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Active Imaging[™] HD (Thru-Hull)

Installation manual

English



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INTRODUCTION

Active Imaging HD (Thru-Hull) transducers allow:

- Side imaging (SideScan) to show underwater structure to either side of your vessel
- Down imaging (DownScan) to show underwater structure beneath your vessel
- CHIRP sonar
- DownScan FishReveal
- SideScan FishReveal, when connected to a S3100 or S3100H sonar module (sold separately).

The transducers come with fairing blocks that you cut to customise the installation to the hull of your boat.

The Active Imaging HD (Thru-Hull, Dual) system has two transducers and two fairing blocks, intended to be installed on each side of the boat's keel. This enables SideScan imaging for a boat whose hull obstructs side beams from a single transducer.

Compatibility

Active Imaging HD (Thru-Hull) transducers are directly compatible with the following multi-function displays:

- Lowrance HDS Pro
- Simrad® NSS 4

→ **Note:** To use SideScan FishReveal, you need a S3100 or S3100H sonar module.

The multi-function displays listed below support Active Imaging HD (Thru-Hull) transducers if you install a S3100 or S3100H sonar module:

- Lowrance HDS Live, HDS Carbon, and Elite FS.
- Simrad® NSS Evo 3, NSS Evo 3S, NSO Evo 3, and NSO Evo 3S.

Refer to the Lowrance and Simrad® websites for more information.

Sonar performance

The choice, location, and installation of transducers and other components of the system are critical to the performance of the system. If in doubt, consult your Lowrance or Simrad® dealer.

Refer to the documentation for your multi-function display for instructions about how to operate the transducer and interpret the display.

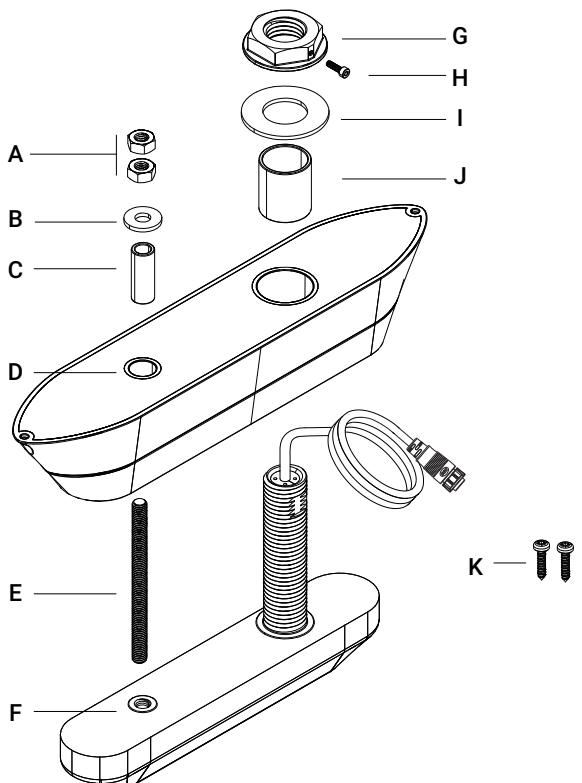
Safety

Never use this instrument as the sole means of gauging depth or other conditions for swimming or diving.

To reduce the risk of misusing or misinterpreting this instrument, you must read and understand all aspects of the installation manual. This manual should be used in conjunction with the installation manual provided with your multi-function display.

IN THE BOX

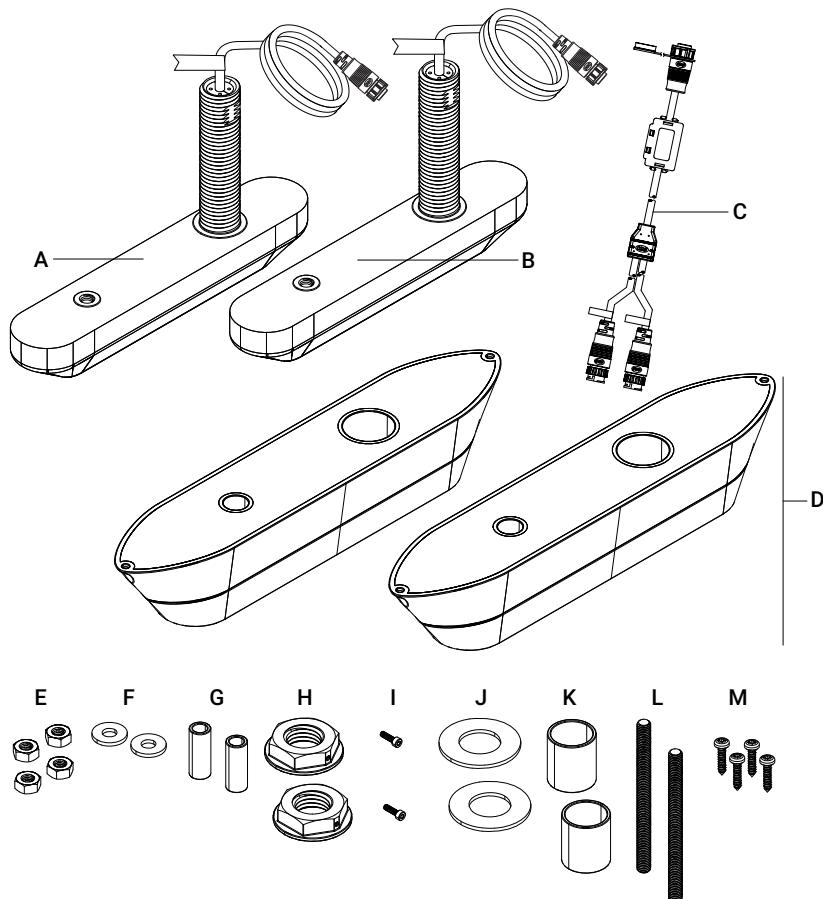
Active Imaging HD (Thru-Hull, Single)



A	2x M10 nut	G	1x stem nut
B	1x M10 nylon washer	H	1x set screw for stem nut
C	1x small isolation sleeve	I	1x M30 nylon washer
D	1x fairing block	J	1x large isolation sleeve
E	1x anti-rotation stud	K	2x self-tapping screws*
F	1x transducer with 1.83 m (6 ft) cable attached		

*Used to mount the fairing block to timber temporarily for cutting.

Active Imaging HD (Thru-Hull, Dual)



A 1x port transducer with 1.83 m (6 ft) cable attached **H** 2x stem nuts

B 1x starboard transducer with 1.83 m (6 ft) cable attached **I** 2x set screws for stem nuts

C 1x transducer Y-cable **J** 2x M30 nylon washers

D 2x fairing blocks **K** 2x large isolation sleeves

E 4x M10 nuts **L** 2x anti-rotation studs

F 2x M10 nylon washers **M** 4x self-tapping screws*

G 2x small isolation sleeves

*Used to mount the fairing blocks to timber temporarily for cutting.

