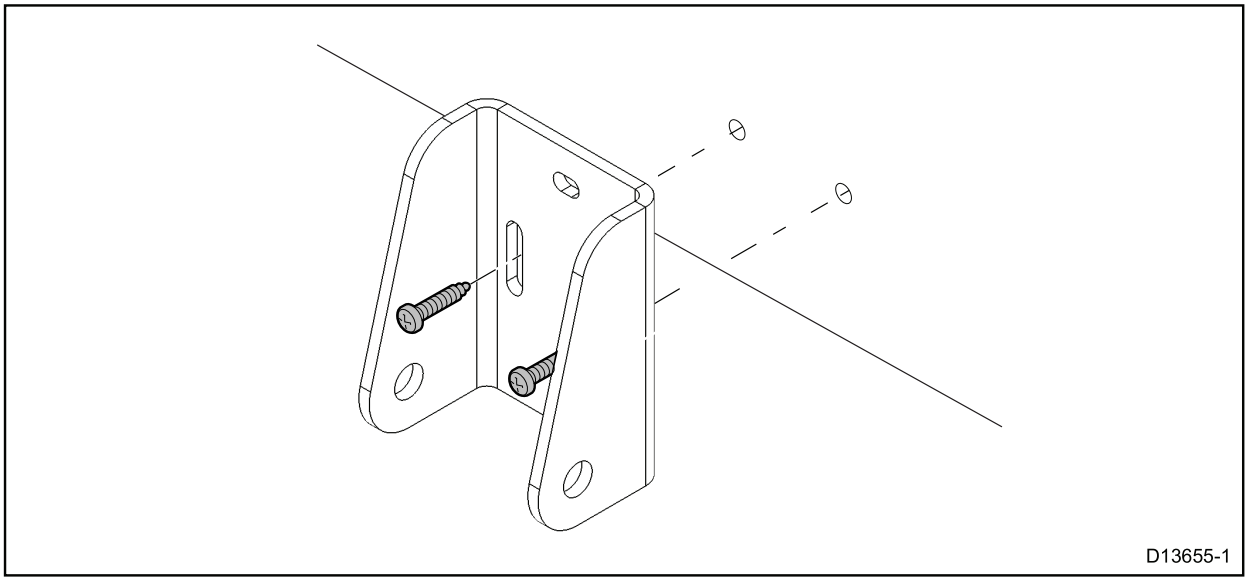
1	Transducer mounting template
2	Waterline
3	Mounting away from propeller

2. Ensure the template is parallel to the waterline.
3. Drill 2 x holes for the adjustment slot screws as indicated on the template.

Note: To help prevent chipping of the mounting surface, use painter's tape to mask the drill area.

Note: Do NOT drill the third mounting hole at this stage.

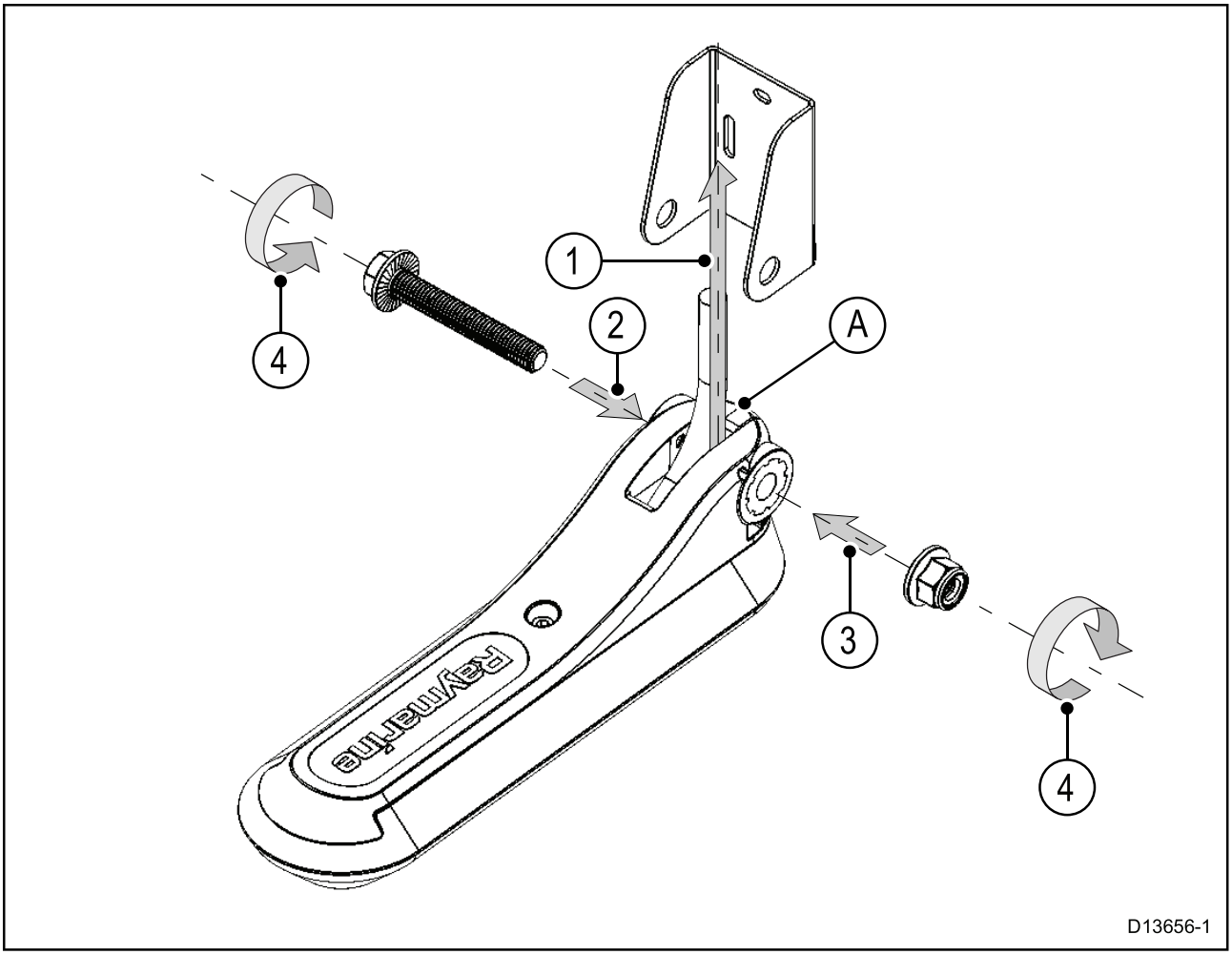
4. Fill the 2 holes with marine grade sealant.
5. Using a pozi-drive screw driver and the screws provided, secure the transom mount bracket using the 2 adjustment slots.



Note: The third locking screw is not used until the transducer has been successfully tested.

5.3 Mounting the transducer

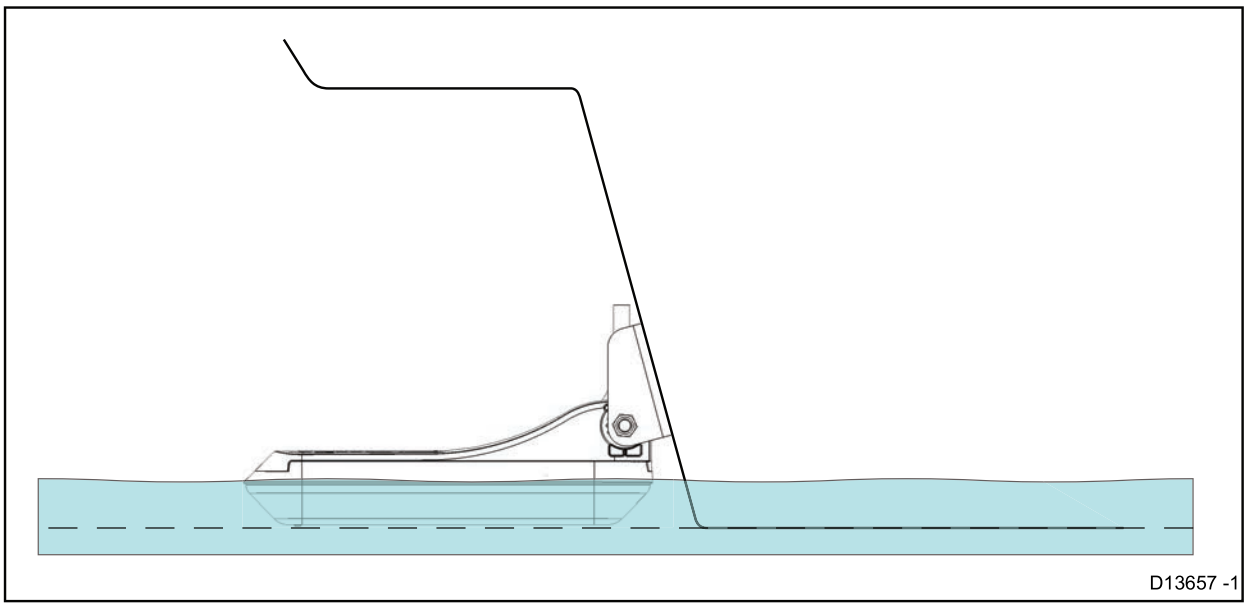
The transducer must be mounted on the transom using the mounting bracket provided. The steps below describe the initial mounting steps required in order to test your transducer's performance. After testing the transducer you must finish the mounting following the instructions in the *Finishing the transducer mounting* section.



