



SEASTAR SOLUTIONS  
3831 NO. 6 ROAD  
RICHMOND, B.C.  
CANADA V6V 1P6  
FAX 604-270-7172

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

ISO 10592



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

FORM NO. 765800 REV. C



© 2016 MARINE CANADA ACQUISITION INC.  
DBA SEASTAR SOLUTIONS

PRINTED IN CANADA 04/18



Please scan this QR code and watch our latest **Boating Safety** video.



## OPERATING INSTRUCTIONS AND OWNER'S MANUAL

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



# BAYSTAR™

Hydraulic Steering for Outboard Powered Vessels Rated to a Maximum of 150HP (Total)



## To the End User (Owner)

Thank you for choosing BayStar Steering Systems by SeaStar Solutions. This Owner's Manual contains all the information that you and others will require for the safe use of your steering system and MUST remain on board the boat. Throughout this manual, information for the safe operation of the steering system will be distinguished in one of the following ways;

### ⚠ WARNING

**Hazards or unsafe practices which could result in severe personal injury or death.**

Failure to adhere to a warning may lead to loss of steering control. Loss of steering control may result in unpredictable boat behavior, leading to ejection from boat causing property damage, personal injury and/or death.

### ⚠ CAUTION

**Hazards or unsafe practices which could result in minor injury or product or property damage.**

These safety alerts alone cannot eliminate all of the hazards that may be present while on the water. SeaStar Solutions recommends that all users of the steering system take an accredited 'boating safety course', follow safe boating practices and are made aware of the environment that they will be in.

### NOTICE

*Due to small amounts of internal hydraulic slip, a "master spoke" or "centered" steering wheel cannot be maintained with a hydraulic steering system. For best results, use an equidistant spoke steering wheel.*

**Maximum steering wheel diameter = 28" (711 mm) and Maximum steering wheel dish = 5" (127 mm).**

### NOTICE

*BayStar is NOT recommended in applications with high steering effort (i.e. such as those using high performance engines or boats capable of attaining high speeds), customers should consider upgrading the system to SeaStar/SeaStar Pro steering.*

## SAFETY INFORMATION

### ⚠ WARNING

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

### ⚠ WARNING

**Limited to boats rated to a MAXIMUM of 150HP (Total). Warranty void if maximum exceeded. Twin engine applications are not available at this time.**

The safe operation of the steering system is dependant upon proper installation and maintenance, common sense, safe judgment and the knowledge/expertise of the operator. The operator of the steering system should know the following requirements **before** operating the steering system.

If you have any questions regarding any of these warnings, contact SeaStar Solutions.

To reduce risk of severe injury or death. Always wear a Coast Guard approved personal flotation device (PFD) and use an engine shut-off cord (lanyard).

## Before Installation

1. Read and understand the Installation and Owner's Manuals provided with your steering components.
2. Ensure that all components required to complete the installation are on hand (including hoses, fittings, fluid and the proper tools required for the installation).
3. SeaStar components are highly engineered and safety tested to ensure system integrity. DO NOT substitute any component with non-SeaStar components as this may compromise system performance/reliability.

### NOTICE

## Installation

### ⚠ CAUTION

**-3 helm pumps are fitted with positionable O-ring style hose fitting ports. 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).**

1. Install components as directed in all Installation Manuals (including helm pumps, hoses and fitting kits).
2. DO NOT modify or substitute any component in any way without written consent from SeaStar Solutions.
3. Comply with all system ratings/regulations (boat/engine, Coast Guard).
  - Cylinder MUST be compatible with engine installed.
  - Cylinder MUST be rated for use on the engine installed.
4. Confirm that there is no interference between the steering cylinder, tiebars and the transom, splashwell, outboard engine or jackplate or any combination of these parts by performing the following steps;
  - a) With engine fully tilted DOWN, turn steering wheel from hard over to hard over and confirm that no interference occurs.
    - if using a hydraulic jack plate the above must also be performed at all the positions of the jackplate.
  - b) Repeat step 4a) with engine tilted UP.
5. Confirm that the steering cylinder can be fully stroked in both directions as well as full tilt and trim without stretching, chafing, rubbing and/or kinking of the hydraulic hoses/tubing.
6. DO NOT use a wire coil type trim switch with a hydraulic steering system as the wire can wind up tight around the steering wheel shaft and prevent further steering.
7. Conduct Fluid Level and System Check as outlined in this sheet.

### NOTICE

*Upgrading to a SeaStar Steering system will reduce the steering effort due to the fact that SeaStar steering provides more output power resulting in lower steering effort.*

## Prior to Every Use

1. Check Fluid level in highest helm pump.
2. Verify immediate steering response when turning steering wheel. Ensure engine, rudder and/or outdrive turn when steering wheel is 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 FLOTATION 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

Rinse off steering system thoroughly using 'fresh, clean water only'.

### ⚠ WARNING

**Cleaning fluids containing ammonia, acids or any other corrosive ingredients MUST NOT be used for cleaning any part of this Hydraulic Steering System. Failure to comply will cause serious damage to the steering system, resulting in possible loss of steering, causing property damage, personal injury and/or death.**

### NOTICE

# FLUID LEVEL AND SYSTEM CHECK

## ⚠ WARNING

The fluid 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.

