

MEMBER  
**ABYC**  
Setting Standards for Safer Boating

91

ISO 9001

*BayStar*<sup>TM</sup>  
*Capitano*<sup>TM</sup>  
and  
*SeaStar*<sup>®</sup>

ARE MANUFACTURED BY

**ITi Teleflex**<sup>®</sup>  
Teleflex Canada

# INSTALLATION INSTRUCTIONS

## AND OWNERS MANUAL

[www.seastarsteering.com](http://www.seastarsteering.com)



*SeaStar*<sup>®</sup>

---

Cylinder Alignment Valve

---

*Before you do it your way,  
please try it our way*

## General

The Cylinder Alignment Valve (part # HA5471-2) will allow for the periodic required realignment of two outboard motors or rudders that are linked together with a Hydraulic Tie Bar as opposed to a solid link or a Mechanical Tie Bar.

Boats exceeding 55 mph must use the SeaStar Pro Helm Pump (part # HH5770) and SeaStar Pro Kevlar Hoses.

Due to the potential for leakage across the piston seals, it is possible for the engines to get out of synchronization. We are unable to predict, due to circumstances beyond our control, the frequency that misalignment may occur, therefore Engine alignment should be checked and corrected as required before leaving the dock.

### ! CAUTION

**Side Mount or Unbalanced Cylinders, such as SeaStar cylinder HC5370 can only be used with the valve by re-orienting the port engine tilt tube, to allow for mounting cylinder on the port (left) side of the port engine. Cylinder rods must face each other.**

### ! WARNING

**The use of a standard helm at high speed (55 mph +) or a high load, eg: full throttle forward/reverse, may cause a vacuum in the liquid tie bar and cause engine/rudders to misalign, resulting in momentary loss of steering control. This will not occur if a SeaStar Pro Helm Pump (part # HH5770) is used.**

## Cylinder Alignment Valve Bleeding Instructions

Referencing the cylinder alignment valve installation schematic.

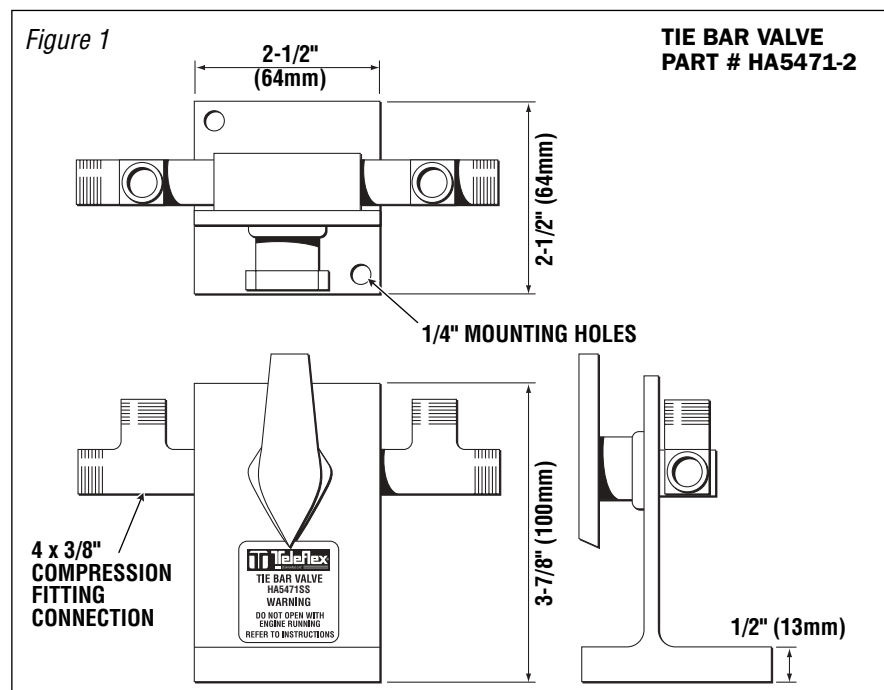
- Fill helm with oil and attach filler device / container to helm
- Open valve
- Open bleed fitting no. 1 and pull cylinder shaft all the way out on fitting no. 1 side of cylinder
- Turn steering wheel clockwise until an air free stream of oil comes forth from bleed fitting no. 1
- Close bleed fitting no. 1
- Open bleed fitting no. 2 and pull cylinder shaft all the way out on fitting no. 2 side of cylinder