Note: Before starting this procedure, check that the plastic chock (marked '**A**' in the illustration) is already positioned in front of the transducer cable. If it is not, push the chock into the correct position, aligning the hole in the chock with the holes in the transducer hanger.

1. Position the transducer hanger between the mounting bracket arms, ensuring that the transducer cable is routed between the arms, and the center hole is aligned with the holes in the arms.
2. Slide the flanged mounting bolt through the mounting bracket assembly.
3. Screw the flanged nyloc nut onto the end of the mounting bolt, and hand-tighten.
4. Using a pair of 14 mm wrenches, tighten the nut onto the mounting bolt until the transducer hanger stays in position, but can still be adjusted by hand.

5. Position the transducer hanger so that the bottom face of the transducer will be parallel with the waterline and tighten the mounting bolt until the hanger is held firmly in place.



The transducer position will be adjusted further during testing.

Note: Do not adjust the M5 screw located on top of the transducer hanger. This screw locates the transducer correctly on the hanger, and must not be adjusted unless specifically directed to do so (for example, when using the Step Mount accessory).

5.4 Attaching the connector locking collar

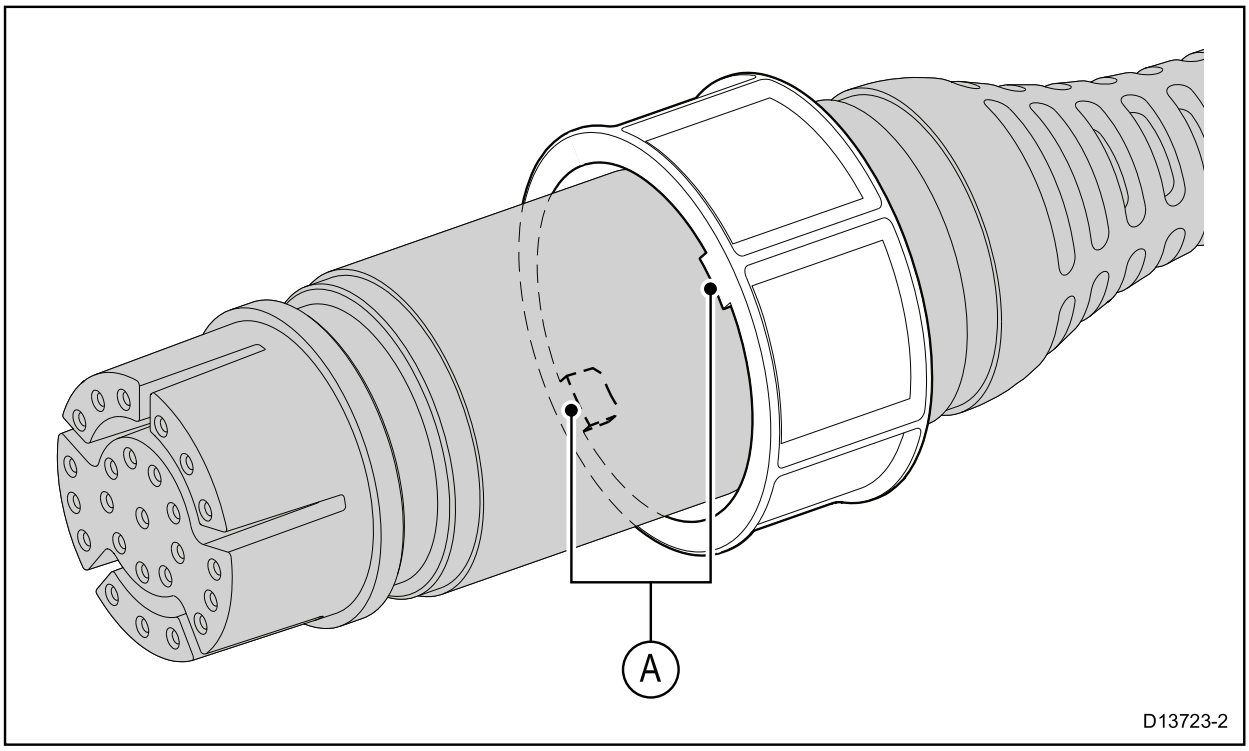
The supplied cable is provided with a separate locking collar assembly, ensuring that the cable connection is secure.

This procedure describes how to attach the locking collar to the cable connector. The locking collar parts are supplied in a separate bag, in the package with your product.

Important: Ensure that you route the cable all the way to its destination **before** attaching the locking collar.

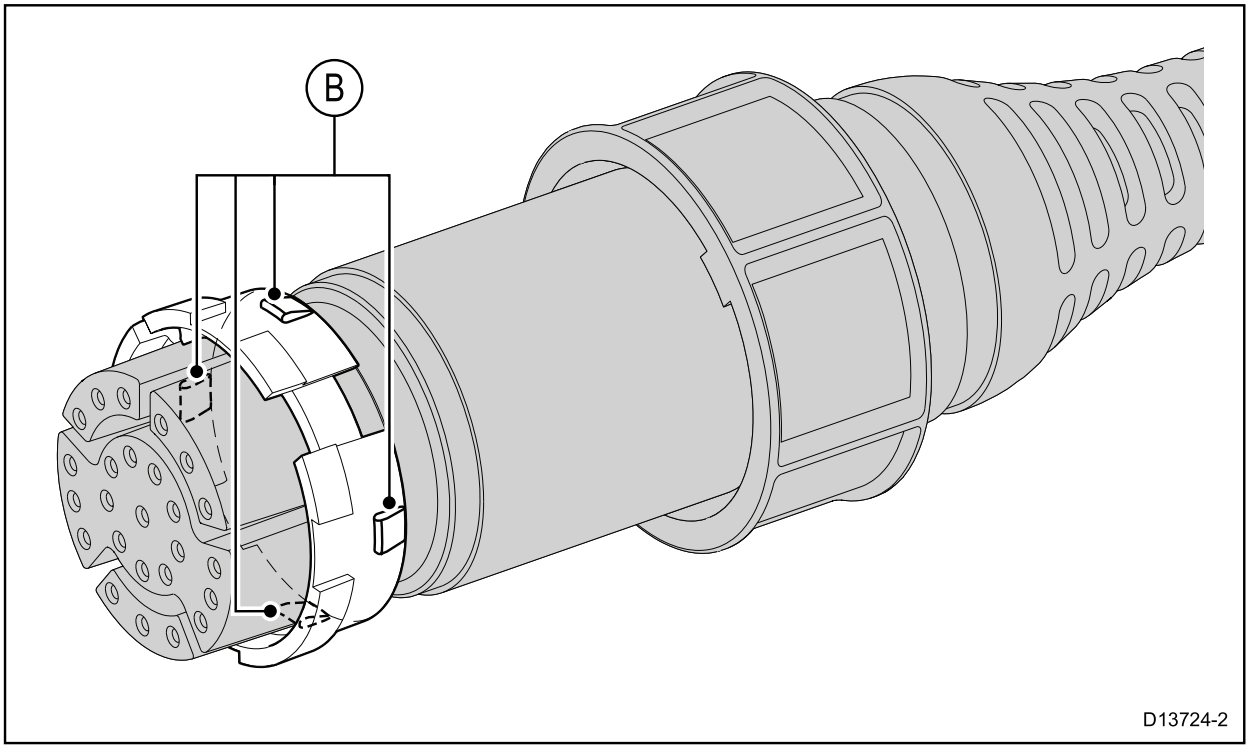
1. Slide the locking collar over the end of the connector, then push it towards the cable-end of the connector.

