



INSTALLATION MANUAL

Type H System
For Hydraulic Steering Systems

OC14278

Revision History

Revision	Description
NEW	First Edition
A	Second Edition
B	Third Edition

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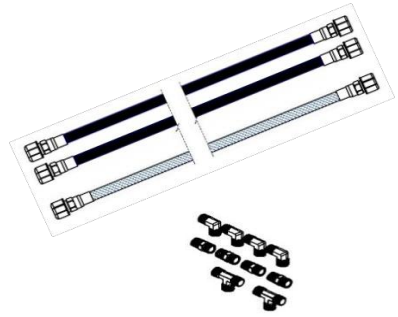
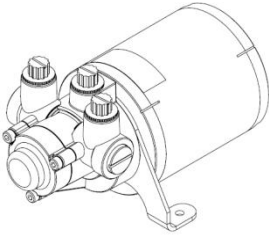
A. INTELLISTEER OVERVIEW

The Type H System enables the addition of a second virtual steering station on a vessel that has an existing 2 line hydraulic steering system. The System includes components to support the installation and remote control of a hydraulic pump. The System comprises of: a 1 litre per minute 12v Octopus Gear Pump – a hydraulic connection kit – a wireless receiver and handheld control pendant.

This Installation Guide covers the hydraulic pump only.

Installation of the Wireless Control System is covered in the Installation Guide supplied with the respective drive unit.

B. SYSTEM PARTS LIST:



B1. Drive Unit

- i. Gear Pump – 12v – 1 l/min – OCTAFG1012.

B2. Hydraulic Connection Kit – OC15SUK39

- i. 2 x High Pressure Steering Hose - 750mm long.
- ii. 1 x Low Pressure Transparent Hose – x 750mm long. (reservoir line).
- iii. 4 x 90 degree elbow fittings – ¼ NPT male – 9/16-18 UNF male.
- iv. 4 x straight fitting – ¼ NPT male – 9/16-18 UNF male.
- v. 2 x tee fitting - 1 x ¼ NPT male – 2 x 9/16-18 UNF male.

C. PUMP MOUNTING:

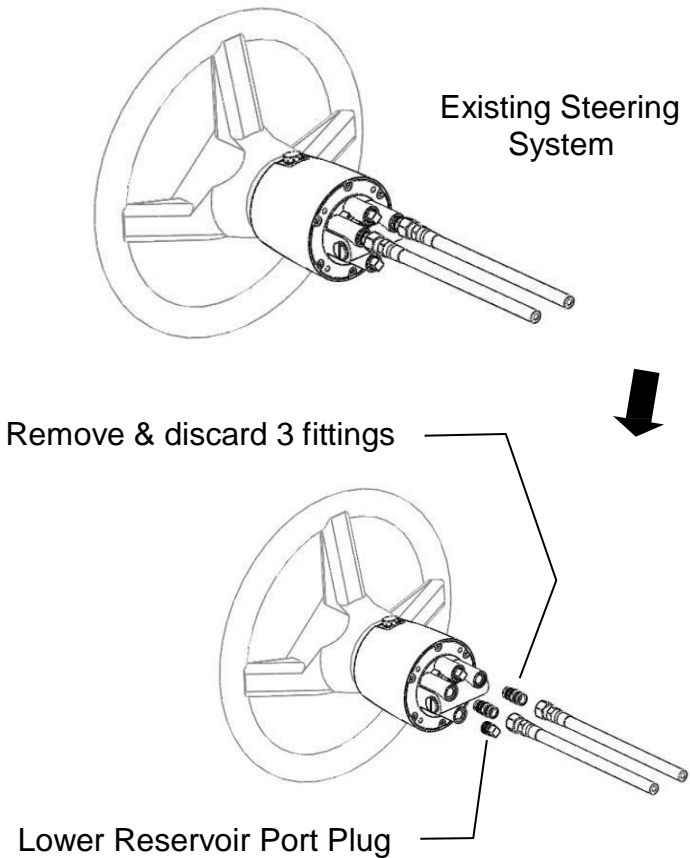
The Octopus pump must be located at a level lower than the helm pump; it can be mounted in any orientation. Care should be taken to ensure that the reservoir hose runs in an upwards path towards the helm pump reservoir connection with no loops or dips. This direct upwards path will ensure that no air pockets can get trapped. The steering lines should also run as directly as possible.