- Turn steering wheel counter-clockwise until an air free stream of oil comes forth from bleed fitting no. 2, then close bleed fitting no. 2
- Open bleed fitting no. 3 and pull cylinder shaft all the way out on fitting no. 3 side of cylinder
- Turn steering wheel counter-clockwise until an air free stream of oil comes forth from bleed fitting no. 3, then close bleed fitting no. 3
- Open bleed fitting no. 4 and pull cylinder shaft all the way out on fitting no. 4 side of cylinder

- Turn steering wheel counter-clockwise until an air free stream of oil comes forth from bleed fitting no. 4, then close bleed fitting no. 4
- Turn steering wheel back and forth from hardover to hardover a couple of times. Align cylinders by pulling cylinder rod all the way out on the same side of each cylinder and close valve

### ! CAUTION

**DO NOT allow cylinder body to move (HC5345), or shaft to move back into cylinder (HC5370). DO NOT use a wrench to hold cylinder.**

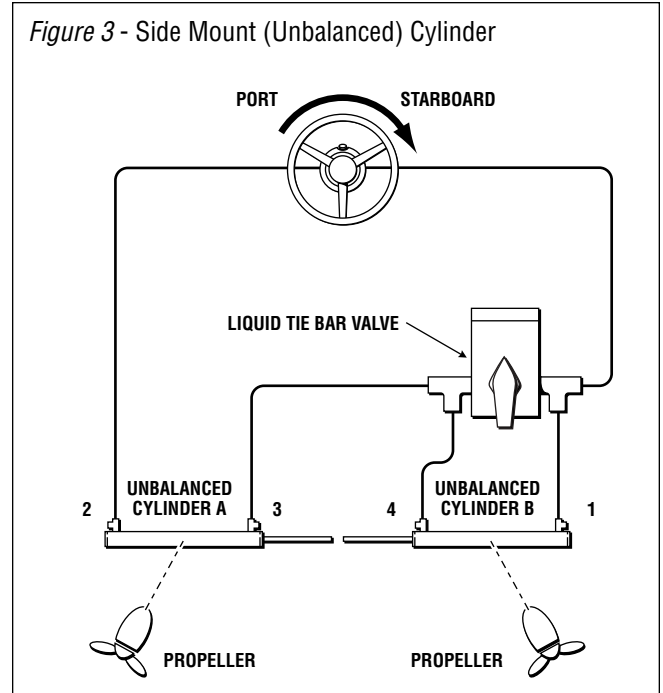
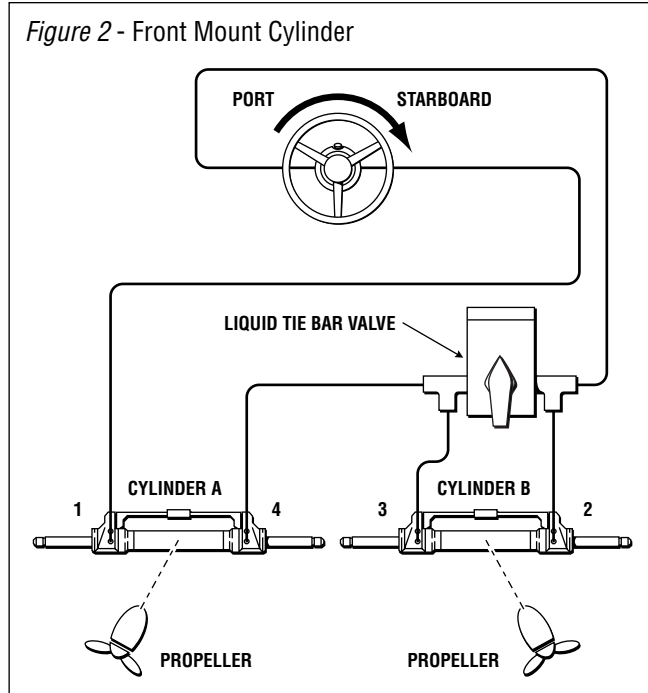


