

Raymarine®



HYPERVERSION™ HV-100

Installation instructions

English (en-US)
Date: 09-2019
Document number: 87362-3
© 2019 Raymarine UK Limited

Trademark and patents notice

Raymarine, Tacktick, Clear Pulse, Truzoom, SeaTalk, SeaTalk^{hs}, SeaTalkng, and **Micronet**, are registered or claimed trademarks of Raymarine Belgium.

FLIR, LightHouse, DownVision, SideVision, RealVision, HyperVision, Dragonfly, Element, Quantum, Axiom, Instalert, Infrared Everywhere, The World's Sixth Sense and **ClearCruise** are registered or claimed trademarks of FLIR Systems, Inc.

All other trademarks, trade names, or company names referenced herein are used for identification only and are the property of their respective owners.

This product is protected by patents, design patents, patents pending, or design patents pending.

Fair Use Statement

You may print no more than three copies of this manual for your own use. You may not make any further copies or distribute or use the manual in any other way including without limitation exploiting the manual commercially or giving or selling copies to third parties.

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.

Publication copyright

Copyright ©2019 Raymarine UK Ltd. All rights reserved.

Contents

Chapter 1 Important information	7
Water ingress	7
Disclaimer	8
Declaration of conformity.....	8
Warranty registration.....	8
Product disposal	8
IMO and SOLAS	8
Technical accuracy.....	8
Chapter 2 Document and product information.....	11
2.1 Product documentation.....	12
Operation instructions	12
Display software	12
Document illustrations	12
2.2 Applicable products.....	12
Product overview.....	13
2.3 Required additional components.....	13
Compatible displays (HV variants)	14
2.4 Parts supplied	14
Chapter 3 Installation	17
3.1 Tools required	18
Anti-fouling	18
3.2 Pre-installation test.....	19
Testing the transducer.....	19
3.3 Selecting a location.....	20
Warnings and cautions	20
Location requirements.....	20
Transducer angle requirements	22
EMC installation guidelines.....	22
HV-100 product dimensions	23
3.4 Mounting.....	24
Transducer assembly.....	24
Mounting the transom bracket.....	25
Mounting the transducer assembly	26
Mounting the escutcheon plate.....	28
Testing and adjusting the transducer	28
Finalizing the transducer mounting	29
Chapter 4 Connections.....	33
4.1 General cabling guidance	34
Cable types and length.....	34

Strain relief.....	34
Cable shielding.....	34
4.2 Cable routing.....	34
HV-100 transducer extension cable.....	34
4.3 Making connections.....	35
Chapter 5 System checks and troubleshooting.....	37
5.1 Operation instructions.....	38
5.2 Troubleshooting.....	38
5.3 Sonar troubleshooting.....	39
Resetting the sonar.....	40
Chapter 6 Maintenance.....	41
6.1 Routine checks.....	42
6.2 Transducer cleaning.....	42
6.3 Re-applying anti-fouling paint.....	42
Chapter 7 Technical support.....	43
7.1 Raymarine product support and servicing.....	44
7.2 Learning resources.....	45
Chapter 8 Technical specification.....	47
8.1 Technical specification.....	48
Physical specification.....	48
Environmental specification.....	48
HyperVision™ technical specification.....	48
Conformance specification.....	49
Chapter 9 Spares and accessories.....	51
9.1 Spares.....	52
9.2 Accessories.....	52

Chapter 1: Important information



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: Anti-fouling

- Failure to comply with the provided anti-fouling and transducer cleaning instructions may affect your product warranty.
- Only use water-based anti-fouling paint.
- Do NOT use ketone or copper-based anti-fouling paint.



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.



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: Petrochemicals

Prolonged exposure to petrochemicals such as gasoline and diesel oil etc. may cause the transducer to discolor and degrade.

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.

Water ingress

Water ingress disclaimer

Although the waterproof rating capacity of this product meets the stated water ingress protection standard (refer to the product's *Technical Specification*), water intrusion and subsequent equipment failure may occur if the product is subjected to high-pressure washing. Raymarine will not warrant products subjected to high-pressure washing.

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 following products are in compliance with the EMC Directive 2014/30/EU:

- HV-100 HyperVision™ plastic transom mount transducer, part number A80603

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

Warranty registration

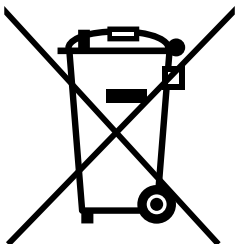
To register your Raymarine product ownership, please visit www.raymarine.com and register online.

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 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.

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 Product documentation on page 12
- 2.2 Applicable products on page 12
- 2.3 Required additional components on page 13
- 2.4 Parts supplied on page 14

2.1 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
HV-100 – HyperVision™ Transom Transducer Installation Instructions (this document)	87362
HV-100 – HyperVision™ Transom Transducer Mounting template	87376
HV-100 – HyperVision™ Trolling Motor Mount Installation Instructions	87368
Element™ – HyperVision™ Basic Operation Instructions Includes basic operation instructions for the Fishfinder app on your display.	81384
Element™ – HyperVision™ Advanced Operation instructions Includes advanced operation instructions for the Fishfinder app on your display.	81388

Operation instructions

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

All product documentation is available to download from the Raymarine website: www.raymarine.com/manuals.

Display software

Ensure your display software is updated to the latest version.

To update your display software refer to the operations instructions for your display.

For the latest software for your display refer to the Raymarine website: www.raymarine.com/software

Document illustrations

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

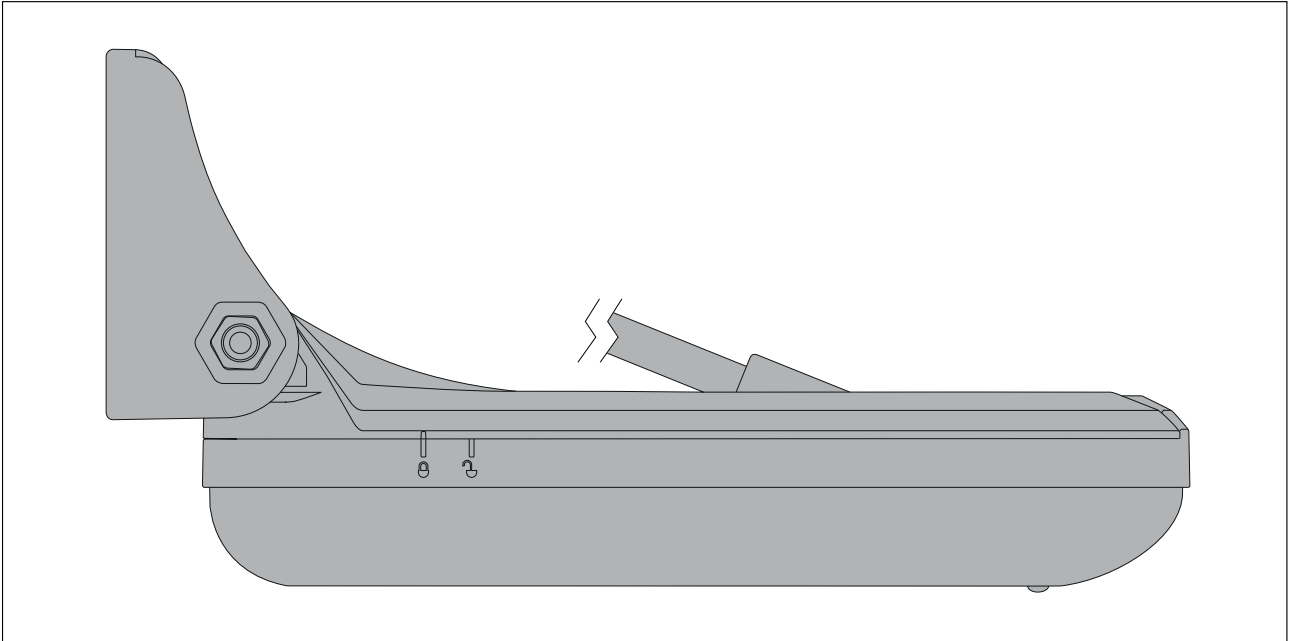
All images are provided for illustration purposes only.

2.2 Applicable products

Part number	Description
A80603	HV-100 – HyperVision™ plastic transom mount transducer

Product overview

The HV-100 is a HyperVision™ transom mount plastic transducer. The transducer is compatible with HyperVision™ variant displays.



HyperVision™ transducers are capable of producing sonar images for:

- RealVision™ 3D (Hyper 1.2 MHz)
- RealVision™ 3D (Standard 350 kHz)
- SideVision™ (Hyper 1.2 MHz)
- SideVision™ (Standard 350 kHz)
- DownVision™ (Hyper 1.2 MHz)
- DownVision™ (Standard 350 kHz)
- Conical high CHIRP (200 kHz)

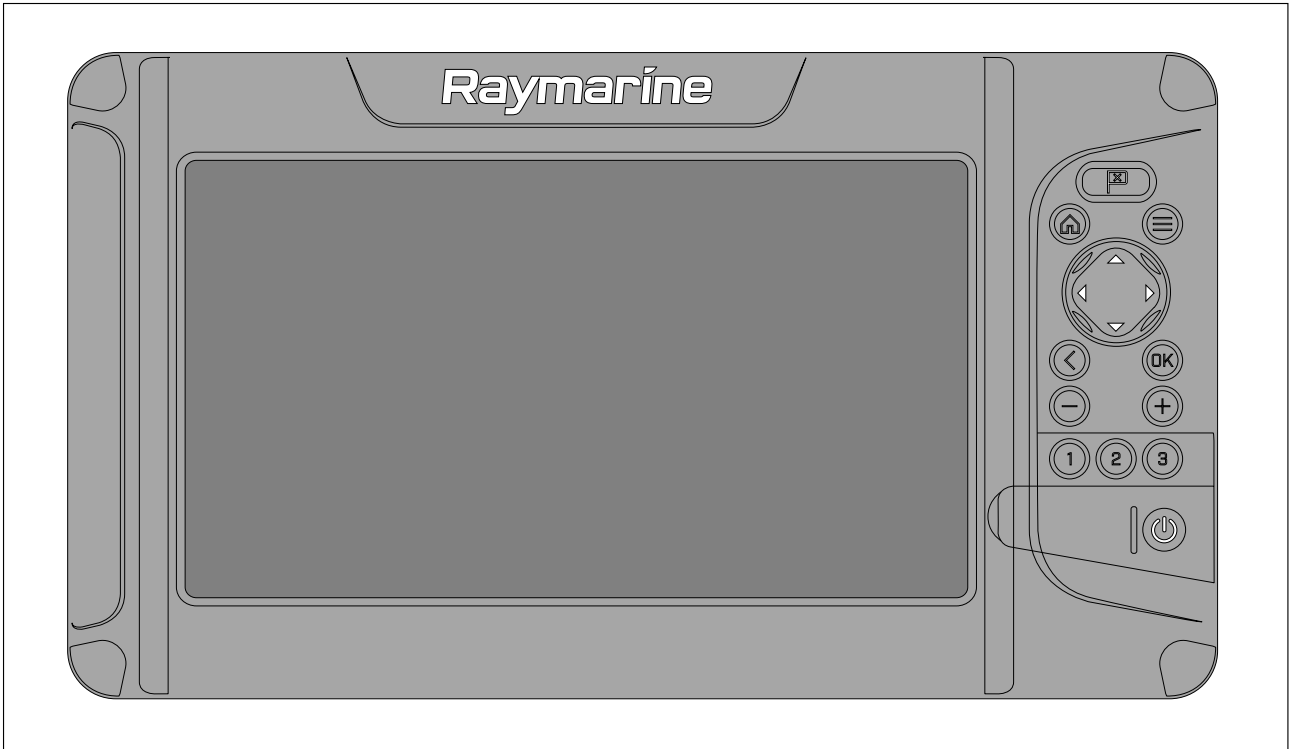
2.3 Required additional components

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

- Compatible HyperVision™ sonar-capable device. For a list of compatible products refer to [p.14 – Compatible displays \(HV variants\)](#)
- For longer cable runs, a transducer extension cable will also be required. For a list of suitable cables refer to [p.34 – HV-100 transducer extension cable](#)

Compatible displays (HV variants)

Compatible displays are listed below.

