

OUTBOARD SPECIALTY TOOLS

Bubble Purge Instructions:

YouTube instructional/demo video for the Bubble Purge G2:

[Bubble Purge™ SeaStar Hydraulic Steering Bleed Repair OST](#)

YouTube instructional video, additional demo

[Bubble Purge G2 SeaStar Hydraulic Steering Flush and Bleed](#)

Visit www.seastarsolutions.com for manufacturer information and specifications for your SeaStar hydraulic steering components.

Thanks for your purchase of the Bubble Purge G2 Kit. Our patented G2 Kit is updated from the 1st Bubble Purge Kit. The short section of tubing with female quick connects that was featured in our original video has been phased out. The G2 Kit is designed to have the Bottle Fill Tube connect directly onto the threaded Helm Fitting with no short section of tubing in between as shown in our G2. Demo video on YouTube. The short piece of tubing with male fittings included in the G2 Kit is only used for steering system flush, as seen in the G2 video, otherwise it is not used during the main purge/bleed process.

***Your safety is extremely important to us, always wear eye protection and appropriate gloves while using our products. This Bubble Purge Kit is not intended for use with “powered on” Power Assist or autopilot pumps and is not compatible with dual cylinder systems with SeaStar Liquid Tie-Bar installed. Always familiarize yourself with manufacturer instructions and recommendations for your SeaStar Uflex or Baystar system. If you have questions, please contact OST support at 843-607-1973

Materials to have on hand:

Oil absorber or oil absorbent cloth

Gloves, protective eyewear

½” open end or box end wrench to open and close bleeders.

Your Bubble Purge Kit includes the following parts:

Fill Tube (OST-PBB.001-1)

Flush/Fill Attachment (OST-PBB.001-02)

OUTBOARD SPECIALTY TOOLS

Helm Fitting (OST-PBB.001-3)

Cylinder Attachment (OST-PBB.001-2)

Instructions:

- 1) **Prep the fluid bottle for use:** Remove bottle cap and any loose debris near bottle top before threading **Fill Tube (OST-PBB.001-1)** onto fluid bottle. Fill tube and brass cap ship assembled, but can be disconnected as needed. Always verify that the locking collars on all quick connect fittings are in their forward locked position when connecting.
- 2) **Check fluid levels inside helm:** Fluid should be visible near the top of the helm fill fitting. To add fluid, attach the **Flush/Fill Attachment (OST-PBB.001-02)** onto the end of the **Fill Tube (OST-PBB.001-1)**. Insert fill tube into helm fill hole, allowing some space for helm to vent air as it fills. Squeeze fluid bottle **GENTLY** to fill the helm. Once fluid is visible, helm is adequately filled. **For completely empty/flushed steering systems or new installs, it may be necessary to fill the helm more than once during the bleed process.** Once helm has been adequately filled, disconnect the Flush/Fill Attachment from the Fill Tube. **For helms with remote fill attachments,** visually inspect the remote fill tube inside the console to verify fluid levels and check for airlock. **If remote fill tube is airlocked it may be difficult to fill the helm. To displace air lock, thread the helm fitting into the remote fill port, connect the fill tube, verify that the locking collar is in forward locked position, and gently squeeze the fluid bottle. This should displace some of the air in the remote fill and allow the helm to take fluid.**
- 3) **Thread Helm Fitting (OST-PBB.001-3)** into helm fill hole until O-ring is seated/sealed. Seat adapter by hand only. Connect Fill Tube to Helm Fitting and verify that quick release locking collar is in forward locked position.
- 4) **Connect Bubble Purge Cylinder Attachment (OST-PBB.001-2) to the bleed valves on the steering cylinder and verify no interference between Cylinder Attachment quick connects and underside of engine compartment.** Open bleed fittings at least one full turn. At this point the motor should move freely when pushed by hand. **Slowly push motor to full lock in both directions by hand and verify that Cylinder Attachment quick connects are not coming into contact with the bottom of the engine compartment. If quick connects/tubing are coming into contact with the underside of the engine, do not push cylinder further to lock or damage can result to steering cylinder and or Bubble Purge Fittings. Contact OST support for further assistance.** As the motor moves, you should see fluid

