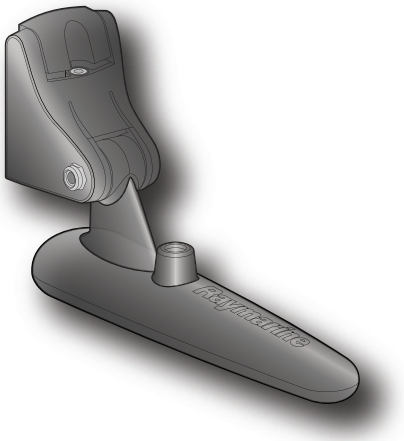
DownVision™ Transom Transducers CPT-60 / CPT-100



Installation instructions

English
Date: 10-2013
Document number: 87197-1-EN

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Software updates

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

Product handbooks

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

ENGLISH
Document number: 87197-1
Date: 10-2013

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.

Warning: High voltages

This product contains high voltages. Do NOT remove any covers or otherwise attempt to access internal components, unless specifically instructed in this document.

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.

Caution: Power supply protection

When installing this product ensure the power source is adequately protected by means of a suitably-rated fuse or automatic circuit breaker.

Caution: Do not cut transducer cables

- Cutting the transducer cable severely reduces sonar performance. If the cable is cut, it must be replaced, it cannot be repaired.
- Cutting the transducer cable will void the warranty and invalidate the European CE mark.

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.

Transducer 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 green scotch brite™ pad. Be careful to avoid scratching the transducers face.

If your transducer has a paddlewheel you can wet sand with fine grade wet/dry paper.

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

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.

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.

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. Whilst the WEEE Directive does not apply to some Raymarine products, we support its policy and ask you to be aware of how to dispose of this product.

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.

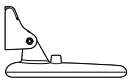
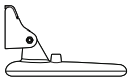
The document includes information to help you:

- 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.

Applicable products

This document is applicable to the following products:

Part number	Description		Mounting Type	Con-struction
A80195	CPT-60 Dragonfly DownVision™ transducer		Transom mount	Plastic
A80270	CPT-100 DownVision™ transducer		Transom mount	Plastic

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.

Product documentation

The following documentation is applicable to your product:

Description	Part number
CPT—60 / CPT-100 Transom mount transducer Installation instructions Installation of a CPT–60 / CPT–100 transducer and connection to a sonar module or multifunction display.	87197 / 88024
a Series, c Series, e Series Installation and operation instructions Details the operation of the fishfinder application (including DownVision operation) for a Series, c Series, e Series multifunction displays.	81337
Dragonfly Installation and operation instructions Details the operation of the Sonar and DownVision applications for Dragonfly multifunction displays.	81345

Further information

For detailed operating instructions, refer to the handbook that accompanies your multifunction display.

Sonar module installation instructions

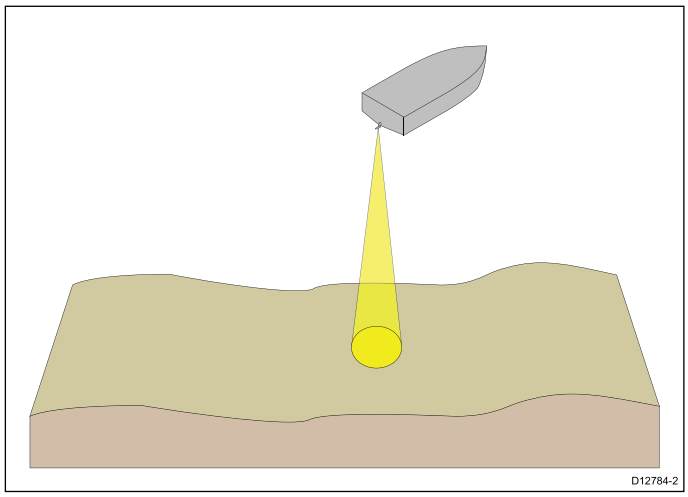
This document includes installation instructions for the transducer only. For installation instructions for connecting a sonar module, please refer to the documentation that accompanies the sonar module.

2.2 CHIRP Sonar overview

Sonar interprets signals from the transducer and builds up a detailed underwater view. The transducer sends pulses of sound waves into the water and measures the time it takes for the sound wave to travel to the bottom and back. The returning echoes are affected by bottom structure and by any other objects in their path, for example reefs, wrecks, shoals or fish.

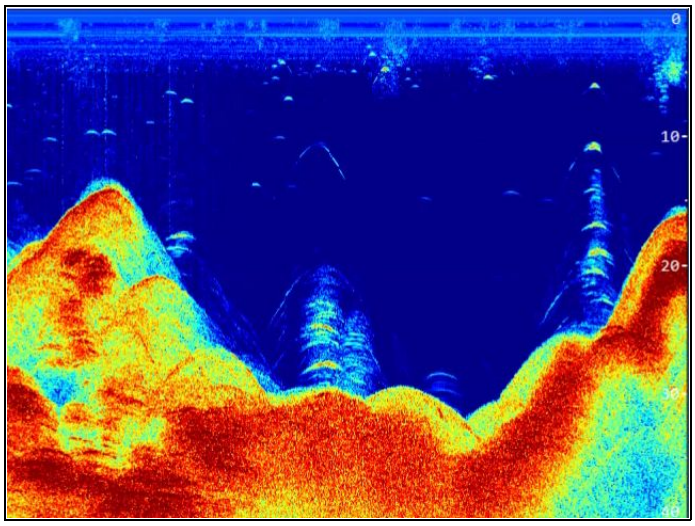
Sonar produces a 25° conical shaped beam, the coverage of the conical beam is the water column directly beneath the vessel.