TOOLS AND MATERIALS REQUIRED

- Tools to measure deadrise angle
- Timber to prepare fairing block for cutting, for example a 400 mm (16 in) length of 2×4 (2 in × 4 in, or 38 mm × 90 mm)
- Band saw or table saw, and appropriate safety equipment
- Drill and appropriate safety equipment
- Drill bit for pilot holes, appropriate for your hull's construction material
- Hole saw: 19 mm (3/4 in)
- Hole saw: 38 mm (1½ in)
- Deburring tool
- Detergent
- Sandpaper: 220–320 (fine)
- Sandpaper: 80–100 (coarse)
- Marine-grade adhesive sealant (below waterline use), such as Sikaflex® 291 or 3M™4200. Approximately 150 mL (5 fl oz) per thru-hull installation
- Wrench: adjustable or 46 mm, for stem nut
- Allen key or hex drive: 3 mm
- Wrench: 17 mm

→ **Note:** Two 17 mm wrenches (or one wrench and a deep socket) are used together to install M10 jam nut.

SYSTEM OVERVIEW

Wiring guidelines

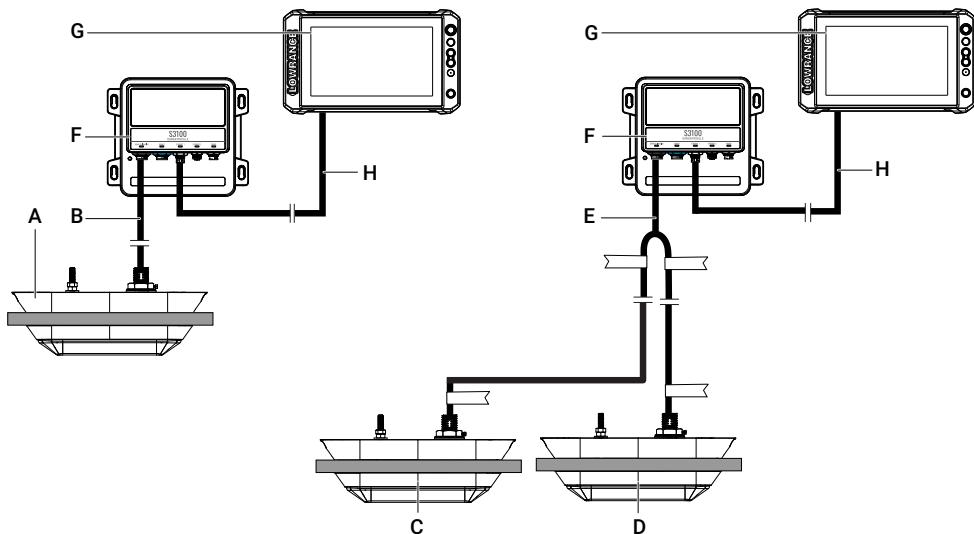
 **WARNING:** Before you start the installation, turn off the electrical power. If power is left on, or turned on during installation, fire, electrical shock or other serious injury may occur.

- Do not run the transducer cable adjacent to radar, transmitter, large/high current carrying cables, high frequency signal cables, or near electric motors.
- Do not run cables so they interfere with mechanical systems.
- Do not run cables over sharp edges or burrs and do not make sharp bends in the cables.
- Use cable ties to keep cables secure. To avoid cable damage, do not overtighten cable ties.
- If installing a sonar module such as S3100 or S3100H, we recommend you install it as close as possible to the transducer or transducers, then extend the Ethernet cable to reach the display if required.

Connect via sonar module

- 1 Connect the Active Imaging HD (Thru-Hull) transducer output cable to the black (imaging) sonar input on a S3100 or S3100H sonar module (not included).
- 2 Connect the sonar module to a compatible multi-function display unit via Ethernet.

→ **Notes:** Sonar extension cables may be purchased separately if they are needed.
Power sources not shown in diagrams.



- A Active Imaging HD (Thru-Hull, Single) transducer assembly
- B Sonar cable
- C Active Imaging HD (Thru-Hull, Dual) port transducer assembly
- D Active Imaging HD (Thru-Hull, Dual) starboard transducer assembly
- E Y-cable
- F S3100 or S3100H sonar module
- G Compatible multi-function display
- H Ethernet cable

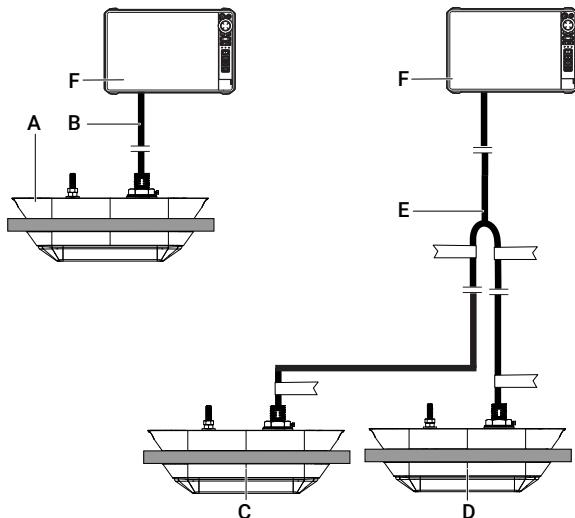
Connect directly to a compatible multi-function display

Active Imaging HD (Thru-Hull) transducers can connect directly to the black (imaging) sonar connector on a Lowrance HDS Pro or Simrad® NSS 4 multi-function display.

→ **Notes:** To use SideScan FishReveal, you also need a S3100 or S3100H sonar module.

Sonar extension cables may be purchased separately if they are needed.

Power sources not shown in diagrams.



- A Active Imaging HD (Thru-Hull, Single) transducer assembly
- B Sonar cable
- C Active Imaging HD (Thru-Hull, Dual) transducer assembly, port
- D Active Imaging HD (Thru-Hull, Dual) transducer assembly, starboard
- E Y-cable
- F HDS Pro display unit

Dual installation

In an Active Imaging HD (Thru-Hull, Dual) installation, the outputs from the port and starboard transducers are combined using a Y-cable (included). The port and starboard transducers are identified by labels fixed to their cables.

Install the port transducer on the port side (left side) of the vessel and install the starboard transducer on the starboard side (right side) of the vessel. The port and starboard transducers are **not** interchangeable. The Y-cable's labelled ends must be correctly matched to the port and starboard transducers. The ends of the Y-cable are **not** interchangeable.

For an Active Imaging HD (Thru-Hull, Dual) system, connect the single end of the supplied Y-cable to the black (imaging) sonar input on a S3100 sonar module or the black (imaging) sonar input on a HDS Pro multi-function display.