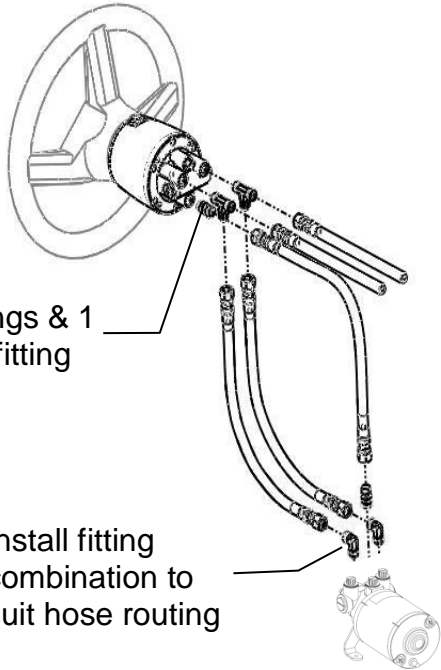
D. TYPICAL HYDRAULIC RETRO-FIT PROCEDURE:

Note: Installing the electro pump close to the helm pump and using the supplied hydraulic connection kit.

- i. Working on the back side of the helm pump, identify and tag one of the existing steering hoses and its port to assist in re-assembly.
- ii. Remove lower blanking plug reservoir port and drain reservoir oil.
- iii. Disconnect 2 existing steering hoses.
- iv. Remove and discard 2 fittings from the steering ports.
- v. Install 2 tee fittings into steering ports
- vi. Install either a straight or 90° angle fitting into the lower helm reservoir port - (choice depends on the routing of the hose assembly – straight shown in diagrams).
- vii. Re-connect 2 existing steering hoses to the most suitable connection of the tee fittings. (ensure that steering hoses are connected to correct side using tags applied in step i.).
- viii. Choice of connection depends on the routing of the existing steering hoses – in line shown in diagrams.
- ix. Connect 2 high pressure steering hoses supplied with kit to the remaining connection of tee fittings.
- x. Connect 1 x low pressure transparent hose supplied with kit to reservoir port fitting.
- xi. Install supplied fittings into Octopus pump as required to suit hose routing.

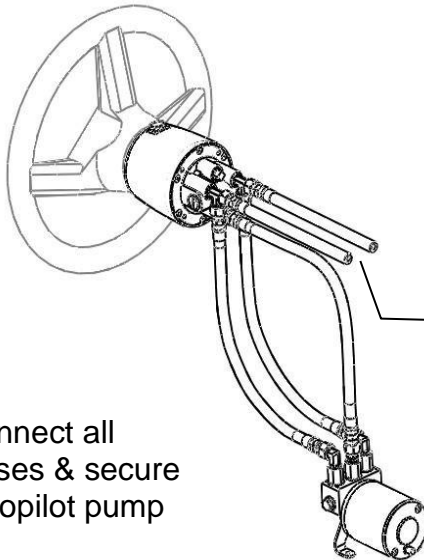
- xii. Connect the 2 high pressure steering hoses and 1 low pressure transparent hose to Octopus pump.
- xiii. Secure Octopus pump to vessel structure.
- xiv. There will be fittings that are not used – they can be discarded.
- xv. To increase the length of the standard hoses; additional hoses can be spliced or custom length hoses can be ordered from the factory.