Conical beam



Sonar is effective at a range of speeds. In deeper waters the CHIRP bandwidth is automatically optimized to improve bottom lock and the detection of moving objects (e.g. fish) in the wider water column.

CHIRP sonar screen example

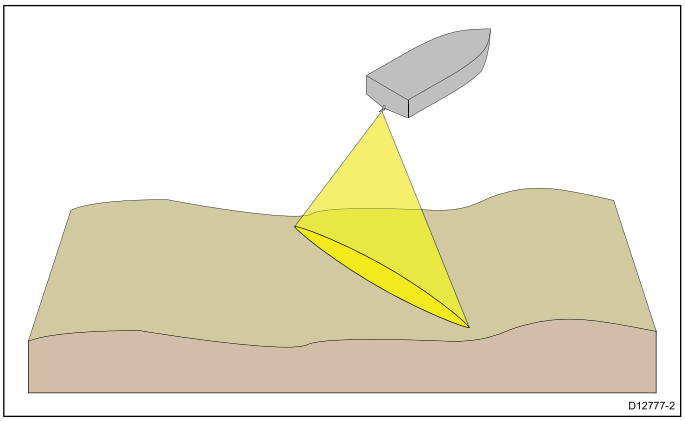


2.3 CHIRP DownVision™ overview

DownVision™ interprets signals from the transducer and builds up a detailed underwater view. The transducer sends pulses of sound waves into the water and measures the time it takes for the sound wave to travel to the bottom and back. The returning echoes are affected by bottom structure and by any other objects in their path, for example reefs, wrecks, shoals or fish.

DownVision™ produces a wide–angle side-to-side beam and a thin fore-to-aft beam. The coverage of the DownVision™ beam is a water column directly beneath and to the sides of the vessel.

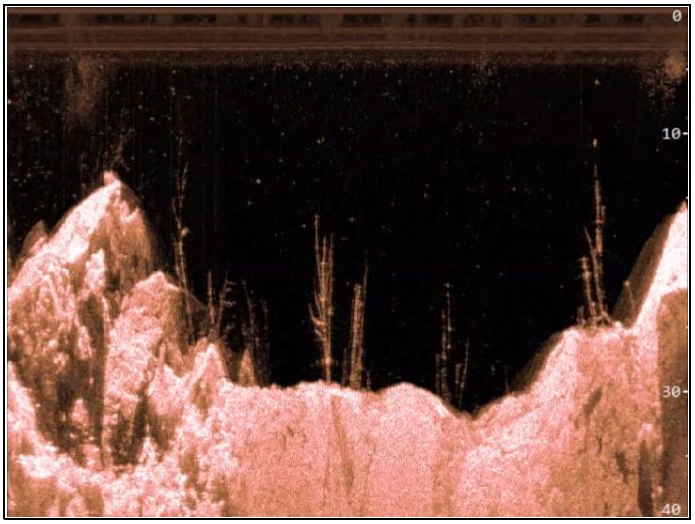
DownVision beam



DownVision™ is effective at lower vessel speeds. In deeper waters the CHIRP bandwidth is automatically optimized to improve bottom lock and the detection of moving objects (e.g. fish) in the wider water column.

The wide, thin beam produces clear target returns. The use of CHIRP processing and a higher operating frequency provide a more detailed image, making it easier to identify bottom structures around which fish may reside.

CHIRP DownVision™ screen example



Chapter 3: Planning the installation

Chapter contents

3.1 Installation checklist

Installation includes the following activities:

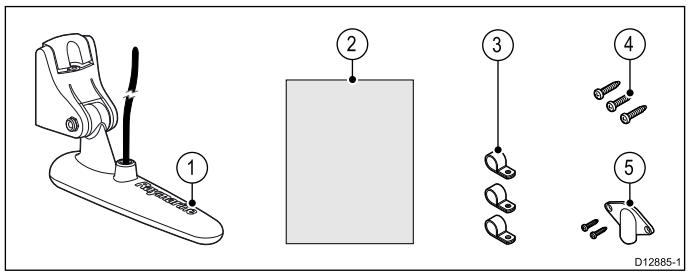
	Installation Task
1	Plan your system.
2	Obtain all required equipment and tools.
3	Site all equipment.
4	Route all cables.
5	Drill cable and mounting holes.
6	Make all connections into equipment.
7	Secure all equipment in place.
8	Power on and test the system.

