

Furuno Navpilot-Verado Hydraulic Fitting/Plumbing and Pump Selection Guide

These instructions are intended to supplement the existing Furuno Navpilot 500/511 Installation Manual

In order to install a Furuno Navpilot on a hydraulic Mercury Verado Outboard Engine equipped boat, you will also need to purchase and install a Furuno Navpilot OB System as well as a Furuno MER-VER-ADP Verado Adapter Kit.

A. Mercury Verado Helm Pump Fittings:

Verado Helm pumps utilize Parker Seal-Lok hydraulic fittings. The best method for plumbing an autopilot pump to any Verado system is to install a set of Parker Seal-Lok “Tee” Fittings onto the existing fittings at the rear of the steering helm unit, provided that there is sufficient space to install these fittings.

The necessary Parker Seal-Lok fittings are listed as follows. They can either be purchased from Mercury or from a local Parker Hydraulic Supply Store:

- 1. Two each – 4 R6LO-S 1/4” Swivel Nut Run Tee**
These Tees are used for the High Pressure Right/Left Cylinder connections
- 2. Two each – 4 XHL6-S 1/4” Male Swivel Adapter**
These adapters convert the Seal-Lok “ORFS” Right/Left Cylinder connections over to 1/4” Flare fittings for connection to the Furuno Navpilot HRP pump set hoses.
- 3. One each – 6R6L0-S 3/8” Swivel Nut Run Tee**
This Tee is used for the Low Pressure Return to the Verado Power Steering Reservoir.
- 4. One each – 6XHL6-S 3/8” Male Swivel Adapter**
This adapter converts the Seal-Lok “ORFS” Return connection over to 3/8” Flare for connection to the Furuno Navpilot HRP pump set return hose.
- 5. Two 1/4” and one 3/8” male flare fittings for the Furuno HRP Pump set.**
- 6. Two 1/4” flare female-ended hoses and One 3/8” flare female-ended hose of appropriate length depending on the HRP Pump Set-to-Verado Helm Unit location.**

Image of Mercury Helm Unit Rear View



B. Furuno HRP Pump Selection Guide

The Furuno HRP pump size depends on the number of hydraulic RAMs installed on the Verado engines for any particular boat. The Volume of the hydraulic RAM on a Verado engine is about 9-10 cubic inches.

Therefore, please use the following information to select the appropriate Furuno HRP Pump Size:

Case #1: Single engine Verado installation – PUMPSET = HRP10.

Case #2: Dual engine Verado installation with a ONE hydraulic RAM, Tie-Bar links both engines – PUMPSET = HRP10

Case #3: Dual, Triple, or Quad engine Verado installation with TWO hydraulic RAMs *with or without Tie-Bar* – PUMPSET = HRP16 (total cylinder volume is about 18 cubic inches)

Case #4: Triple or Quad Verado engine installation with three or more hydraulic RAMs *with or without Tie-Bar* –PUMPSET = HRP75 (total cylinder volume will be 27 or 37 cubic inches)

-Use appropriate wire sizes for the HRP75 Pump set

-Adjust the flow control valve to yield a 70-80% Rudder Duty Cycle in the Rudder Test Mode.