OUTBOARD SPECIALTY TOOLS

- and/air moving freely in both directions inside the Cylinder Attachment tube. **Once the Cylinder Attachment is connected and bleeder valves are open, do not disconnect the Cylinder Attachment until the bleeder valves have been completely closed. Do not turn the wheel to bleed system with the bleed valves closed as this can compress air in the system and over pressurize the cylinder attachment when the bleed valves are opened.**
- 5) Connect Fill Tube and fluid bottle to Helm Fitting.
 - 6) **Turn steering wheel to one direction a minimum of 20 turns** and then alternate to the other direction for another 20 turns. In an empty steering system, the steering wheel will move freely and slowly build a small amount of resistance as the system fills and becomes able to build internal pressure. Resistance may be choppy at first but should smooth out to create a uniform but minor level of resistance. **If you feel resistance building up that seems abnormally high (the wheel is becoming difficult to turn) or if the steering wheel wants to stop turning, stop turning wheel immediately and inspect to verify bleed fittings are open and nothing is obstructing the system.** Continuing to turn wheel with an obstruction or bleeders shut will pressurize the entire system and can damage steering components and your Bubble Purge Kit. **If you have any questions regarding any aspect of your steering system or Bubble Purge Kit, call OST support (Tyler Holland) and I will be happy to assist!**
 - 7) Move motor to opposite direction all the way to **lock** and repeat the process several turns in each direction, then move the motor to the opposite lock and repeat. Moving the motor lock to lock helps to force air out of the cylinder more efficiently as the bleeder valves become the highest point on the cylinder.
 - 8) Air bubbles will be visible in the Cylinder Attachment and flowing upwards into the fluid bottle. As you continue turning the wheel and the motor from side to side, fluid entering the steering system will eventually push all of the air out of your steering system, into the helm and into the bottle.
 - 9) **Venting the Bottle: In the event that the fluid bottle begins to build pressure (or vacuum) during bleed, carefully lower the bottle and Fill Tube to a level below the helm fitting to allow fluid to drain back into the bottle and prevent spilling.** disconnect the end of the Fill Tube from the Helm Fitting. Connect the Flush Fill Attachment to the end of the Fill Tube, and the bottle will vent as needed. Once the bottle has vented, it can be reconnected to the Helm Fitting to continue bleed.
 - 10) After turning wheel several turns in each direction and no bubbles are passing through Fill Tube or Cylinder Attachment, close the bleeder valves and disconnect

OUTBOARD SPECIALTY TOOLS

the Fill Tube and bottle from Helm Fitting, remove Helm Fitting (have a cloth handy, a full helm may drip until capped off) and cap system off with fill cap. Then disconnect the Cylinder Attachment.

- 11) **Flushing your steering system:** Attach the Cylinder Attachment to steering cylinder, open the bleeders and spin the wheel a couple of turns to push fluid into the Cylinder Attachment. Visually inspect the contents of the Cylinder Attachment tubing. Clean fluid looks relatively clear and contains no debris. If fluid is contaminated and you wish to flush your steering system, close off one of the bleeders, detach the Cylinder Attachment from the closed bleeder and connect Flush/Fill Attachment to the free end of the Cylinder Attachment, put the flush attachment into appropriate container for disposal. GENTLY turn the steering wheel in the direction that pushes fluid out of the Cylinder Attachment. If steering wheel builds resistance and wants to stop turning this is a normal indicator that you are turning the wheel in the direction of the closed off side of the system. Turn the steering wheel in the opposite direction and it should move freely. Once fluid stops coming out of the tube, close off the bleeder, connect the Cylinder Attachment to the opposite bleed fitting on the cylinder, open the bleed fitting and repeat the process. At this point the system should be ready to add new fluid and bleed. Return to Step 1.

- 12) **Testing Your Steering System: Once you have finished the bleed purge process, the steering system must be tested. Pushing the motor side to side, there should be no more than half an inch of movement of the cylinder along the piston rod. Also, turn the steering wheel. The wheel should be able to turn the motor from lock to lock with a smooth motion using the same number of turns specified by the manufacturer of the helm. The steering motion should be smooth with no sudden changes in resistance.**

All new users should take a moment to familiarize themselves with the Bubble Purge Kit by viewing our demo video. If you have any questions, please call support at 843 607 1973

If calling for tech support, please have your order number ready.

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