36 Electrical Stage
Autopilot

General Arrangements:

1. Generally, the autopilot system for this boat contains fluxgate compass, drive unit, ST-6002 controller and S-2 course computer.
2. The fluxgate compass locates inside the bottom of V berth hanging locker. The linear drive unit locates in the port transom locker and the its link is attached to rudder steering quadrant in quad cover on cockpit area, as well as the rudder angle reference unit. The course computer locates inside electrical panel by main cabin port NAV station.

Linear Drive:

The linear drive unit

Mounting the linear drive

Mounting the drive unit involves four main steps:

1. ensuring correct drive alignment
2. securing the drive to the boat
3. connecting the drive to the steering system
4. completing a steering check

Drive alignment

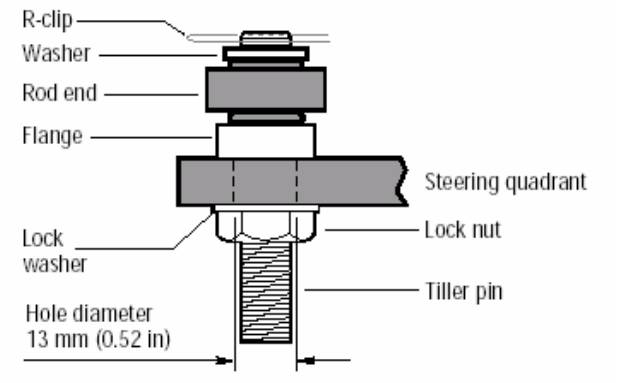
When mounting the linear drive unit, check that it is aligned correctly:

1. The main drive assembly must be at right angles to the mounting Surface.
2. The drive unit must be at right angles to the tiller arm when the rudder is amidships. The push rod must be accurately aligned with the tiller arm plane of rotation. The ball end fitting only allows up to 5 degrees misalignment between the push rod and tiller arm plane of rotation. Make sure the alignment is accurate, do not exceed +/- 5 ° limit under any circumstances.

Securing the drive on Mounting location

Before secure the drive to the boat, check the suitability of the mounting location.Attach the mounting foot with four stainless steel M10 (3/8 inch) bolts and lock nuts/lock washers.

Note: *Always mount the drive as securely as possible to make sure it performs reliably and remains correctly aligned.*



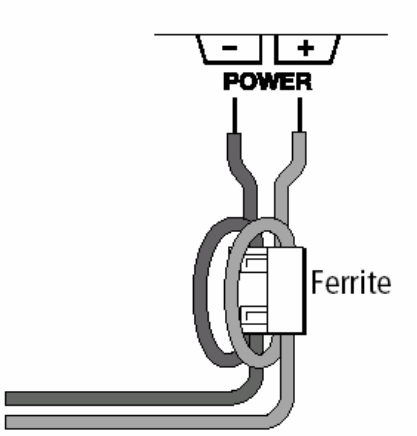
36 Electrical Stage
Autopilot

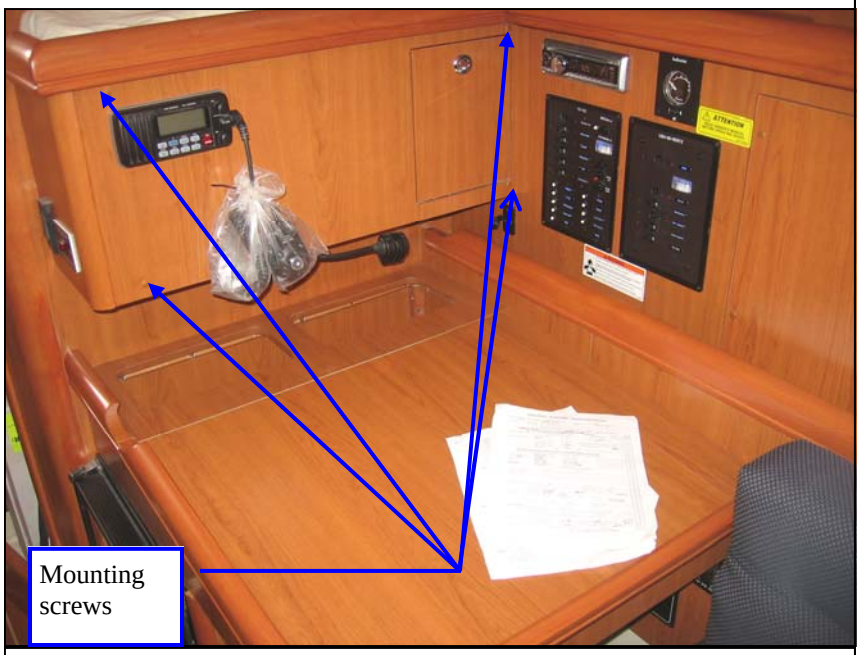
Course Computer:

1. Remove screw caps on electrical panel (the panel that mounts VHF radio), loosen mounting screws then remove the electrical panel, be cautioned with the VHF radio unit when doing this procedure.
2. Use a flat-bladed screwdriver or small coin to rotate the catch 1/4 turn (90°) in either direction – until a click is heard and the slot is horizontal lift off the cover. (replace the cover turn the catch so the slot is vertical push in the catch until you hear it click).
3. Mount the course computer unit in the electrical cabinet. Use pan head #10 x 5/8" long screws to secure the unit onto the bulkhead. Make sure the screws will not stripe thru the bulkhead.

Power Supply to Course Computer:

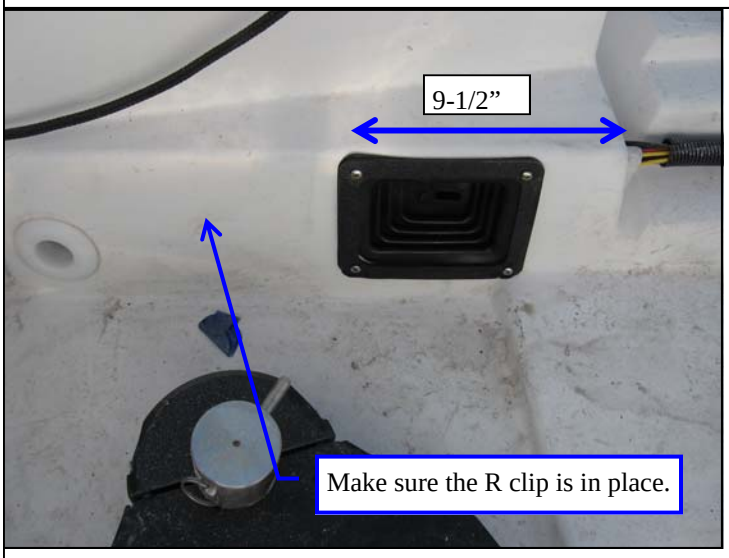
1. The course computer will gain its 12V power from DC junction panel. The "INSTRUMENT" breaker that comes with 5A will be replaced by a 15A breaker as well as the label on DC distribution panel.
2. Loosen mounting screws that secure the D distribution panel, replace looking for the "INSTRUMENT" breaker and replace the breaker with 15A breaker. Make sure the breaker is secure all the time.
3. Route DC cables (+) & (-) that will supply the power from Dc distribution panel to course computer unit. Strip each end Strip 8–10 mm (½ in) of insulation from the end of each cable.
4. For the **POWER** connection, Attach the suppression ferrite (supplied) around both the positive and negative power cables, between the cable clamp and course computer. When attach the ferrite, loop both power cables so that the ferrite encloses two passes of each cable. Secure the ferrite with the small tie-wrap.
5. Use a small screwdriver to loosen the screw on the terminal block. Insert the stripped cable into the terminal and tighten the screw.
6. Strip the other end of the cables then install ring connectors. And secure the cables on the DC breaker on distribution panel. Reinstall the distribution panel back in place.
7. Replace "INSTRUMENT" label with the new label.