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:

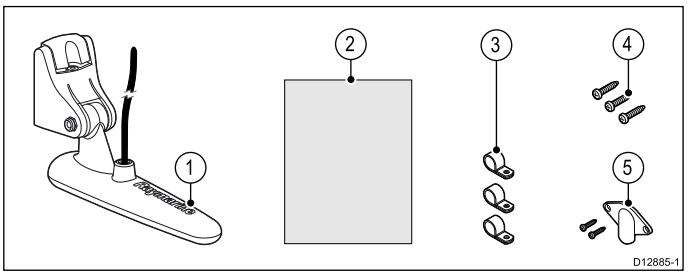
- Location of all components.
- Connectors, cable types, routes and lengths.

3.2 Parts supplied — CPT-60 Transducer



Item	Description	Quantity
1	Transducer. Includes 6 m (19.7 ft) transducer cable.	1
2	Documentation pack.	1
3	P-clips and screws.	3
4	Transducer bracket mounting screws.	3
5	Escutcheon and 2 mounting screws (for through-transom cable installation).	1

3.3 Parts supplied — CPT-100 Transducer



Item	Description	Quantity
1	Transducer. Includes 10 m (32.8 ft) cable.	1
2	Documentation pack.	1
3	P-clips and screws.	3
4	Transducer bracket mounting screws.	3
5	Escutcheon and 2 mounting screws (for through-transom cable installation).	1

3.4 Required additional components

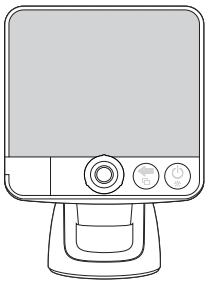
This product forms part of a system of electronics and requires the following additional components for full operation.

- Compatible DownVision™ Sonar Module or DownVision™ variant multifunction display. Refer to 3.5 Compatible DownVision™ products, for a list of compatible products.
- Transducer extension cables. Refer to Chapter 4 Cables and connections, for suitable cables.

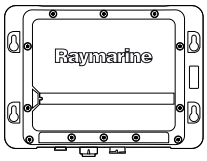
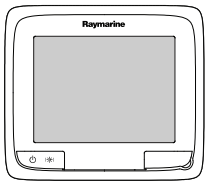
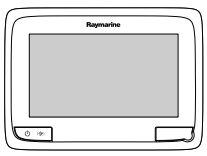
3.5 Compatible DownVision™ products

The transducer can be connected directly to the following DownVision™ sonar modules and multifunction displays.

CPT-60 / CPT-70 / CPT-80

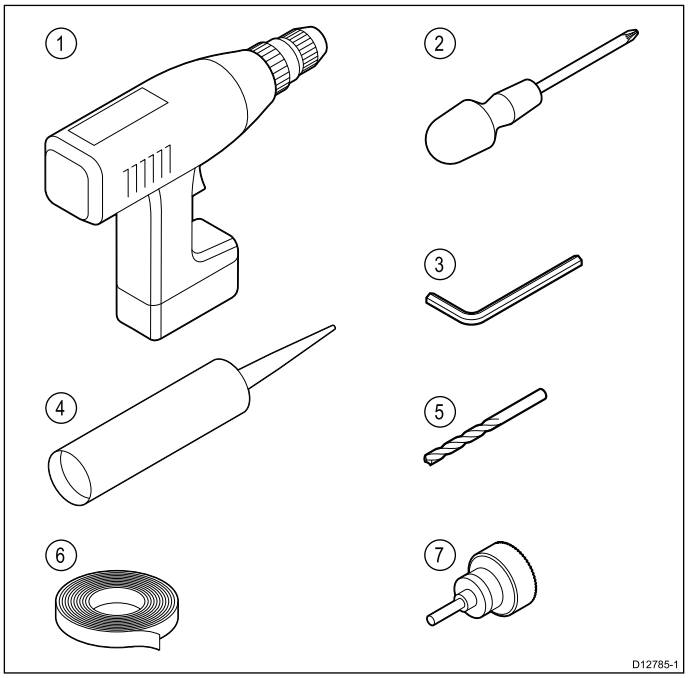
	Description	Part number
	Dragonfly	E70226

CPT-100 / CPT-110 / CPT-120

	Description	Part number
	CP100	E70204
	a68 / a68 Wi-Fi	E70206 / E70207
	a78 / a78 Wi-Fi	E70208 / E70209

3.6 Tools required

The following tools are required to install the transducer.



1. Power drill.
2. Pozidrive screwdriver.
3. 3 mm (5/32) Allen key.
4. Marine grade sealant.
5. Suitable sized drill bit.
6. Adhesive tape.
7. 18 mm (23/32”) Hole saw (only required if you are routing the cable through the transom.

3.7 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.