## STEP 1 – Fluid Level Setting

- Helms mounted with the wheel shaft completely horizontal **MUST** be filled to the bottom of filler hole **AT ALL TIMES**. **DO NOT** allow fluid level to drop more than 1/4" below filler threads.
- For helms mounted between 20° (from horizontal) and vertical shaft positions, fluid level should always be within 1/2" of filler hole threads.

## ⚠ WARNING

The system check **MUST** be completed after installation. Doing so will ensure the safe operation of your steering. Any fault/leak 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.

## ⚠ 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.

## STEP 2 – System Check

- Turn steering wheel hard over to hard over to confirm unrestricted movement of the steering system and hoses. Repeat this procedure in ALL trim/tilt positions of the engine. If interference occurs, or, hoses are being stretched this **MUST** be removed prior to operating your boat.
- Confirm that the engine is 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.

# ROUTINE MAINTENANCE

## ⚠ WARNING

Following the routine maintenance schedules as outlined below, in the time frame noted will ensure years of service from your BayStar Steering System, as well as keep you and your passengers safe from the dangers that are present on and off the water.

## 1. Owner(s) (End Users)

Prior to every use.

1. Verify immediate steering response when turning steering wheel. (Ensure engine turns when steering wheel is turned.)
2. Visually inspect all steering hoses and fittings for wear, kinking and/or leaks.
3. Check for binding, loose, worn or leaking steering components.

## ⚠ WARNING

**DO NOT** operate boat if any component is not in proper working condition.

## 2. Qualified Marine Mechanic

After first 20 hours, then every 100 hours or 6 months thereafter (which ever comes first).

1. All points noted above.
2. Check tightness of ALL fasteners/fittings throughout the steering system. Tighten to correct torque specifications as indicated below.

3. Check for mechanical play or slop throughout steering system, correct as required.
4. Check for signs of corrosion. If corrosion is present contact your dealer or SeaStar Solutions.

## ⚠ WARNING

Any work being performed with the steering system **MUST** be completed by a qualified mechanic with the working knowledge of the system.

After every 200 hours or 12 months (which ever comes first).

1. All points noted above.
2. Remove support brackets completely; clean engine steering/tilt tube and regrease with a good quality marine grease. Complete on both sides of cylinder. **NOTE:** Ensure proper torque specification is met when reinstalling.
3. Remove tiller nut; clean threads, regrease using a good quality marine grease, then reinstall. **NOTE:** Ensure proper torque specification is met when reinstalling.
4. Remove steering wheel; clean off helm pump shaft; regrease using a good quality marine grease. **NOTE:** when reinstalling steering wheel, ensure proper torque specification is met as per wheel manufacturer recommendations.

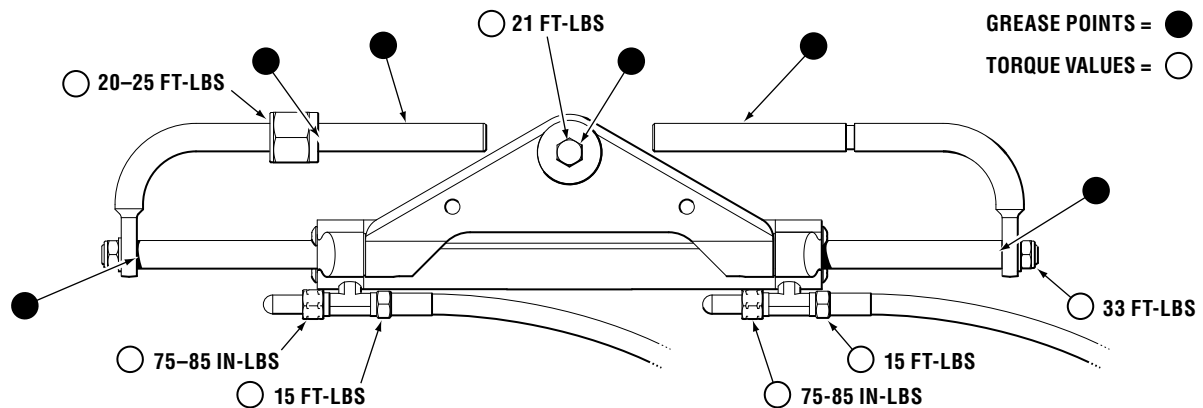


Figure 1. Grease Points; Fastener and Fitting Torques.

# HYDRAULIC FLUID

Due to recent upgrades in our steering system components, SeaStar Solutions recommends use of SeaStar Steering Fluid **ONLY** in our 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, anti-oxidants, 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.

## ⚠ WARNING

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.

## NOTICE

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

## ⚠ WARNING

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

## Hose Inspection

**DO NOT** operate the vessel if ANY of the following are observed:

- Hose and Bleeder fittings are not properly torqued with protective rubber cap installed over bleed nipple
- Damaged, cracked, cut, abraded, blistered, degraded or loose outer hose jacket
- Damaged, bent or badly corroded fittings
- Leaks at fitting, or in hose
- Kinked, crushed, flattened or twisted hose

# WARRANTY AND SUPPORT

Go to [www.seastarsolutions.com](http://www.seastarsolutions.com) for full product manuals and warranty information.

## Technical Support

Phone: 604-248-3858  
email: [seastar@seastarsolutions.com](mailto:seastar@seastarsolutions.com)  
Hours: Monday - Friday 05:00 – 15:30 PST  
Web: [www.seastarsolutions.com](http://www.seastarsolutions.com)