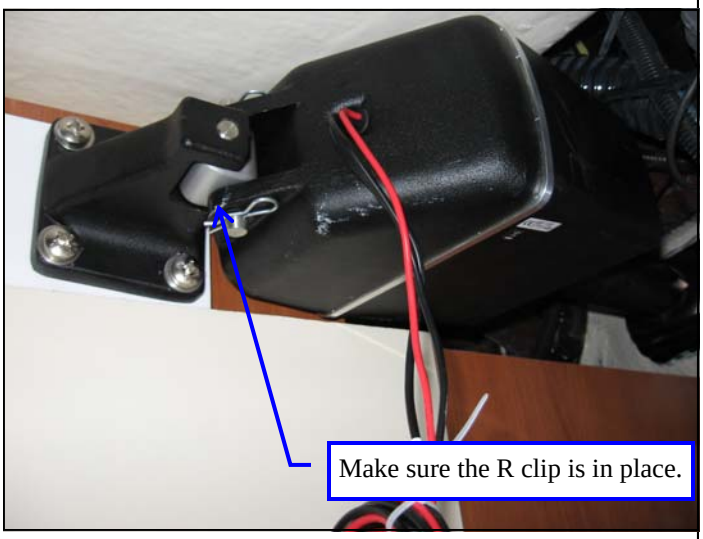


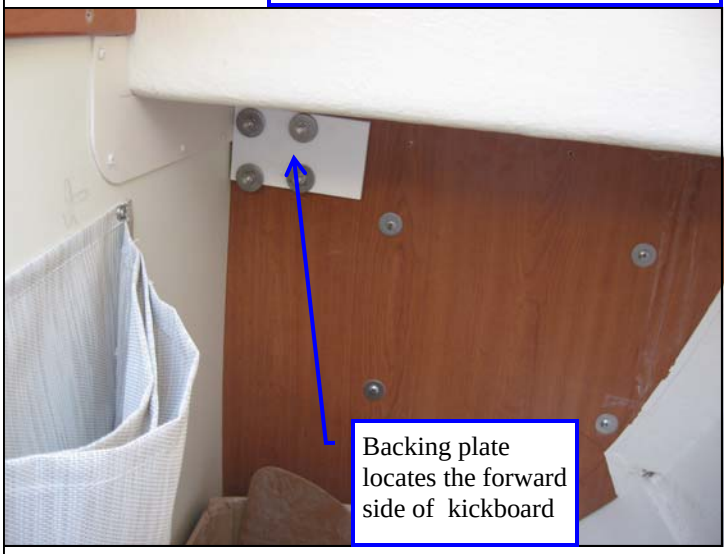


The course computer locate inside this panel.

36 Electrical Stage
Autopilot





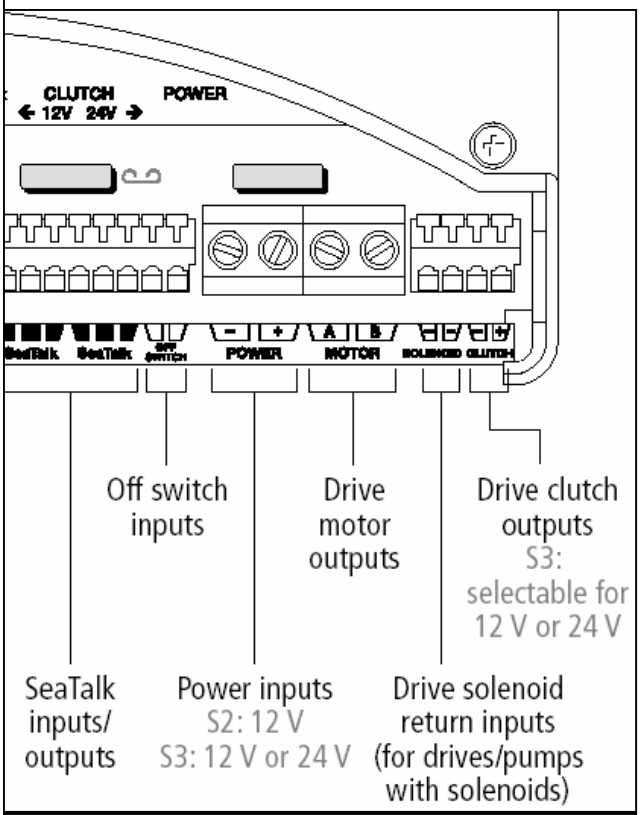


36 Electrical Stage
Autopilot

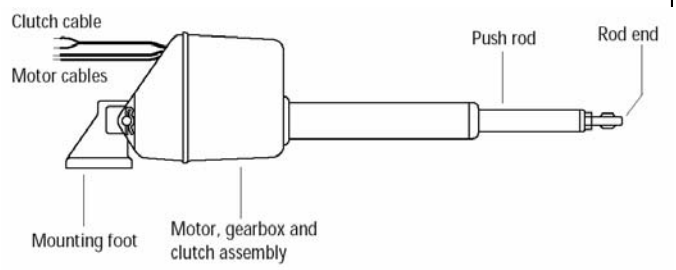
Linear drive Wiring :