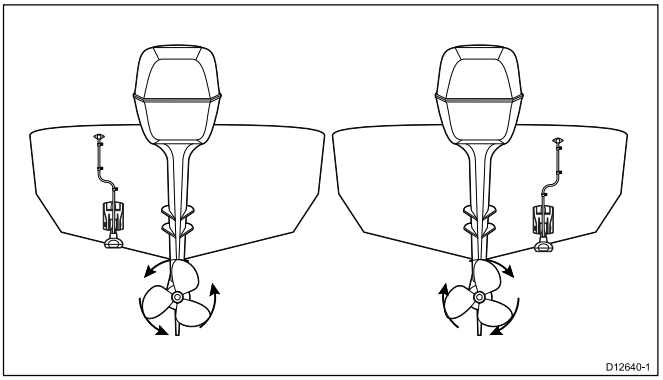
3.8 Selecting a location for the transducer

This product is supplied with a transom mount transducer. The guidelines below should be followed when selecting a location for the transducer.

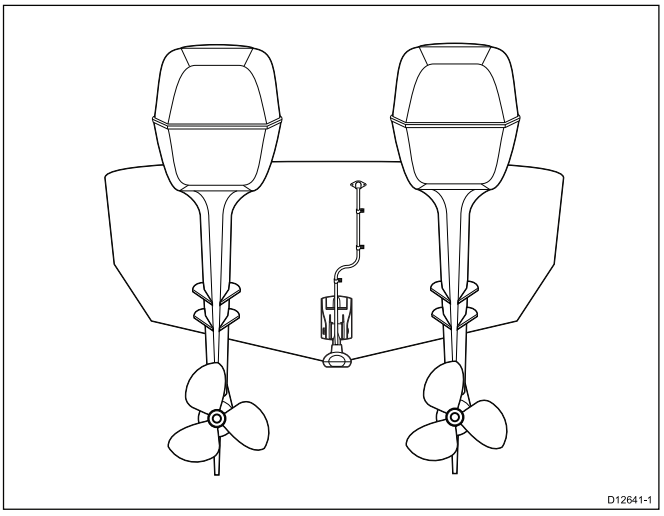
Note: The transducer is not suitable for mounting on vessels where the transom is aft of the propeller(s).

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.

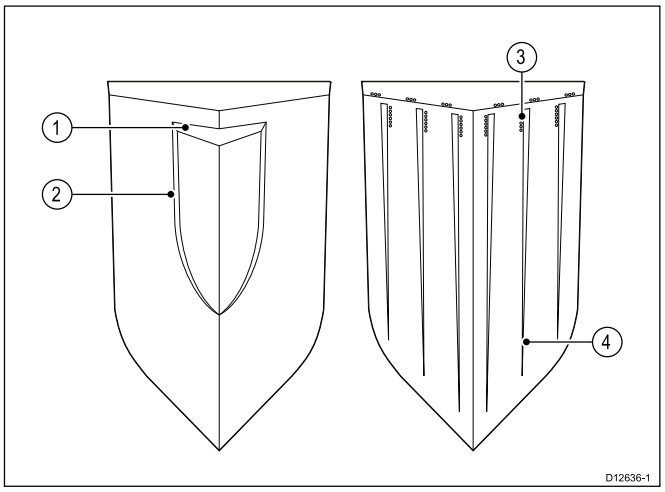
- The transducer should be mounted close to the keel (centreline) of the vessel, so that the transducer remains fully submerged when the vessel is turning.
- The transducer must be mounted a suitable distance from the propeller(s) to avoid wake.
- For clockwise rotating propellers the transducer should be mounted on the starboard side, for anti-clockwise rotating propellers the transducer should be mounted on the port side.



- On a twin engine vessel the transducer should be mounted between the engines.

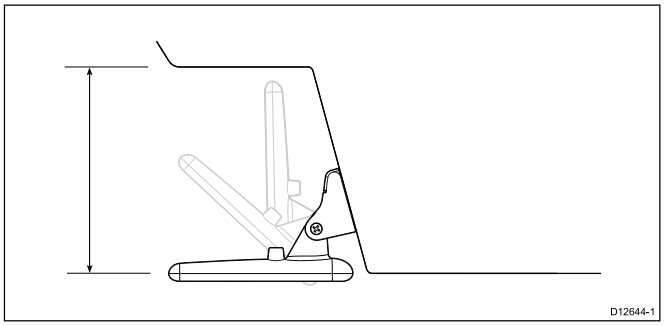


- Turbulence can also be caused by a number of other factors such as steps, ribs, strakes, and rows of rivets. The turbulence appears aft of these locations.



1	Step
2	Rib
3	Row of rivets
4	Strake

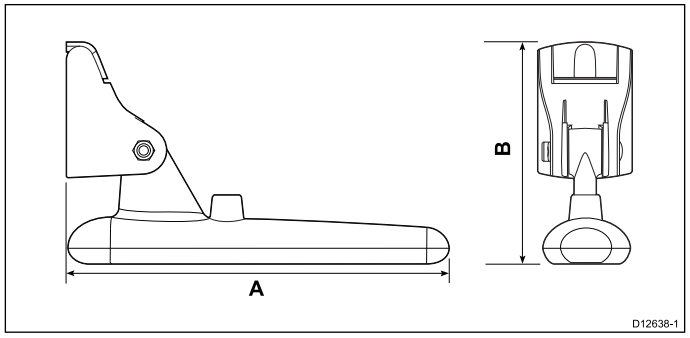
- Air trapped under the front of the vessel can travel under the hull and appear as aeration aft.
- If installing on the step of a stepped transom, allow sufficient room above the transducer for transducer kick-up.