Important: Ensure that the lugs on the locking collar (labelled 'A' in the illustration), are closest to the plug-end of the connector.



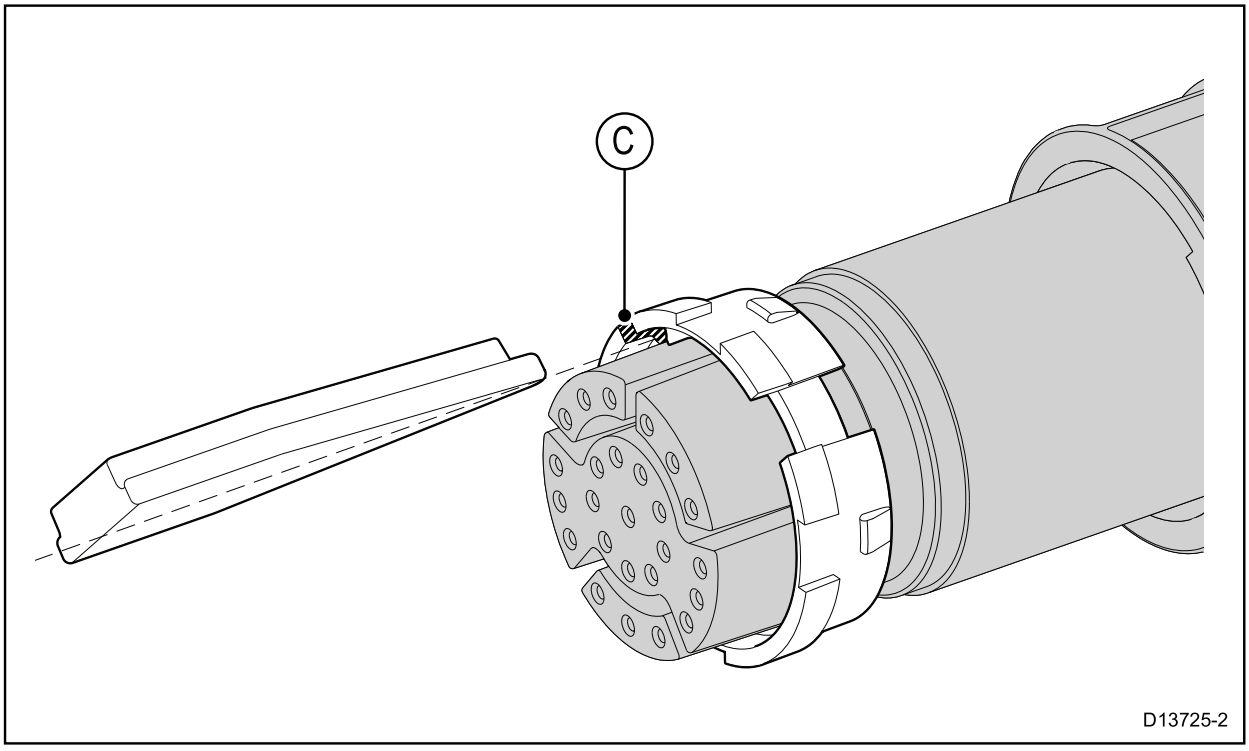
2. Slide the split-ring over the end of the connector, then push it towards the cable-end of the connector.

Important: Ensure that the tabs on the split-ring (labelled 'B' in the illustration), are closest to the cable-end of the connector.



The split-ring slides easily for approximately 1 cm onto the connector, before butting up against the connector moulding.

3. Carefully insert the pointed end of the supplied tool into the split-ring's gap (labelled 'C' in the illustration).

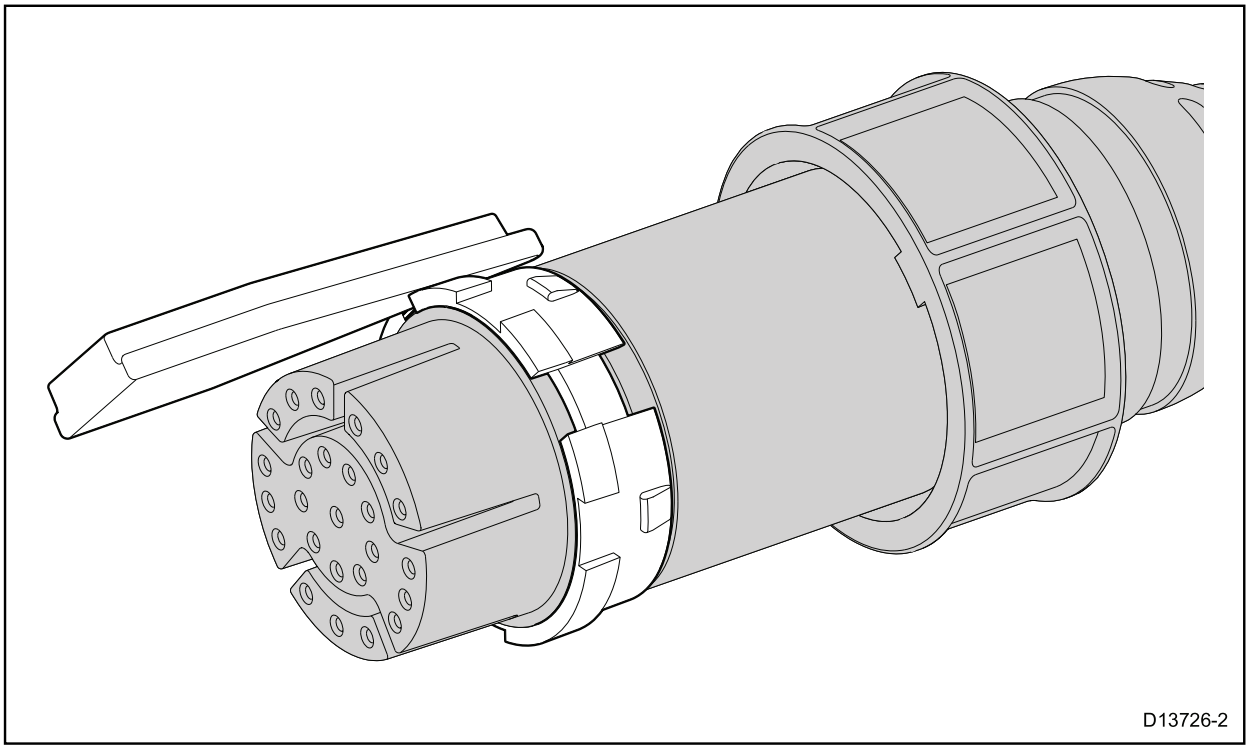


The tool widens the gap in the split ring, enabling the split ring to be pushed further back onto the connector in the following step.

Important: Always use the supplied tool when attaching the split ring. The split ring may become overstretched and break if you try to attach it without using the tool.

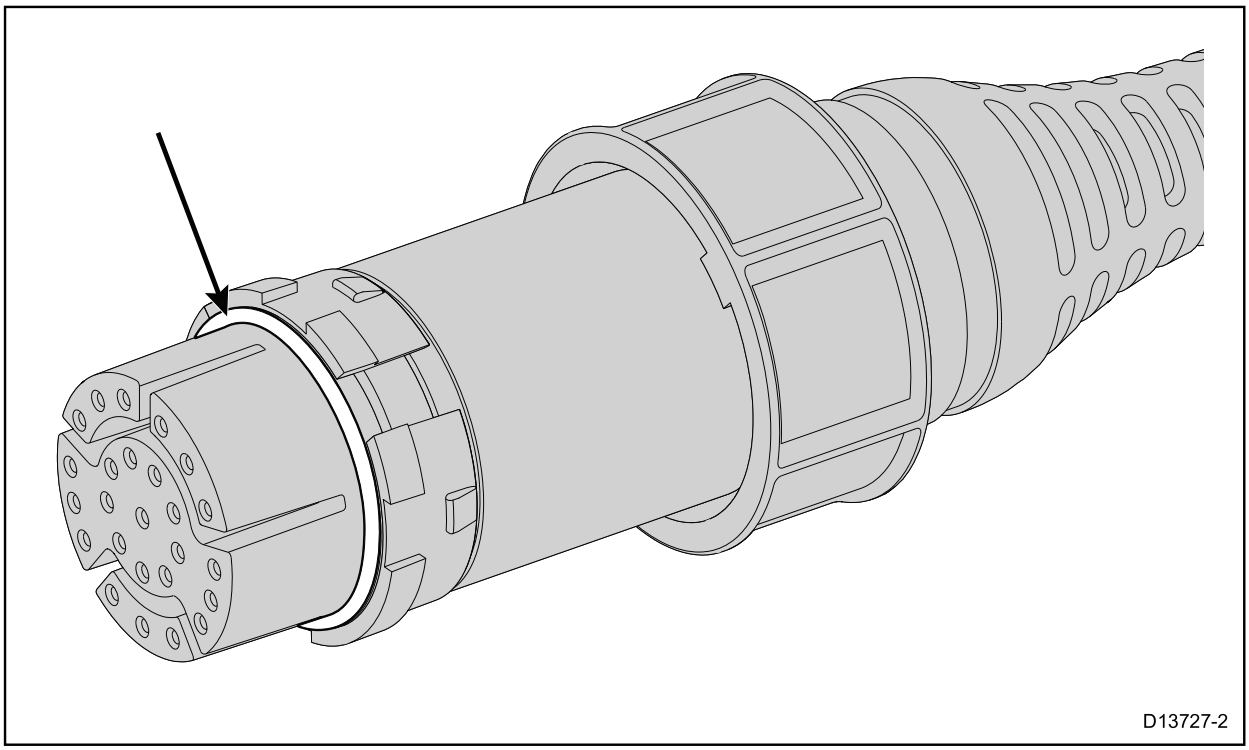
Important: A spare split ring is supplied with the locking collar assembly, in case of breakage.