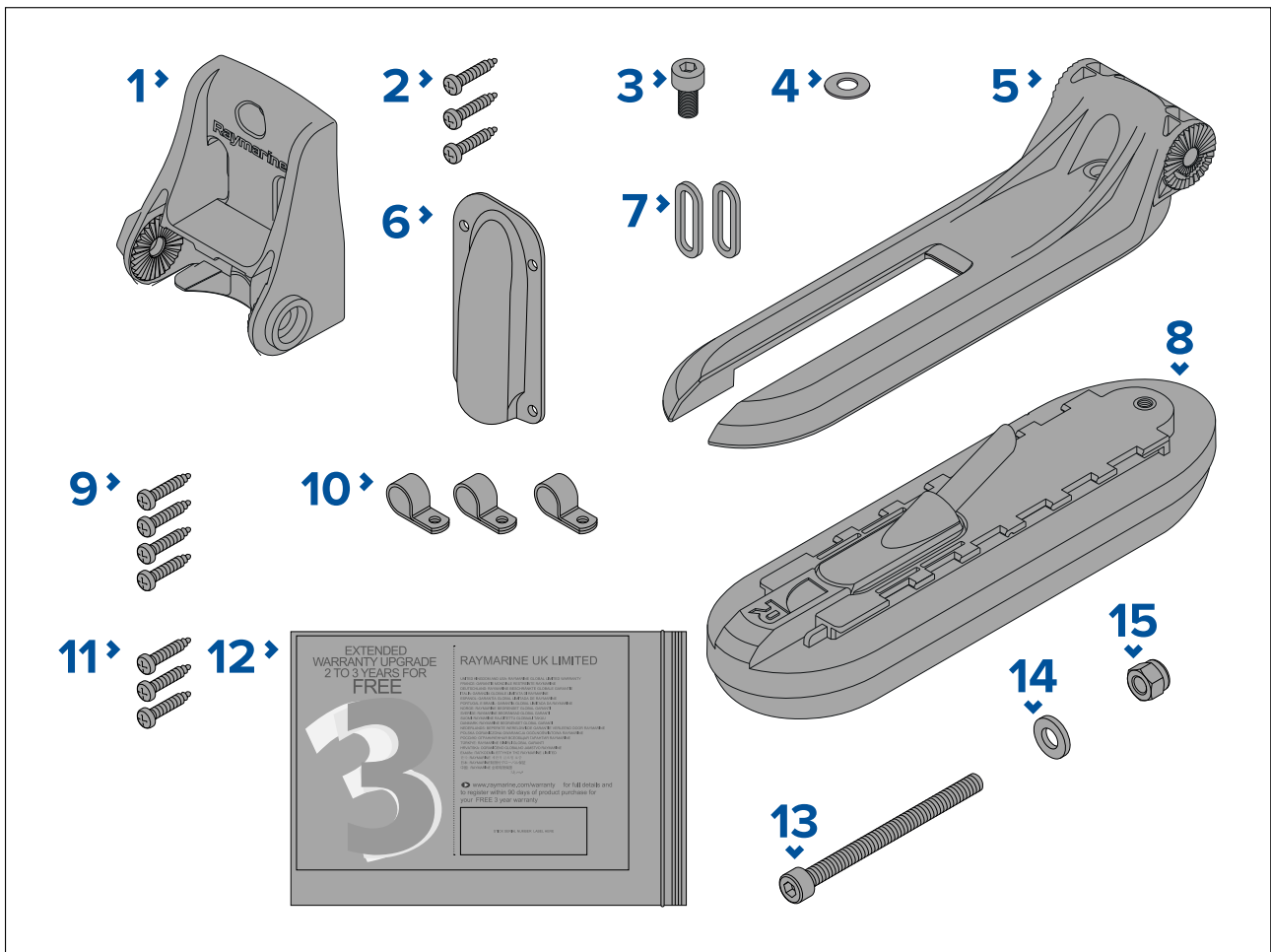


Part number	Description
E70532	Element™ 7 HV
E70534	Element™ 9 HV
E70536	Element™ 12 HV

2.4 Parts supplied

The following parts are supplied with your product:

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	Transom bracket
2	3 x bracket fixing screws (4.2x19 mm A4 stainless steel)
3	M5x10 hex bolt (A4 stainless steel)
4	M5 washer (A4 stainless steel)
5	Hanger bracket
6	Escutcheon plate (used when routing cable through transom or a bulkhead)
7	2 x adjustment slot washers
8	Transducer with 6 m (19.69 ft) fitted cable
9	4 x escutcheon plate fixings (#8x13 SUS316)
10	3 x cable clips
11	3 x cable clip fixings (#8x13 SUS316)
12	Documentation pack
13	M6x70 hex bolt (A4 stainless steel)
14	M6 washer (A4 stainless steel)
15	M6 locking nut

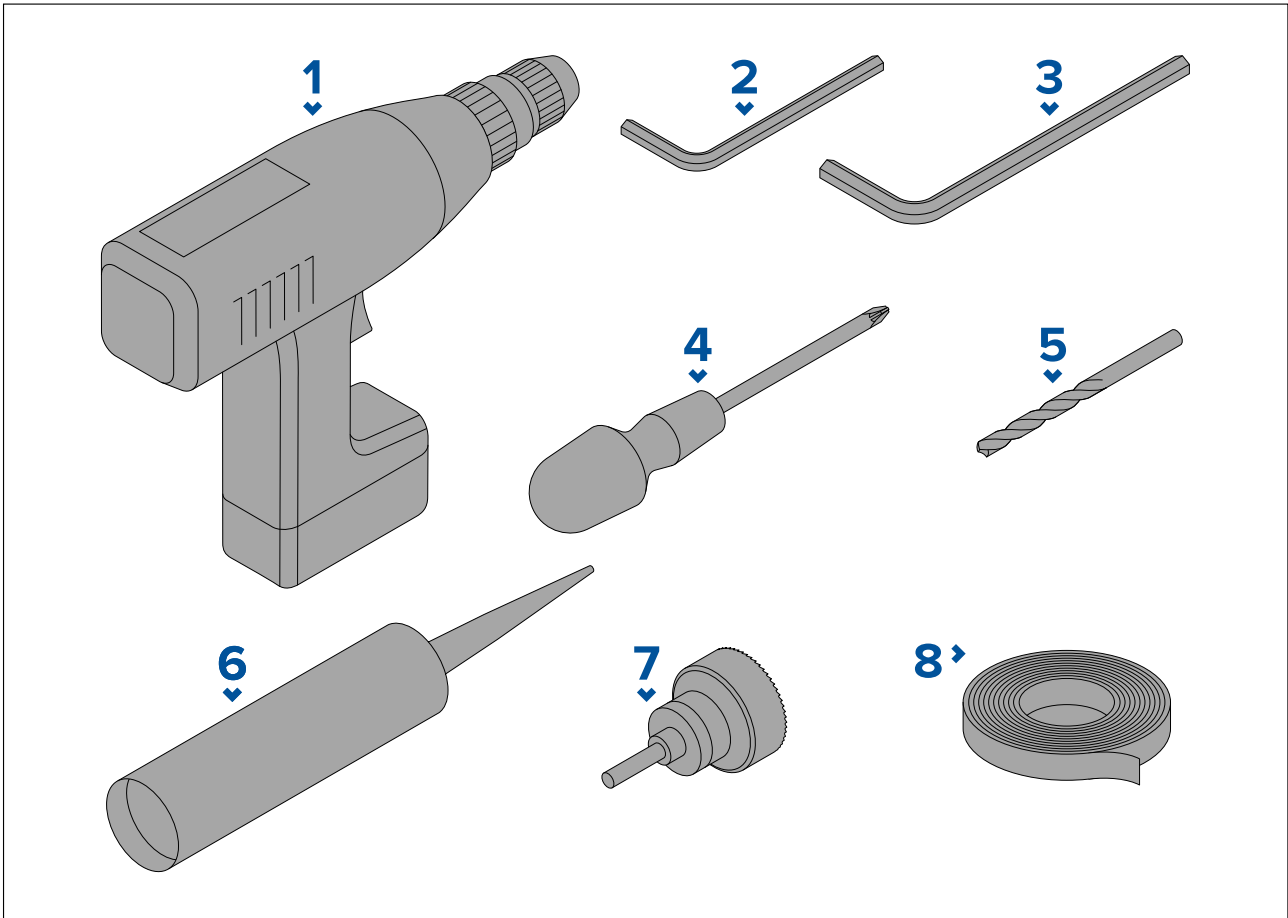
Chapter 3: Installation

Chapter contents

- 3.1 Tools required on page 18
- 3.2 Pre-installation test on page 19
- 3.3 Selecting a location on page 20
- 3.4 Mounting on page 24

3.1 Tools required

The following tools are required to install your transducer:



1. Power drill
2. 4 mm hex wrench (Allen key)
3. 5 mm hex wrench (Allen key)
4. Pozi-drive screw driver
5. Drill bit (suitable for pilot holes)
6. Marine grade sealant
7. 24 mm (15/16 in) or suitable size hole cutter (only required when routing the cable through a bulkhead or transom)
8. Masking / adhesive tape



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.

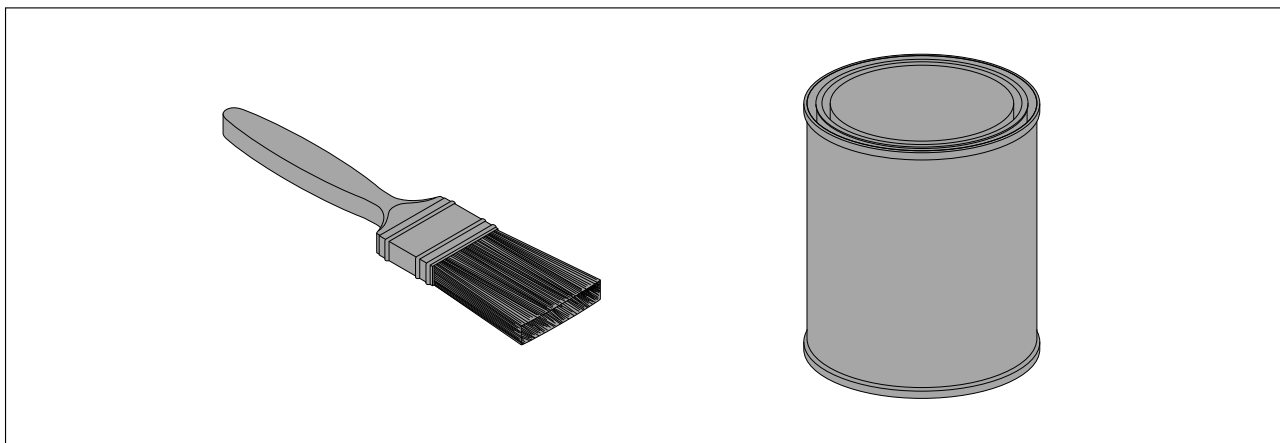
Anti-fouling

Where local regulations allow, it is recommended that you coat your transducer using a water-based anti-fouling paint. This will help prevent the build-up of organic growth, which can reduce transducer performance.

Important:

- Before applying water-based anti-fouling paint, check that local environmental rules and regulations do not prohibit the use of anti-fouling paint.
- Never use copper-based anti-fouling paint as this can impact transducer performance.
- Never use ketone-based anti-fouling paint as this can attack the transducer's plastic, damaging the transducer.

- Paint your transducer using a brush, do not use a spray can or a sponge roller as these methods can cause tiny air bubbles to be incorporated in the paint, which will also reduce transducer performance.



The anti-fouling paint should be applied in a thin and even coat covering all externally exposed transducer surfaces.

You should clean your transducer regularly and re-apply anti-fouling paint every 6 months, or sooner depending on how rapidly organic growth builds up.

For guidance on transducer cleaning refer to [p.42 – Transducer cleaning](#)

For instructions on re-applying anti-fouling paint refer to [p.42 – Re-applying anti-fouling paint](#)

3.2 Pre-installation test

Testing the transducer

Transducer operation should be checked before installation.

1. Connect the transducer to the transducer connection of a HyperVision™ compatible display (e.g. Element HV 9 display).
2. Fully submerge the transducer in water.
3. Power up your HyperVision™ display.

The first time the display is powered up, or after a factory reset has been performed, the startup wizard is displayed. Transducer selection is part of the boat details options in the startup wizard.