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 before locking the transducer's position.

3.9 Transducer dimensions

The transducer's dimensions including the mounting bracket are shown below.



A	202.6 mm (8 in)
B	117.4 mm (4.6 in)

Chapter 4: Cables and connections

Chapter contents

4.1 General cabling guidance

Cable types and length

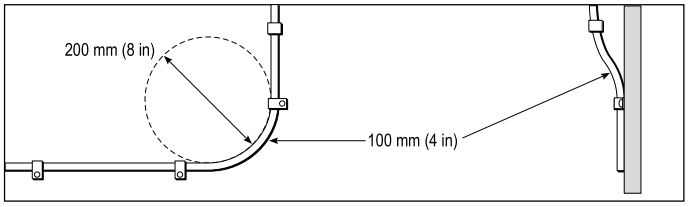
It is important to use cables of the appropriate type and length

- 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.

Routing cables

Cables must be routed correctly, to maximize performance and prolong cable life.

- Do NOT bend cables excessively. Wherever possible, ensure a minimum bend diameter of 200 mm (8 in) / minimum bend radius of 100 mm (4 in).



- Protect all cables from physical damage and exposure to heat. Use trunking or conduit where possible. Do NOT run cables through bilges or doorways, or close to moving or hot objects.
- Secure cables in place using tie-wraps or lacing twine. Coil any extra cable and tie it out of the way.
- Where a cable passes through an exposed bulkhead or deckhead, use a suitable watertight feed-through.
- Do NOT run cables near to engines or fluorescent lights.

Always route data cables as far away as possible from:

- other equipment and cables,
- high current carrying ac and dc power lines,
- antennae.

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 data cables are properly shielded that the cable shielding is intact (e.g. hasn't been scraped off by being squeezed through a tight area).

4.2 Cable routing

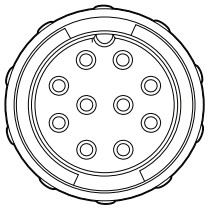
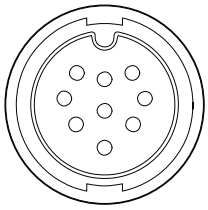
Cable routing requirements for the transducer cable.

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

- The cable can be routed through or over the transom.
- Check that the cable is long enough to reach the equipment that it will be connected to. An optional 4 m (13.1 ft) extension cable is 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.
- Secure the cable at regular intervals using the supplied cable clips.
- Fill all transom mounting holes with marine-grade sealant prior to tightening securing screws.
- Fill the transom cable hole with marine-grade sealant after routing the cable (if routing through the transom).
- Use the supplied escutcheon to cover over the transom cable hole (if routing through the transom).
- Any excess cable can be coiled up at a convenient location.

4.3 Connections overview

Use the following information to help you identify the connections on your product.

Connector	Connector type	Connects to:
	CPT-60 / CPT-70 / CPT–80 Transducer and display power	Dragonfly display
	CPT-100 / CPT-110 / CPT-120 Transducer	Sonar module or compatible multifunction display.

4.4 Transducer cable connection

The transducer can be connected directly to a DownVision sonar module or a DownVision variant multifunction display.

Follow the *Cables and Connections* chapter of the manual that accompanied your sonar module or DownVision variant multifunction display to make the appropriate connections.

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.

Transducer cable extension

For some installations it may be necessary to extend the transducer cable.

- Refer to Chapter 11 Spares and accessories for a list of suitable transducer extension cables.
- Raymarine recommends a maximum of one cable extension for any single transducer cable.
- For best performance, keep all cable lengths to a minimum.

Chapter 5: Pre-installation test

Chapter contents

5.1 Testing the transducer

Transducer operation should be checked before installation.

1. Connect the transducer to the sonar module's transducer connection.
2. Fully submerge the transducer in water.
3. Power up the sonar module and the multifunction display connected to it.
4. Open a Fishfinder application page on your multifunction display.
5. Check that accurate depth and temperature readings are displayed in the Fishfinder application.
6. If you experience difficulties obtaining readings then contact Raymarine Technical Support.

Note: The transducer may be connected directly to a multifunction display that has a built in DownVision sonar module.

Warning: Transducer operation

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

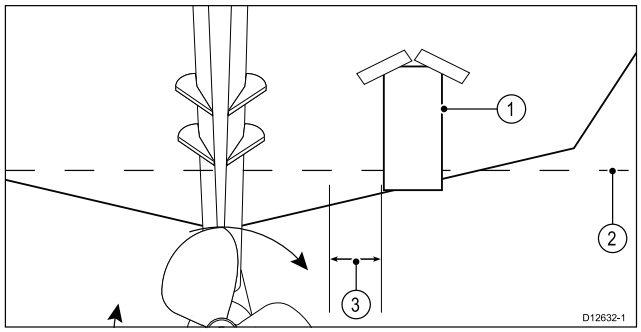
Chapter 6: Mounting

Chapter contents

6.1 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 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.