4. Use the tool to gently lever the split ring over the moulding on the connector until it snaps into position approximately 0.5 cm further back towards the cable-end of the connector.

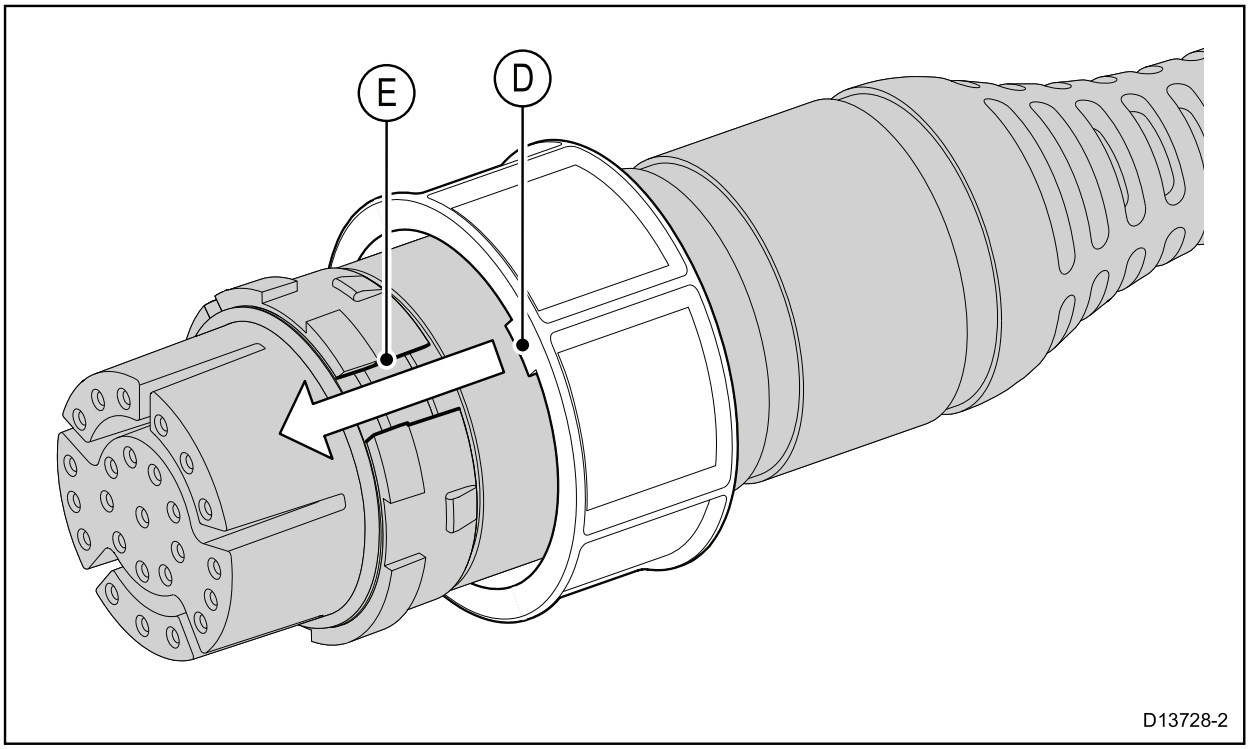


You can now remove the tool. The split-ring stays in position on the connector, but rotates freely.

5. Slide the O-ring (arrowed) over the end of the connector, and ensure that it is seated squarely against the connector moulding, adjacent to the split-ring.

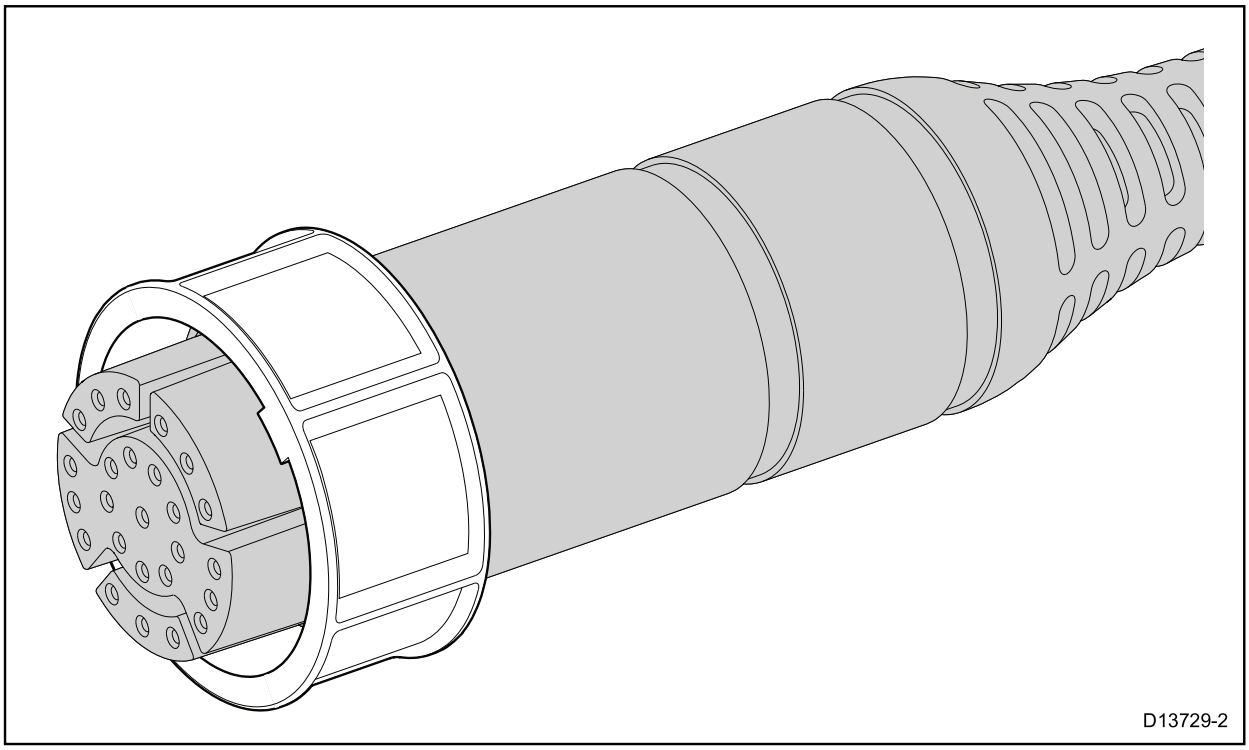


6. Slide the locking collar towards the plug-end of the connector, rotating the collar as necessary to ensure that the lugs on the locking collar (labelled ‘D’ in the illustration) pass through the channels (labelled ‘E’) in the split-ring.



The locking collar slides easily towards the plug-end of the connector, before butting up against the split-ring moulding.

7. Grasp the body of the connector with one hand, then with the other hand, pull the locking collar firmly towards the plug-end of the connector.



As you pull the locking collar, it clicks into place over the split-ring. The locking collar stays in position on the connector, but rotates freely.

5.5 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.

RealVision™ 3D transducer extension cable

For best performance, cable runs should be kept to a minimum. However, for some installations it may be necessary to extend the transducer cable.

