

To measure the critical dimensions:

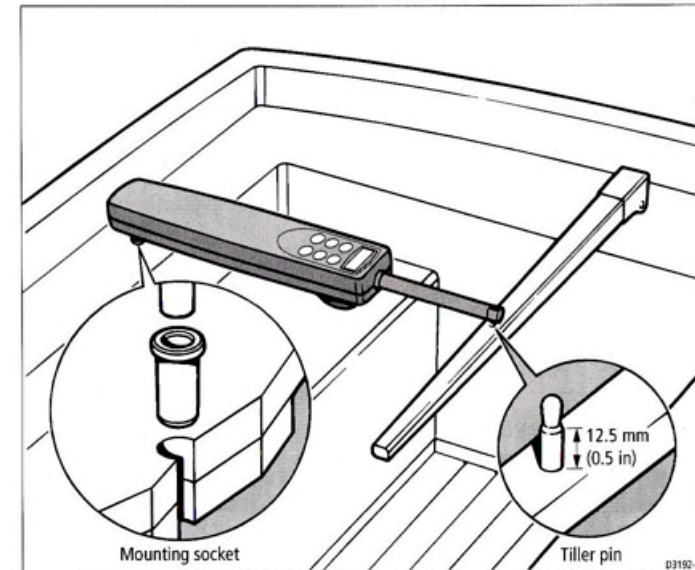
1. Clamp the tiller on the boat's center line.
2. Mark dimensions **A** and **B** and use masking tape to locate the fixing points.

Note: For standard installations, dimension **A** is measured on the starboard side of the cockpit. If you need to mount the tiller pilot on the port side of the cockpit, you can measure dimension **A** to port. However you will need to reverse the tiller pilot's operating sense when you have completed installation (see page 49).

3. Make sure that:
 - dimensions **A** and **B** are at **right angles** to each other (as shown on the diagram opposite)
 - the tiller pilot is mounted **horizontally**

Basic installation

After establishing control dimensions **A** and **B**, you can usually mount the tiller pilot directly onto the cockpit seat.



Installing the tiller pin

1. Drill a 6 mm ($\frac{1}{4}$ in) diameter hole to a depth of 25 mm (1 in) at the fixing point you have marked on the tiller.
2. Use a two part epoxy (e.g. Araldite) to fix the tiller pin in place.
3. Position the shoulder of the pin so it is 12.5 mm ($\frac{1}{2}$ in) above the tiller surface.

Installing the mounting socket

1. Drill a 12.5 mm ($\frac{1}{2}$ in) hole to a depth of 25 mm (1 in) at the fixing point you have marked on the cockpit seat.
2. If the structure at the mounting position is less than 25 mm (1 in) thick, reinforce the underside with plywood bonded into position.
3. Fix the mounting socket in place using a two part epoxy.

CAUTION:

As the tiller pilot is capable of generating high pushrod loads, you MUST:

- drill all holes to the specified size and reinforce where necessary
- allow the epoxy to harden thoroughly before applying a load

Installation accessories

If you are not able to install the tiller pilot directly onto the cockpit seat or tiller as described, one (or a combination) of the following installation accessories:

- OK
- pushrod extensions *D008*
 - tiller brackets
 - cantilever sockets
 - pedestal sockets
 - alternative tiller pins

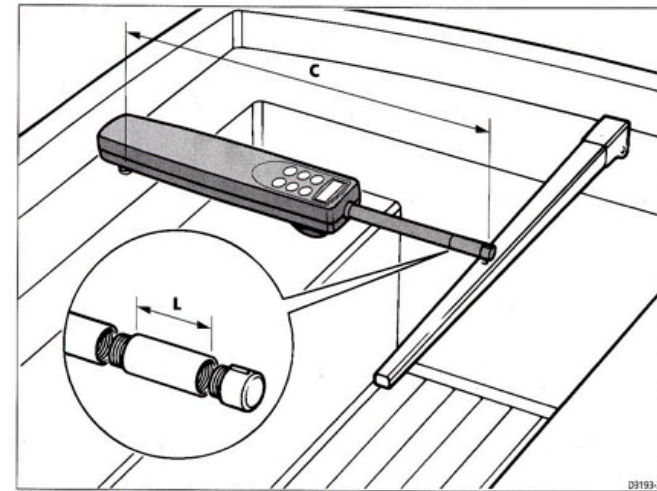
Pushrod Extensions

If you need to increase the pushrod length (because of the distance from the mounting socket location to the center line), use a Raymarine pushrod extension.

Identifying the correct pushrod extension

1. Clamp the tiller on the boat's center line.
2. Measure dimension **C**.
3. Select the appropriate pushrod extension length (and part number) using the following table.