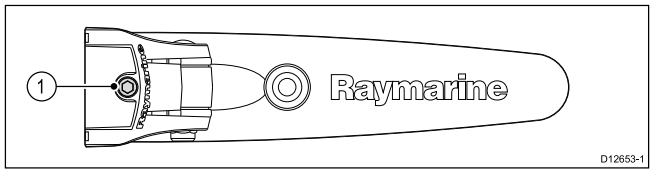


1	Transducer mounting template
2	Waterline
3	Mounting away from propeller

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

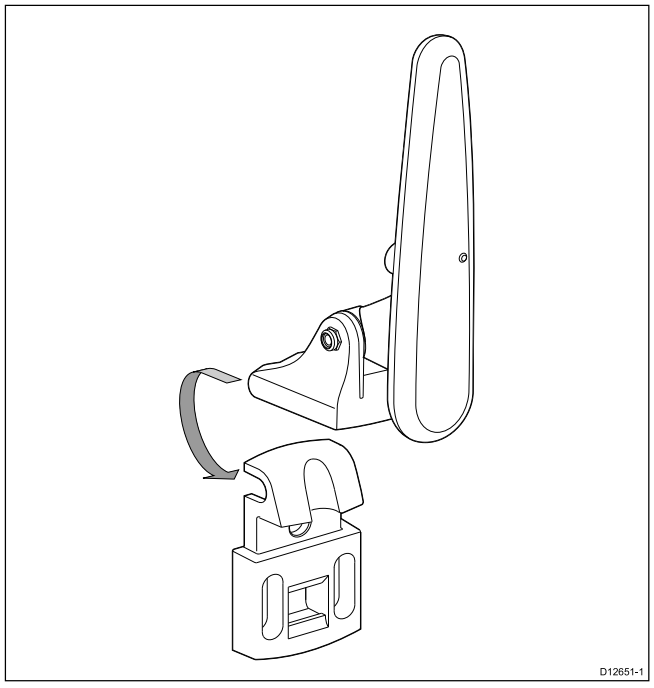
Note: Do NOT drill the third mounting hole at this stage.

4. Fill the 2 holes with marine grade sealant.
5. The kick-up adjustment screw may need to be loosened to gain access to the mounting holes.

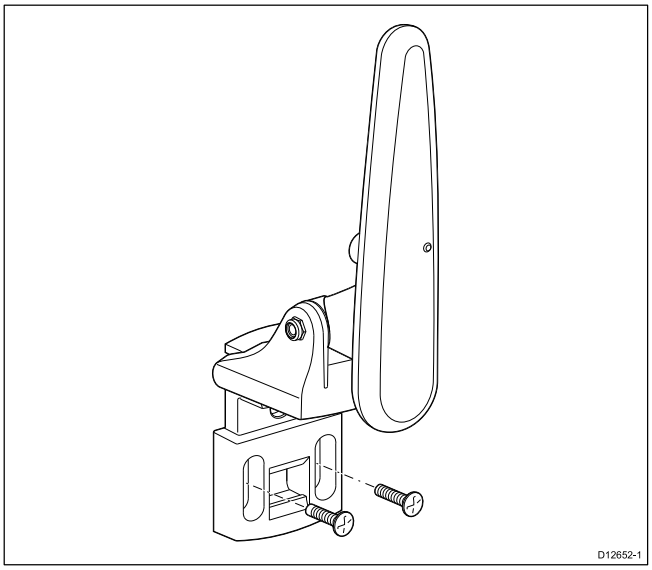


1	Kick-up adjustment screw

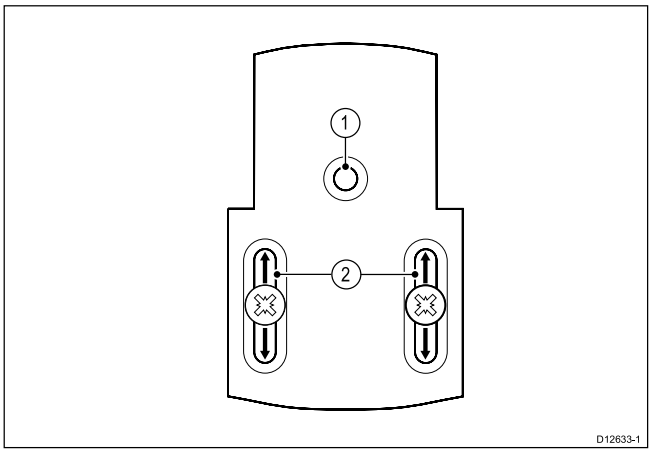
6. Ensure the transducer and bracket pivot arm are hooked over the mounting bracket back plate as shown below.