MOUNTING LOCATION

The installation involves creating holes in the hull of your vessel, so it is important to be certain of the transducer's planned position before you make any holes or cuts.

If you are installing an Active Imaging HD (Thru-Hull, Dual) system, the procedure is the same as the Active Imaging HD (Thru-Hull, Single) system, but carried out for both the port and starboard transducers.

 **WARNING:** Before drilling any holes, ensure that holes will be drilled in a safe position. Ensure you do not drill into tanks, reservoirs, hoses, or cables, etc. and that the holes will not weaken the structure in any way.

 **WARNING:** Always wear appropriate eyewear, ear protection and dust mask when drilling, cutting, or sanding.

 **WARNING:** When installing, keep the transducer in its protective packaging as much as possible. Do not pull, carry or hold a transducer by the cable.

Hull material

The instructions in this manual are appropriate for installing the Active Imaging HD (Thru-Hull) Single or Dual transducer systems into a hull made of metal, wood, or solid fiberglass.

At the mounting location, the hull must:

- Be no thicker than 50.8 mm (2 in)
- Have a deadrise no steeper than 25°.

These limits are imposed by the height of the transducer stem and fairing blocks.

For hulls with a foam core, extra preparation is needed. The installation area should be reinforced to prevent deformation of the hull which could allow water to enter. Such installations should be completed with the guidance of a professional installer.

Location guidelines

- In general, thru-hull transducers should be mounted parallel to and as close as possible to the boat's keel, to ensure proper boat handling and water flow under the transducer. However, to avoid disturbing the water in front of a (centered) propeller, you may need to offset the transducer from center.
- Do not mount a transducer in line with objects or hull features that could cause turbulent water to flow around the transducer, including strakes, trim tabs, other fairing blocks or instruments, propellers, or near water intakes or discharge openings.
- Do not mount a transducer where the boat is supported during trailering, launching, hauling or storing.
- Make sure there is nothing around the mounting location that could block or reflect a transducer's acoustic beams. Mount a transducer away from areas prone to electrical and acoustic noise and vibration.
- A transducer will not work while it is out of the water. Ensure it is in contact with the water at all boat speeds.

Select location

The transducer's mounting location depends on the shape of your hull.

On single-drive vessels, if the propeller is turning clockwise when viewed from behind the vessel, mount the

transducer on the starboard side. If the propeller is turning counter-clockwise, mount the transducer on the port side.

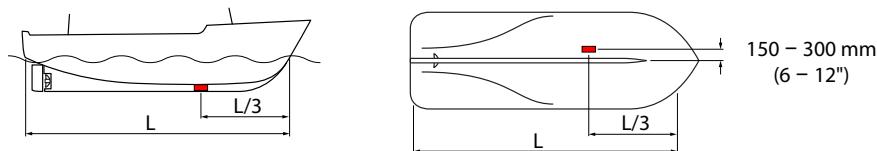
If the hull has a steep deadrise, consider mounting dual transducers.

A distance of 152–305 mm (6–12 in) between the transducer and the keel is recommended, to prevent a narrow valley between the fairing block and the keel that could cause a turbulent flow of water.

Displacement hull

In the diagrams below, L is the loaded waterline length.

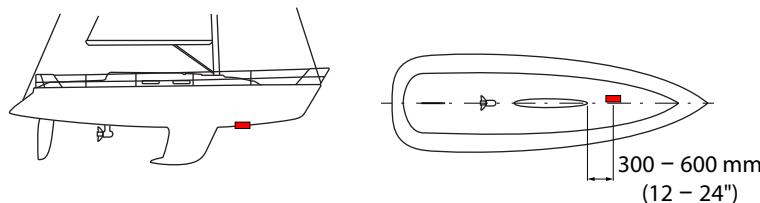
Install the transducer about $\frac{1}{3} L$ back from the bow, and 150–300 mm (6–12 in) starboard of the centerline (for a clockwise-turning propeller).



→ **Note:** If the keel blocks the transducer's side beam, install a dual transducer system.

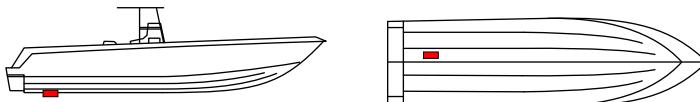
Fin keel sailboat

Install the transducer 300–600 mm (12–24 in) in front of the keel, at the point of minimum deadrise angle, and close to the centerline.



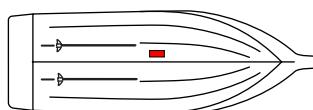
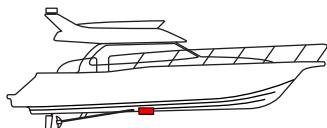
Planing hull (outboard, stern drive)

Install the transducer aft, between the centerline and the first set of lifting strakes.



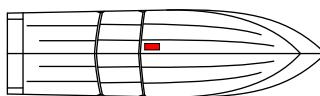
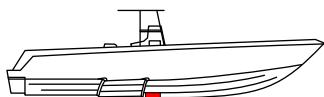
Planing hull (inboard: shaft or pod drive)

Install the transducer in front of the propellers and shafts, and between the two drives.



Stepped hull

Install the transducer on the first step back from the bow, as close to the profile change (step) as possible. The transducer should be as central as possible.



Steep deadrise hull: dual transducer installation

If the hull of your boat has a steep deadrise angle, or structure such as a keel that partially obstructs the left or right side beams from a single transducer, a dual installation is needed.

In addition to the other guidelines, the dual transducers should be mounted:

- one each side of the keel, parallel to the keel, and equal distances from the keel.
- in line with each other bow–stern, not one further forward than the other.

The bottom of the keel should be lower in the water than the two transducers.

Install the port transducer on the port side (left side) of the vessel and install the starboard transducer on the starboard side (right side) of the vessel. The port and starboard transducers are **not** interchangeable.

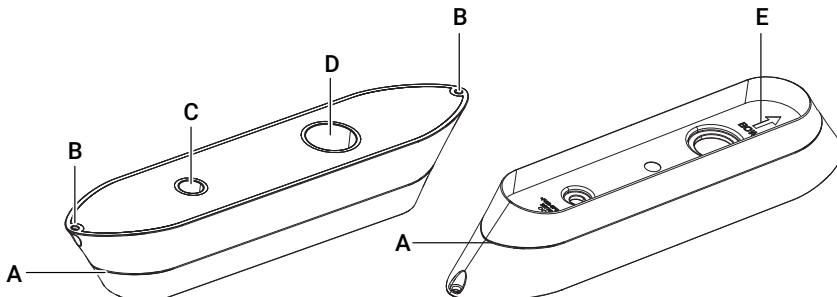
FAIRING BLOCKS

The fairing block ensures the face of the installed transducer is parallel to the waterline.