4. Open a Fishfinder (Sonar) app on your display.
5. If required, select the relevant transducer from the Transducer settings tab (**Menu > Transducer > Transducer**).
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.

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.

3.3 Selecting a location

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.

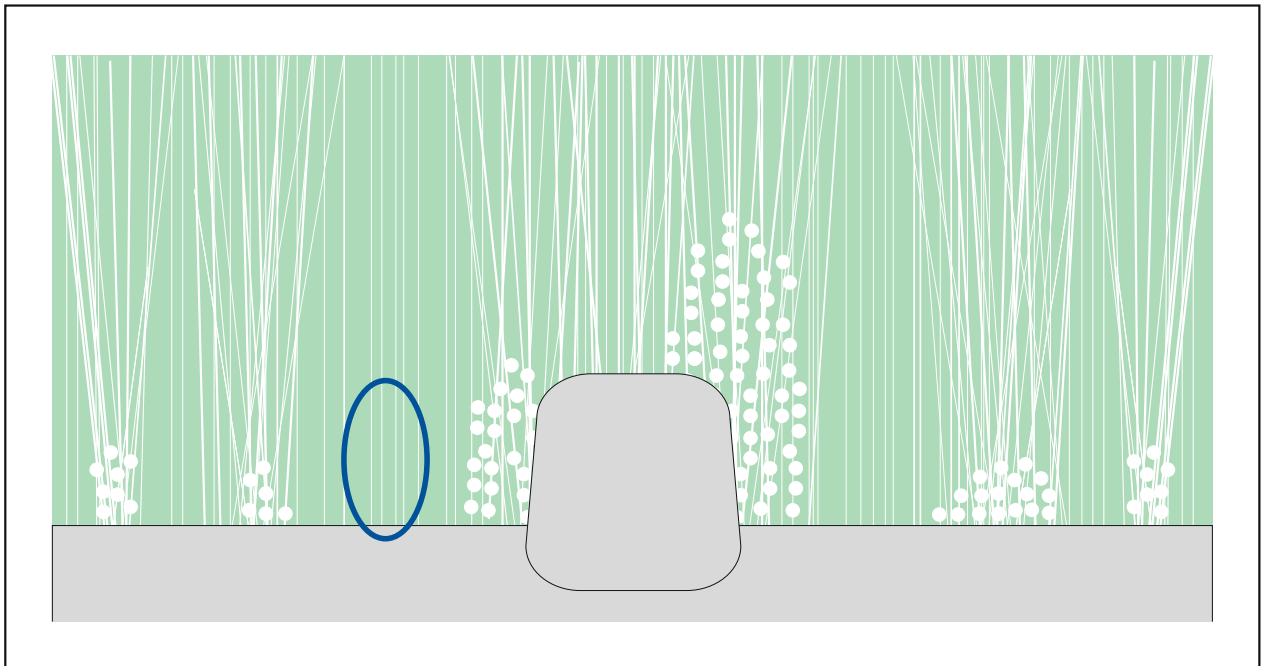
Location requirements

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

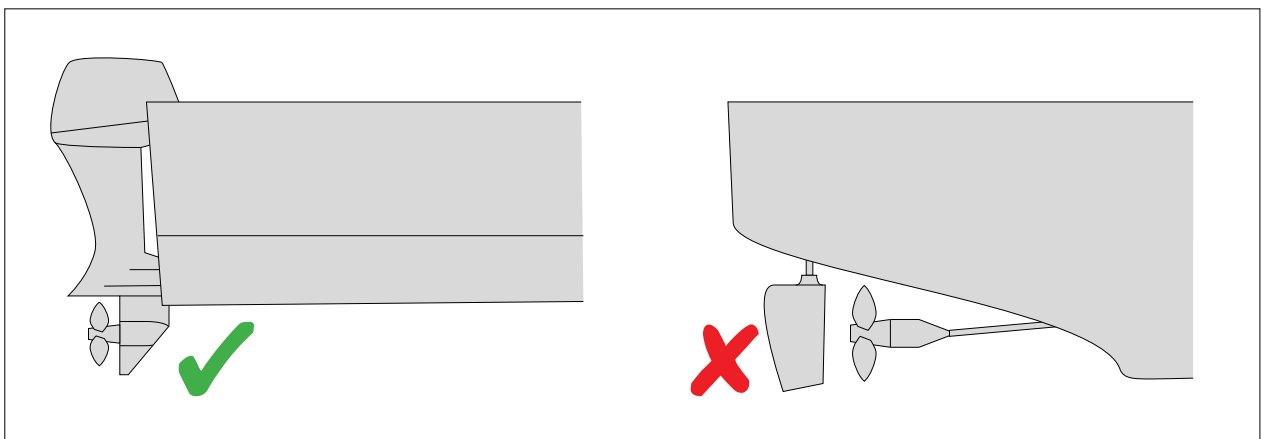
Note:

The information below is provided for guidance only. Optimum transducer location will be different for each vessel.

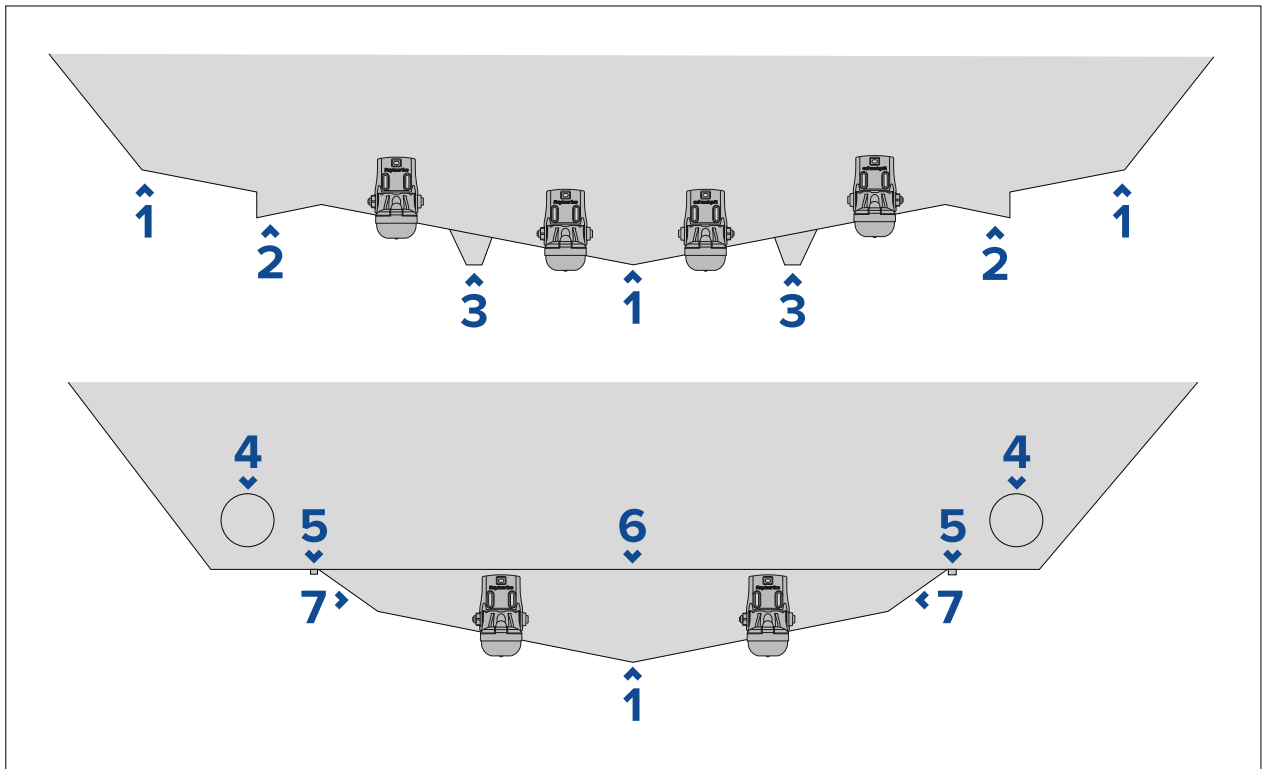
- To obtain the best location for your transducer, observe the transom whilst underway and install in the area where the least amount of turbulence and aeration occurs.



- The transducer is NOT suitable for mounting on vessels where the transom is aft of the propeller(s).

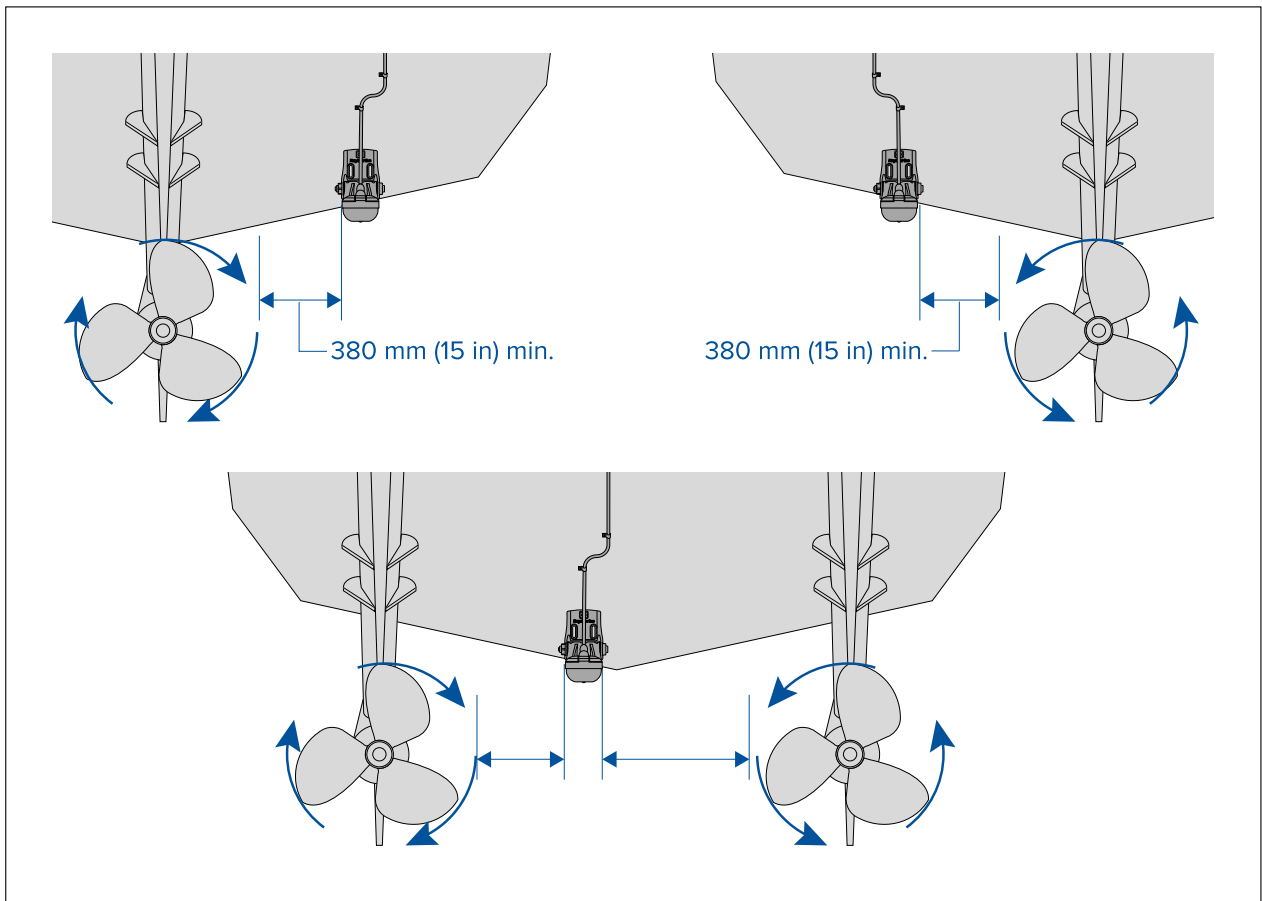


- The transducer should be mounted as close to the centerline as possible, however if the centerline is pointed the transducer should be offset from the centerline.
- For best performance the transducer must be installed in a location with the least turbulence and aeration. The most effective way to determine this is by checking the water flow around the transom whilst underway. Turbulence can be caused by chines (1), skegs (2), strakes, (3), outlets and exhausts (4), rows of rivets (5) steps (6) and ribs (7). Do NOT install your transducer aft of these locations or in areas of turbulence created by them.