7. Lift up the transducer and pivot arm to access the mounting holes.

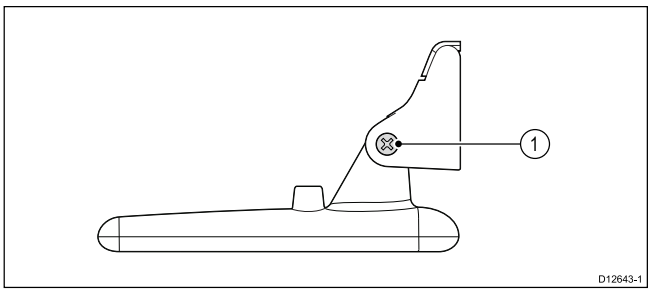


8. Using the screws provided, temporarily secure the mounting bracket using the adjustment slots on the back plate.



1	Locking hole
2	Adjustment slots

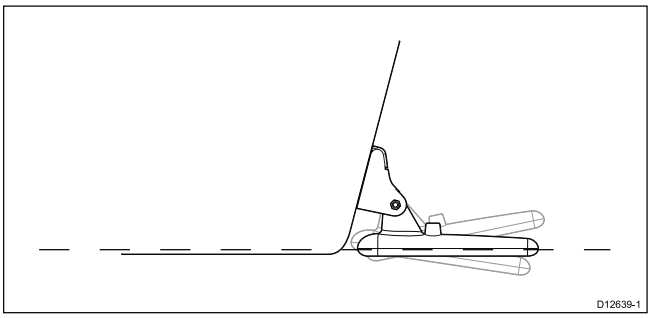
9. Push the transducer and pivot arm down until the bracket clicks into place.
10. Loosen the transducer pivot bolt approximately 3 turns to enable adjustment.



1	Pivot bolt location

11. Adjust the angle of the transducer using the ratchet mechanism, one click at a time until the transducer face is parallel with the waterline.

The transducer position will be adjusted further during testing (see *Testing the transducer*).



12. Tighten the transducer pivot bolt.
13. Tighten the kick-up adjustment screw to achieve the desired kick-up force.

    The kick-up force needs to be adequate to prevent the transducer from kicking-up during testing but also needs to be loose enough so that it can kick-up should the transducer be struck by an object when underway.

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

6.2 Testing 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 limit of the system.

The Sonar application will be able to maintain readings at depths greater than the DownVision application.

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

1. Press and hold the **Power** button until a beep is heard.
2. Complete the Start-up wizard settings.
3. Use the View switcher to open a view which contains the Sonar or DownVision application.

   If the unit is operating correctly the bottom should be visible on-screen and the depth reading displayed.
4. Start moving your vessel at a low speed and ensure the depth reading and bottom are shown and that you have a clear image on-screen.
5. Gradually increase the vessel speed up to your usual cruising speed, whilst checking the display if the image becomes poor, starts skipping or missing the bottom then the transducer needs to be adjusted.
6. Height and angle adjustments should be made in small increments, and re-tested each time until you obtain optimum performance.
7. To adjust the angle of the transducer loosen the pivot bolt approximately 3 turns and then pivot the transducer either up or down.
8. Re-tighten the pivot bolt before re-testing.
9. When you achieve optimum performance at the desired vessel speeds you can finish the transducer mounting.

Note: It may be necessary to make several adjustments to the transducer before obtaining optimum performance.

6.3 Finishing the transducer mounting

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

Note: If the transducer requires repositioning ensure all old holes are filled with marine grade sealant.

1. Loosen the kick-up adjustment screw.
2. Lift up the transducer and bracket pivot arm to gain access to the mounting holes.
3. Drill the locking hole location taking care not to damage the mounting bracket.
4. Fill the locking hole with marine grade sealant.
5. Secure the transducer and bracket by fully tightening all 3 mounting screws.
6. Push the transducer and pivot arm down until it clicks into position.
7. Re-tighten the kick-up adjustment screw to the desired level.

Note: The Kick-up adjustment screw needs to be tight enough to prevent kick-up during high speeds but loose enough to enable the kick-up feature to activate if an object hits the transducer when underway.

Chapter 7: System checks and troubleshooting

Chapter contents

7.1 Further information

For detailed operating instructions, refer to the handbook that accompanies your multifunction display.

7.2 Multiple sonar operation

For systems with multiple sonar modules, only one sonar may operate at any one time.

Before attempting to use the fishfinder application on your multifunction display, use one of the methods described in this document to ensure that only one sonar module is active on your system.

Switching between internal and external sonar modules

If you want to switch your active sonar module between internal and external follow the steps below.

1. Power off the active sonar module.
   - Internal sonar module is turned off from the Fishfinder application menu: **Menu > Set-up > Sounder Set-up > Internal Sounder**.
   - External sonar modules should be turned off at the power supply.
2. Wait for the No Sounder Source Available message to be displayed in the Fishfinder application.
3. Power on the new sonar module.

Switching between multiple external sonar modules

If your system includes multiple external sonar modules you must complete the procedure detailed below to ensure only one sonar module is active at a time.

Note: If your multifunction display has an **internal** sonar module, complete the procedure detailed in Switching between internal and external sonar modules BEFORE attempting the following:

1. Power off ALL external sonar modules, either at the power supply or by disconnecting the power cable from the sonar module.
2. Wait for the No Sounder Source Available message to be displayed in the Fishfinder application.
3. Power on the external sonar module that you want to use.