Before installing a thru-hull transducer and fairing block, the fairing block must be measured and cut to fit against the hull. Both the top and bottom pieces of the cut fairing block are needed for the installation.

The groove (A) around the fairing block is where the fairing block should be cut if you are installing the transducer on a flat (0° deadrise) section of hull. Cuts should not cross below the plane marked by (A).

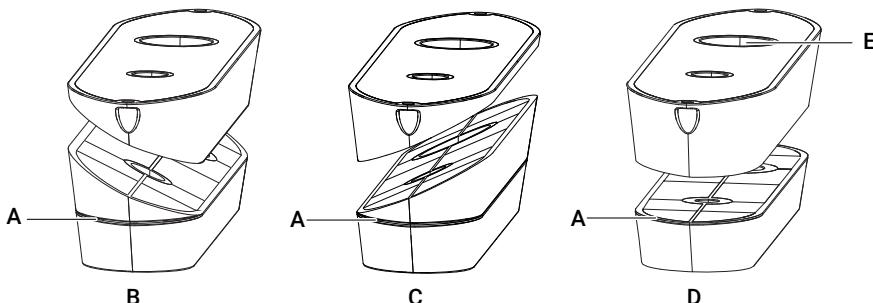
An arrow on the underside of the fairing block (E) shows which end of the fairing block is towards the bow.



- A Groove on fairing block
- B Holes used to attach fairing block to timber for cutting
- C Hole for anti-rotation stud
- D Hole for transducer stem
- E Arrow showing forward (bow) direction

A dual installation requires two fairing blocks. The cut for the starboard fairing block (C) is angled in the direction opposite to the cut for the port fairing block (B).

→ **Note:** Never cut the fairing block lower than plane marked by the groove on the fairing block (A).



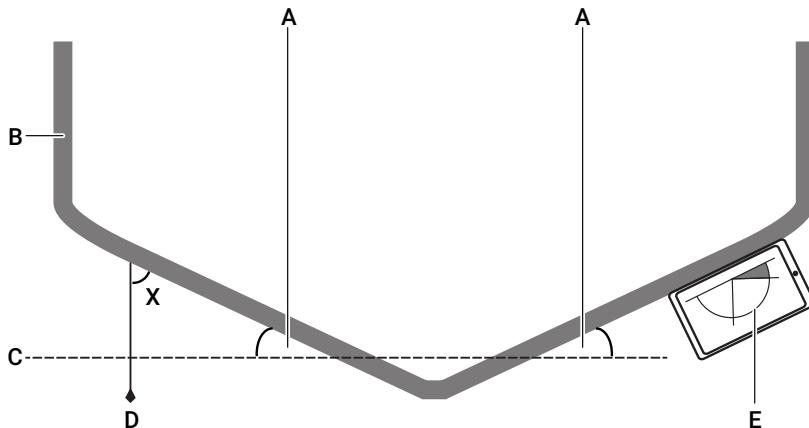
- A Groove on fairing block
- B Fairing block cut for port side installation
- C Fairing block cut for starboard side installation
- D Fairing block cut for installation on a flat hull
- E Hole for transducer stem at front (bow) end

Measure hull deadrise

The angle of the fairing block cut depends on the deadrise of the hull at the mounting location.

The deadrise is the angle measured upward from a line parallel to the water surface to the outer surface of the hull (A).

→ **Note:** The diagram shows the back of the vessel (stern), and is not to scale.

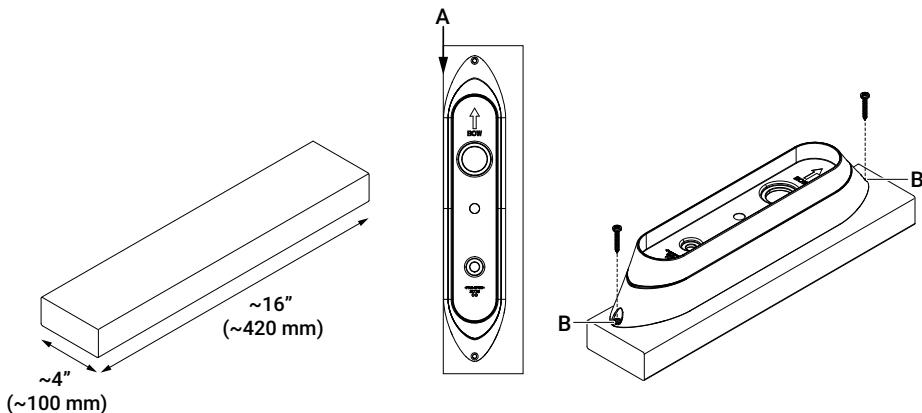


- A** Deadrise. If the deadrise is greater than 25°, stop and seek further advice.
- B** Hull. If the hull thickness is greater than 2 in (50.8 mm) at the mounting location, stop and seek further advice.
- C** Horizontal, parallel to water surface.
- D** Plumb line. Use a plumbline and protractor to measure **X** (the angle complementary to the deadrise) if you don't have a clinometer. Deadrise = $90^\circ - X$.
- E** Clinometer, or cellphone with clinometer app.

Mount fairing block for cutting

You will need to cut the fairing block into two pieces using a band saw or table saw. To guide your cut, temporarily attach the fairing block upside down to a piece of timber (not supplied).

- 1 Cut a piece of planed, square-edged timber slightly longer than the fairing block. Standard 2x4 timber cut to a length of 16 in (~420 mm) works well.
- 2 Place the fairing block's widest surface on the widest face of the timber.
- 3 Align the long edge of the fairing block flush against the long edge of the timber (A). The larger hole in the fairing block is at the forward (bow) end of the fairing block.
- 4 Attach the fairing block to the timber through the two holes (B) on the ends of the fairing block, using the supplied screws (#2 Philips).



Cut fairing block

⚠️ WARNING: To avoid damaging the transducer when using the saw, do not fit the transducer into the fairing block until after the fairing block is cut.

⚠️ WARNING: Wear appropriate eye protection, ear protection and dust mask when drilling, cutting or sanding.

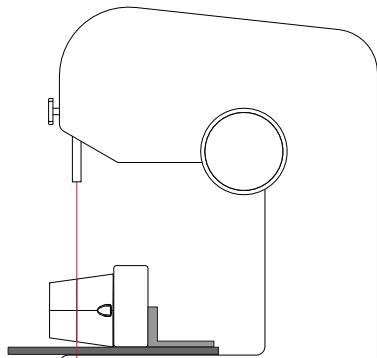
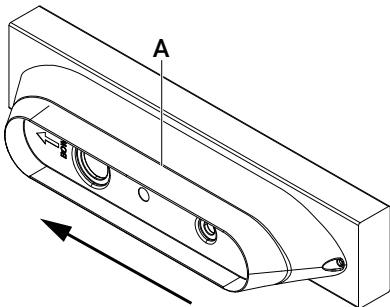
Flat cut for a flat hull

If you are mounting the transducer at a flat (0° deadrise) position on the hull:

- 1 The saw blade should be at a right angle (90°) to the saw table.
- 2 Push the fairing block through the saw blade, making sure the blade cuts along the 0° deadrise groove on the fairing block (A).