Note: The illustration above provides potential transducer locations for the hull types depicted. Before selecting a location ensure that all of the location requirements have been met.

- The transducer should be mounted a minimum of 380 mm (15 in) away from the propeller. 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 close to the centerline or just offset from the centerline.

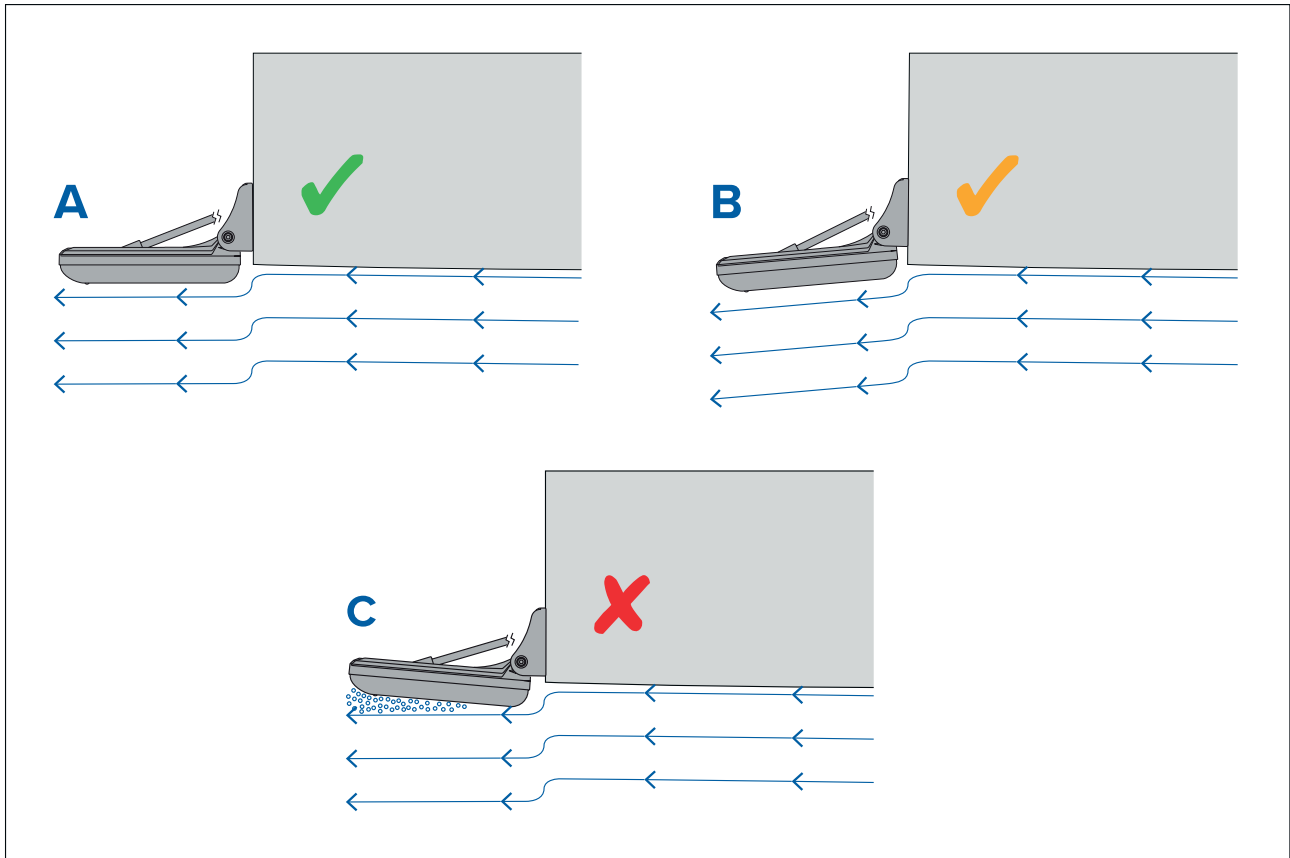


- The mounting location must ensure that the transducer element remains submerged when planing and turning.

- The transducer should also be mounted in a location where no load will be applied to the transducer during launching, lifting, trailering and storage of the vessel.

Transducer angle requirements

The face of the transducer must be set to an appropriate angle.



A	For best results the transducer face should usually be angled so that it is parallel to the waterline whilst the vessel is underway
B	Tilting the transducer down slightly may be required for best results on high speed vessels and vessels that run bow-high.
C	Tilting the transducer upwards is not recommended as this can cause aeration across the transducer face.

EMC installation guidelines

Raymarine equipment and accessories conform to the appropriate Electromagnetic Compatibility (EMC) regulations, to minimize electromagnetic interference between equipment and minimize the effect such interference could have on the performance of your system

Correct installation is required to ensure that EMC performance is not compromised.

Note: In areas of extreme EMC interference, some slight interference may be noticed on the product. Where this occurs the product and the source of the interference should be separated by a greater distance.

For **optimum** EMC performance we recommend that wherever possible:

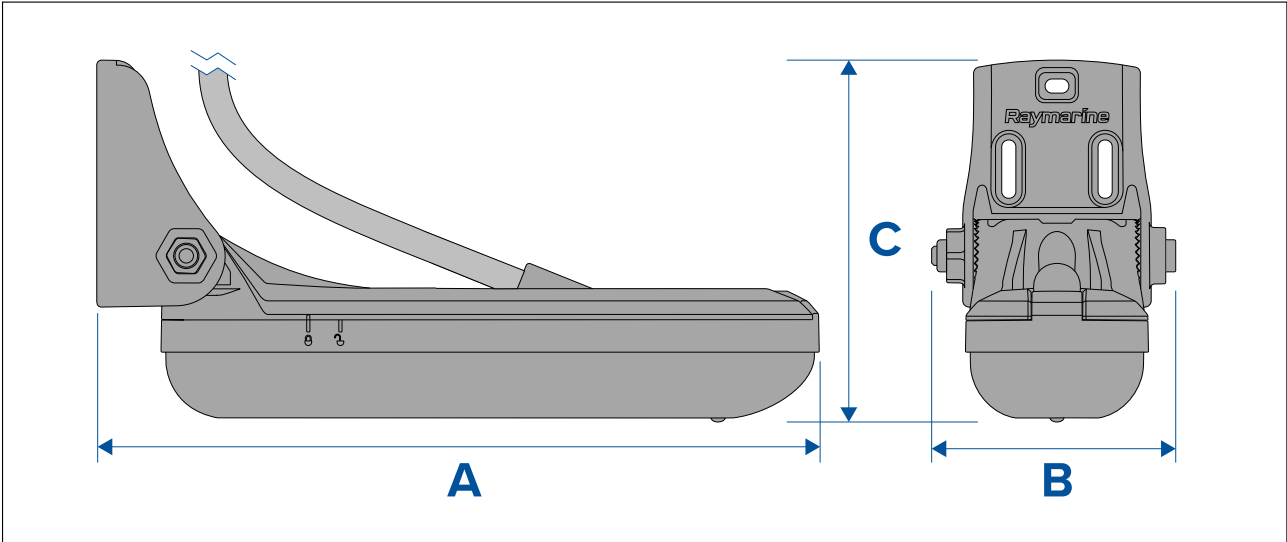
- Raymarine equipment and cables connected to it are:
 - At least 1 m (3.3 ft) from any equipment transmitting or cables carrying radio signals e.g. VHF radios, cables and antennas. In the case of SSB radios, the distance should be increased to 2 m (6.6 ft).
 - More than 2 m (6.6 ft) from the path of a radar beam. A radar beam can normally be assumed to spread 20 degrees above and below the radiating element.
- The product is supplied from a separate battery from that used for engine start. This is important to prevent erratic behavior and data loss which can occur if the engine start does not have a separate battery.

- Raymarine specified cables are used.
- Cables are not cut or extended, unless doing so is detailed in the installation manual.

Note:

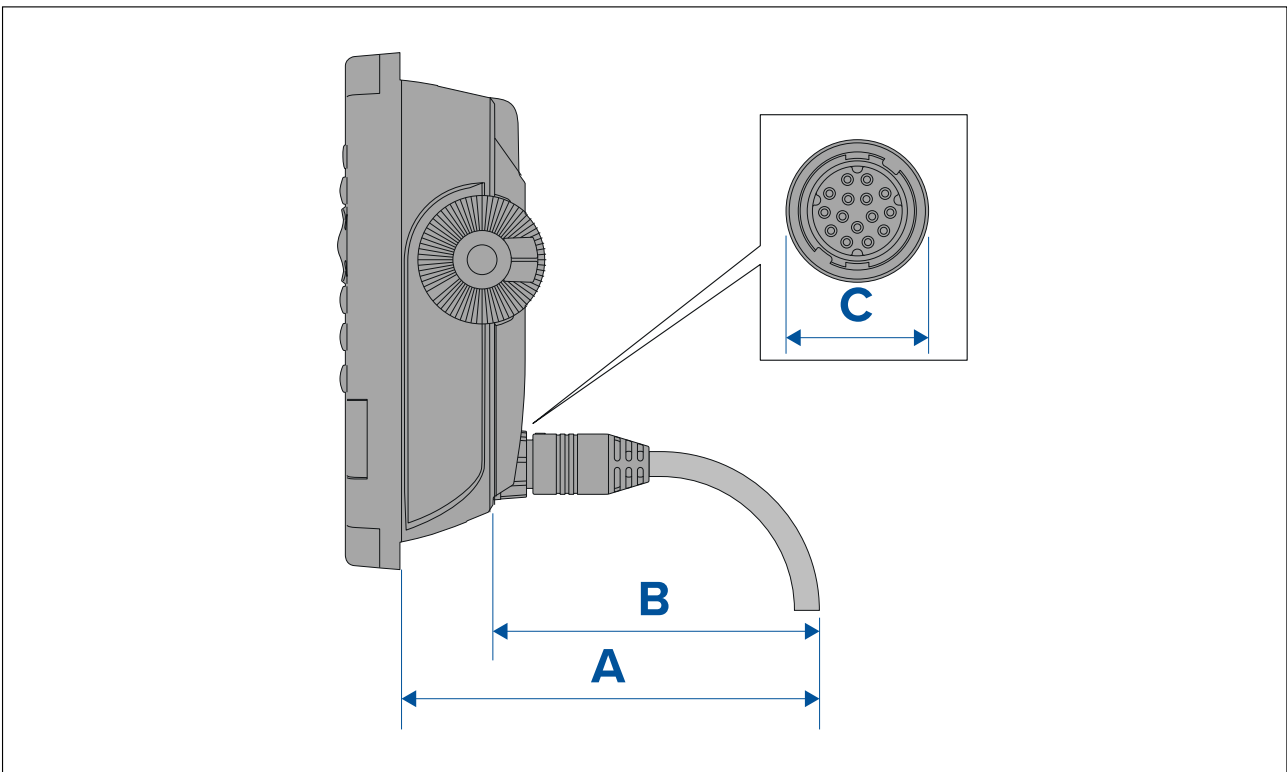
Where constraints on the installation prevent any of the above recommendations, always ensure the maximum possible separation between different items of electrical equipment, to provide the best conditions for EMC performance throughout the installation.

HV-100 product dimensions



A	224.99 mm (8.86 in)
B	76.00 mm (2.99 in)
C	112.69 mm (4.44 in)

Transducer cable length: 6 m (19.69 ft).