Install 2 Tee fittings & 1
straight/elbow fitting

Install fitting
combination to
suit hose routing

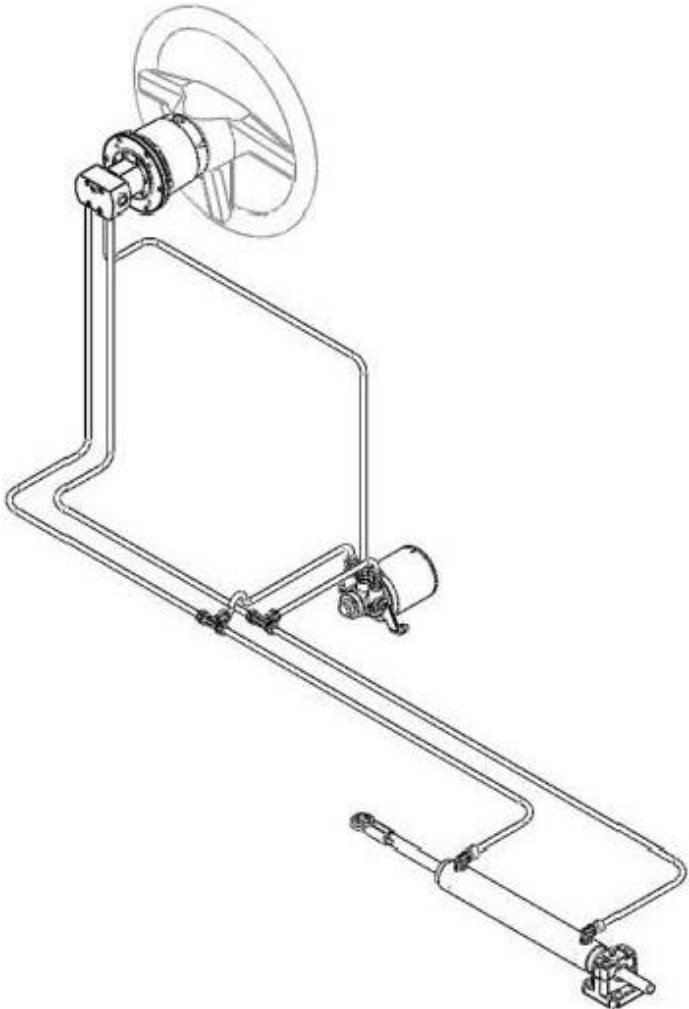


Existing Steering
Hoses - to
Steering Cylinder

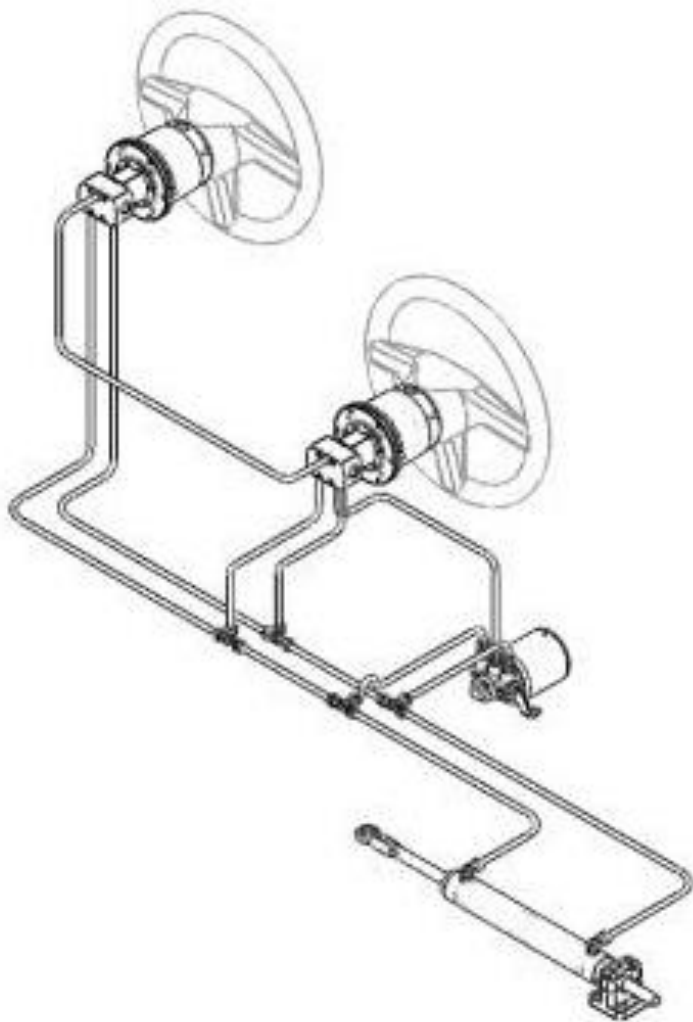
Connect all
Hoses & secure
autopilot pump

