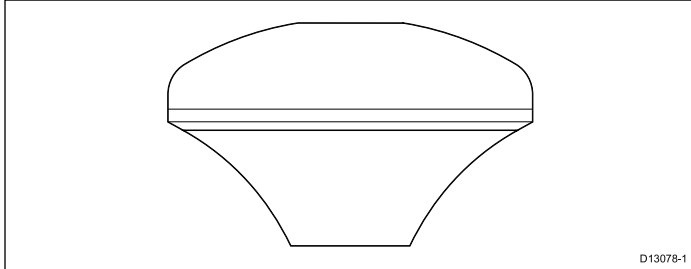


GA150 installation instructions

GA150 product overview

The GA150 is an external antenna capable of improving the reception of a Multifunction display's (MFD's) internal Global Navigation Satellite System (GNSS) receiver.



The GA150 has the following features:

- 10 m (33 ft.) fitted cable.
- Low power consumption.
- Surface or pole mountable.

Note: When the Beidou GNSS becomes available a GA150 MUST be used in order to obtain reception. Your MFD will also require a software update to enable support of the Beidou system.

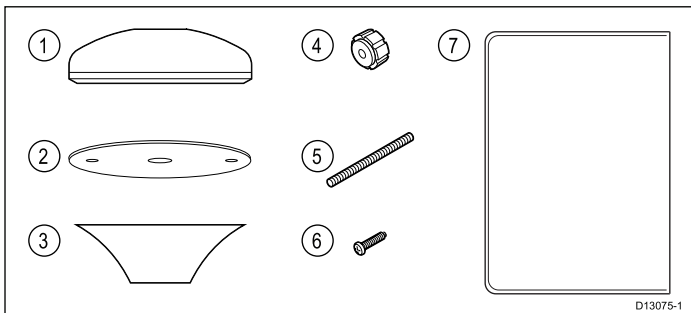
GA150 MFD compatibility

The GA150 antenna is compatible with the following Raymarine variant MFDs:

- a95 / a97 / a98
- a125 / a127 / a128

GA150 Parts supplied

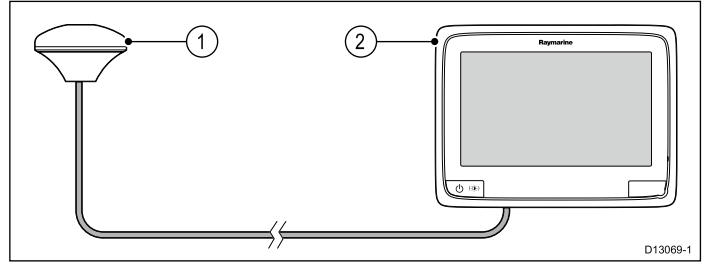
The parts supplied with your GA150 GNSS (GPS / GLONASS) antenna are shown below.



1. GA150 antenna (The antenna is supplied with a fitted 10 m (33 ft.) cable for connection to your MFD.)
2. GA150 mounting gasket
3. Pole mount adaptor
4. 2 x Thumbs nuts
5. 2 x Studs
6. 2 x screws
7. Document pack

GA150 connection

a9x and a12x MFDs include an internal GNSS (GPS / GLONASS) receiver. The GA150 antenna can be used to improve the GNSS (GPS / GLONASS) receiver's reception.



1. GA150 antenna
2. a9x or a12x variant MFD

For installation details for your external antenna, refer to the documentation that accompanied the antenna.

Note:

- The Beidou GNSS is supported but not currently available.
- A GA150 must be connected in order to receive the Beidou system when it becomes available.
- A software update will be required to add support for Beidou once the system is available. Please check with your Raymarine dealer for further details.

Antenna cable length

The GA150 is supplied with a fitted 10 m (33 ft.) cable. The length of the antenna cable can be extended if required.

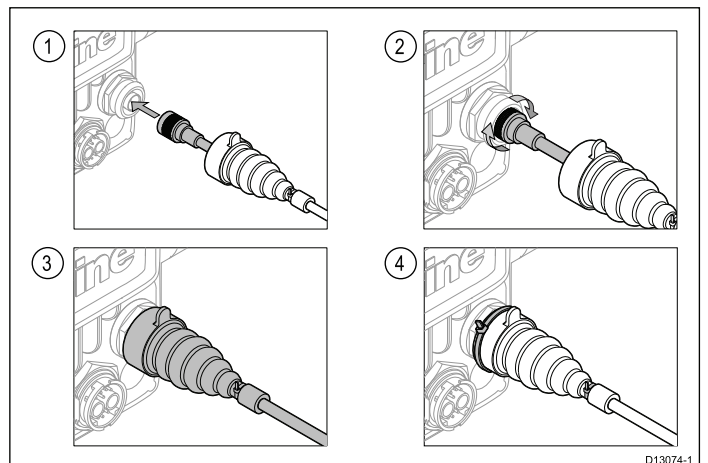
The antenna cable length can be extended by up to 10 m (33 ft.) giving a total maximum cable length of 20 m (66 ft.)

50 ohm coaxial cable and reliable connectors (offering protection against water ingress) must be used when extending the antenna cable.

Note: Extending the cable length by more than the recommended maximum length will result in signal degradation.

Connecting an external antenna

Follow the steps below to connect the GA150 external antenna to your a9x or a12x variant MFD.



1. Fully insert the antenna's cable connector into the GA150 connector on the rear of your display.
2. Turn the locking collar clockwise until tight.

3. Push to protective boot over the connection on the back of the display.
4. Use the supplied cable tie to secure the protective boot over the connection.