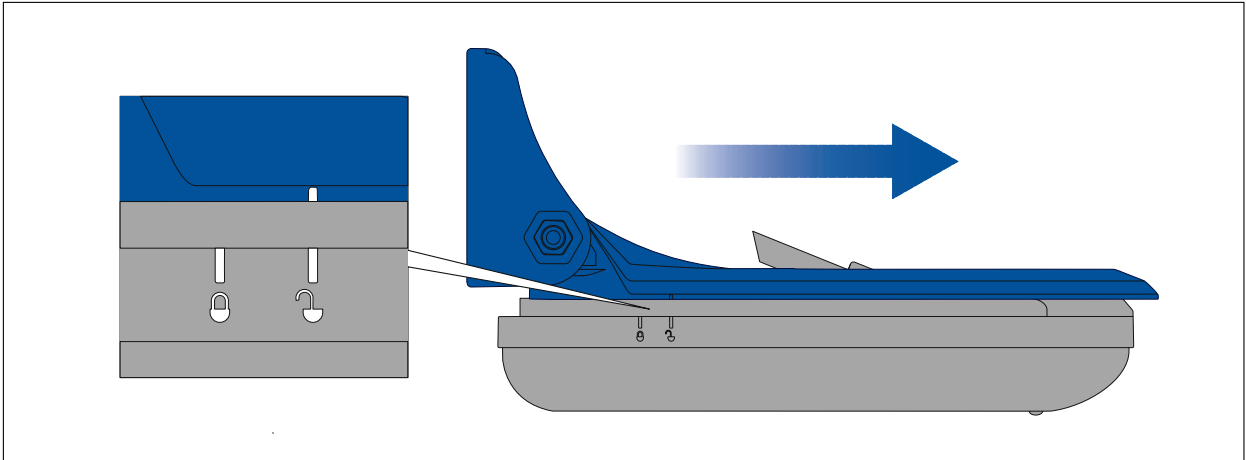
A	130.00 mm (5.12 in)
B	84.00 mm (3.31 in)
C	22.20 mm (0.87 in)

3.4 Mounting

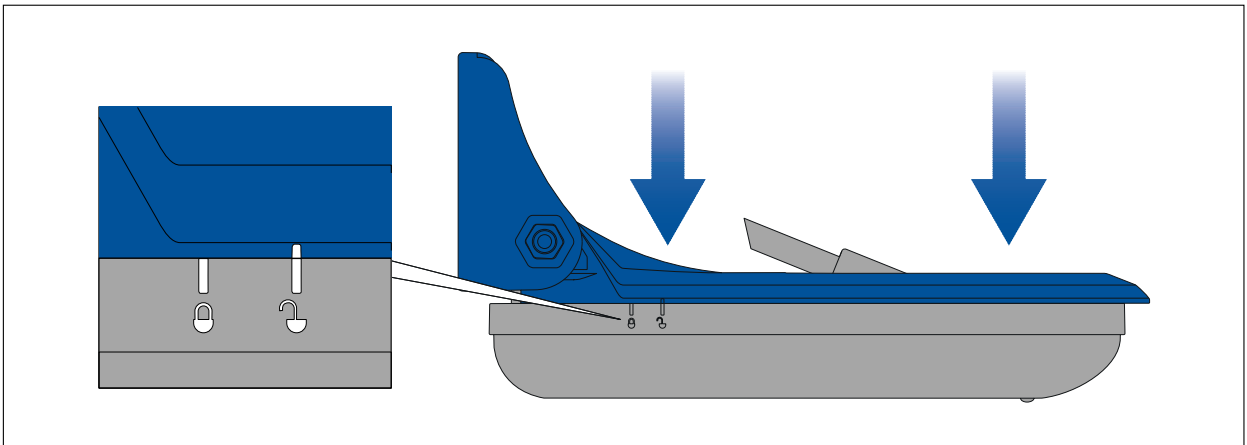
Transducer assembly

Follow the steps below to assemble the transducer ready for attaching to the Transom bracket.

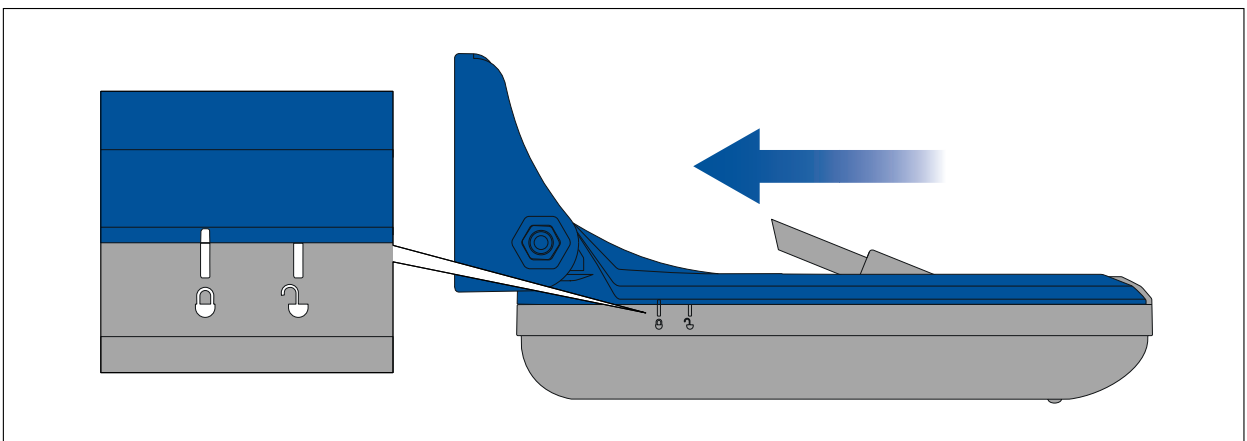
1. Slide the hanger bracket over the top of the transducer until the notch in the side of the bracket hanger aligns with the unlocked symbol on the side of the transducer.



2. Allow the hanger bracket to move down into the slots on the top of the transducer.

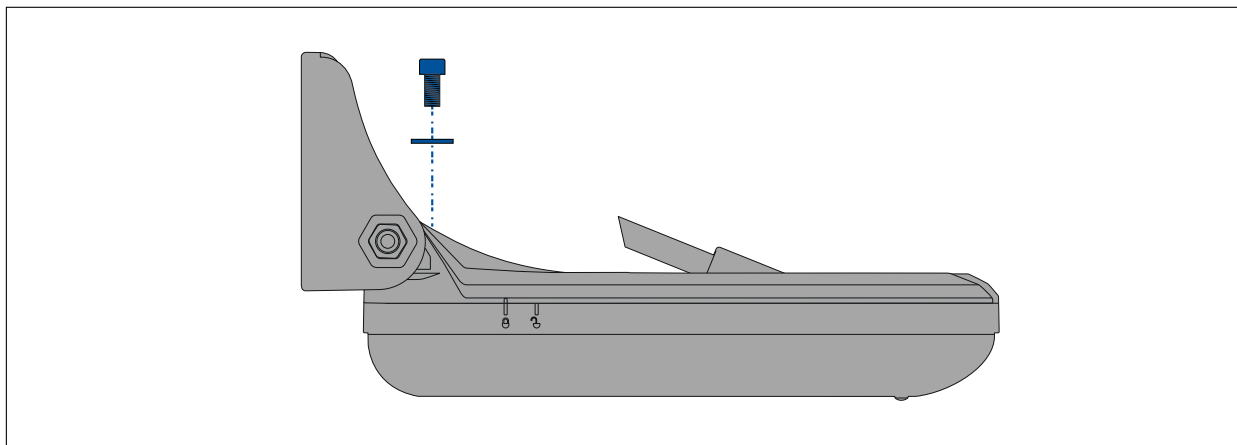


3. Slide the hanger bracket in the opposite direction from step 1, so that the notch in the side of the bracket hanger aligns with the locked symbol on the side of the transducer.



4. Secure the hanger bracket to the transducer, using a 4 mm Hex wrench (Allen key) and the supplied M5 hex bolt and washer.

Ensure tightening torque does not exceed 2 N·m (1.48 lbf·ft). Overtightening may cause damage to the transducer.



Mounting the transom bracket

The transducer must be mounted at a height where the transducer will be submerged whilst the vessel is planing and turning. 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 using the instructions in the *Finishing the transducer mounting* section.

Important:

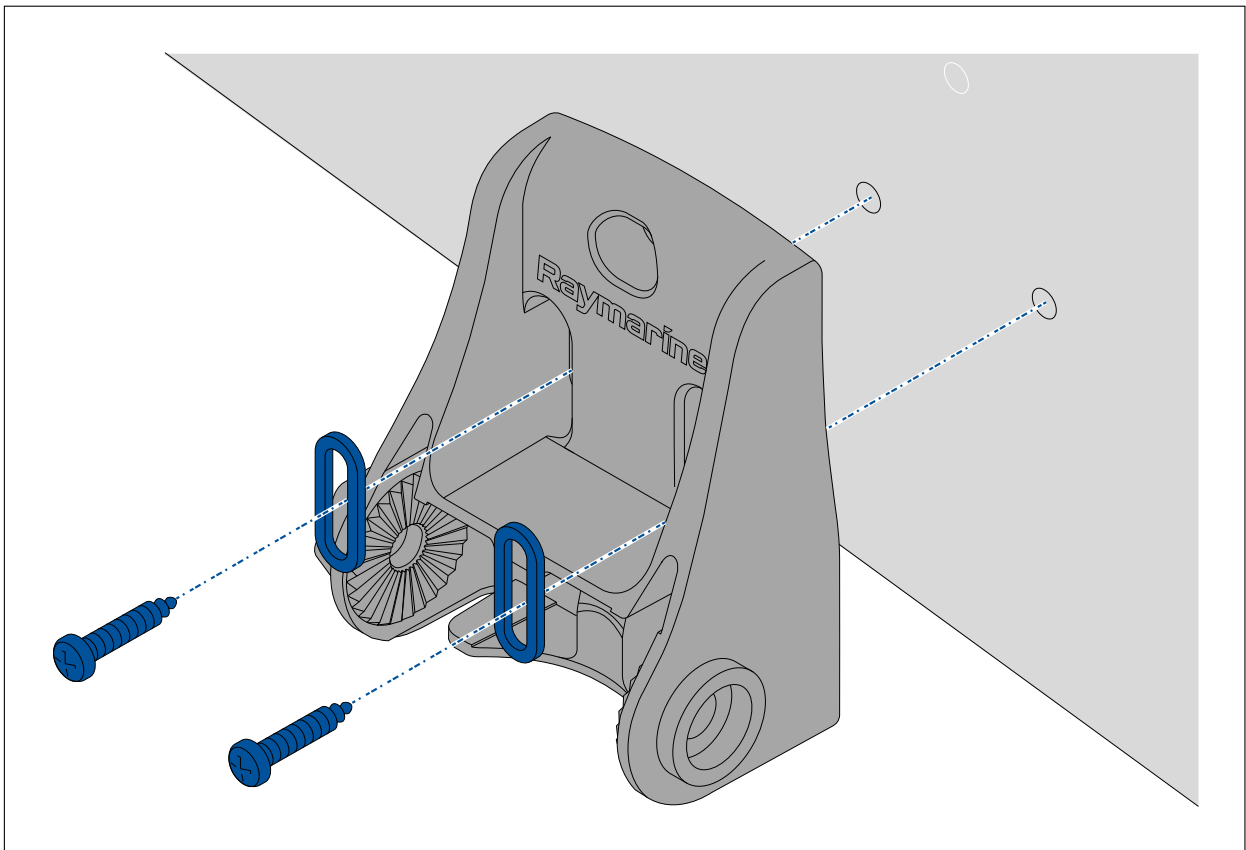
To help prevent chipping of fiberglass hulls, use painter's tape to mask the drill hole areas, behind the mounting template.

1. Fix the supplied transducer mounting template to the selected location, using masking or self-adhesive tape.
2. Ensure the template is parallel to the waterline.
3. Drill 2 x pilot holes for the adjustment slot screws as indicated on the template.

Important:

Do NOT drill the third mounting hole at this stage.