**E. ALTERNATE HYDRAULIC PLUMBING CIRCUITS:
FITTINGS & HOSES SUPPLIED BY OTHERS**

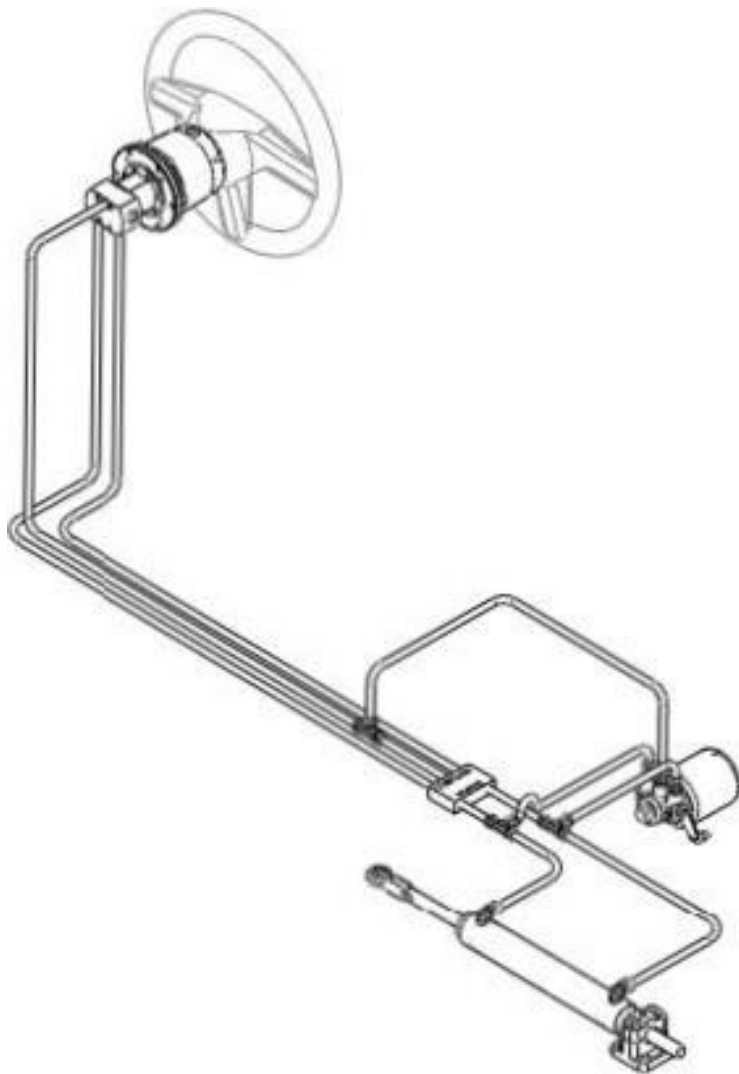
E1. 2 Line System - Single Helm Stations.