→ **Note:** For a hull with 0° deadrise, it doesn't matter whether the fairing block enters the blade bow first or stern first.

→ **Note:** Support the flat faces of the timber against the saw table and saw fence. The flat faces of the timber keep the fairing block aligned for a plane cut.



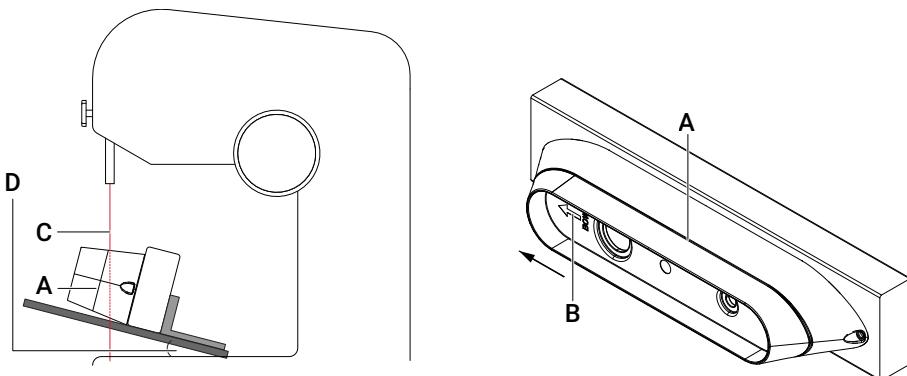
- 3 After the fairing block is cut, unscrew the upper part from the timber.
- 4 Remove any melted plastic or rough edges from both pieces of the fairing block. Ensure the cut surfaces are smooth and free from debris.

Angle cut for starboard side installation

→ **Note:** If you are mounting a dual transducer system on a sloping hull, the cuts on the port and starboard fairing blocks slope in different directions.

- 1 Adjust the angle (**D**) of the saw table to match the deadrise at the mounting location.
- 2 Note the arrow (**B**) showing the bow end of the fairing block. Align the fairing block so it enters the saw blade **bow end first**.
- 3 Push the fairing block through the saw blade. Make sure the blade (**C**) only cuts the fairing block on the wider side (timber side) of the 0° deadrise groove (**A**) around the fairing block.

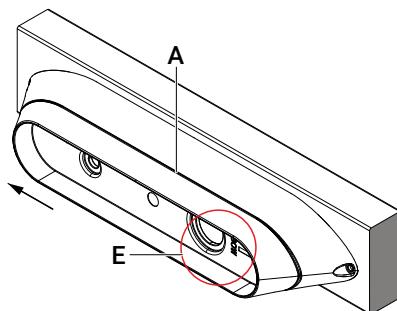
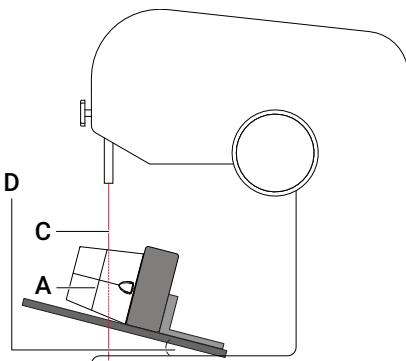
→ **Note:** Support the flat faces of the timber against the saw table and saw fence. The flat faces of the timber keep the fairing block aligned for a plane cut.



- 4 After the fairing block is cut, remove the upper part of the fairing block from the timber (the screws and timber can now be reused for the other fairing block).
- 5 Remove any melted plastic or rough edges from both pieces of the fairing block. Ensure the cut surfaces are smooth and free from debris.

Angle cut for port side installation

- 1 Adjust the angle (**D**) of the saw table to match the deadrise at the mounting location.
- 2 Note the arrow (**E**) showing the bow end of the fairing block. Align the fairing block so it enters the saw blade **stern end first**.
- 3 Push the fairing block through the saw blade. Make sure the blade (**C**) only cuts the fairing block on the wider side (timber side) of the 0° deadrise groove (**A**) around the fairing block.
- 4 → **Note:** Cutting the second fairing block stern end first lets you keep the saw table at the same angle for the cuts in both fairing blocks, if the port and starboard hull deadrises are the same.
- 5 → **Note:** Support the flat faces of the timber against the saw table and saw fence. The flat faces of the timber keep the fairing block aligned for a plane cut.



- 4 After the fairing block is cut, remove the upper part of the fairing block from the timber (the screws and timber can now be reused).
- 5 Remove any melted plastic or rough edges from both pieces of the fairing block. Ensure the cut surfaces are smooth and free from debris.

INSTALLATION

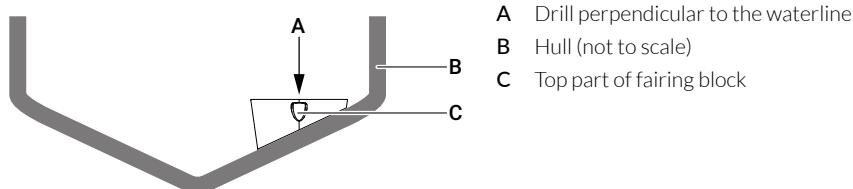
Drill holes in hull

Inside the hull

- 1 Inside the boat, place the top half of the cut fairing block in its intended position. The larger hole in the fairing block, for the transducer stem, is at the front (bow) end. The fairing block should be parallel to the keel, as best you can judge from the inside of the hull.
- 2 Mark the center of the transducer stem hole on the inside of the hull, and drill a pilot hole for the transducer stem hole through the hull. (Diameter 3 mm (1/8 in) is appropriate.)

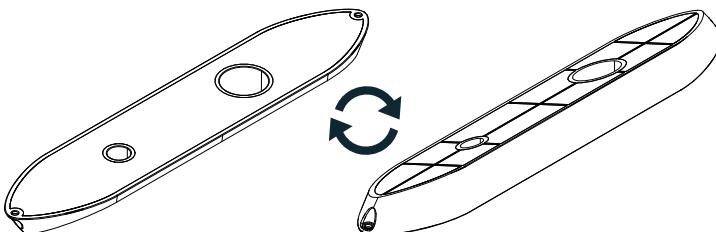
→ **Note:** Check from outside the hull that the pilot hole is in the correct location. If it is not, repeat steps 1 and 2 to create a new pilot hole. An incorrect hole can be filled with marine sealant.

- 3 Return to the inside of the boat with a 38 mm (1 1/2 in) hole saw. Place the top half of the fairing block in position and use it to guide the hole saw into the pilot hole, making sure the hole is perpendicular to the waterline (A). Drill a 38 mm (1 1/2 in) hole through the hull from inside to outside.



