

# COMBO-SEP™

## Diesel Engine Version



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 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 (61 cm). Maximum operating temperature should not exceed 350° F (176° C). A typical well designed system should run between 120-188° F (49-87° C).
4. The Combo-Sep™ is designed to be installed at or above the loaded waterline (LWL) only. The base of the Combo-Sep™ must be above the waterline so that the separation chamber drains upon engine shutdown. **Do not install the Combo-Sep™ below the waterline.** See Figure 1 (opposite page). For below water line installations, we recommend the use of a Vernalift in combination with a Gen-Sep™. The water drain line should be as short as possible.
5. The bottom portion of the Combo-Sep™ is a lift muffler. The inlet on the muffler must be installed at least 12" (305 mm) 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 ("gooseneck") be installed in the system.
6. Install the Combo-Sep™ as close to the centerline of the engine as possible. This will minimize the possibility of cooling water return to the engine in severe angles of heel.

### 7. 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. **Do not over torque or over tighten in any direction as this can cause leaking over time.**
  - 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 screwdriver or small wrench. Do not use air wrenches.
8. The Combo-Sep™ will separate nearly 98% of engine cooling water. However, due to condensation, it is strongly recommended that the outlet hose should run continuously downhill for self-draining of remaining water and condensate. **Under no circumstances should there be a loop in the outlet hose that could collect condensation and impede the exhaust flow.** For uphill or "dry-stack" installations, special provisions are necessary.



**WARNING** – These are GUIDELINES ONLY and are NO GUARANTEE of a properly designed and installed exhaust system. Centek's products are used in a variety of systems and applications. Therefore, it is impossible for Centek to provide specific installation instructions for all possible configurations of exhaust systems that may be incorporated on a marine vessel by the vessel manufacturer.

IT IS THE RESPONSIBILITY OF THE BOAT MANUFACTURER TO PROPERLY DESIGN AND INSTALL AN EXHAUST SYSTEM APPROPRIATE FOR THE VESSEL IT MANUFACTURES.

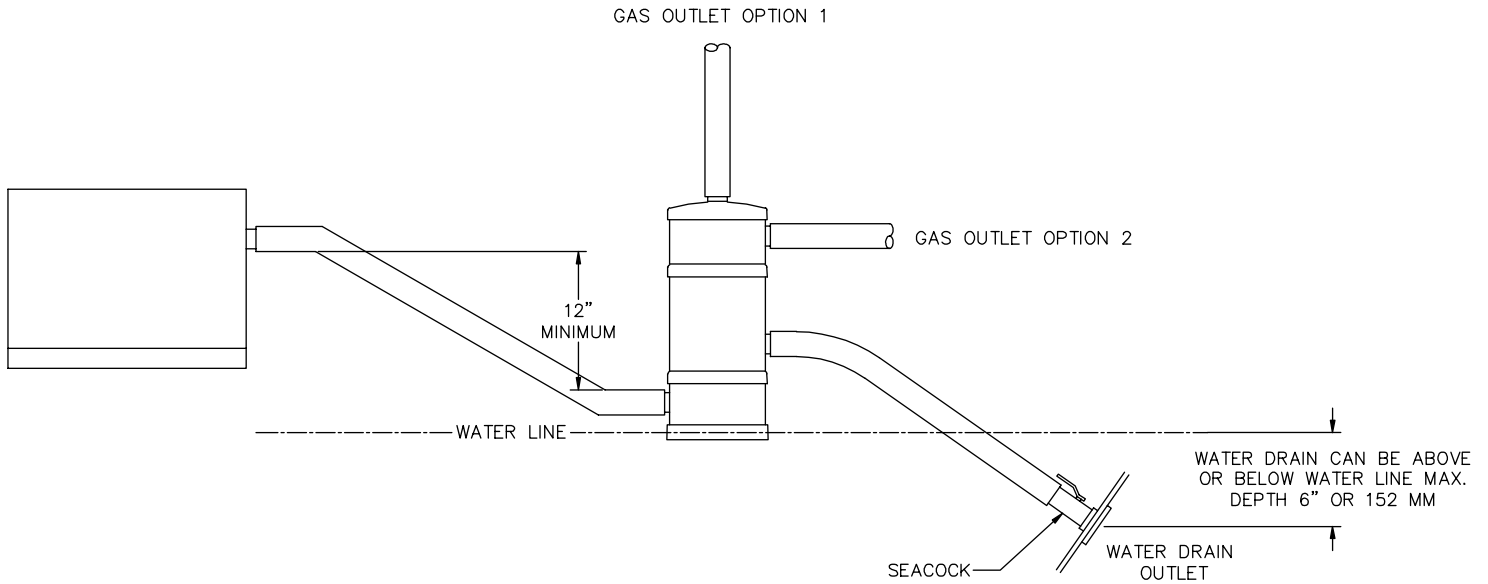
# COMBO-SEP™ DIESEL ENGINE VERSION

## Installation Guidelines

### COMBINATION WATERLIFT / EXHAUST GAS-WATER SEPARATOR

NOTE:

1. DEWATERED EXHAUST GAS PIPE OR HOSE MUST BE INSTALLED SUCH THAT WATER TRAPS DO NOT OCCUR.



Please call our support line if we may assist you in any way. (229) 228-7653



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