# Realignment Instructions

## Engines Toe'd Outwards; Props too far apart

- 1 Turn the wheel hard over to Starboard. (Both cylinders move; cylinder B reaches hard over first)
- 2 Open the valve

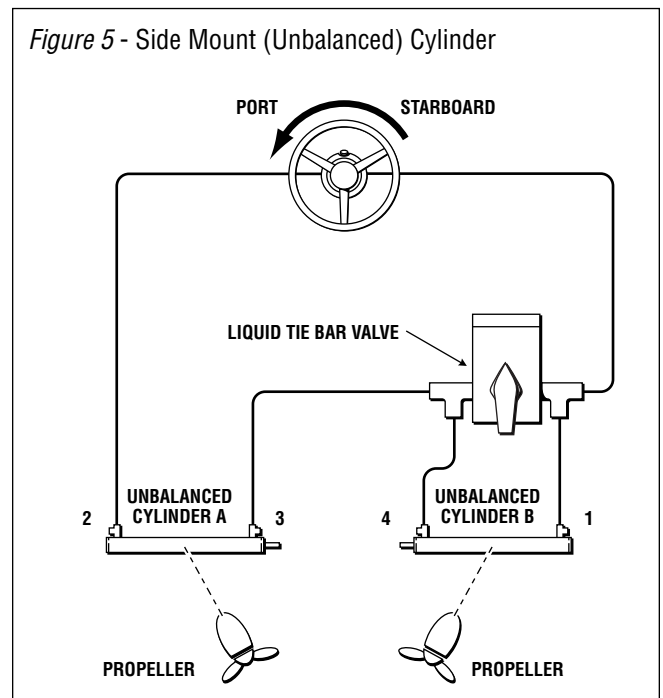
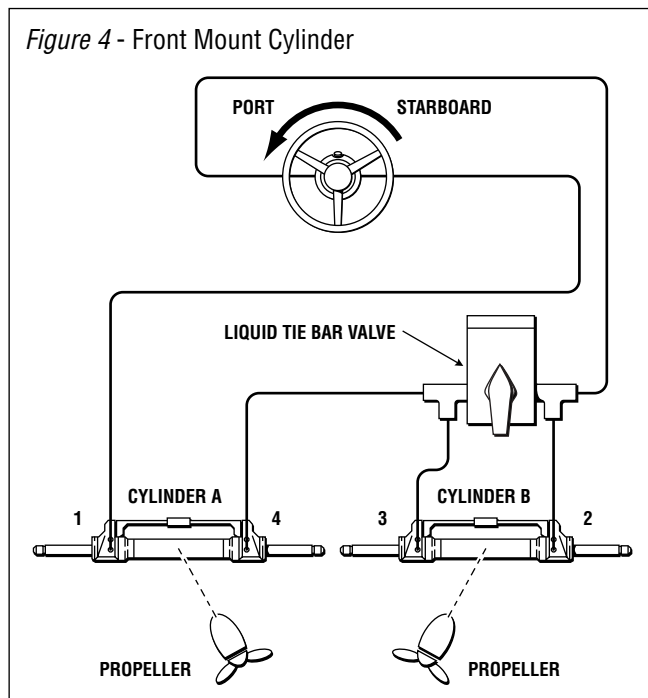
- 3 Continue to turn the wheel hard over to Starboard. (Only cylinder A moves and reaches hard over)
- 4 Close the valve



## Engines Toe'd Inwards; Props too close together

- 1 Turn the wheel hard over to Port. (Both cylinders move; cylinder B reaches hard over first)
- 2 Open the valve

- 3 Continue to turn the wheel hard over to Port. (Only cylinder A moves and reaches hard over)
- 4 Close the valve



## Pressure Test & Inspection

Once the system is completely bled, turn the steering wheel at helm all the way to the hard over position (port or starboard) until the wheel stops and then force the wheel an extra 1/4-1/2

a revolution in the same direction until pressure relief is reached. (The helm pump may make a squeak or squeal sound as pressure relief is reached.)

