

Centek Industries

Combo-Sep Installation Sheet



Please follow these installation instructions carefully for safe operation and to avoid damage to your muffler system or your engine.

1. The Combo-Sep is a WET marine exhaust muffler.
2. The Combo-Sep is designed for gas/water to flow in one direction only, Please note the labels on muffler carefully.
3. Allow sufficient distance between the water injection point and the Combo-Sep to adequately cool the exhaust gases. We recommend a minimum of two feet. Maximum operating temperature should not exceed 250°F. A normal, well designed system should run between 150-180°F.
4. The Combo-Sep is designed to be installed at or above the loaded waterline (LWL) only. The water drain on the Combo-Sep must be above the waterline so that the separation chamber drains upon engine shut down. Do not install the Combo-Sep below the waterline. For these installations we recommend the use of a Vernalift in combination with a Gen-Sep. (Figures 1, 2, & 3)
5. The bottom portion of the Combo-Sep is a lift muffler. The inlet on the muffler must be installed at least 12” below the engine elbow to prevent the reverse flow of water. When space constraints do not allow for this height difference, it is strongly recommended that a riser (“goose-neck”) be installed in the system (figure 2).
6. The Combo-Sep base needs to be at or above the LWL with the drain discharge at or above the loaded LWL. For every inch below the LWL that the drain discharge is located, the base of the Combo-Sep should be located an equal distance above the LWL. The water drain line should be as short as possible. (Figures 1, 2, & 3)
7. Install the Combo-Sep as close to the centerline of the vessel as possible. This will minimize the effects of heeling in sailboats.
8. A ball valve with Thru-hull or seacock is recommended at the exit point to optimize the opening for the water drain.
9. Making connections:
 - A. Use approved marine exhaust hose for all connections. This will help isolate the muffler and other components from vibration. Do not connect other components to the muffler in a rigid fashion by using adhesives and/or FRP reinforcements.
 - B. Do Not coat hose or muffler with oil or grease, use water for lubrication.
 - C. Use a minimum of two stainless steel hose clamps per end connection; tighten clamps by hand with a screw driver or small wrench. Do not use air wrenches.
10. The Combo-Sep will separate nearly 98% of engine cooling water. However, due to condensation, it is recommended that the outlet hose should run continuously downhill for self draining of remaining water and condensate. For uphill or “dry stack” installations, special provisions are necessary. Please contact Centek technical services (800) 950-7653 for special instructions.

The Combo-Sep is recommended for both gasoline and diesel propulsion & generator engines. It is designed to withstand many times the normal operating pressures. This does not mean that it can withstand the extreme instantaneous pressures associated with back-fire.

WARNING! A back-fire is caused by an untuned or difficult starting engine and the use of starting fluids. Should a back-fire occur, an immediate and thorough inspection of the entire exhaust system is recommended, and the engine must be checked for the cause of the back-fire.

Warranty

Centek Industries, Inc. (Centek) warrants its standard products; Vernalift, Mini-Max, Verna-ski, Vernatube, Gen-Sep, Combo-Sep, (Products) for a period of five years from the date of original sale. Since Centek cannot exercise control over the installation and application of the Products, this limited warranty is in lieu of all other expressed or implied warranties or warranty of merchantability or fitness for a particular use or the results or effects of such use. Under no circumstance will Centek be liable for any consequential damages, damage by improper handling, damage during installation or damage in shipping. Centek’s liability is limited to the replacement or repair of the Products and such liability will not exceed the original purchase price. Centek must authorize the return of any alleged defective Product, and such return must be made within 30 days of the receipt of that authorization. A reasonable proof of purchase date must accompany all returned Products.

FIGURE 1

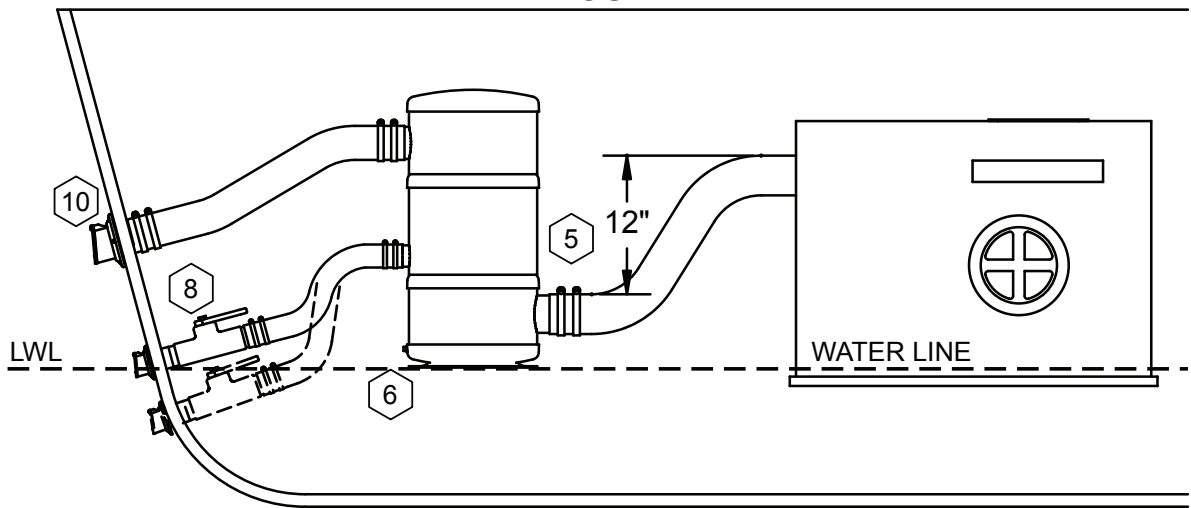


FIGURE 2

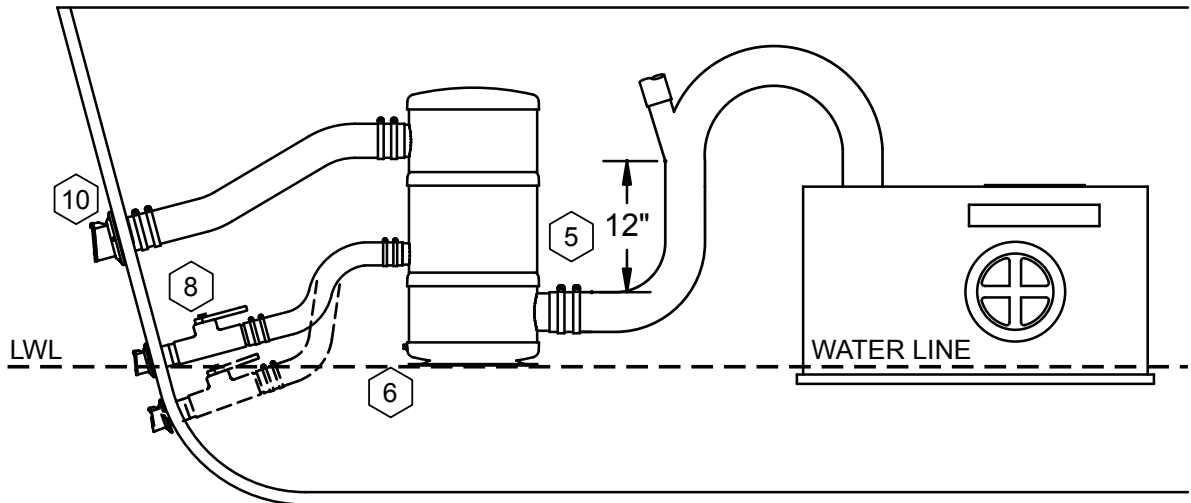


FIGURE 3