Outside the hull

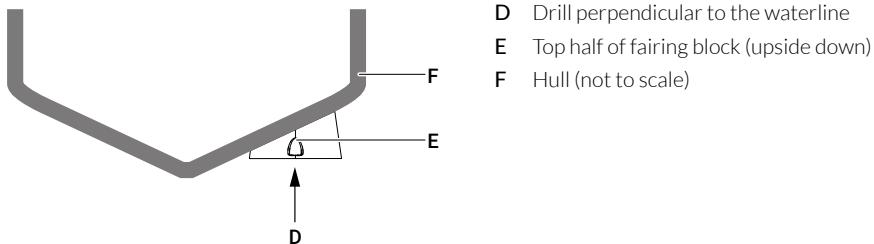
- 4 Move to outside the boat. Select the **top** half of the cut fairing block, and turn it over so it is upside down.



- 5 Position the cut face of the upper part of the fairing block (E) against the outer hull of the boat (F), matching the large hole in the fairing block to the hole you just made in the hull. Make sure the fairing block is parallel to the boat's keel.
- 6 Mark the position on the outside of the hull for the anti-rotation stud hole. This hole is astern of (behind) the first hole you made. Create a pilot hole (diameter 3 mm ($\frac{1}{8}$ in)) for the anti-rotation stud hole.
- 7 Use a 19 mm ($\frac{3}{4}$ in) hole saw. Use the top part of the fairing block upside down (E) to guide the hole saw into the pilot hole, making sure the drill is perpendicular to the waterline.

→ **Note:** Do not use the bottom part of the fairing block as a drill guide.

- 8 Drill a 19 mm ($\frac{3}{4}$ in) hole through the hull from outside to inside.



- 9 Deburr all holes after drilling.

Fit anti-rotation stud

The anti-rotation stud prevents the transducer and fairing block from rotating relative to the hull when the boat moves through the water.

→ **Note:** Always install an Active Imaging HD (Thru-Hull) transducer with its anti-rotation stud.

- 1 Thread two M10 nuts (supplied) onto the end of the anti-rotation stud that does not have the blue nylon threadlock patch.
- 2 Tighten the upper nut against the lower nut, so the upper nut acts as a jam nut.
- 3 Insert the end of the anti-rotation stud with the nylon threadlock patch into the threaded hole on the transducer.
- 4 Using a 17 mm wrench on the jam nut (upper nut), tighten the anti-rotation stud securely into the transducer.
- 5 Remove both M10 nuts from the anti-rotation stud and save them. (Use two wrenches so the threaded stud is not loosened from transducer while removing the nuts.)

Dry fit and mask

Before applying any adhesive sealant, make sure everything fits together.

- 1 Insert the transducer into the bottom part of the fairing block, with the transducer stem and anti-rotation stud in the fairing block holes.
- 2 Put masking tape on the transducer's urethane surface just outside the rim of the fairing block, to protect the transducer windows from drips or smears of sealant.
- 3 Fit this assembly into the prepared holes in the hull.

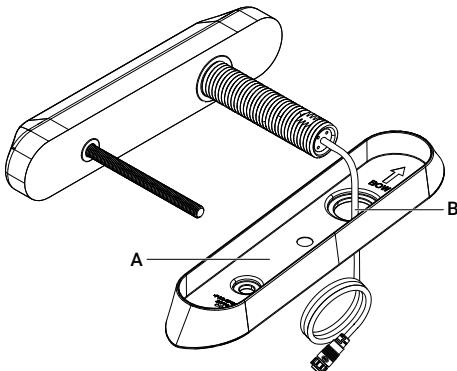
- 4 While another person supports the transducer outside the hull, move inside the hull. Place the top half of the fairing block in position over the stem and anti-rotation stud inside the hull. Confirm there are no clearance issues.

 **WARNING:** Do not install a mis-cut fairing block. Replace it instead.

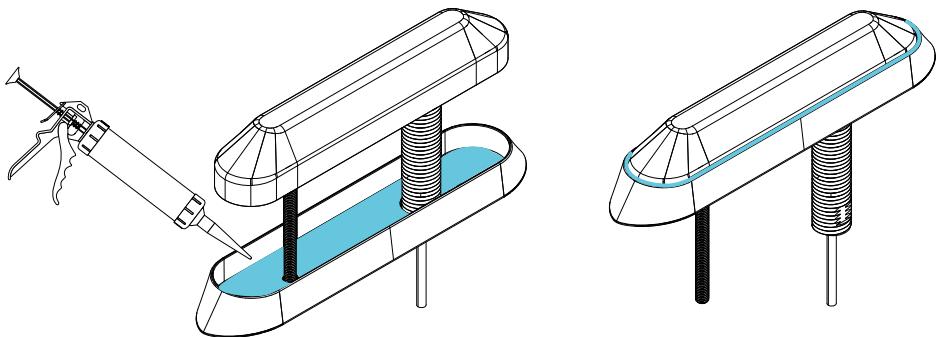
- 5 While the dry fit is in place, use masking tape to outline the top part of the fairing block where it contacts the inner hull. (Leave a slight margin with the masking tape so the masking tape becomes the boundary of the cured sealant.)
- 6 Outside the hull, with the bottom part of the fairing block in the correct position, use masking tape to outline the fairing block on the hull. Leave a slight margin around the fairing block so the masking tape becomes the boundary of the cured sealant.
- 7 Remove the transducer and fairing block parts from their test positions.
- 8 To ensure proper adhesion of the marine sealant, follow the manufacturer's instructions to remove dirt, grease, and anti-fouling coating from the installation areas you marked inside and outside the hull.
- 9 Use fine sandpaper (220–320) to sand inside the areas you marked. Make sure to wear appropriate protective wear, and clean away dust resulting from drilling and sanding.

Attach transducer to fairing block

- 1 Outside the hull, flip over the bottom half of the fairing block so that the transducer pocket (A) is upward. Feed the transducer cable through the large hole (B).



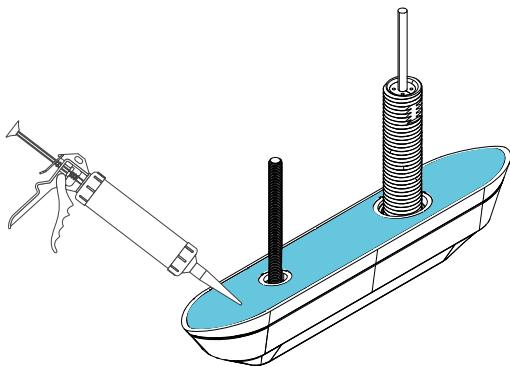
- 2 Generously coat the transducer pocket in the bottom half of the fairing block with a marine sealant suitable for below-waterline use, such as Sikaflex® 291 or 3M™ 4200. Apply enough sealant so that when the transducer and fairing block are mated, the sealant pushes out to fill the gap between the edge of the transducer and the fairing block pocket. Insert the transducer into the bottom half of the fairing block so the flat faces meet.