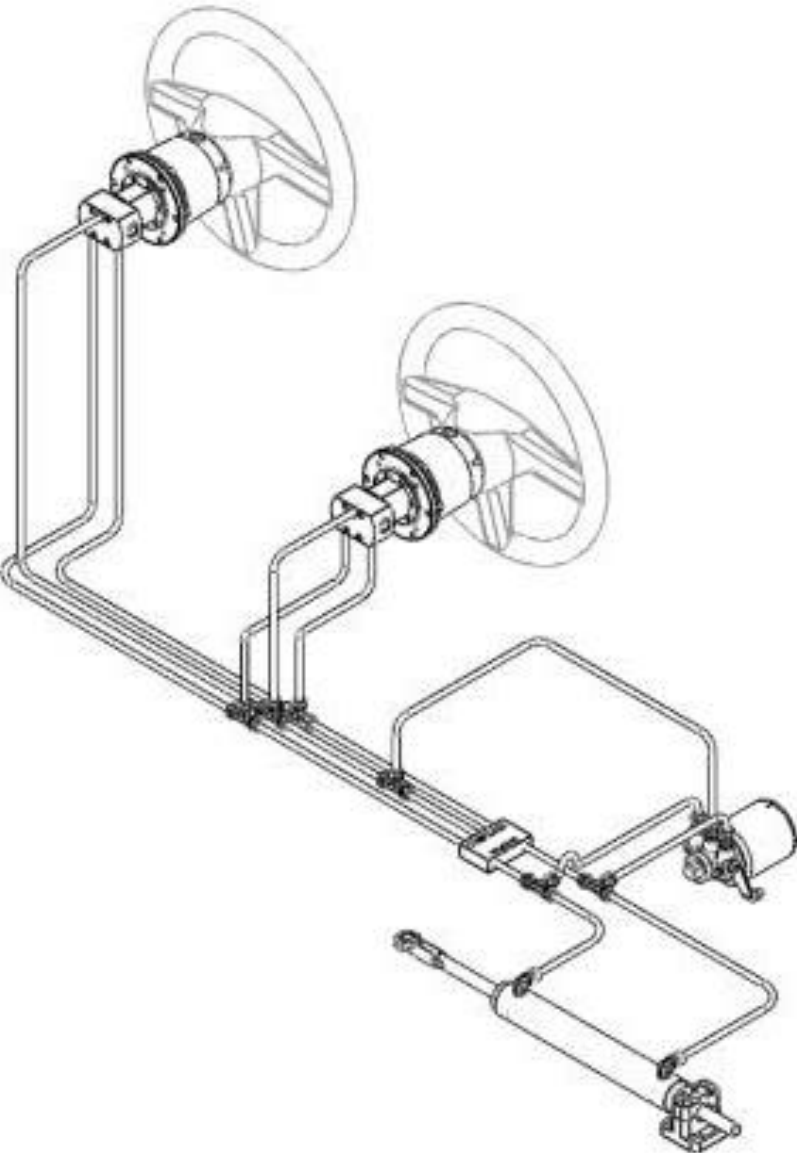
E2. 2 Line System - Twin Helm Stations.



E3. 3 Line System - Single Helm Stations.



E4. 3 Line System -Twin Helm Stations.



F. INSTALLING THE WIRELESS RECEIVER:

Detailed instructions for installing the Wireless Controller are supplied in a separate guide included with the Wireless Controller kit.

G. BLEEDING THE SYSTEM:

Bleeding the hydraulic system after installing the electro pump is an important step; if there is any air left in the system; the steering will feel unresponsive, especially at hard over. This can also affect the performance of the electro pump, causing noise and degrading response times.

The electrical components (wireless receiver) must be installed and the electro pump connected in order to utilize the pump during the bleeding procedure. See the installation guide that is supplied with the receiver kit.

The system reservoir must be full of hydraulic fluid before starting this procedure and this level must be maintained during the procedure. See the steering system manufacturer's guide for the exact procedure for your steering system. (Note: this can vary depending upon the type of steering cylinder that is fitted).

Stage 1 – Purge the Electro Pump to Helm Pump lines:

Using the remote wireless controller:

- i. Run the electro pump in one direction for 10-15 seconds.
- ii. Run the electro pump in the opposite direction for 10-15 seconds.
- iii. Repeat 2-3 times

Stage 2 – Purge the Helm Pump through to the steering cylinder.

The type of steering cylinder will dictate the specific procedure for this operation. See the steering system manufacturer's purging guide.

Stage 3 – Oil Level and System Check:

At this time the steering system must be checked for proper connections of all hoses and fittings and for air removal. To do so: turn the steering wheel and pressurize very hard to port. Apply enough force to the wheel to exceed the pressure relief valve setting. You will not harm the system. While pressure is maintained on the steering wheel; check all port fittings and line connections for leaks. If no leaks are obvious your steering system is ready for use. If leaks are found they must be corrected. Repeat this procedure for the starboard lines. Watch the oil level in the helm pump when the steering reached both hard over positions. If there is no obvious drop in the oil level; the air has been removed. If there is an obvious drop in oil level; you are compressing air and further purging is required. Repeat the Stage 2 Purge.