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

SEASTAR SOLUTIONS
3831 NO.6 ROAD
RICHMOND, B.C.
CANADA V6V 1P6
FAX 604-270-7172
www.seastarsolutions.com
ISO 10592
© 2014 MARINE CANADA ACQUISITION INC.
DBA SEASTAR SOLUTIONS
PRINTED IN CANADA
10000–12/15

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

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

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

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 FLATATION 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.
2. 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.

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

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

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

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

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 FLATATION 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.
2. 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.

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

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

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

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

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 FLATATION 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.
2. 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.

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

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

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

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

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 FLATATION 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.
2. 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.

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

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

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

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

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 FLATATION 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.
2. 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.

CAUTION
If photocopied check ALL measurements using a measuring device to ensure accuracy.
Ensuring that the steering wheel will not interfere with any other functional equipment and you have adequate space “behind” the dash for fittings and steering line connections, determine your desired mounting position.

**NOTE**

The helm may be mounted with the helm shaft horizontal, vertical or any angle between. At ALL times the fluid cap MUST be in the uppermost position.

### 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 helm hose fittings into the helm pump prior to mount.**
- See Positionable ORB Hose Fitting Installation.
- **Ensure the fill port is in the uppermost position, install helm pump onto dash.**
- **Install the four washers and four nuts onto the mounting template to dash and use a center punch for locating required holes.**
- **Using a good quality marine grease, lightly grease taper of the helm pump shaft and mount steering wheel to helm.**
- **Tighten wheel shaft nut to 150 in-lb.**
- **Install hoses as directed in your steering cylinder installation manual.**
- **Fill and Purge steering system as outlined in your steering cylinder installation manual.**

### WARNING

-3 helm pumps are fitted with positionable O-ring style hose fittings ports (referred throughout this manual as ORB). Do NOT attempt to install an NPT pipe fitting into a -3 helm hose fitting port. Doing so will lead to irreparable damage to the helm. ONLY use SeaStar Solutions O-Ring style hose fittings (ORB).

### CAUTION

- If leaks are noticed they MUST be repaired prior to operating boat. After repair repeat bleeding procedures as outlined in the steering cylinder manual.

### NOTICE

- Filling the helm full of oil can be done faster if oil is poured into the helm pipe to connecting filter tube and oil bottle to the helm.

---

### HYDRAULIC FLUID

Due to recent upgrades in our steering system components, SeaStar Solutions recommends use of SeaStar Steering Fluid ONLY in hydraulic steering systems. SeaStar Steering Systems have been engineered and validated using our proprietary SeaStar Hydraulic steering fluid. SeaStar steering fluid is engineered with special additive package that contains anti-foaming and anti-rusting agents, viscosity stabilizers, corrosion inhibitors, wear additives as well as water emulsification additives. It is highly recommended that SeaStar Steering Fluid be used to ensure optimum system performance and safety.

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.

---

### 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/check 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.

- **Right side mount and Splashwell mount cylinders are unbalanced.** To set the oil level in the helm pump the cylinder rod MUST be fully “retracted (cylinder shaft all the way in the cylinder body). Failure to adhere to this caution WILL result in oil spillage at the helm pump and/or stiff steering operation.

**CAUTION**

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

**WARNING**

The system check MUST be completed after installation. Doing so will ensure the safe operation of your steering. Any fault/check will be shown during this check. Failure to adhere to this warning/check may result in 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.

- **Turn steering wheel hard over to hard over to confirm unrestricted movement of the steering system and helms.** 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.
- **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.

**NOTICE**

This step will NOT harm the system and any noise made during this step should not be considered a fault in the steering system. Take steering wheel hard over to starboard (any helm can be used on a multi-station boat). Once the wheel reaches its stop point (cylinder is fully stroked out), continue to force the wheel one (1) full turn past stop. Leave wheel in this position while you check all connections, fittings, seals and hoses for leaks.

- **Repeat to the Port direction and inspect ALL connections, fittings, seals and hoses for leaks.**
- If leaks are noticed they MUST be repaired prior to operating boat. After repair repeat bleeding procedures as outlined in the steering cylinder manual.

**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 resulting in property damage, personal injury and/or death.

---

### POSITIONABLE ORB HOSE FITTING INSTALLATION/REALIGNMENT

**NOTE:** for straight ORB fittings simply torque fitting to 28 ft-lbs. Fitting re-orientation not required.

1. Back off lock nut (item 1), counter-clockwise, until it is more than 1/4” below filler threads.
2. Thread fitting into helm port until fitting washer (item 2) contacts the face of the helm port. Tighten hand tight. **DO NOT USE A WRENCH.**
3. Re-position fitting to desired orientation by turning 6 counter-clockwise to a MAXIMUM of 1 full turn.
4. While holding the fitting body securely with a wrench, torque the lock nut (item 5) to 18 ft-lbs.
5. While holding the fitting body securely with a wrench, torque the hose end nut to 25 ft-lbs.
6. Purge system per applicable instruction manual.

**WARNING**

Failure to properly tighten the lock-nut (item 2) may lead to loss of steering control. Loss of steering control may result in unpredictable boat behavior, collision with an obstacle and/or ejection from vessel, leading to property damage, personal injury and/or death.

**WARNING**

SeaStar Solutions recommends that the hose and fittings are checked on a regular basis to ensure the safe operation of the steering system.

**NOTE:**

- Filling the helm full of oil can be done faster if oil is poured into the helm pipe to connecting filter tube and oil bottle to the helm.

---

### 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/check 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.

- **Right side mount and Splashwell mount cylinders are unbalanced.** To set the oil level in the helm pump the cylinder rod MUST be fully “retracted (cylinder shaft all the way in the cylinder body). Failure to adhere to this caution WILL result in oil spillage at the helm pump and/or stiff steering operation.

**CAUTION**

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

**WARNING**

The system check MUST be completed after installation. Doing so will ensure the safe operation of your steering. Any fault/check will be shown during this check. Failure to adhere to this warning/check may result in 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.

- **Turn steering wheel hard over to hard over to confirm unrestricted movement of the steering system and helms.** 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.
- **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.

**NOTICE**

This step will NOT harm the system and any noise made during this step should not be considered a fault in the steering system. Take steering wheel hard over to starboard (any helm can be used on a multi-station boat). Once the wheel reaches its stop point (cylinder is fully stroked out), continue to force the wheel one (1) full turn past stop. Leave wheel in this position while you check all connections, fittings, seals and hoses for leaks.

- **Repeat to the Port direction and inspect ALL connections, fittings, seals and hoses for leaks.**
- If leaks are noticed they MUST be repaired prior to operating boat. After repair repeat bleeding procedures as outlined in the steering cylinder manual.

**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 resulting in property damage, personal injury and/or death.