C. Furuno HRP Pump Plumbing Guide:

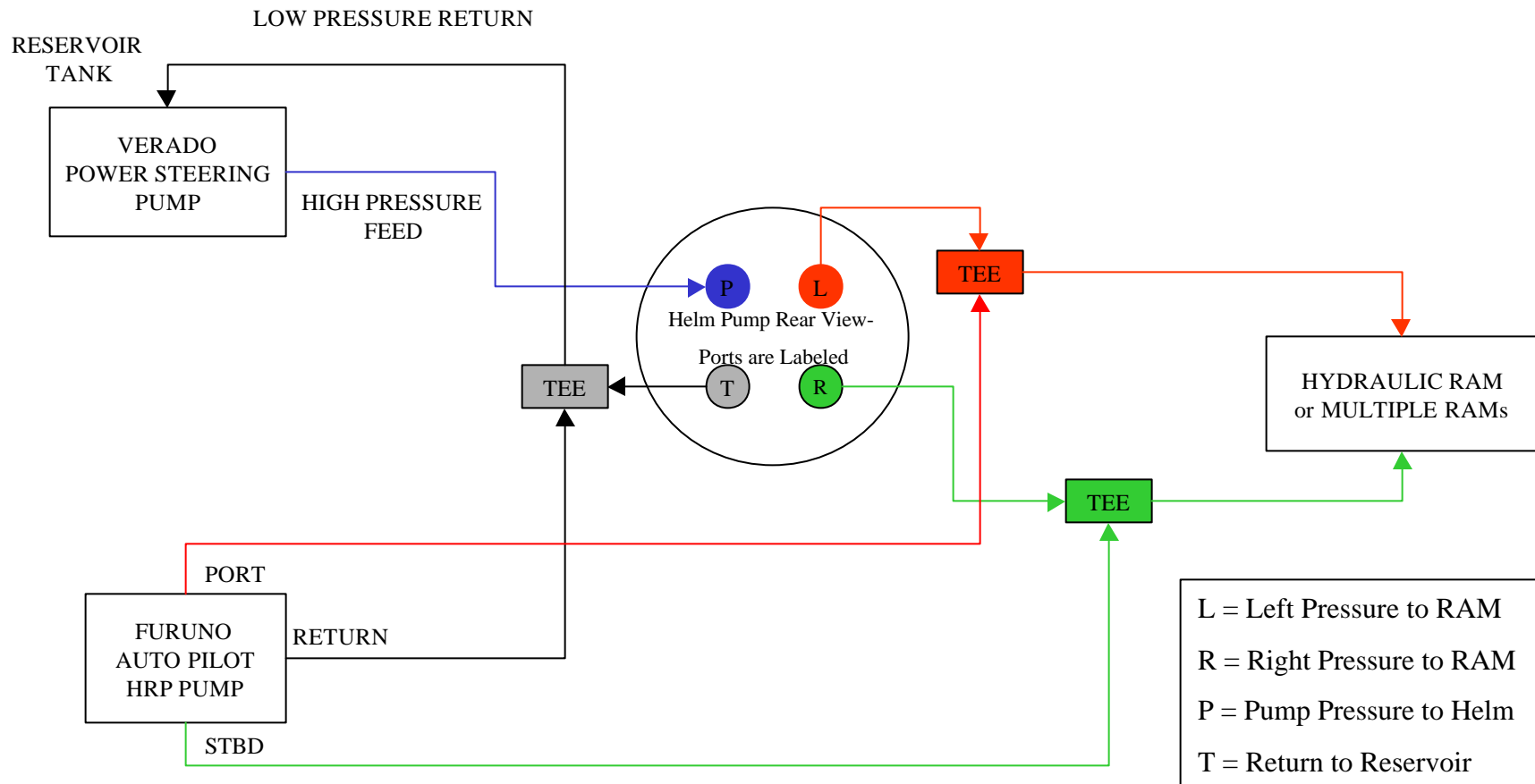
- 1. If the boat has a Single Helm, please follow the Single Helm Hydraulic Connection Diagram in these instructions.**
- 2. If the boat has Two Helms, please follow the Dual Helm Hydraulic Connection Diagram in these instructions.**

END

SINGLE HELM VERADO WITH AUTOPILOT PUMP

Plumbing “Tees” into the Verado Power Steering Helm Unit is not significantly different than Teleflex Helm Units in theory.