Dimension C	Pushrod extension length L	Part no.
589 mm (23.2 in)	Standard dimension	-
615 mm (24.2 in)	25 mm (1 in)	D003
640 mm (25.2 in)	51 mm (2 in)	D004
665 mm (26.2 in)	76 mm (3 in)	D005
691 mm (27.2 in)	102 mm (4 in)	D006
716 mm (28.2 in)	107 mm (5 in)	D007
742 mm (29.2 in)	152 mm (6 in)	D008



Mounting the pushrod extension

To mount the pushrod extension:

1. Unscrew the end of the tiller pilot's pushrod.
2. Screw the extension into the pushrod.
3. Screw the pushrod end into the pushrod extension.

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Tiller brackets

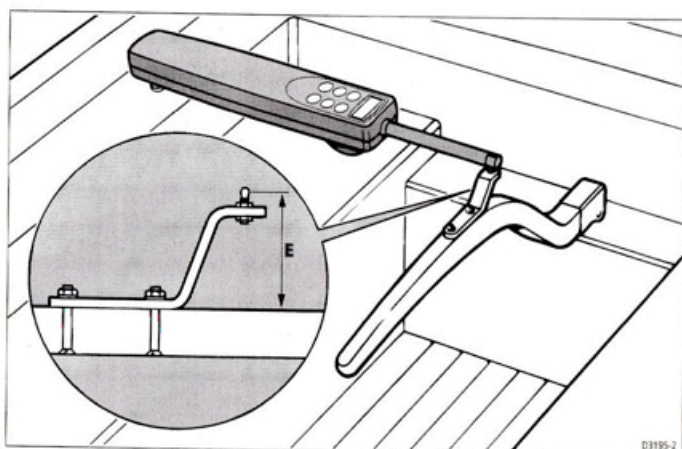
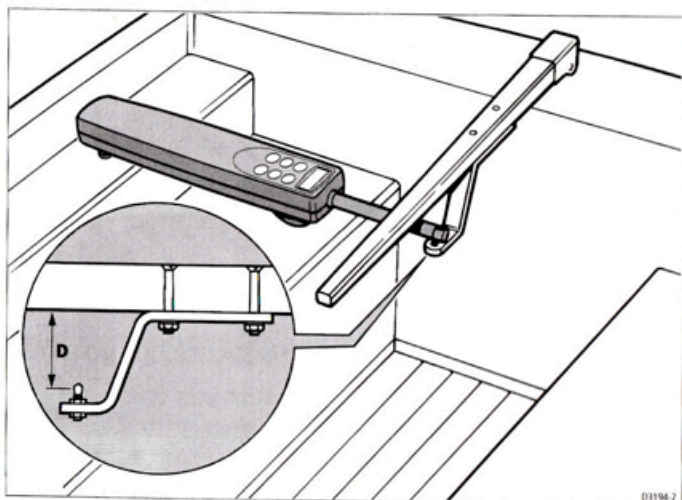
If the tiller is higher or lower than the mounting socket, you can use a Raymarine tiller bracket to vary the tiller pin offset so the pilot is horizontal.

Identifying the correct tiller bracket

1. Clamp the tiller on the boat's center line.
2. Measure dimension **D** (if the pushrod is above the tiller) or dimension **E** (if the pushrod is below the tiller).
3. Select the appropriate bracket from the following table:

Dimension D (pushrod below tiller)	Dimension E (pushrod above tiller)	Bracket part no.
25 mm (1 in)	51 mm (2 in)	D009
51 mm (2 in)	76 mm (3 in)	D010
76 mm (3 in)	102 mm (4 in)	D011

Dimension D (pushrod below tiller)	Dimension E (pushrod above tiller)	Bracket part no.
102 mm (4 in)	127 mm (5 in)	D159
127 mm (5 in)	152 mm (6 in)	D160



Mounting the tiller bracket

1. Position the tiller bracket on the center line of the tiller (above or below) and establish the critical dimensions **A** and **B**

Note: To measure dimension B on a boat with a sloping rudderstock, refer to the diagram on page 31.

2. Mark the centers of the two bracket mounting holes.
3. Drill two 6 mm ($\frac{1}{4}$ in) diameter holes through the center line of the tiller at the positions you have marked.
4. Attach the tiller bracket using two 6 mm ($\frac{1}{4}$ in) diameter bolts, nuts and washers.
5. Bond the fixing bolts in place with two part epoxy adhesive
6. When the epoxy is completely hardened, fully tighten the nuts.
7. Attach the tiller pin to the bracket.