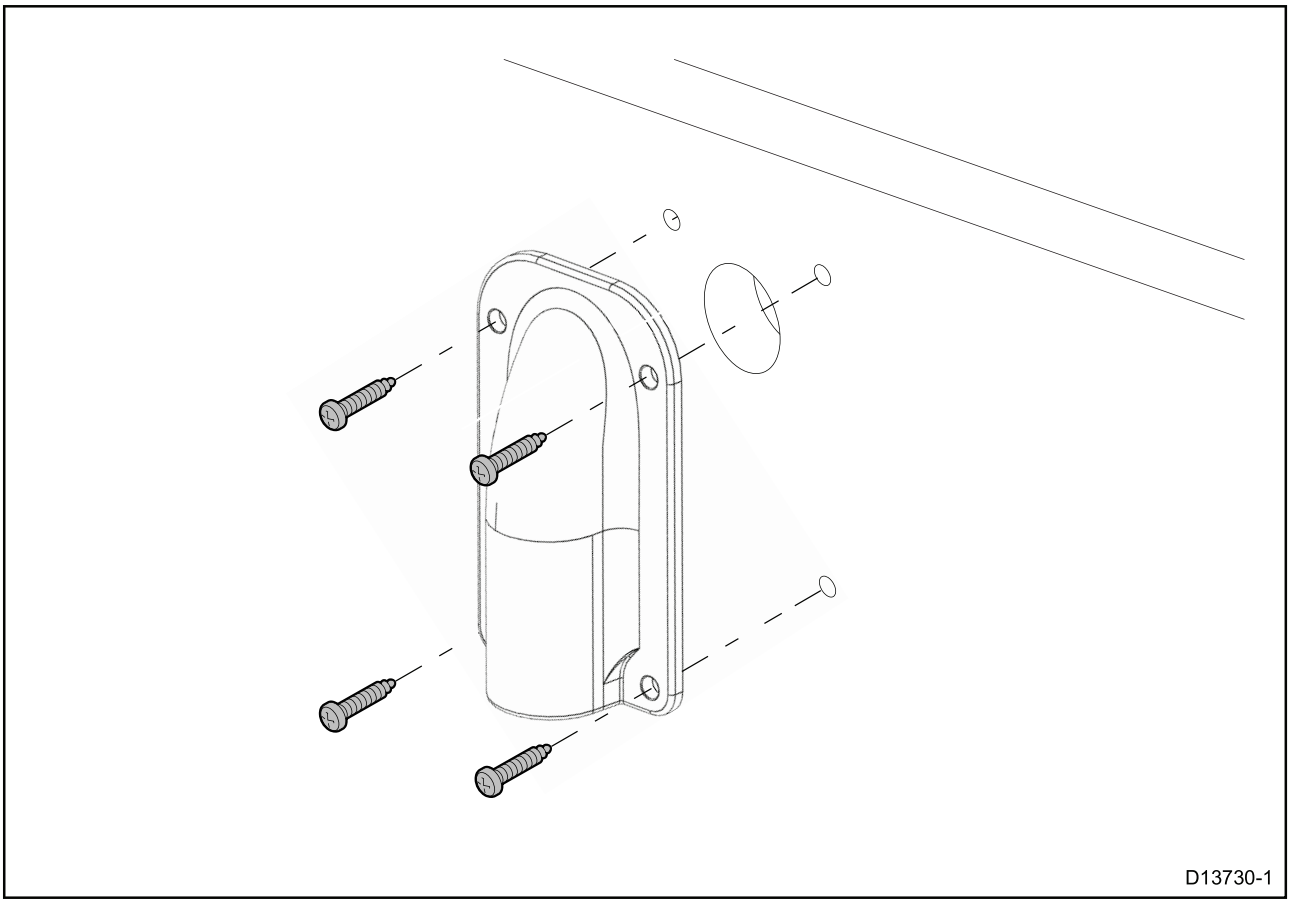
- 3 m (9.8 ft), 5 m (16.4 ft), and 8 m (26.2 ft) transducer extension cables are available (part numbers: 3 m - A80475, 5 m - A80476, 8 m - A80477).
- It is recommended that a maximum of two cable extensions are used, with the total cable length not exceeding 18 m (59 ft).

5.6 Mounting the escutcheon plate

Your RV-100 transducer is supplied with an escutcheon plate.

If you have chosen to route the transducer cable through the transom or through a bulkhead, you can use the escutcheon plate to cover the hole required to accommodate the cable. The plate is designed to fit over a 25 mm (1 inch) diameter hole.

After you have threaded the transducer cable through the hole in the transom or bulkhead, attach the escutcheon plate as shown, taking care that the cable is not trapped between the escutcheon plate and the mounting surface.



Note: To avoid possible damage to the transducer cable, round-off the edges of the hole that the cable passes through using a file.

5.7 Testing and adjusting the transducer

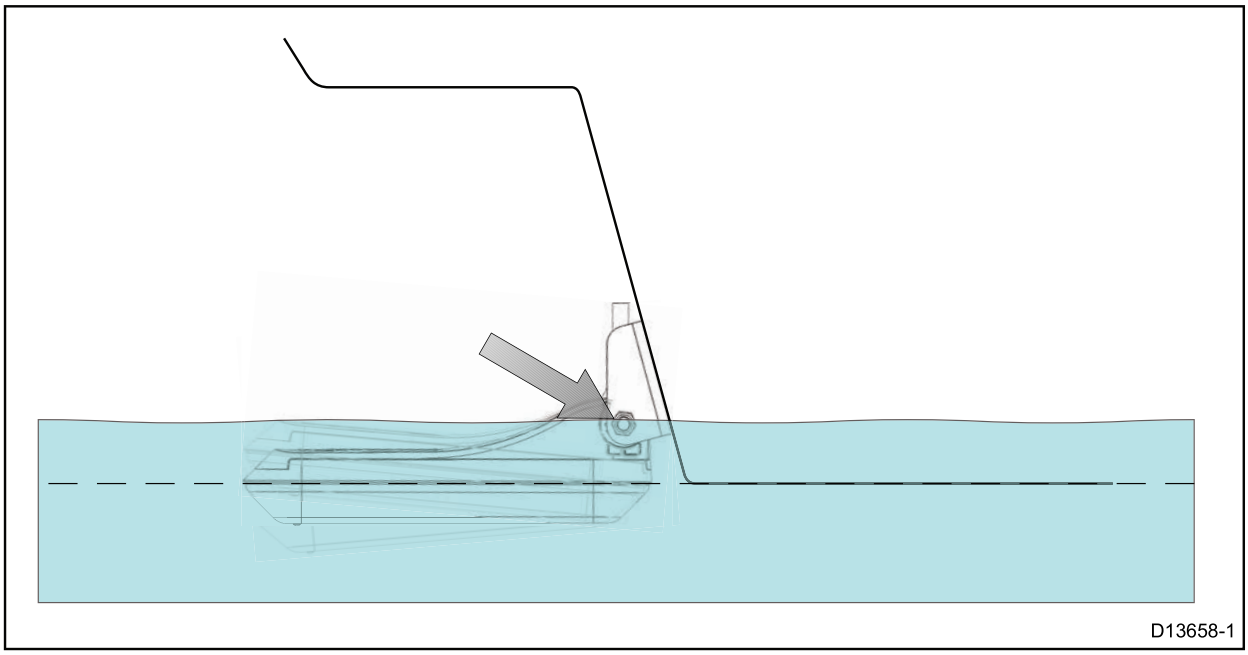
Once the initial mounting procedures have been carried out, the transducer must be tested prior to finishing the mounting.