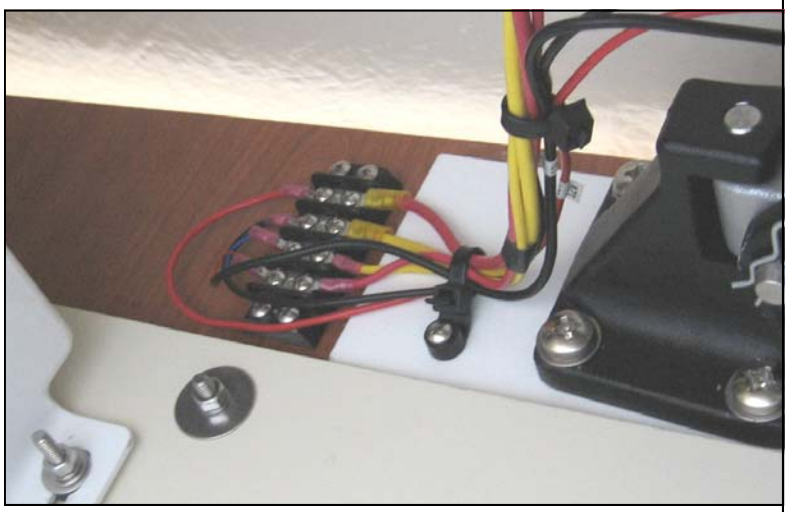
The linear drive unit has electrical connections from the drive motor: two single-core cables: red and black and the clutch: a two-core cable with red (+) and blue (-) cores. Follow these steps to connect the linear drive to the course computer:

1. Check on deck harness, there are 10 Gauge cables red (+) #39 and yellow (-) #40, the other ends of both cables can be found in port side cockpit locker. The cables are for power supply to from course computer to linear drive.
2. Linear drive clutch wires can be found in deck harness, they are 16 gauge wires, red(+) and yellow (-), both wires are 30 feet in length.
3. Join these cables to the drive cables using appropriate electrical connectors. Make sure there is no loose connection. Mount and install terminal stripe on kickboard for bridging wires.
4. Connect the cables to the course computer. See figures
5. Recheck the connections and, conduit and tie wrapping the cables where necessary. (the linear drive is water proof , according to OEM).



The partial view of the course computer shows the location of the linear drive power port and drive clutch port

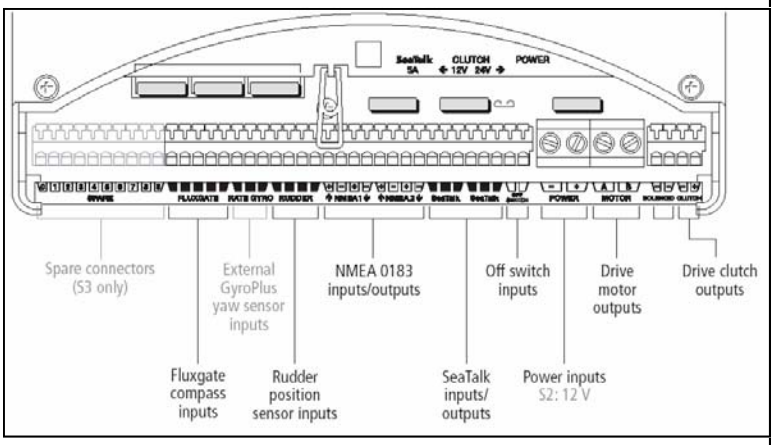




36 Electrical Stage
Autopilot

Fluxgate Compass:

1. The fluxgate compass locates in V berth port side hanging locker, loosen 2 bottom mounting screws then remove the bottom, install fluxgate unit in the location as shown in the pictures (the unit should be mounted close to boat centerline as possible).
2. Run the wire from fluxgate compass unit to NAV station electrical panel. Make sure the compass will not interface by any other electrical devices.
3. Attach and secure the wire to fluxgate compass input port. Ensure there is no loose connections.
4. Conduit the wire and secure the wire in place using tie wraps where necessary.