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



Note:

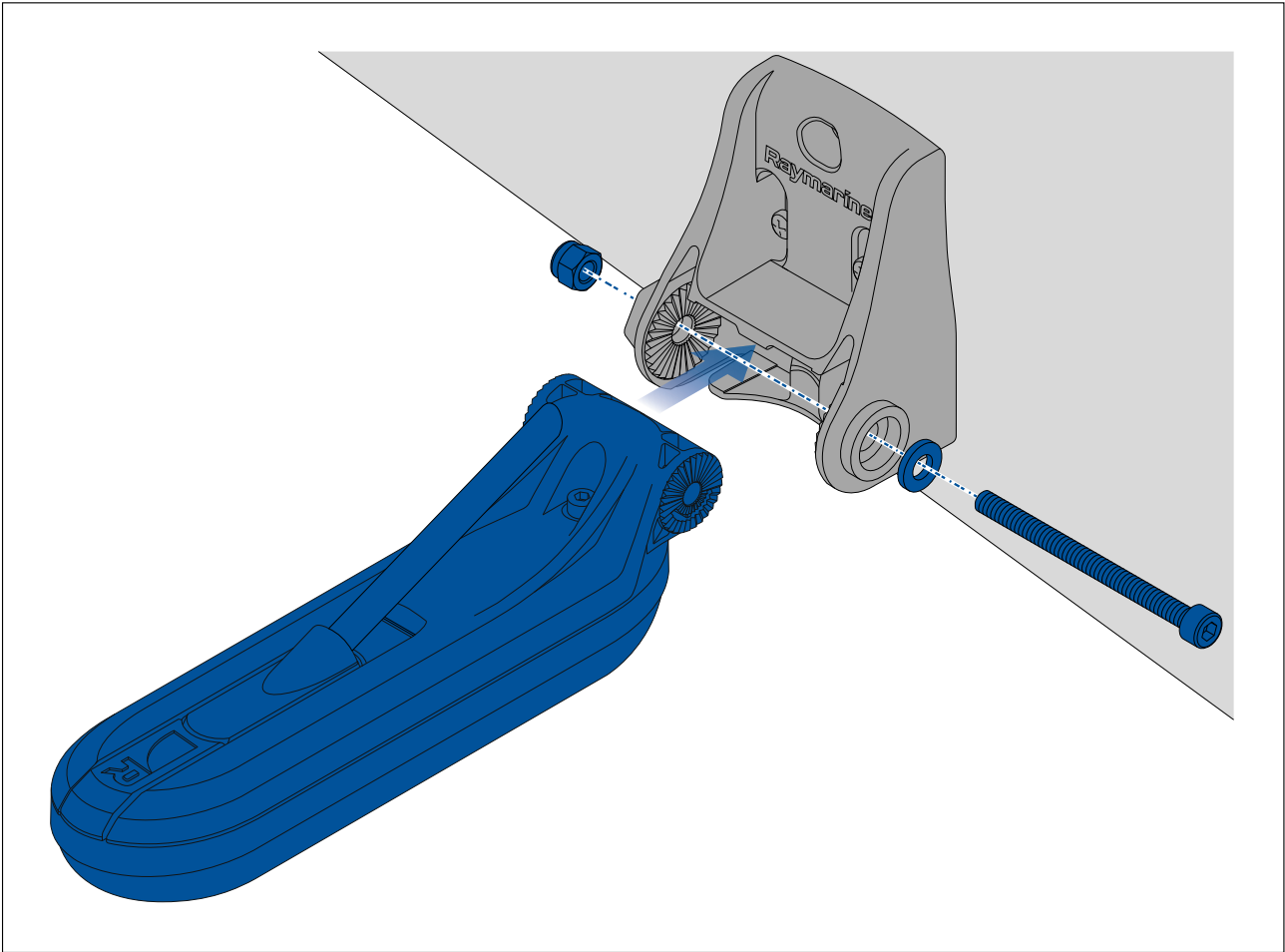
The third locking screw is not used until the transducer has been successfully tested.

Mounting the transducer assembly

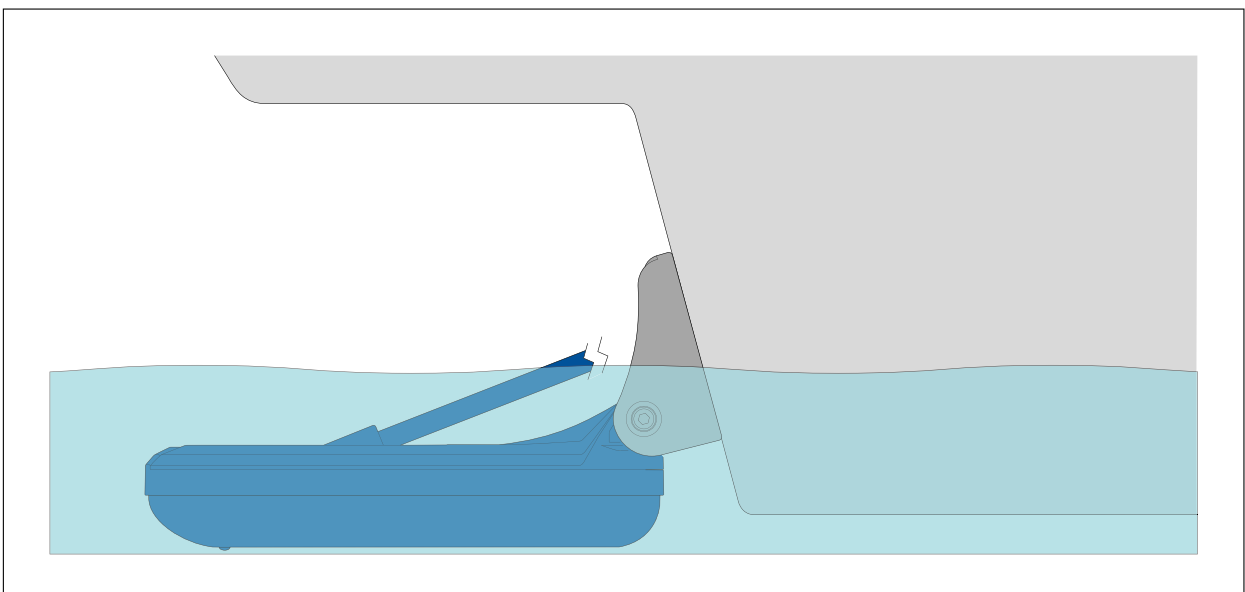
Important:

- Only perform the installation with your vessel out of the water.
- Do NOT lift or suspend the transducer using its cable.

- Do NOT overtighten the bolt. Overtightening may cause damage to the transducer.



1. Position the transducer assembly in the transom bracket, ensuring that the ratchet grooves in the transom bracket are aligned with the ratchet grooves in the hanger bracket.
2. Slide the M6 metal washer over the M6 hex (Allen) bolt.
3. Slide the supplied M6 hex (Allen) bolt through the transom bracket hole.
4. Place the M6 locking nut into the captive area on the mounting bracket and hold in position.
5. Using a 5 mm Hex wrench ((Allen key), tighten the bolt onto the locking nut, until the transducer stays in position, but can still be adjusted (tilted) by hand.
6. Tilt the transducer so that the bottom face of the transducer will be parallel with the waterline and tighten the hex bolt until the hanger is held firmly in place.



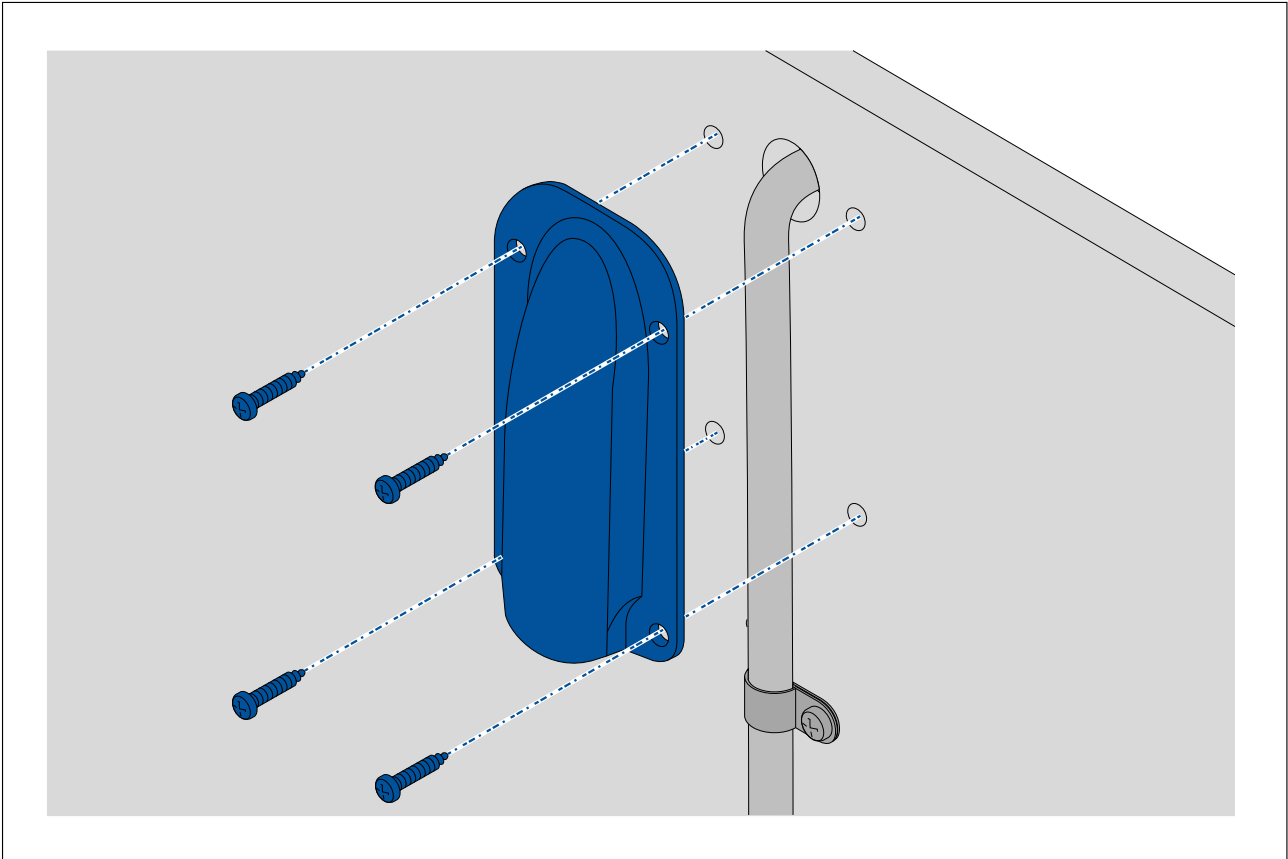
The transducer position will be adjusted further during testing.

Mounting the escutcheon plate

Your 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 supplied escutcheon plate to cover the hole required to accommodate the cable. The plate is designed to fit over a hole up to 25 mm (1 inch) in diameter.

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, use a file to round-off the edges of the hole that the cable passes through.

Testing and adjusting the transducer

Once the initial mounting procedures have been carried out, the transducer must be tested before locking the transducer's position.

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.

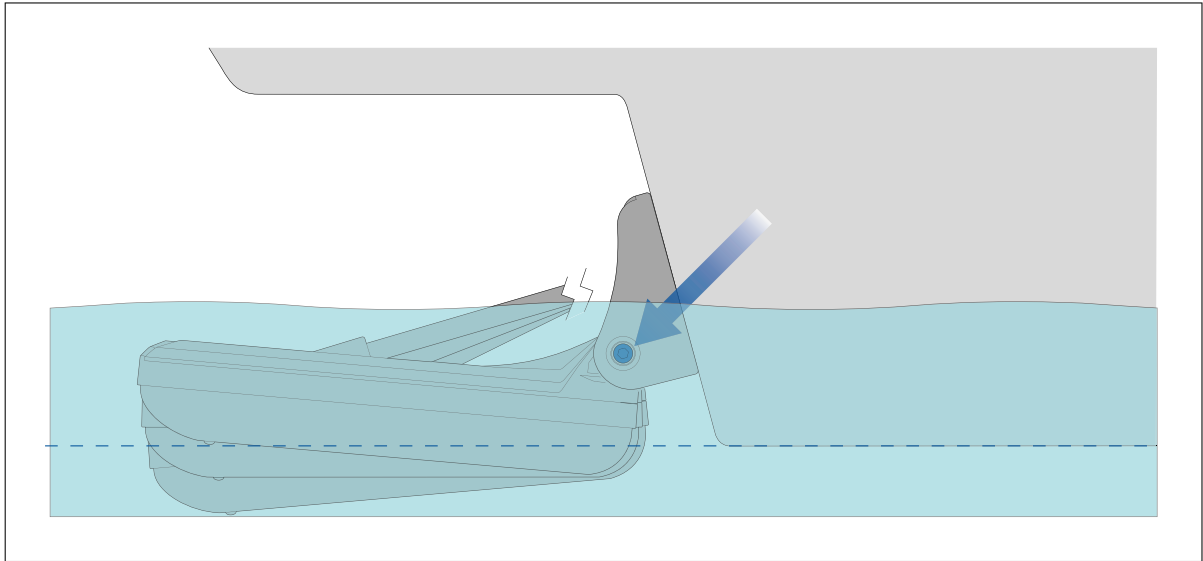
Note:

- It may not always be possible to obtain depth readings at higher speeds due to air bubbles passing under the transducer.

1. Open the Fishfinder app on your display, and select the **Sonar** channel from the menu. 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.