Antenna location requirements

The antenna can be used to improve the reception of your MFD's built-in GNSS (GPS / GLONASS) receiver. Do NOT connect any other antenna to the MFD's GA150 connector.

The antenna can be mounted either on a flat horizontal surface or on a suitable pole.

- If you intend to surface mount the antenna, ensure you have access to the underside of the mounting surface.
- If you intend to pole-mount the antenna, the pole needs to have a 1 inch 14 TPI thread.

Important: The antenna must be mounted in a location that provides a good direct line of site to the entire sky, around the horizon.

Ensure that the selected mounting location is:

- Open and clear of any obstructions (such as masts, search lights, or other structures) that could block line-of-sight to the sky.
- As low as possible, to keep the antenna as stable as possible. The more stable the antenna, the more effectively it will track satellites and provide stable data.
- As far as possible (at least 1 m (3 ft) from other antennae and electronic equipment.

Do NOT mount the antenna:

- In any area where it could be stepped on or tripped over.
- Up a mast. This will cause the antenna to swing and give significant errors in position data.
- In the direct path of a radar beam.

Fitting the antenna

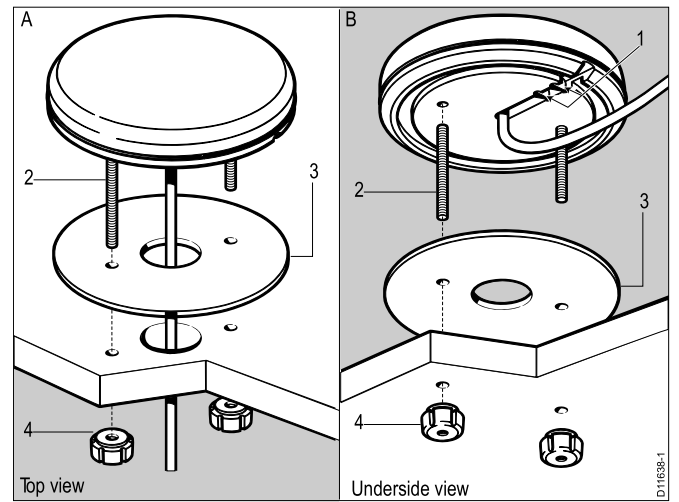
To fit the antenna:

1. Select a suitable location for the antenna as described under *Antenna location requirements*.
2. Fit your antenna using either the *Surface mounting* or *Pole mounting* procedure, as appropriate.
3. Ensuring that cable routing and connection requirements as detailed in the installation instructions for the product that the antenna will be connected to are followed.

Surface mounting

When surface mounting the antenna, you can route the cable either centrally (Option A) or from the side of the antenna (Option B).

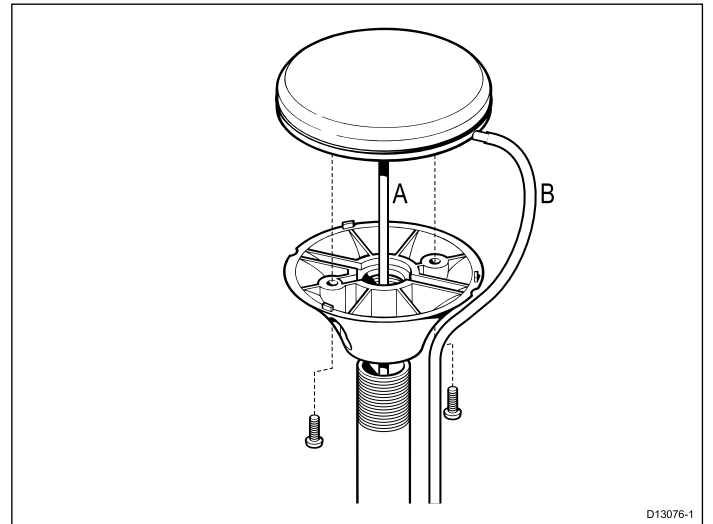
1. Use the template supplied to mark the two 6 mm (0.25 in) mounting holes.
 - OPTION A: If the cable is going to pass through the mounting surface drill a 19 mm (0.75 in) center hole.
 - OPTION B: If the cable is to be routed from the side of the antenna (i.e. above the mounting surface), remove the two plastic tabs (1) obstructing the cable channel. If you do not remove these tabs before using the cable channel, you could damage the cable.



2. Screw the two mounting studs (2) into the underside of the antenna.
3. Stick the supplied gasket (3) to the mounting surface, ensuring that the holes on the gasket correspond with the drilled holes.
4. Route the cable as follows:
 - For Option A, feed the cable down through the center hole.
 - For Option B, route the cable along the cable exit channel.
5. Carefully place the antenna so the mounting studs pass through the holes in the mounting surface.
6. Secure the antenna to the surface using the supplied thumb nuts (4).

Pole mounting

If you want to pole-mount the antenna, obtain a pole of suitable length with a 1 inch 14 TPI thread.



1. Ensuring that the *Antenna location requirements* are met, securely attach the pole to a suitable, stable point.
2. Screw the pole mount adaptor fully onto the pole and ensure it is secure on the pole.
3. Route the antenna cable as follows:
 - i. If you want to route the antenna cable directly down from the antenna (option A), feed it through the center of the pole mount adaptor and then down through the pole.
 - ii. If you want to route the antenna cable out of the side of the antenna (option B), remove the two plastic tabs from the cable channel, then feed the cable along the channel.
4. Ensuring you do not trap the cable, place the antenna on the pole mount adaptor so the screw holes align, then secure the antenna with the screws provided.