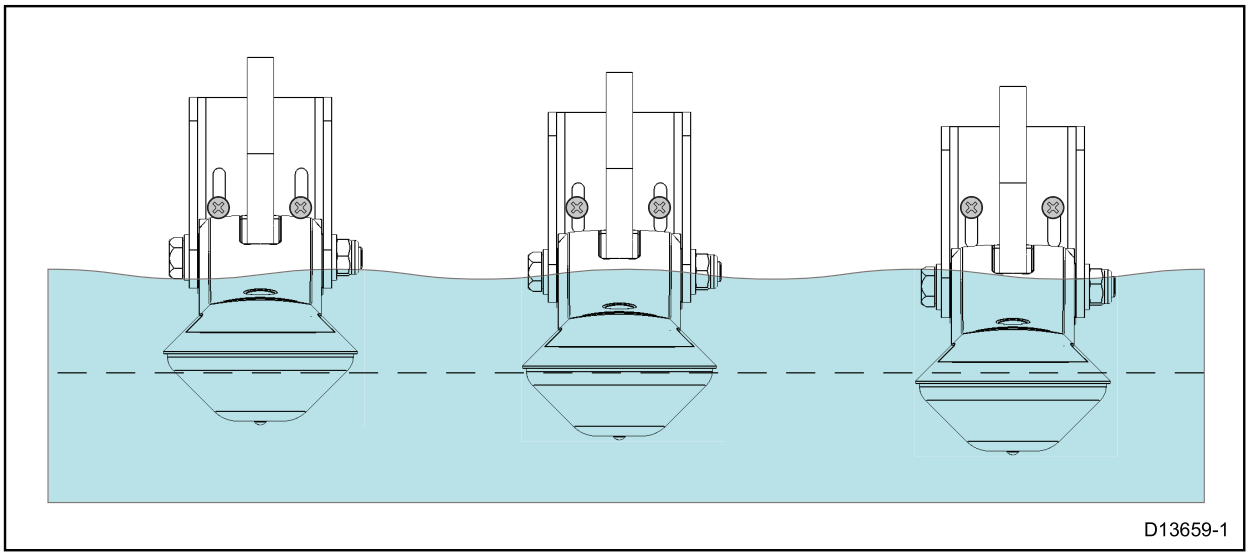
The testing should be carried out with your vessel in the water, with a depth greater than 0.7 m (2.3 ft) but less than the maximum depth range of the transducer.

1. Open the Sonar application on your display, and select the Sonar channel.

   After a few seconds the bottom should be visible onscreen and a depth reading displayed.
2. Start moving your vessel at a low speed, ensuring you have a depth reading and a clear image is displayed.
3. Gradually increase the vessel speed whilst checking the display, if the image becomes poor or the bottom is missing at lower speeds then the transducer needs to be adjusted.
4. Angle and height adjustments should be made in small increments and re-tested each time until you obtain optimum performance.

   For best performance, you should ensure that the bottom half of the transducer assembly is positioned so that it is lower than the lowest point of the hull in the vicinity of the transducer. In the following illustrations, the dashed line indicates the lowest point of the hull in the vicinity of the transducer.





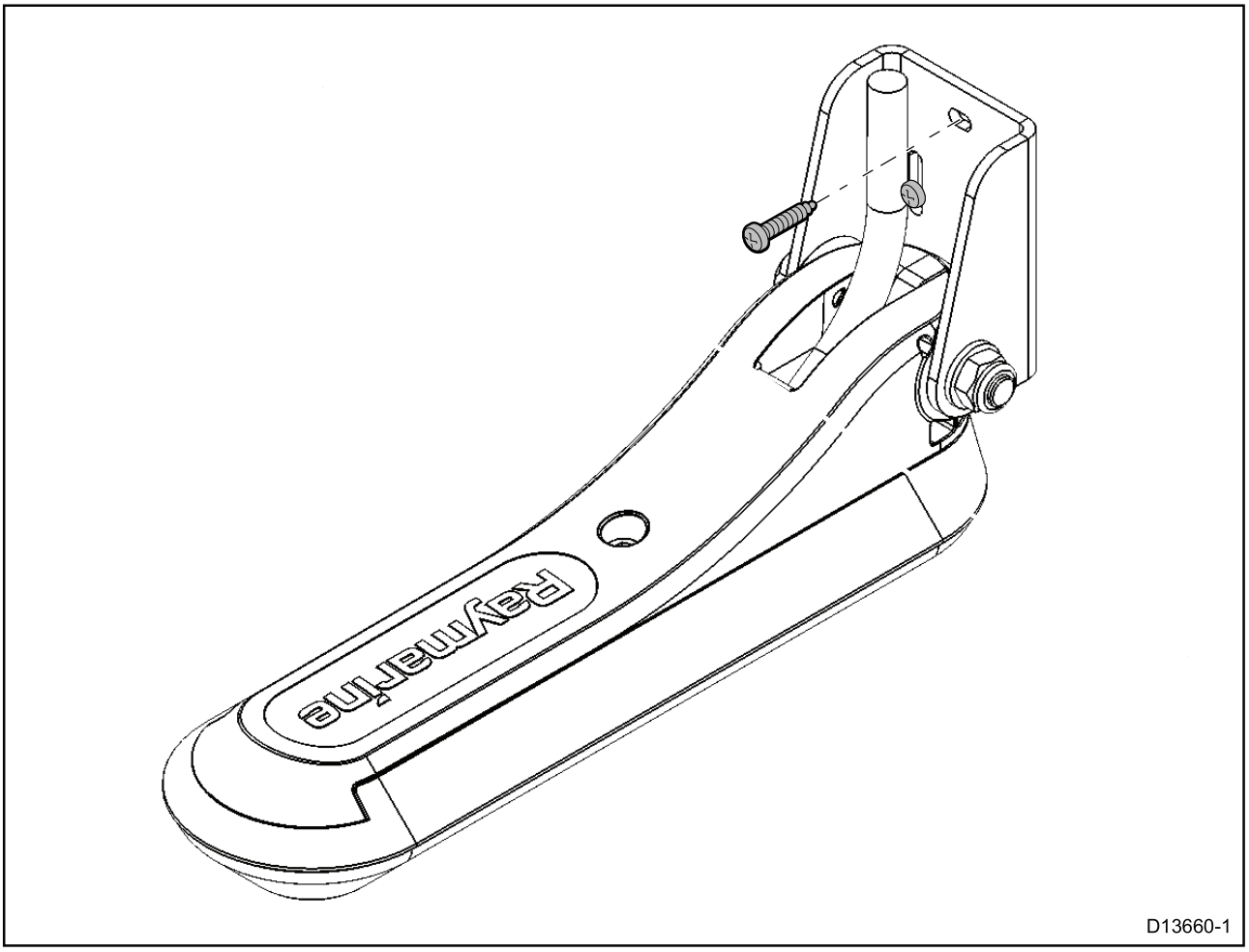
5. Loosen the mounting bolt to adjust the transducer angle.
6. Loosen the 2 mounting bracket screws to adjust the transducer height.
7. Re-tighten the mounting bolt and mounting screws before re-testing.

Note:

- It may not always be possible to obtain depth readings at higher speeds due to air bubbles passing under the transducer.
- It may be necessary to make several adjustments to the transducer before obtaining optimum performance.
- If the transducer requires repositioning ensure all old holes are filled with marine grade sealant.

5.8 Finalizing the transducer mounting

Once you have achieved optimum performance at the desired vessel speeds the transducer must be locked into position to complete the installation.



1. Drill the locking hole location taking care not to damage the mounting bracket.
2. Fill the locking hole with marine grade sealant.
3. Secure the transducer and bracket by fully tightening all 3 mounting screws.
4. Secure the transducer hanger by tightening the mounting bolt; do not exceed a torque of 35 Nm (25.8 ft lb). The transducer hanger should not be easily moveable by hand, and should remain in its normal operating position when your vessel is underway.

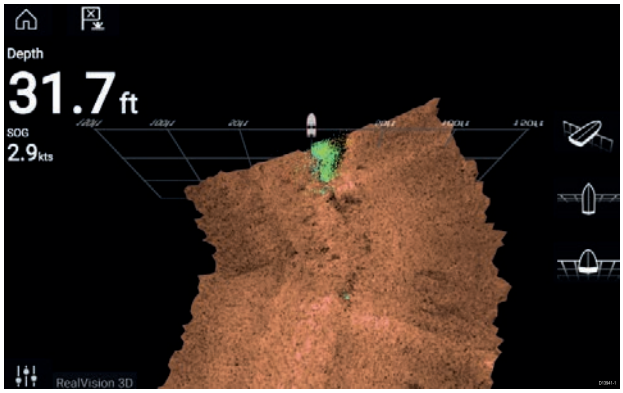
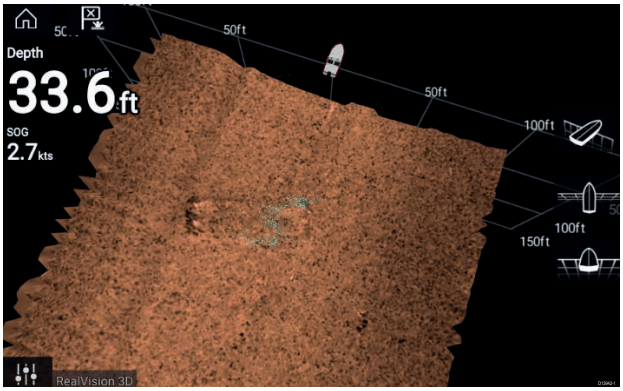
Chapter 6: System checks and troubleshooting

Chapter contents

6.1 RealVision™ 3D AHRS calibration

RealVision™ 3D transducers include a built-in AHRS (Attitude and Heading Reference Sensor), which measures the motion of your vessel to assist in the rendering of sonar images. After installation all RealVision™ 3D transducers require calibration.