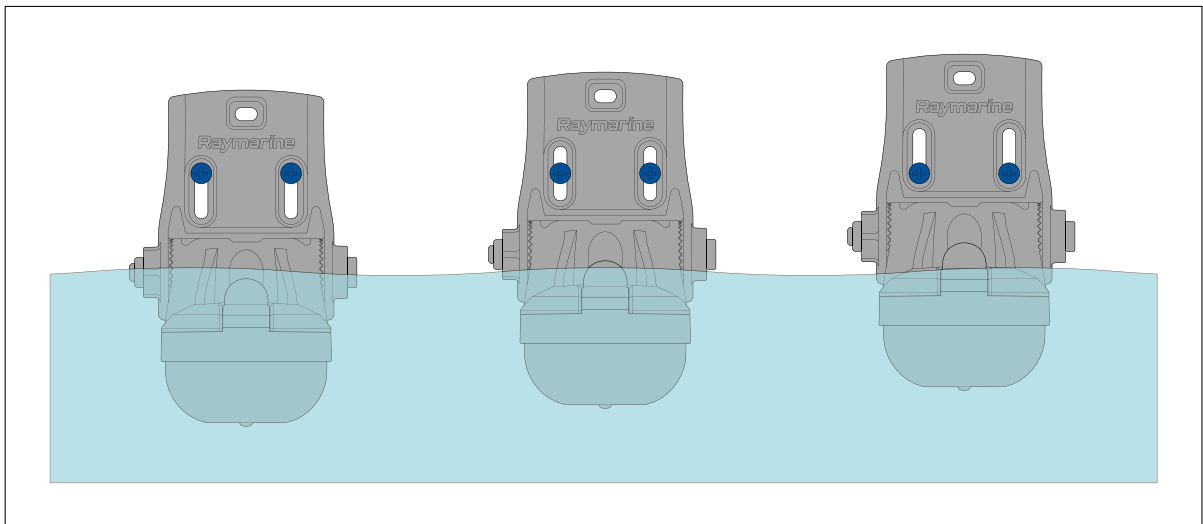
- i. Loosen the mounting bolt to adjust the transducer angle.

Angle adjustment



- ii. Loosen the 2 mounting bracket screws to adjust the transducer height.

Height adjustment



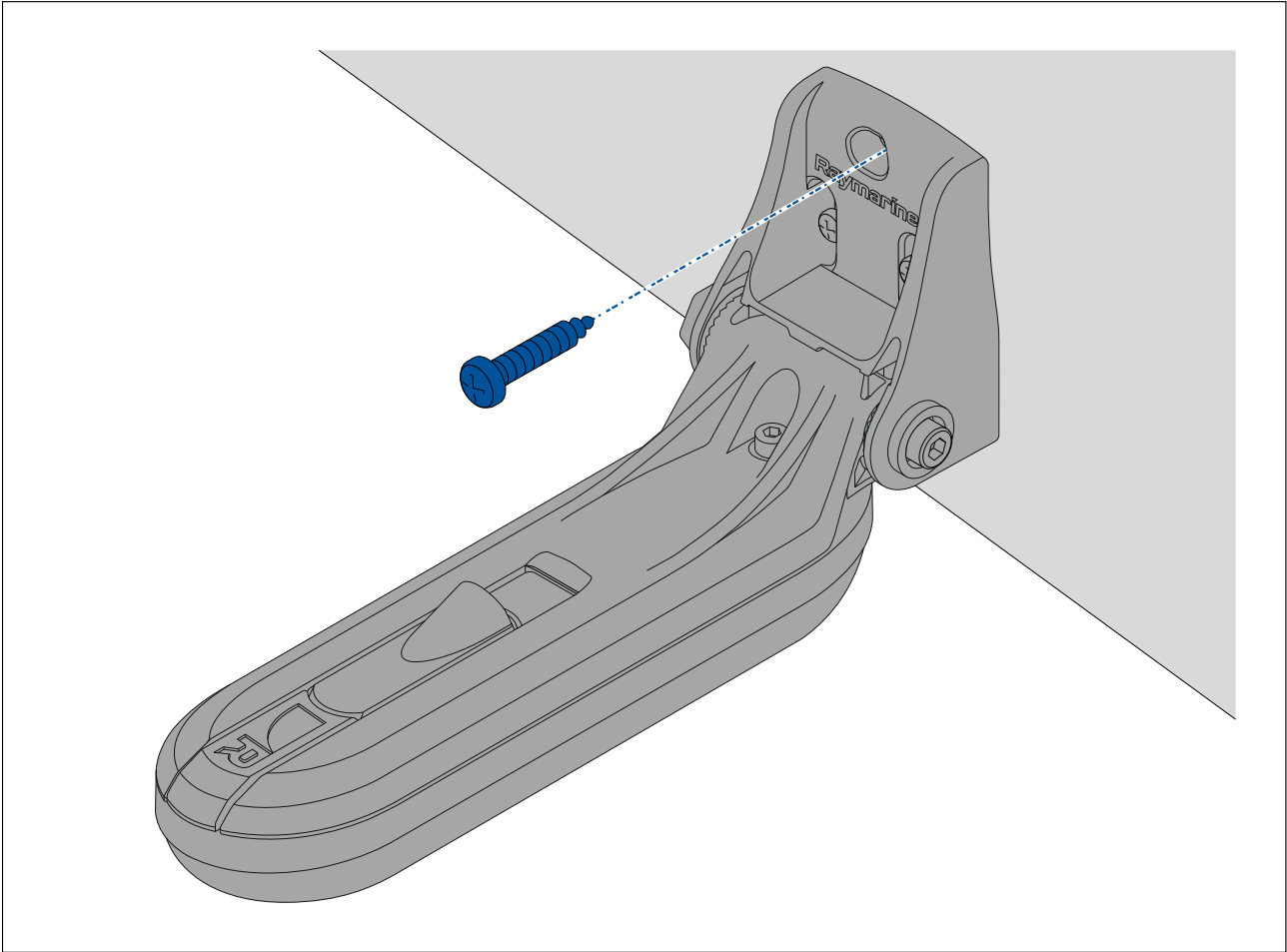
- iii. Re-tighten the mounting bolt and mounting screws before re-testing.

Important:

- 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.

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.



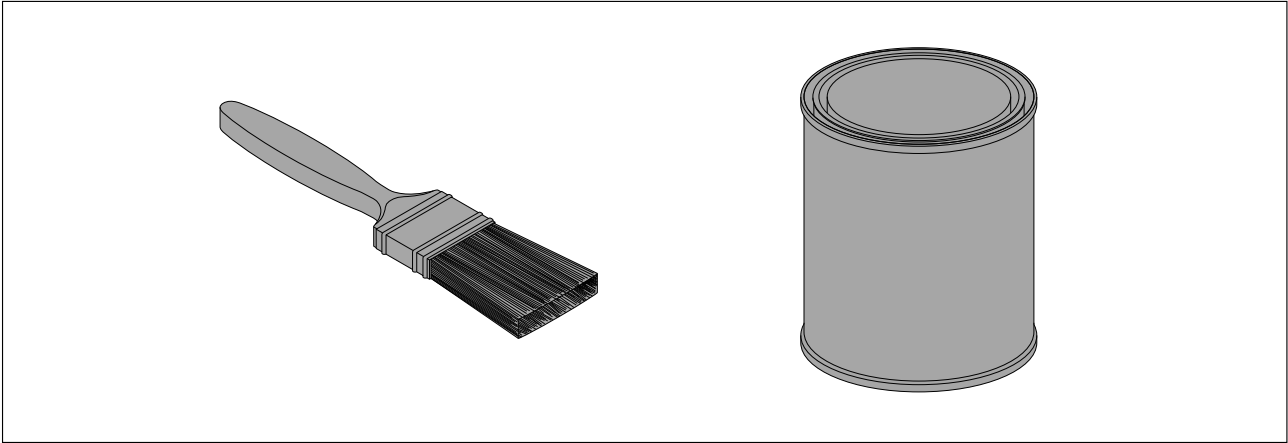
1. Drill the locking hole location taking care not to damage the transom bracket.
2. Fill the locking hole with marine grade sealant.
3. Lock the transducer position by fully tightening all 3 transom bracket mounting screws.
4. Lock the transducer angle by tightening the mounting bolt; do not exceed a torque of 4 N·m (2.95 lbf·ft). The transducer should not be easily movable by hand, and should remain in its normal operating position when your vessel is underway.

Anti-fouling

Where local regulations allow, it is recommended that you coat your transducer using a water-based anti-fouling paint. This will help prevent the build-up of organic growth, which can reduce transducer performance.

Important:

- Before applying water-based anti-fouling paint, check that local environmental rules and regulations do not prohibit the use of anti-fouling paint.
- Never use copper-based anti-fouling paint as this can impact transducer performance.
- Never use ketone-based anti-fouling paint as this can attack the transducer's plastic, damaging the transducer.
- Paint your transducer using a brush, do not use a spray can or a sponge roller as these methods can cause tiny air bubbles to be incorporated in the paint, which will also reduce transducer performance.



The anti-fouling paint should be applied in a thin and even coat covering all externally exposed transducer surfaces.

You should clean your transducer regularly and re-apply anti-fouling paint every 6 months, or sooner depending on how rapidly organic growth builds up.

For guidance on transducer cleaning refer to [p.42 – Transducer cleaning](#)

For instructions on re-applying anti-fouling paint refer to [p.42 – Re-applying anti-fouling paint](#)

Chapter 4: Connections

Chapter contents

- [4.1 General cabling guidance on page 34](#)
- [4.2 Cable routing on page 34](#)
- [4.3 Making connections on page 35](#)

4.1 General cabling guidance

Cable types and length

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

- Unless otherwise stated only use cables supplied by Raymarine.
- Where it is necessary to use non-Raymarine cables, ensure that they are of correct quality and gauge for their intended purpose. (e.g.: longer power cable runs may require larger wire gauges to minimize voltage drop along the run).

Strain relief

Use adequate strain relief for cabling to ensure that connectors are protected from strain and will not pull out under extreme sea conditions.

Cable shielding

Ensure that cable shielding is not damaged during installation and that all cables are properly shielded.

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.

- 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 pivot up and down during adjustment.
- If you intend to route the cable through the transom then you must ensure the hole is as high as possible above the waterline and use the supplied escutcheon plate to cover the hole.
- Secure the cable at regular intervals using the supplied cable clips.
- Any excess cable should be coiled up at a convenient location.

HV-100 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.

A 4 m (13.12 ft) HyperVision™ transducer extension cable (A80562) is available

It is recommended that a maximum of one cable extensions is used, with the total cable length not exceeding 10 m (32.81 ft).

Note:

The HyperVision™ transducer extension cable can only be used to connect a HV series transducer.

4.3 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.

Chapter 5: System checks and troubleshooting

Chapter contents

- [5.1 Operation instructions on page 38](#)
- [5.2 Troubleshooting on page 38](#)
- [5.3 Sonar troubleshooting on page 39](#)

5.1 Operation instructions

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

All product documentation is available to download from the Raymarine website:
www.raymarine.com/manuals.

5.2 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.

5.3 Sonar troubleshooting

Problems with the sonar and their possible causes and solutions are described here.

No transducer connected message displayed

Possible causes	Possible solutions
Incorrect display software version	Display software may be incompatible with your connected transducer. Check the Raymarine website and ensure that the display is running the latest available software.
Transducer not connected	Connect compatible transducer / Ensure that the transducer cable connector is fully inserted and locked in position and reboot the display.
Wrong transducer selected	Transducer selection is performed as part of the initial start up wizard, if an incorrect transducer was selected then the 'No transducer connected' message is displayed each time a new instance of the Fishfinder app is opened. To view the Fishfinder image, press the Menu button and select the fishfinder channel you want to view. To prevent further 'No transducer connected' warnings perform a factory reset and ensure the correct transducer is selected from the bottom of the Boat details page of the startup wizard.
Damaged display connector	Check that the transducer connector pins on the back of the display are not bent or broken / missing. If damage is detected replace the display or send it to an authorized service agent for repair.
Damaged transducer or cable	<ol style="list-style-type: none"> 1. Check that the transducer cable connector is free from damage, is correctly orientated and fully inserted into the display and that the connector is locked in position. If damage is detected, replace the transducer. 2. Check the condition of the transducer and cabling for signs of damage. If damage is detected, replace the transducer.
Wrong transducer fitted	Check product and transducer documentation and ensure that the transducer is compatible with your system. Replace with a compatible transducer, if necessary.