Hold the helm/steering wheel in this position while all fittings and hose

connections are checked to ensure there are no leaks.

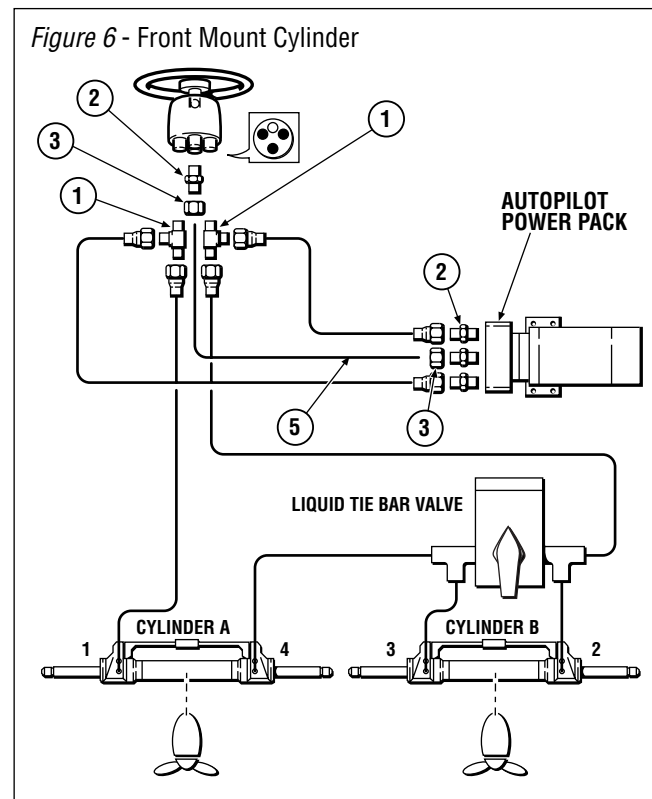
Repeat the procedure a second time in both directions to insure the hard over position is intact and there are no fitting leaks.

## Optional Autopilot Interface

### **! WARNING**

**DO NOT CUT OUTBOARD HOSES.**

**Tee Autopilot at helm pump using fitting kit HF5501 (Refer to Figure 6).**



### HF5501

Fitting kit to add a 2nd station or autopilot to an outboard system.

Item No.	Description	Quantity per kit	Part No.
1	Tee Fitting 1 End - 3/8" NPT (M) 1 End - 1/4" NPT (M) Center - 3/8" Tube (M)	2	600603
2	Connector Fitting 3/8" Tube (M) - 1/4" NPT (M)	4	600602
3	Tube Nut - 3/8" Dia.	4	280327
4	Non-Vented Filler Plug	1	HA5432
5	SeaStar Nylon Tube 3/8" Dia.	25ft	HT5092
A*	Elbow 3/8" Tube (M) - 1/4" NPT (M)	2	

\* SUPPLIED WITH HELM PUMP

**NOTE:** USED IN SYSTEMS PLUMBED WITH OUTBOARD HOSE



TELEFLEX CANADA  
3831 NO.6 ROAD  
RICHMOND, B.C.  
CANADA V6V 1P6

FAX 604-270-7172

[www.seastarsteering.com](http://www.seastarsteering.com)

ISO 10592



© 1998 TELEFLEX CANADA LIMITED PARTNERSHIP

PRINTED IN CANADA

FORM NO. 570122 300-02/03 Rev F