An uncalibrated transducer can produce an offset to the front edge of the render of the bottom in the sonar image, as illustrated below.

	
Uncalibrated	Calibrated

Calibration is an automatic process and starts after your vessel has turned approximately 100° at a speed of between 3 –15 knots. Calibration requires no user input, however at least a 270° turn is required before the calibration process can determine the local deviation and apply a relevant offset.

The time it takes to complete the calibration process will vary according to the characteristics of the vessel, the installation environment of the transducer, and the levels of magnetic interference at the time of conducting the process. Sources of significant magnetic interference may increase the time required to complete the calibration process. Certain areas with substantial magnetic deviation may require extra circles or “figure of 8” manoeuvres to be performed. Examples of such sources of magnetic interference include:

- Marine pontoons
- Metal-hulled vessels
- Underwater cables

Note:

The Calibration process will require repeating after a **Sonar reset** or MFD **Factory reset**.

6.2 Troubleshooting

The troubleshooting information provides possible causes and corrective action required for common problems associated with installation and operation of your product.

Before packing and shipping, all Raymarine products are subjected to comprehensive testing and quality assurance programs. If you do experience problems with your product this section will help you to diagnose and correct problems in order to restore normal operation.

If after referring to this section you are still having problems with your product, please refer to the Technical support section of this manual for useful links and Raymarine Product Support contact details.

Operation instructions

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

Sonar troubleshooting

Scrolling image is not being displayed

Possible causes	Possible solutions
Sonar disabled	Enable **Ping** from the Sonar app's sounder tab: **Menu** > **Settings** > **Sounder** > **Ping**.
Incorrect transducer selected	Check that the correct transducer is selected in the Sonar app's Transducer tab: **Menu** > **Settings** > **Transducer** > **Ping**.
Damaged cables	1. Check that the transducer cable connector is fully inserted and locked in position. 2. Check the power supply cable and connectors for signs of damage or corrosion, replace if necessary. 3. With the unit turned on, try flexing the cable near to the display connector to see if this causes the unit to re-boot/loose power, replace if necessary. 4. Check the vessel's battery voltage, the condition of the battery terminals and power supply cables, ensuring connections are secure, clean and free from corrosion, replace if necessary. 5. With the product under load, using a multi-meter, check for high voltage drop across all connectors/fuses etc (this can cause the Fishfinder applications to stop scrolling or the unit to reset/turn off), replace if necessary.
Damaged or fouled transducer	Check the condition of the transducer ensuring it is not damaged and is free from debris/fouling, clean or replace as necessary.
Wrong transducer fitted	Check product and transducer documentation and ensure that the transducer is compatible with your system.
External sonar module: SeaTalkhs / RayNet network problem.	• Check that the unit is correctly connected to the MFD or network switch. Check all connections ensuring connections are secure, clean and free from corrosion, replace if necessary.
External sonar module: Software mismatch between equipment may prevent communication.	Ensure all Raymarine products contain the latest available software, check the Raymarine website: www.raymarine.com/software for software compatibility.

No depth reading / lost bottom lock

Possible causes	Possible solutions
Transducer location	Check that the transducer has been installed in accordance with the instructions provided with the transducer.
Transducer angle	If the transducer angle is too great the beam can miss the bottom, adjust transducer angle and recheck.

Possible causes	Possible solutions
Transducer kicked-up	If the transducer has a kick-up mechanism, check that it has not kicked up due to hitting an object.
Power source insufficient	With the product under load, using a multi-meter, check the power supply voltage as close to the unit as possible to establish actual voltage when the current is flowing. (Check your product's Technical specification for power supply requirements.)
Damaged or fouled transducer	Check the condition of the transducer ensuring it is not damaged and is free from debris / fouling.
Damaged cables	1. Check the unit's connector for broken or bent pins. 2. Check that the cable connector is fully inserted into the unit and that the locking collar is in the locked position. 3. Check the cable and connectors for signs of damage or corrosion, replace if necessary. 4. With the unit turned on, try flexing the power cable near to the display connector to see if this causes the unit to re-boot/loose power, replace if necessary. 5. Check the vessel's battery voltage, the condition of the battery terminals and power supply cables, ensuring connections are secure, clean and free from corrosion, replace if necessary. 6. With the product under load, using a multi-meter, check for high voltage drop across all connectors/fuses etc (this can cause the Fishfinder applications to stop scrolling or the unit to reset/turn off), replace if necessary.
Vessel speed too high	Slow vessel speed and recheck.
Bottom too shallow or too deep	The bottom depth may be outside of the transducers depth range, move vessel to shallower or deeper waters as relevant and recheck.

Poor / problematic image

Possible causes	Possible solutions
Targets will appear differently if your vessel is stationary (e.g.: fish will appear on the display as straight lines).	Increase vessel speed.
Scrolling paused or speed set too low	Unpause or increase sonar scrolling speed.
Sensitivity settings may be inappropriate for present conditions.	Check and adjust sensitivity settings or perform a Sonar reset.
Damaged cables	1. Check the unit's connector for broken or bent pins. 2. Check that the cable connector is fully inserted into the unit and that the locking collar is in the locked position. 3. Check the cable and connectors for signs of damage or corrosion, replace if necessary. 4. With the unit turned on, try flexing the power cable near to the display connector to see if this causes the unit to re-boot/loose power, replace if necessary. 5. Check the vessel's battery voltage, the condition of the battery terminals and power supply cables, ensuring connections are secure, clean and free from corrosion, replace if necessary.

Possible causes	Possible solutions
	6. With the product under load, using a multi-meter, check for high voltage drop across all connectors/fuses etc (this can cause the Fishfinder applications to stop scrolling or the unit to reset/turn off), replace if necessary.
Transducer location	• Check that the transducer has been installed in accordance with the instructions provided with the transducer. • If a transom mount transducer is mounted too high on the transom it may be lifting out of the water, check that the transducer face is fully submerged when planing and turning.
Transducer kicked-up	If the transducer has a kick-up mechanism, check that it has not kicked up due to hitting an object.
Damaged or fouled transducer	Check the condition of the transducer ensuring it is not damaged and is free from debris / fouling.
Damaged transducer cable	Check that the transducer cable and connection is free from damage and that the connections are secure and free from corrosion.
Turbulence around the transducer at higher speeds may affect transducer performance	Slow vessel speed and recheck.
Interference from another transducer	1. Turn off the transducer causing the interference. 2. Reposition the transducers so they are farther apart.
Unit power supply fault	Check the voltage from the power supply, if this is too low it can affect the transmitting power of the unit.

Resetting the sonar module

You can use the reset function on a compatible Raymarine multifunction display to restore the sonar module to its factory default settings.

In the fishfinder application:

1. Select **Menu**.
2. Select **Set-up**.
3. Select **Sounder Set-up**.
4. Select **Sonar Reset**.
5. Select **Yes** to confirm or **No** to abort the operation, as appropriate.

The unit will now be reset to factory default settings.

Chapter 7: Maintenance

Chapter contents

7.1 Routine checks

The following periodic checks should be made:

- Examine cables for signs of damage, such as chafing, cuts or nicks.
- Check that the cable connectors are firmly attached and that their locking mechanisms are properly engaged.

Note: Cable checks should be carried out with the power supply switched off.

Warning: High voltage

This product contains high voltage. Adjustments require specialized service procedures and tools only available to qualified service technicians. There are no user serviceable parts or adjustments. The operator should never remove the cover or attempt to service the product.

7.2 Unit cleaning instructions

The unit does not require regular cleaning. However, if you find it necessary to clean the unit, please follow the steps below:

1. Ensure power is switched off.
2. Wipe unit clean with a damp cloth.
3. If necessary, use a mild detergent solution to remove grease marks.

Transducer care and cleaning

Growth can collect on the bottom of the transducer, this can reduce performance. To prevent the build-up of sea growth, coat the transducer with a thin layer of water-based antifouling paint, available from your local marine dealer. Reapply paint every 6 months or at the beginning of each boating season. Certain smart transducers have restrictions on where antifouling paint is applied. Please consult your dealer.