Scrolling image is not being displayed or is intermittent

Possible causes	Possible solutions
Sonar ping disabled	Enable sonar ping from the shortcuts page by pressing the Power button and enabling Sonar ping .
Transducer location	Check that the transducer has been installed in accordance with the instructions provided with the transducer. The transducer must be installed where it is , always submerged, is parallel to the waterline and in an area free from turbulence and aeration.
Damaged display connector	Check that the transducer connector pins on the back of the display are not bent or broken / missing. If damage is detected replace the display or send it to an authorized service agent for repair.

Possible causes	Possible solutions
Damaged transducer or cable	<ol style="list-style-type: none"> 1. Check that the transducer cable connector is free from damage, is correctly orientated and fully inserted into the display and that the connector is locked in position. If damage is detected, replace the transducer. 2. Check the condition of the transducer and cabling for signs of damage. If damage is detected, replace the transducer.
Fouled transducer	Check transducer condition, ensuring it is free from debris/fouling. If necessary, clean or replace your transducer. After cleaning or replacement coat the transducer using a water-based anti-fouling paint.
Wrong transducer fitted	Check product and transducer documentation and ensure that the transducer is compatible with your system.
Proximity of high power cables	If the transducer cable runs too close to engine and other high power cables the transducer signal may be interrupted causing loss of transducer connection and or electrical noise to appear onscreen. These issues may be more prevalent at higher engine revs. Move transducer cable as far away from high power cables as possible.

Poor / problematic image

Possible causes	Possible solutions
Poor and problematic images can be caused by the same issues as when no depth reading or bottom lock is possible. In addition to the solutions listed under 'No depth reading / lost bottom lock try the following:	
Vessel stationary	Fish arches are not displayed if the vessel is stationary; fish will appear on the display as straight lines.
Cursor mode is active	The scrolling screen is paused in cursor mode, press the Back button to resume scrolling.
Sensitivity settings may be inappropriate for present conditions.	Check and adjust sensitivity settings or perform a Sonar reset.
Turbulence around the transducer at higher speeds may affect transducer performance	Slow vessel speed and recheck.
Interference from another transducer	<ol style="list-style-type: none"> 1. Turn off the transducer causing the interference. 2. Reposition the transducers so they are farther apart.

Resetting the sonar

You can reset the display's internal sonar module to its factory default settings following the steps below.

In the Fishfinder app:

1. Select **Menu**.
2. Select **Settings**.
3. Select **Sounder**.
4. Select **Reset sounder**.
5. Select **Yes** to confirm or **No** to abort the operation, as appropriate.

The internal sonar module will now be reset to factory default settings.

Chapter 6: Maintenance

Chapter contents

- 6.1 Routine checks on page 42
- 6.2 Transducer cleaning on page 42
- 6.3 Re-applying anti-fouling paint on page 42

6.1 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.

6.2 Transducer cleaning

You must clean your transducer regularly to remove organic growth. Organic growth can build up quickly on the bottom face of your transducer; this can impact transducer performance in a matter of weeks.

Important:

- When cleaning growth from an anti-fouled transducer, take care not to let paint dust and other debris enter the water, as this can have an impact on aquatic life.
- Take care not to scratch the surface of the transducer as this can impact transducer performance.
- Do NOT use harsh cleaning solvents such as acetone as this will damage the transducer.

Follow the guidance below to clean growth from your transducer:

- use a soft cloth and a mild household cleaning detergent to clean mild growth build up.
- use a scouring pad, such as a green Scotch Brite™ pad and a mild household cleaning detergent to clean moderate growth build up.
- you may need to use a fine grade wet and dry paper and a mild household cleaning detergent to clean severe build up.

6.3 Re-applying anti-fouling paint

If you have applied anti-fouling paint to your transducer, it is important to re-apply it at least every 6 months, to maintain effectiveness.

Follow the instructions below to re-apply anti-fouling paint.

Important:

- Following environmental best practice, preparation and re-application of the anti-fouling paint should be performed using suitable washdown facilities, which ensures paint particles do not enter the water and impact aquatic life.
- Take care not to scratch the transducer face, as this may impact transducer performance.

1. Remove your vessel from the water.
2. Clean your transducer, ensuring all organic growth is removed.
3. Remove any flaking anti-foul paint.
4. Use a soft dry cloth to remove any loose bits of paint.
5. Re-apply a water-based anti-fouling paint.

Chapter 7: Technical support

Chapter contents

- [7.1 Raymarine product support and servicing on page 44](#)
- [7.2 Learning resources on page 45](#)

7.1 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 diagnostic pages of the connected MFD.

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	Contact
United Kingdom (UK), EMEA, and Asia Pacific	<ul style="list-style-type: none">• E-Mail: emea.service@raymarine.com• Tel: +44 (0)1329 246 932
United States (US)	<ul style="list-style-type: none">• E-Mail: rm-usrepair@flir.com• Tel: +1 (603) 324 7900

Web support

Please visit the “Support” area of the Raymarine website for:

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

Worldwide support



Region	Contact
United Kingdom (UK), EMEA, and Asia Pacific	<ul style="list-style-type: none">• E-Mail: support.uk@raymarine.com• Tel: +44 (0)1329 246 777
United States (US)	<ul style="list-style-type: none">• E-Mail: support@raymarine.com• Tel: +1 (603) 324 7900 (Toll-free: +800 539 5539)
Australia and New Zealand (Raymarine subsidiary)	<ul style="list-style-type: none">• E-Mail: aus.support@raymarine.com• Tel: +61 2 8977 0300
France (Raymarine subsidiary)	<ul style="list-style-type: none">• E-Mail: support.fr@raymarine.com• Tel: +33 (0)1 46 49 72 30
Germany (Raymarine subsidiary)	<ul style="list-style-type: none">• E-Mail: support.de@raymarine.com• Tel: +49 (0)40 237 808 0
Italy (Raymarine subsidiary)	<ul style="list-style-type: none">• E-Mail: support.it@raymarine.com• Tel: +39 02 9945 1001
Spain (Authorized Raymarine distributor)	<ul style="list-style-type: none">• E-Mail: sat@azimut.es• Tel: +34 96 2965 102
Netherlands (Raymarine subsidiary)	<ul style="list-style-type: none">• E-Mail: support.nl@raymarine.com• Tel: +31 (0)26 3614 905

Region	Contact
Sweden (Raymarine subsidiary)	<ul style="list-style-type: none"> E-Mail: support.se@raymarine.com Tel: +46 (0)317 633 670
Finland (Raymarine subsidiary)	<ul style="list-style-type: none"> E-Mail: support.fi@raymarine.com Tel: +358 (0)207 619 937
Norway (Raymarine subsidiary)	<ul style="list-style-type: none"> E-Mail: support.no@raymarine.com Tel: +47 692 64 600
Denmark (Raymarine subsidiary)	<ul style="list-style-type: none"> E-Mail: support.dk@raymarine.com Tel: +45 437 164 64
Russia (Authorized Raymarine distributor)	<ul style="list-style-type: none"> E-Mail: info@mikstmarine.ru Tel: +7 495 788 0508

7.2 Learning resources

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

Video tutorials

	<p>Raymarine official channel on YouTube:</p> <ul style="list-style-type: none"> YouTube <p>LightHouse™ 3 tips and tricks:</p> <ul style="list-style-type: none"> Raymarine website
	<p>Video Gallery:</p> <ul style="list-style-type: none"> Raymarine website

<p>Note:</p> <ul style="list-style-type: none"> 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>

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 8: Technical specification

Chapter contents

- [8.1 Technical specification on page 48](#)

8.1 Technical specification

Physical specification

Overall dimensions:	<ul style="list-style-type: none"> • Length: 224.99 mm (8.86 in) • Height: 112.69 mm (4.44 in) • Width: 76.00 mm (2.99 in)
Cable length:	<ul style="list-style-type: none"> • HV-100: 6 m (19.69 ft) fitted cable
Weight (unboxed):	1.05 kg (2.31 lb)

Environmental specification

Operating temperature range:	−2°C (28.4°F) to + 55°C (131°F)
Storage temperature range:	−20°C (23°F) to + 70°C (158°F)
Waterproof rating:	<ul style="list-style-type: none"> • IPx6 (surfaces exterior to hull, only) • IPx7 • IPx8

HyperVision™ technical specification

The following specification only applies to HyperVision™ products.

Sonar channels:	<ul style="list-style-type: none"> • Conical high CHIRP sonar • RealVision™ 3D (Hyper) • RealVision™ 3D (Standard) • SideVision™ (Hyper) • SideVision™ (Standard) • DownVision™ (Hyper) • DownVision™ (Standard)
Power:	<ul style="list-style-type: none"> • 1.2 MHz (Hyper) = 1000 W • 350 kHz (Standard) = 700 W • 200 kHz (Conical high CHIRP sonar) = 100 W
Frequencies:	<ul style="list-style-type: none"> • 1.2 MHz CHIRP • 350 kHz CHIRP • 200 kHz CHIRP
200 kHz range:	<ul style="list-style-type: none"> • Conical high CHIRP sonar = 0.6 M (2 ft) to 274 m (900 ft)
350 kHz (Standard) range:	<ul style="list-style-type: none"> • RealVision™ 3D = 0.6 M (2 ft) to 91 m (300 ft) • SideVision™ = 0.6 M (2 ft) to 91 m (300 ft) each side • DownVision™ = 0.6 M (2 ft) to 183 m (600 ft)
1.2 MHz (Hyper) range:	<ul style="list-style-type: none"> • RealVision™ 3D = 0.6 M (2 ft) to 38 m (125 ft) • SideVision™ = 0.6 M (2 ft) to 38 m (125 ft) each side • DownVision™ = 0.6 M (2 ft) to 38 m (125 ft)

Conformance specification

Conformance	<ul style="list-style-type: none">• EN 60945:2002• IEC 28846:1993• EMC Directive 2014/30/EU• Australia and New Zealand: C-Tick, Compliance Level 2
-------------	---

Chapter 9: Spares and accessories

Chapter contents

- [9.1 Spares on page 52](#)
- [9.2 Accessories on page 52](#)

9.1 Spares

Description	Part number
HV-100 Transom bracket	R70651

9.2 Accessories

Description	Part number
HV-100 trolling motor mount	A80557
HyperVision™ transducer extension cable 4 m (13.12 ft)	A80562

Index

A

Accessories	52
Anti-fouling	18, 30, 42
Assembly	24

B

Bend radius	23
Bracket mounting	25

C

Cable	
extension	34
Protection	34
routing	34
Strain relief.....	34
Cable length	48
Cleaning the transducer	42
Connections	35
General cabling guidance.....	34
Contact details.....	44

D

Dimensions.....	48
Documentation	
Installation instructions	12
Mounting template.....	12
Operation instructions	12, 38

E

Electromagnetic Compatibility.....	22
EMC, <i>See</i> Electromagnetic Compatibility	
Escutcheon plate	28

F

Finalizing Installation	30
-------------------------------	----

H

HV-100	
Compatible displays	14
HV-100 transducer.....	12
HyperVision.....	48

I

Installation	
Testing	19, 28
Tools	18

L

LightHouse™ 3	
Tips and Tricks	45

LightHouse Sport	
Compatible displays	14
Location requirements	
General	20

M

Maintenance.....	7
------------------	---

O

Operation instructions	12, 38
------------------------------	--------

P

Parts supplied.....	14
Product dimensions.....	23
Product overview.....	13
Product recycling (WEEE)	8
Product support.....	44

R

Required components	13
---------------------------	----

S

Service Center.....	44
Servicing.....	7
Software	12
Spares	52
Support forum	45

T

Technical specification	47–48
Environmental	48
HyperVision	48
Physical.....	48
Technical Specification	
Conformance	49
Technical support.....	44–45
Temperature range	48
Tools required	18
Training courses	45
Transducer mounting	25, 27
Troubleshooting	38

V

Video Gallery.....	45
--------------------	----

W

Warranty	44
WEEE Directive.....	8
Weight	48



FLIR Belgium BVBA
Luxemburgstraat 2, 2321 Meer.
Belgium.

Tel: +44 (0)1329 246 700

www.raymarine.com

Raymarine®

a brand by  **FLIR®**