Cantilever mounting

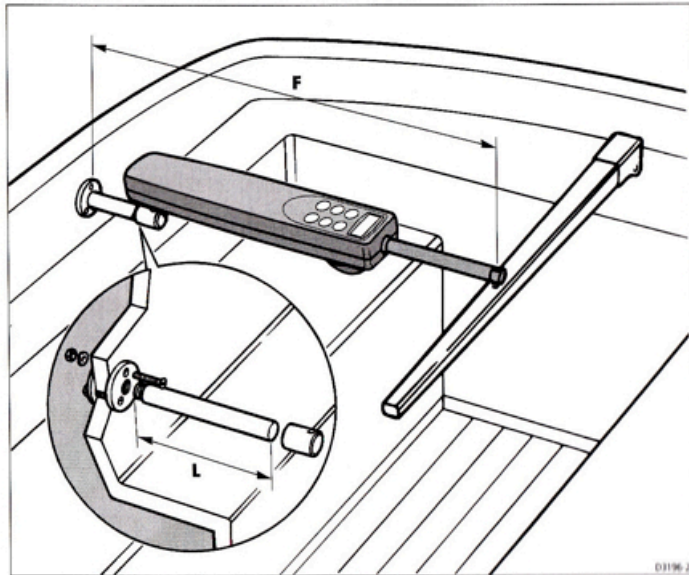
If you need to attach the tiller pilot to a vertical face (such as the cockpit sidewall), use a Raymarine cantilever socket assembly (part number D031):

- the maximum possible extension offset is 254 mm (10 in)
- you cut the cantilever to the exact length during mounting

Cutting the cantilever rod to length

1. Clamp the tiller on the boat's center line.
2. Measure dimension **F** (actual).
3. Refer to the table to establish a cutting length for the cantilever rod – **double check measurements before cutting.**
4. **Measure the rod from threaded end**, then cut the cantilever rod to length **L** using a hacksaw. Remove any sharp edges with a file.

Dimension F	Cut length L
654 mm (25.75 in)	51 mm (2 in)
705 mm (27.75 in)	102 mm (4 in)
743 mm (29.75 in)	152 mm (6 in)
806 mm (31.75 in)	203 mm (8 in)
832 mm (32.75 in)	229 mm (9 in)



Mounting the cantilever assembly

To mount the cantilever assembly:

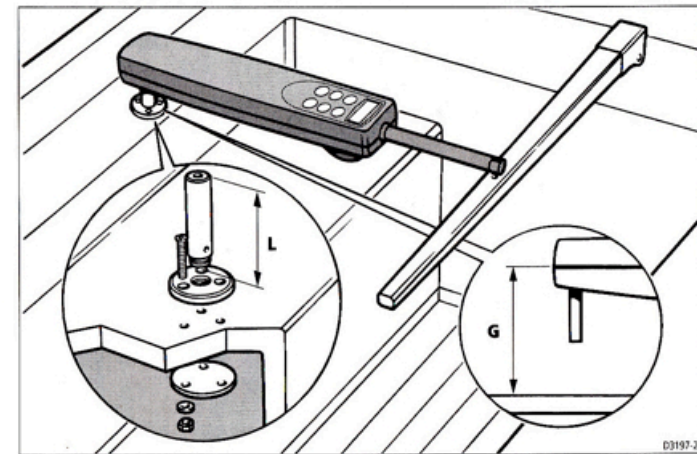
1. Temporarily assemble the cantilever by screwing the rod into the mounting ring.
2. Ensure the tiller pilot is **horizontal** and then mark the location of the mounting ring and its mounting holes.
3. Drill three 6 mm ($1/4$ in) diameter holes at the positions you have marked.
4. Bed the mounting ring on a thin coat of silicon sealant.
5. Use three 6 mm ($1/4$ in) diameter bolts, nuts and washers to attach the mounting ring to the backing plate (with the backing plate on the other side of the mounting surface, as shown above).
6. Screw the rod firmly into place.
7. Roughen the end of the cantilever rod and the inside of the cap to provide a key. Then apply two part epoxy adhesive to the rod end and the cap.
8. Place the cap over the rod end, **making sure the hole for the tiller pilot mounting pin faces upwards**. Allow the epoxy adhesive to harden fully before applying a load.

Note: When the tiller pilot is not in use, you can unscrew the complete rod assembly to leave the cockpit unobstructed.

Pedestal socket mounting

If you need to raise the height of the mounting socket to keep the tiller pilot horizontal, use a Raymarine pedestal socket assembly.