Note: Transducers with a temperature sensor may not work properly if painted.

Note: Never use ketone-based paint. Ketones can attack many plastics, possibly damaging the sensor.

Note: Never use spray paint on your transducer. Spraying incorporates tiny air bubbles, and a marine transducer cannot transmit properly through air.

Use a soft cloth and mild household detergent to clean the transducer. If the fouling is severe, remove the growth with a tough cleaning pad, such as a green Scotch Brite™ pad for example. Be careful to avoid scratching the face of the transducer.

Note: Harsh cleaning solvents such as acetone WILL damage the transducer.

Chapter 8: Technical support

Chapter contents

8.1 Raymarine product support and servicing

Raymarine provides a comprehensive product support service, as well as warranty, service, and repairs. You can access these services through the Raymarine website, telephone, and e-mail.

Product information

If you need to request service or support, please have the following information to hand:

- Product name.
- Product identity.
- Serial number.
- Software application version.
- System diagrams.

You can obtain this product information using the menus within your product.

Servicing and warranty

Raymarine offers dedicated service departments for warranty, service, and repairs.

Don't forget to visit the Raymarine website to register your product for extended warranty benefits: http://www.raymarine.co.uk/display/?id=788.

Region	Telephone	E-mail
United Kingdom (UK), EMEA, and Asia Pacific	+44 (0)1329 246 932	emea.service@raymarine.com
United States (US)	+1 (603) 324 7900	rm-usrepair@flir.com

Web support

Please visit the "Support" area of the Raymarine website for:

- **Manuals and Documents** — http://www.raymarine.com/manuals
- **FAQ / Knowledgebase** — http://www.raymarine.com/knowledgebase
- **Technical support forum** — http://forum.raymarine.com
- **Software updates** — http://www.raymarine.com/software

Telephone and e-mail support

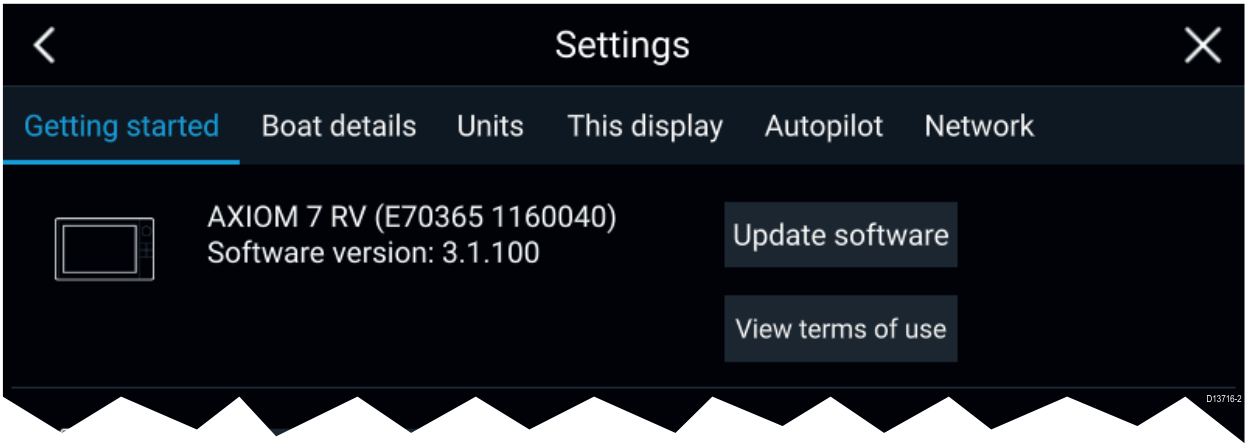
Region	Telephone	E-mail
United Kingdom (UK), EMEA, and Asia Pacific	+44 (0)1329 246 777	support.uk@raymarine.com
United States (US)	+1 (603) 324 7900 (Toll-free: +800 539 5539)	support@raymarine.com
Australia and New Zealand	+61 2 8977 0300	aus.support@raymarine.com (Raymarine subsidiary)
France	+33 (0)1 46 49 72 30	support.fr@raymarine.com (Raymarine subsidiary)
Germany	+49 (0)40 237 808 0	support.de@raymarine.com (Raymarine subsidiary)
Italy	+39 02 9945 1001	support.it@raymarine.com (Raymarine subsidiary)
Spain	+34 96 2965 102	sat@azimut.es (Authorized Raymarine distributor)
Netherlands	+31 (0)26 3614 905	support.nl@raymarine.com (Raymarine subsidiary)
Sweden	+46 (0)317 633 670	support.se@raymarine.com (Raymarine subsidiary)
Finland	+358 (0)207 619 937	support.fi@raymarine.com (Raymarine subsidiary)

Region	Telephone	E-mail
Norway	+47 692 64 600	support.no@raymarine.com (Raymarine subsidiary)
Denmark	+45 437 164 64	support.dk@raymarine.com (Raymarine subsidiary)
Russia	+7 495 788 0508	info@mikstmarine.ru (Authorized Raymarine distributor)

Viewing product information

The **Getting started** tab contains hardware and software information for your MFD.

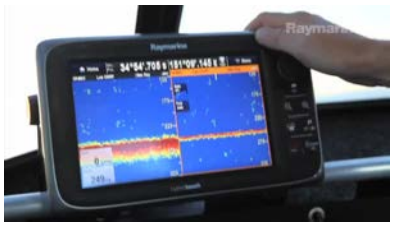
1. Select **Settings**, from the Homescreen.



8.2 Learning resources

Raymarine has produced a range of learning resources to help you get the most out of your products.

Video tutorials

	Raymarine official channel on YouTube: • http://www.youtube.com/user/RaymarineInc
	Video Gallery: • http://www.raymarine.co.uk/view/?id=2679
	Product Support videos: • http://www.raymarine.co.uk/view/?id=4952

Note:

- Viewing the videos requires a device with an Internet connection.
- Some videos are only available in English.

Training courses

Raymarine regularly runs a range of in-depth training courses to help you make the most of your products. Visit the Training section of the Raymarine website for more information:

- http://www.raymarine.co.uk/view/?id=2372

FAQs and Knowledge Base

Raymarine has produced an extensive set of FAQs and a Knowledge Base to help you find more information and troubleshoot any issues.

- http://www.raymarine.co.uk/knowledgebase/

Technical support forum

You can use the Technical support forum to ask a technical question about a Raymarine product or to find out how other customers are using their Raymarine equipment. The resource is regularly updated with contributions from Raymarine customers and staff:

- http://forum.raymarine.com

Chapter 9: Technical specification

Chapter contents

9.1 Technical specification

Physical specification

Dimensions (including bracket)	• Length: 256.6 mm (10.10 in) • Height: 120.5 mm (4.74 in)
Cable length	8 m (26.2 ft)
Weight (unit including bracket)	0.647 kg (1.42 lb)

Environmental specification

Operating temperature	–2 °C to + 55 °C (28.4 °F to 131 °F)
Storage temperature	–20 °C to + 70 °C (23 °F to 158 °F)
Waterproof rating	• IPX6 • IPX7 • IPX8

RealVision™ 3D sonar specification

The following specification only applies to RealVision™ 3D products.

Channels	Channels • 1 x CHIRP sonar • 1 x DownVision™ • 1 x SideVision™ • 1 x RealVision™ 3D
Range	• CHIRP sonar = 0.6 M (2 ft) to 274 m (900 ft) • DownVision™ = 0.6 M (2 ft) to 183 m (600 ft) • SideVision™ = 0.6 M (2 ft) to 91 m (300 ft) • RealVision™ 3D = 0.6 M (2 ft) to 91 m (300 ft)

Conformance specification

Conformance	• EN 60945:2002 • IEC 28846:1993 • EMC Directive 2004/108/EC • Australia and New Zealand: C-Tick, Compliance Level 2

Chapter 10: Spares and accessories

Chapter contents

10.1 Accessories

Cables and adapters

Description	Part number
RealVision™ 3D Transducer right-angled adapter cable 400 mm (15.7 in.)	A80515
RealVision™ 3D Transducer extension cable 3 m (11.8 ft.)	A80475
RealVision™ 3D Transducer extension cable 5 m (19.7 ft.)	A80476
RealVision™ 3D Transducer extension cable 8 m (31.5 ft.)	A80477

Mounting accessories

Description	Part number
RealVision™ 3D Transducer Step Mount	A80479
RealVision™ 3D Transducer Jack Plate Mount	A80480
RealVision™ 3D Transducer Jack Plate Spacer Kit	A80482

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