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

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INSTALLATION INSTRUCTIONS
SUPPLEMENTAL

7.1 Hydraulic Steering HELMS

DASHBOARD MOUNTING TEMPLATE

WARNING
If a 20° mounting wedge is used, cut out dash as per mounting wedge template and mount helm directly to the 20° wedge.

SAFETY INFORMATION

WARNING
The safety information provided below is intended to inform you of the dangers that may be present before, during and after use. It is critical that you read and understand ALL the points noted.

PRIOR TO EVERY USE

1. Check Fluid level in highest helm pump (see page 2 for proper fluid level setting).
2. Verify immediate steering response when turning steering wheel(s). Ensure engine(s), rudder(s) and/or outdrive(s) turn when all steering wheels are turned.
3. Visually inspect all steering hoses and fittings for wear, kinking and/or leaks.
4. Check for binding, loose, worn or leaking steering components.
DO NOT OPERATE BOAT IF ANY COMPONENT IS NOT IN PROPER WORKING CONDITION.

DURING USE

1. WEAR A COAST GUARD-APPROVED PERSONAL FLATION DEVICE (PFD).
2. ATTACH ENGINE SHUT-OFF CORD (LANYARD) TO YOUR PFD.
3. Never allow anyone not familiar with the operation of the steering system operate the boat at any time.
4. Know and adhere to the operator restrictions for your area including:
   - Federal Laws/Regulations,
   - State Laws/Regulations and
   - Municipal Laws/Regulations.
DO NOT OPERATE BOAT IF ANY COMPONENT IS NOT IN PROPER WORKING CONDITION.

AFTER USE

1. Rinse off steering system thoroughly using ‘fresh, clean water only’.

MAINTENANCE

1. Maintain steering system at a minimum of twice per year.
   - Due to the many different systems these helm pumps are used in, please refer to your Installation and Owner’s Manual provided with your steering cylinder.

Keep our waters clean for all current and future users. Dispose of ALL fluids in accordance with your local regulations.

NOTE

This helm pump is fitted with Re-positionable O-ring hose fittings (ORB).

CAUTION

If photocopied check ALL measurements using a measuring device to ensure accuracy.

WARNING

WARNING
DO NOT use ANY SeaStar PRO helm pump with “unbalanced” steering cylinder as a steering lock up WILL result.

NOTE

FILLER PORT 3/4" STANDARD TAPER ORB PORTS (4)

3-15/16" (100 mm)

1-15/16" (50 mm)

ALL HELMS

6-1/16" (155 mm)

SEASTAR/BAYSTAR PLUS HELMS 4-7/16" (113 mm)

BAYSTAR HELMS 4-5/8" (118 mm)

THIS HELM PUMP IS FITTED WITH RE-POSITIONABLE O-RING HOSE FITTINGS (ORB).

NOTICE

FORM NO.998002 Rev.B

ISO 10592

3" DIA. (76 mm)

ORB PORTS (4)

Figure 1. SeaStar helm shown, BayStar and BayStar Plus similar.

Figure 2.
**Positionable ORB Hose Fitting Installation/Realignment**

**Installation**
- Tape mounting template to dash and use a center punch for locating required holes.
- Drill the 3” diameter hole and the four 5/16” diameter mounting holes, positioned as shown.
- To ease installation, install your hose fittings into the helm pump prior to mount. See Positionable ORB Hose Fitting Installation.
- Ensure the fitting port is in the uppermost position, install helm pump onto dash.
- Install the four washers and four nuts onto the mounting studs of the helm pump. Torque nuts to 110 in-lbs. Fitting re-orientation not required.

**NOTE:** for straight ORB fittings simply torque fitting to 18 ft-lbs. For misaligned ORB fittings (if required.)

**Thread Fitting by Hand Until Washer Contacts This Face**

3. Reposition fitting to desired orientation by turning it counterclockwise to a maximum of 1 full turn.
4. While holding the fitting body securely with a wrench, torque the lock nut (item 2) to 18 ft-lbs.
5. While holding the fitting body securely with a wrench, torque the hose end nut to 15 ft-lbs.
6. Purge system per applicable instruction manual.

**WARNING**
- Do not use a wrench.

**NOTE:** O-ring must be fully on sealing surface and cannot contact any threads. Do not use Teflon stops.

**WARNING**
- Back off lock nut (item 1), counter-clockwise, until it contacts the face of the helm port. Do NOT force.

**NOTE:** Never use brake fluid. Any non-approved fluid may cause irreparable damage, loss of steering, and cancellation of warranty. In cases of extreme emergency any non-toxic, non-flammable fluid may provide temporary steering.

**WARNING**
- Fill and Purge steering system as outlined in your steering cylinder installation manual.

**HYDRAULIC FLUID**

Recommended fluids for your steering system are:
- SealStar Hydraulic Fluid, part# HA6430
- Texaco HOS5
- Shell Aero Fluid #1
- Exxon Univek N5
- Chevron Aviation Fluid A
- Mobil Aero HFA
- Fluids meeting MIL-PRF-5629H specifications.
- Automatic transmission fluid Diron II may be used in an emergency.

**WARNING**
- Never use brake fluid. Any non-approved fluid may cause irreparable damage, loss of steering, and cancellation of warranty.

**OIL LEVEL & SYSTEM CHECK**

**STEP 1 – Oil Level Setting**

**WARNING**
- The oil level MUST be checked and maintained before each use to ensure safe steering operation. Failure to adhere to this warning may lead to loss of steering control resulting in persons being ejected from vessel or collision with an obstacle, leading to property damage, personal injury, and/or death.

**CAUTION**
- The oil level MUST be checked and maintained before each use to ensure safe steering operation.

**NOTE:**
- Side mount and Splashwell mount cylinders are untaped. To set the oil level in the helm pump the cylinder rod MUST be fully “retracted (cylindershaft all the way in the cylinder body). Failure to adhere to this caution WILL result in oil spillage at the helm filler port and/or stiff steering operation.

**WARNING**
- Helm mounted with the wheel shaft completely horizontal MUST be filled to the bottom of filler hole A. DO NOT allow oil level to drop more than 1/4” below filler threads.

**WARNING**
- For helms mounted on a 20 degree angle, or with wheel shaft in the vertical position, oil level should be within 1/2” of filler hole.

**STEP 2 – System Check**

**NOTE**
- This step will NOT harm the system and any noise made during this step should not be considered a flaw in the steering system.

**WARNING**
- Take steering wheel hard over to hard over to confirm uninterrupted movement of the steering system and helm. Repeat this procedure in ALL trim/tilt positions of the engine(s). If interference occurs, or, hoses are being stretched this MUST be removed prior to operating your boat.

**WARNING**
- Confirm that engine(s) are steering to the proper direction when steering wheel is turned.
- If no interference is noticed, or, any interference is corrected, go to next step.

**WARNING**
- Failure to complete the above noted step or failure to correct a problem may result in loss of steering control leading to ejection from the vessel or collision with an obstacle, leading to property damage, personal injury, and/or death.