Identifying the correct pedestal socket



1. Clamp the tiller on the boat's center line.
2. Establish the standard control dimensions **A** and **B**.
3. With the tiller pilot horizontal, measure dimension **G**.
4. Select the appropriate pedestal socket assembly from the table.

Dimension G	Pedestal socket length L	Part no.
64 mm (2.5 in)	Standard dimension	-
102 mm (4.0 in)	38 mm (1.5 in)	D026
114 mm (4.5 in)	50 mm (2.0 in)	D027
127 mm (5.0 in)	64 mm (2.5 in)	D028
140 mm (5.5 in)	76 mm (3.0 in)	D029
153 mm (6.0 in)	89 mm (3.5 in)	D030

Mounting the pedestal socket

1. Mark the mounting ring's position on the cockpit seat or counter.
2. Ensure that control dimensions **A** and **B** are correct.

3. Mark the bolt holes on the mounting ring and then drill three 6 mm ($1/4$ in) diameter holes.
4. Bed the mounting ring on a thin coat of silicon sealant.
5. Use three 6 mm ($1/4$ in) diameter bolts, nuts and washers to attach the mounting ring to the backing plate (with the backing plate on the other side of the mounting surface, as shown above).
6. Screw the mounting socket firmly into place.

Note: When the tiller pilot is not in use, you can unscrew the complete rod assembly to leave the cockpit unobstructed.

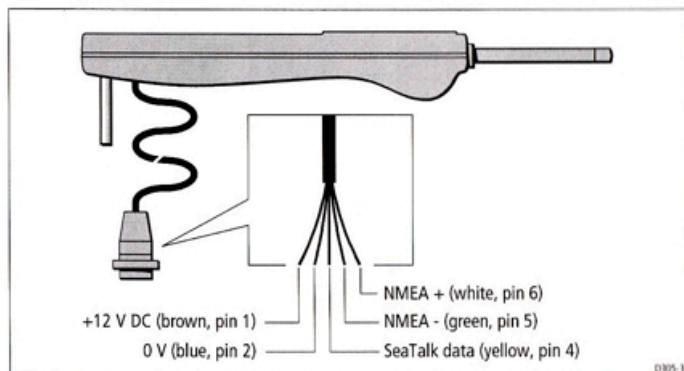
Alternative tiller pins

Your Raymarine dealer can also supply the following alternative lengths of tiller pin for other non-standard installations.

Description	Size	Part no.
Small threaded tiller pin	25 mm (1.0 in)	D014
Extra length tiller pin	72 mm (2.8 in)	D020
Extra length threaded tiller pin	72 mm (2.8 in)	D021

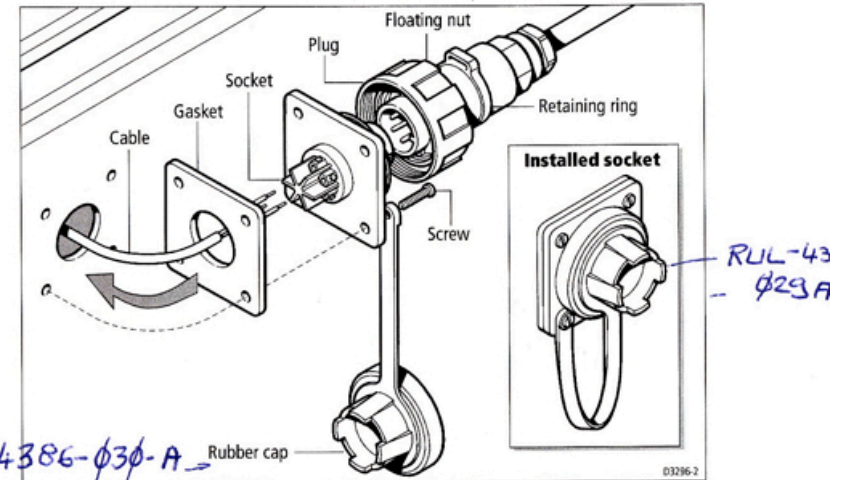
4.3 Cabling and socket installation

Both power and data are supplied to the tiller pilot via a waterproof plug and socket. The plug comes ready assembled and the socket can be mounted in the cockpit area adjacent to the tiller pilot.