7.3 Troubleshooting

The troubleshooting information provides possible causes and corrective action required for common problems associated with marine electronics installations.

All Raymarine products are, prior to packing and shipping, subjected to comprehensive test and quality assurance programs. However, if you experience problems with the operation of 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 unit, please contact Raymarine Technical Support for further advice.

Sonar troubleshooting

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

Problem	Possible causes	Possible solutions
Sonar data not available on multifunction display.	Unit power supply fault.	Check the unit power supply and cables.
	Other unit fault.	Refer to the instructions supplied with the unit.
	SeaTalk^{hs} / RayNet network problem.	Check that the unit is correctly connected to a Raymarine network switch. If a crossover coupler or other coupler cable / adapter is used, check all connections (as applicable).
		Check the status of the Raymarine network switch (if applicable).
		Check that SeaTalk^{hs}/ RayNet cables are free from damage.
	Software mismatch between equipment may prevent communication.	Contact Raymarine technical support.
Problematic depth readings or sonar image.	Gain or Frequency settings may be inappropriate for present conditions.	Check the sonar presets, gain and frequency settings.
	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.
	Unit cable fault.	Ensure that the power, transducer and all other cables to the unit are properly connected and free from damage.
	Transducer fault.	Check that the transducer is mounted correctly and is clean.
		If you have a transom mount transducer, check that the transducer hasn't kicked-up due to hitting an object.
	Other unit fault.	Refer to the instructions supplied with the unit.
	Vessel stationary.	Fish arches are not displayed if the vessel is stationary; fish will appear on the display as straight lines.
	High vessel speed	Turbulence around the transducer may be confusing the unit.
	Scroll speed set to zero	Adjust the scroll speed.

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 8: Maintenance

Chapter contents

8.1 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.

8.2 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 9: Technical support

Chapter contents

9.1 Raymarine customer support

Raymarine provides a comprehensive customer support service. You can contact customer support through the Raymarine website, telephone and e-mail. If you are unable to resolve a problem, please use any of these facilities to obtain additional help.

Web support

Please visit the customer support area of our website at:

www.raymarine.com

This contains Frequently Asked Questions, servicing information, e-mail access to the Raymarine Technical Support Department and details of worldwide Raymarine agents.

Telephone and e-mail support

In the USA:

- **Tel:** +1 603 324 7900
- **Toll Free:** +1 800 539 5539
- **E-mail:** support@raymarine.com

In the UK, Europe, and the Middle East:

- **Tel:** +44 (0)13 2924 6777
- **E-mail:** ukproduct.support@raymarine.com

In Southeast Asia and Australia:

- **Tel:** +61 (0)29479 4800
- **E-mail:** aus.support@raymarine.com

Product information

If you need to request service, 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.

9.2 Viewing product information

You can view information about your unit from the **Diagnostics** menu on a compatible multifunction display. This option displays information such as product serial number and software version.

With the Homescreen displayed:

1. Select **Set-up.**
2. Select **Maintenance**.
3. Select **Diagnostics**.
4. Select the **Select Device** option.

   A list of connected devices is displayed.
5. Select the product for which you want to view information. Alternatively, select **Show All Data** to display information for all connected products.

Chapter 10: Technical specification

Chapter contents

10.1 Technical specification

Physical specification — CPT-60 Transducer

Dimensions	• Length: 202.6 mm (8 in) • Height: 117.4 mm (4.6 in)
Cable length	6 m (19.7 ft)
Weight (unit including cradle)	0.60 kg (1.3 lbs)

Physical specification — CPT-100 Transducer

Dimensions	• Length: 202.6 mm (8 in) • Height: 117.4 mm (4.6 in)
Cable length	10 m (32.8 ft)
Weight (unit including cradle)	0.60 kg (1.3 lbs)

Transducer environmental specification

Operating temperature	0 ºC to + 40 ºC (32 ºF to 104 ºF)
Storage temperature	–20 ºC to + 70 ºC (23 ºF to 158 ºF)
Waterproof rating	• IPX6 and IPX7

Sonar / DownVision specification

Channels	2 x CHIRP (1 x sonar and 1 x DownVision)
Operating frequencies	• **Sonar** — Centered 200 KHz • **DownVision** — Centered 350 KHz
Beam coverage	• **Sonar** — 25° **conical** beam. • **DownVision** — Wide (port / starboard) and thin (fore / aft) **fan** beam.
Target separation	Achieved through CHIRP processing: • **Sonar** — 32 mm (1.25 in). • **DownVision** — 25 mm (1 in).
Depth	Typical depth performance of 189 m (600 ft). Applies to both Sonar and DownVision channels.

Conformance specification

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

Chapter 11: Spares and accessories

Chapter contents

11.1 Spares and accessories

Spares

Description	Part number
Replacement kick up bracket (CPT-60 / CPT-100)	R70257

Accessories

Description	Part number
Trolling motor mount CPT-60 / CPT-100	A80207
4 m (13.1 ft.) Transducer extension cable (CPT-100)	A80273
4 m (13.1 ft.) Dragonfly transducer extension cable (CPT-60)	A80224

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