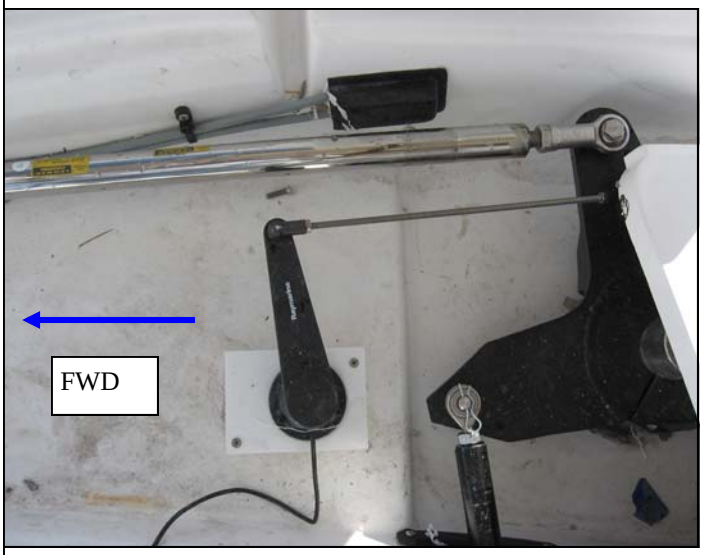
Fluxgate compass mounting location

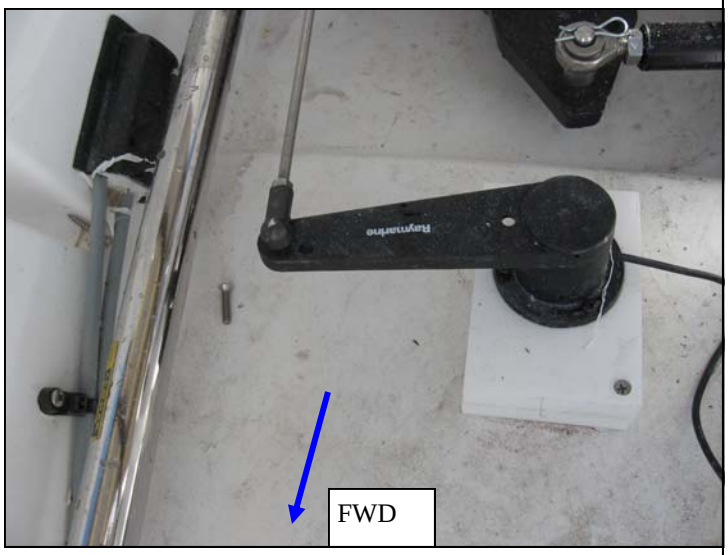
Fluxgate compass wire to course computer

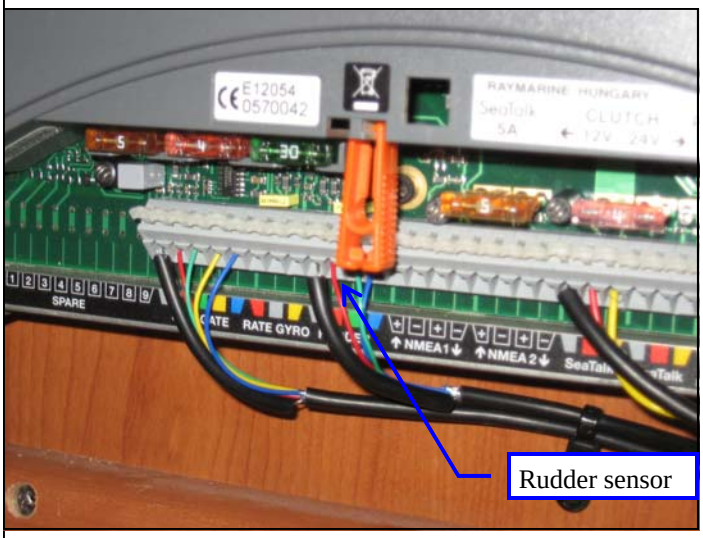
36 Electrical Stage
Autopilot

Rudder Reference Unit:

1. The rudder position sensor locates in cockpit quad cover. The sensor arm links to steering quadrant by a ball joint steel rod.
2. Route the wire from cockpit quadrant compartment with other wire harness thru the deck then run along with other deck harness underneath the port side to NAV station.
3. Attach and install the rudder sensor wire to rudder position input on course computer.
4. The sensor will be mounted on boat centerline as the rudder leading edge pointing board centerline. Use starboard board as shim to raise the height of rudder reference unit. Attach and secure one end of link rod on the rudder sensor then secure the other end of the rod on rudder quadrant.
5. Position the starboard board then caulk around the mounting holes. Install the board and securing the board to deck using designated fasteners. Install and secure the sensor unit on starboard board.
6. Make sure there is no loose connection. Conduit the wire and secure the harness using tie wrap where necessary.
7. Recheck the harness the at goes thru the deck glass. Make sure water will not leak at this location. Use marine grade sealant (3M #795) to caulk around the thru deck if necessary.



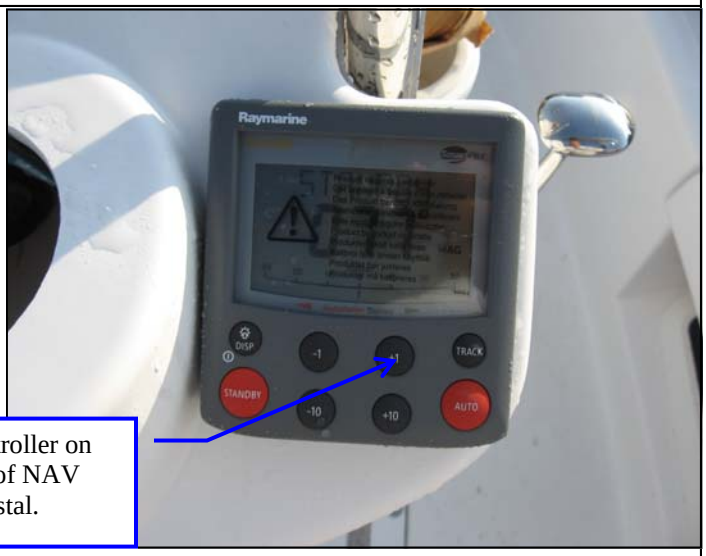




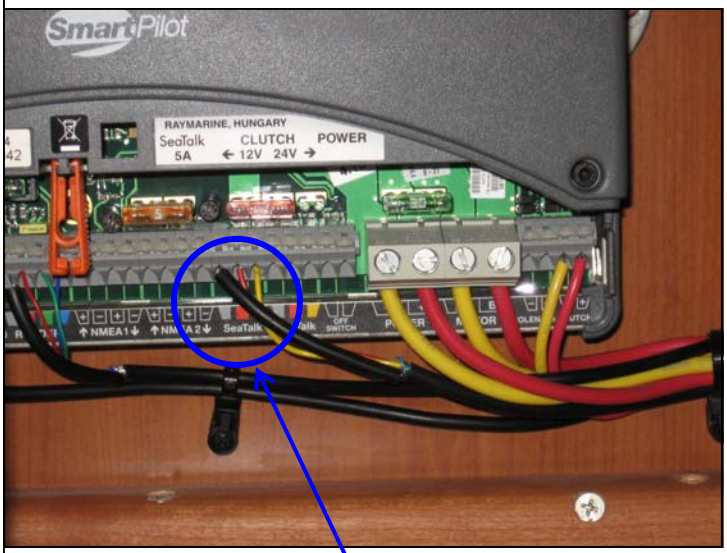
36 Electrical Stage
Autopilot

ST-6002 Autopilot Controller:

1. The controller locates on NAV pod on steering pedestal. At this location, the template should be used for marking up the cutting hole location for installing the controller. See the pictures below.
2. Run the seatalk wire from NAV pod to course computer, then connect the other end of the wire to course computer as shown in the picture below.
3. Make sure the is no loose connection, conduit the wire and tie-wrap the wire where necessary.



Mount the controller on starboard side of NAV pod in on pedestal.



Connect the controller sea talk wire to this port