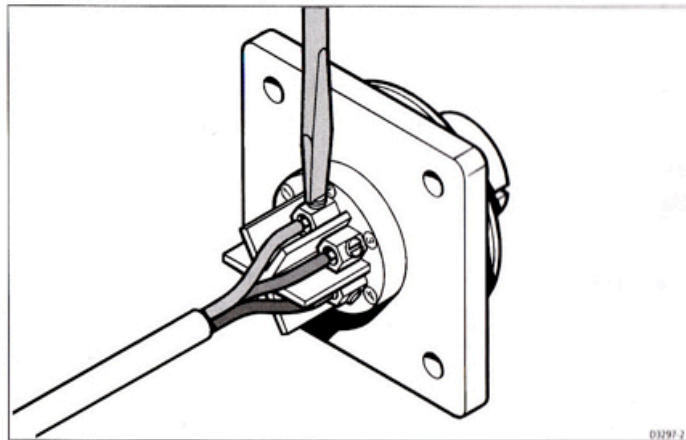
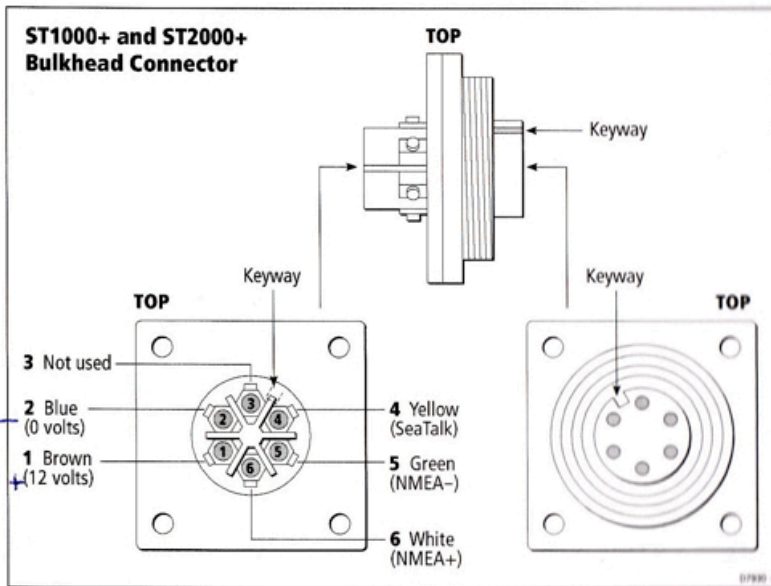


Mounting the socket

Install the tiller pilot socket as follows:



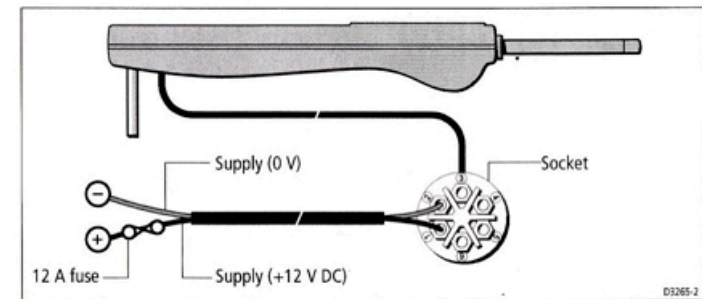
1. Attach the template (provided at the back of this handbook) to the selected bulkhead.
2. Carefully drill a 21 mm ($53/64$ in) clearance hole for the cable boss.
3. Drill 4 pilot holes (2.5 mm or $3/32$ in) for the self-tapping screws.
4. Remove the template.
5. Pass the power cable and any other cables (SeaTalk and NMEA) through the bulkhead and the gasket.
6. Use a small flat-bladed screwdriver to connect the cable(s) to the socket – refer to the illustrations on the following pages to identify the individual connections on the SeaTalk socket. Ensure that the socket is oriented correctly and note the connection numbers in relation to the keyway.



7. Assemble the rubber cap to one of the 4 self-tapping screws.
8. Secure the socket to the bulkhead using the 4 self-tapping screws.
9. Secure the cable(s) at regular intervals using suitable clips.
10. Assemble the plug to the socket by screwing the 'floating' nut onto the threaded part of the socket by hand.

11. The retaining ring is designed as a stop for the plug nut to prevent accidental disassembly. After you have tightened the floating nut, slide the retaining ring back up the plug to retain the nut.

Power supply



- The tiller pilot requires its own dedicated power supply – it cannot source its power from SeaTalk.
- Power should be taken directly from the boat's central distribution panel and protected with a **12 A fuse** or equivalent circuit breaker.

The following table shows the minimum cable size acceptable for the power supply:

Cable length	Copper area	AWG
Up to 2.5 m (8 ft)	1.5 mm ²	16
Up to 4 m (13 ft)	2.5 mm ²	14

CAUTION:

Correct power cable size is critical for correct autopilot operation. If in doubt, use a heavier gauge cable than specified. A lighter gauge cable might cause a voltage drop between the supply and the autopilot. This will reduce the power at the tiller.