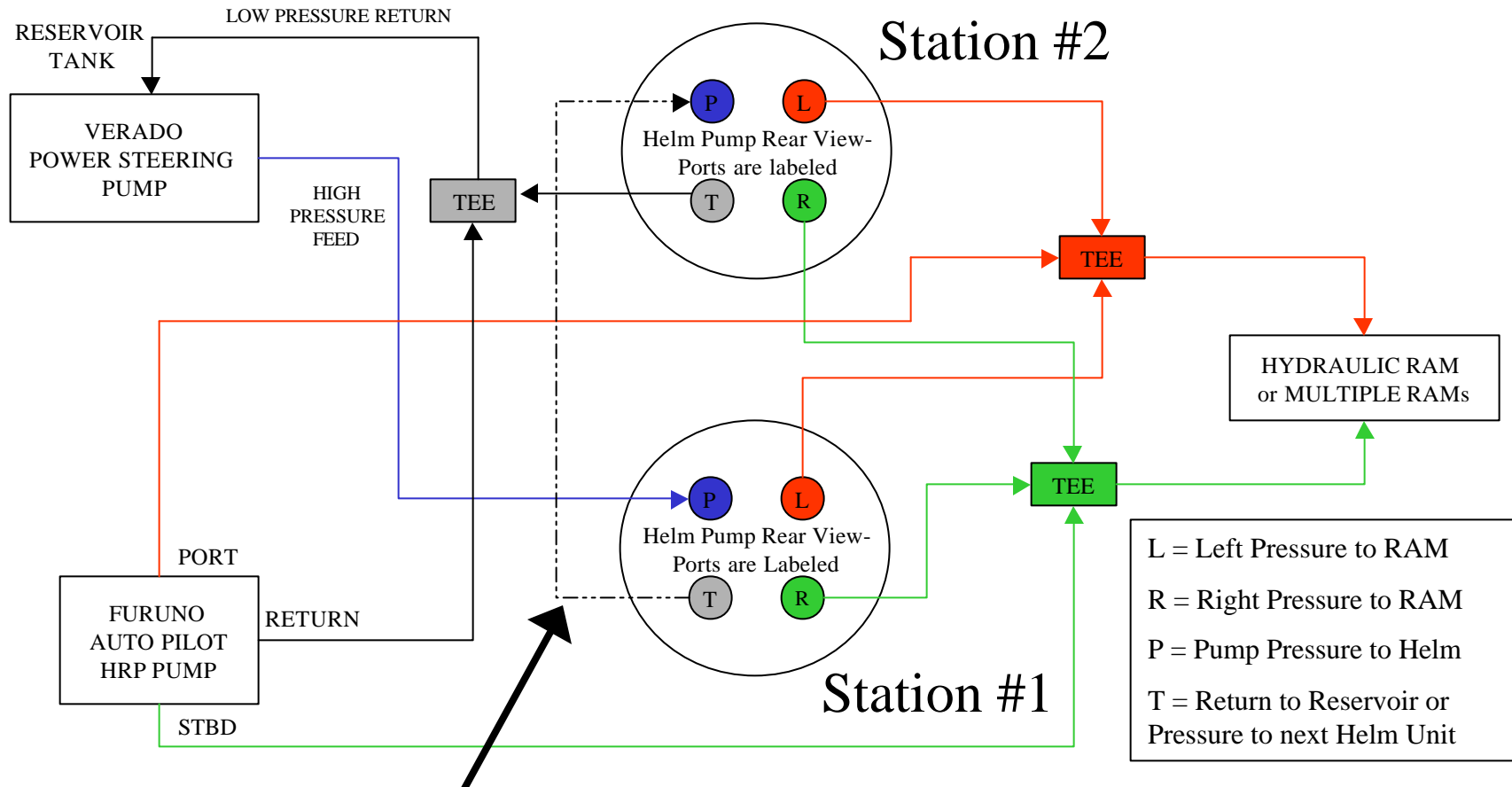
- Follow the below connection diagram for Single Helm Systems with one or more hydraulic RAMs.
- Note that the Return Port “T” Line has a larger diameter than the Left and Right hydraulic RAM Lines.



DUAL HELM VERADO WITH AUTOPILOT PUMP

Warning: Dual Helm Verado Power Steering Systems use a “Series” high pressure line connection from the 1st Helm “T” Return Port directly to the 2nd Helm “P” Pressure Port.

-Prior to A/P pump installation, identify the plumbing to each helm to find where the “T” return lines are connected. Then, plumb the Autopilot Pump Return Line to the 2nd Helm with the “T” Return Port that feeds directly back to the Verado Power Steering Reservoir Tank!



DANGER: NEVER plumb the Autopilot Pump Return into this line!
It is a High Pressure Line and will destroy the Pump Shaft Seal.