- 3 Wipe away excess sealant that oozes onto the urethane surface of the transducer or the fairing block.
- 4 Carefully remove the masking tape from the transducer before the sealant dries.

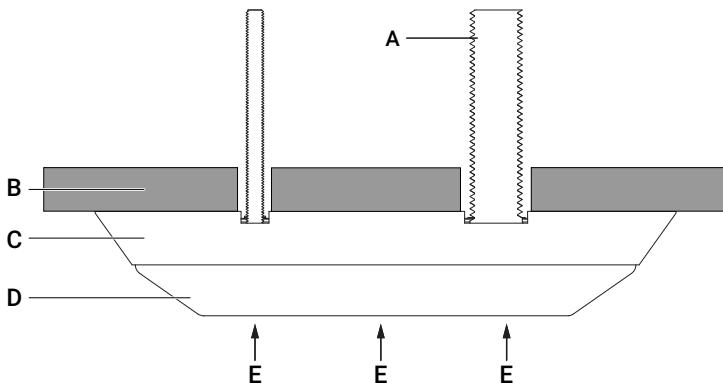
Attach assembly to hull

- 1 Flip the transducer and fairing block over, so the transducer stem is upward.
- 2 Apply a uniform layer of sealant to the upper face of the lower part of the fairing block. This is the surface that will be in contact with the bottom of the hull. The layer of sealant should be approximately 2 mm ($\frac{1}{16}$ in) thick.



- 3 From outside the hull, feed the transducer cable through the large hole in the hull.
- 4 Fit the transducer stem and anti-rotation stud through the holes in the hull. Apply gentle pressure to the assembly to secure the lower half of the fairing block and attached transducer to the hull in its final position.

→ **Note:** The transducer must be supported in position outside the hull (E, below) until you have installed and tightened the nuts on the transducer stem and anti-rotation stud.



Cross-section view

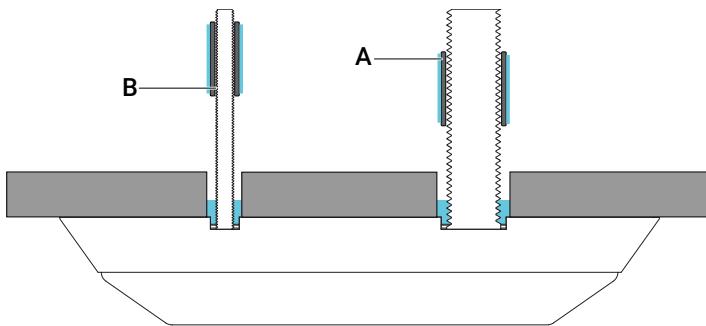
- A Transducer stem at forward/bow end
- B Hull with drilled holes
- C Bottom part of fairing block
- D Transducer
- E Support the transducer until installation is complete

Fit isolation sleeves

The isolation sleeves prevent the metal transducer stem and anti-rotation stud from contacting the hull, which could result in galvanic corrosion. The sleeves are also needed to ensure a secure fit.

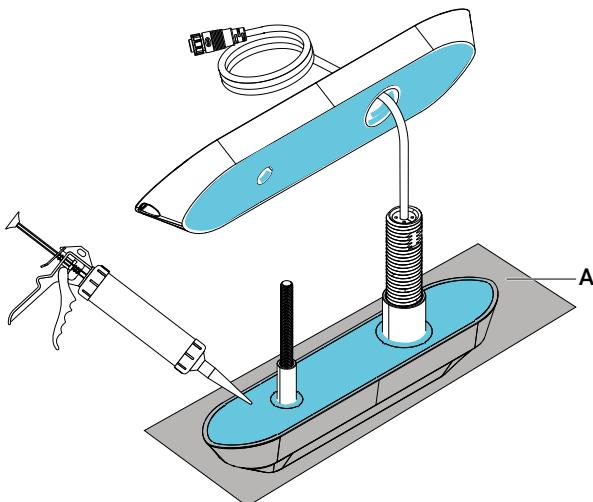
→ **Note:** Always install an Active Imaging HD (Thru-Hull) transducer with isolation sleeves fitted on the transducer stem and anti-rotation stud, even if the boat's hull is not metal.

- 1 Carry the isolation sleeves, the upper part of the fairing block, sealant, and other fittings to the inside of the boat.
- 2 Find the transducer cable inside the hull, and thread the large isolation sleeve onto the transducer cable.
- 3 Place a small amount of sealant in each hole, and coat the outsides of the isolation sleeves with sealant in a layer approximately 2 mm ($\frac{1}{16}$ in) thick.
- 4 Slide the large isolation sleeve (A) over the transducer stem and down as far as it will go, so its bottom rim is in contact with the lip at the base of the fairing block.
- 5 Slide the small isolation sleeve (B) over the anti-rotation stud and down as far as it will go, so its bottom rim is in contact with the lip at the base of the fairing block.



Install top of fairing block

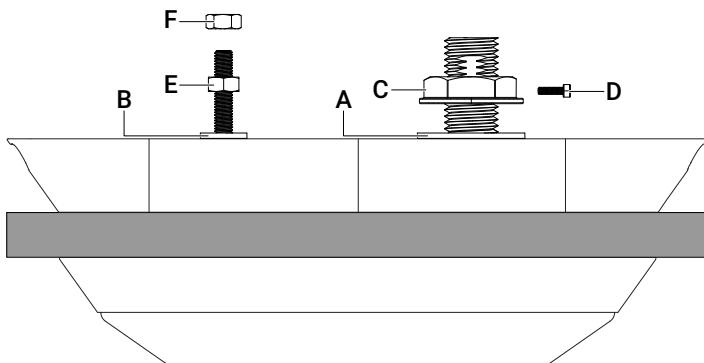
- 1 While on top of the boat, pass the transducer cable through the transducer stem hole (the larger hole) in the top part of the fairing block.
- 2 Apply a thin layer of sealant to the hull (**A**) inside the masked off area.
- 3 Coat the insides of the two holes in the top piece of the fairing block, and the cut face (bottom face) with marine sealant.



- 4 Lower the top half of the fairing block over the transducer stem and anti-rotation stud. Press it gently into position against the inside of the hull.
- 5 If gaps are visible around the stem and anti-rotation stud, fill them in with sealant. Then wipe away excess sealant that oozes over the edges or top surface of the fairing block.

Fit washers and nuts

- 1 Pass the transducer cable through the large nylon washer. Move the nylon washer (**A**) down over the transducer stem to contact the top surface of the fairing block.
- 2 Place the small nylon washer (**B**) on the anti-rotation stud and move the washer down to contact the top surface of the fairing block.
- 3 Screw the stem nut (**C**) down the transducer stem. Tighten the stem nut against the washer using a 46 mm wrench or adjustable wrench.
- 4 Insert the set screw (**D**) into the stem nut and tighten it using a 3 mm Allen key.
- 5 Place the first M10 nut (**E**) onto the anti-rotation stud and tighten it down against the washer using a 17 mm wrench.
- 6 Place the second M10 nut (**F**) onto the anti-rotation stud, and tighten it down onto the first nut. Hold the lower nut (**E**) in position with a second wrench, to prevent it turning with the top nut and over tightening the stud.



- 7 To complete the installation, while the sealant is still wet, remove masking tape from inside and outside the hull to create a crisp finished edge.
- 8 Wait the required amount of time for the sealant to cure (refer to the sealant manufacturer's instructions) before testing the boat in water.

Test for leaks

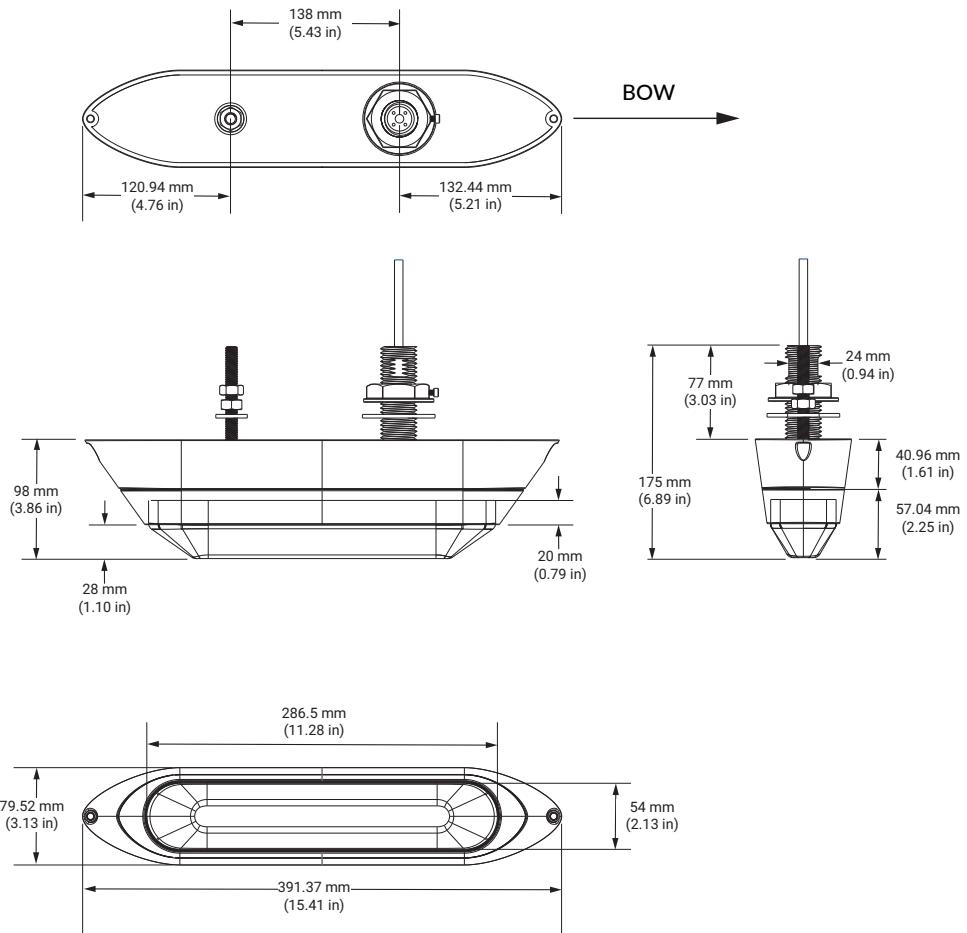
When the cure time for the sealant has been reached, place the boat in the water and check for leaks around the transducer installation immediately. Even a small leak can allow a lot of water to accumulate, so monitor the boat carefully for several hours and do not leave the boat unattended.

DIMENSIONS

The diagram shows the Active Imaging HD (Thru-Hull) transducer fitted to the uncut fairing block.

The hull of the boat is **not** shown.

The dimensions are the same for Active Imaging HD (Thru-Hull, Single) and Active Imaging HD (Thru-Hull, Dual) systems.



TECHNICAL SPECIFICATIONS

The following specifications apply for Active Imaging HD (Thru-Hull, Single) and Active Imaging HD (Thru-Hull, Dual) transducer systems.

Environmental	
Water temperature for operation	0°C to 35°C (32°F to 95°F)
Storage temperature	-30°C to 70°C (-22°F to 158°F)
Physical	
Weight: Single transducer	1.62 kg (3.57 lb)
Weight: Dual transducer (port)	1.59 kg (3.50 lb)
Weight: Dual transducer (starboard)	1.40 kg (3.09 lb)
Weight: fairing block (uncut)	0.55 kg (1.2 lb)
Cable	9-pin connector; 1.8 m (6 ft) Y-cable (with dual package only) 0.3 m (11.8 in)
Mounting	Thru-Hull, using fairing block
Frequencies	
Sonar	Wide Beam High CHIRP, 200 kHz
DownScan	700 kHz CHIRP; 1200 kHz CHIRP
SideScan	455 kHz CHIRP; 1075 kHz CHIRP
Maximum depth	
Sonar	305 m (1000 ft) at 200 kHz/High CHIRP
DownScan	46 m (150 ft) at 700 kHz 27 m (90 ft) at 1200 kHz
SideScan	91 m (300 ft) side range at 455 kHz 46 m (150 ft) side range at 1075 kHz
Maximum boat speed for sonar function	
Sonar	48 knots (55 mph)
DownScan	9 knots (10 mph)
SideScan	9 knots (10 mph)

MAINTENANCE

Check your transducer mounting hardware periodically for damaged or missing parts, and replace as required.

Cleaning

Use a mild household detergent to gently remove aquatic growth, oil, and dirt from the transducer surface. Take care to avoid scratches. Do not use an abrasive cleaner. If the fouling is severe, lightly wet-sand with fine-grade wet-dry paper.

Do not use products containing solvents to clean the transducer.

Anti-fouling coating

You may find it helpful to cover transducers exposed to saltwater with a water-based anti-fouling coating made for transducers. Ensure the anti-fouling coating is chemically compatible with urethane and nylon. Never use ketone-based paint. Follow the manufacturer's instructions and ensure the coating has no bubbles, cracks, or dust, which could degrade the acoustic signal.

Reapply the anti-fouling coating at the intervals recommended by the manufacturer.

