



# VERNATONE™

## Product Installation Guidelines



**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.**

The guidelines for the Vernatone™ are as follows:

1. The Vernatone™ is a WET marine exhaust muffler. It is designed for use in an exhaust system as appropriately recommended by ABYC (American Boat & Yacht Council) Standard P-1.
2. The Vernatone™ is designed for gas/water to flow in one direction only. Please note labels on muffler carefully.
3. There must be sufficient distance between the water injection point and placement of the Vernatone™ to allow adequate cooling of the exhaust gases. The distance will be dependent on the manner of the water injection. Maximum operating temperature should not exceed 350° F. A typical well-designed system should run between 120-188° F.
4. The diagram shows a backwash surge chamber as protection against back flow of water up and into the exhaust manifold. Such designs are desirable and can help to reduce the risk of engine damage. See our catalog or website for the various sizes/dimensions of surge chambers available.
5. The Vernatone™ should be installed in a level position or tipped slightly toward the outlet, with the body rotated so that the installation label is directly on top and the direction of the flow arrow points aft. The internal baffle openings should be placed in the lowest possible position for the most efficient muffler operation.
6. 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 screwdriver or small wrench. Do not use air wrenches.
7. Although the muffler itself is very light, the water content is significant in weight. Therefore, 3" and larger sizes should be firmly supported and strapped at the major diameter of both end bells..
8. It is recommended that the exhaust outlet be placed above the loaded water line by a dimension equal to its diameter. Minimizing the number of hull penetrations near or below the water line is always good practice.

The Vernatone™ is recommended for both gasoline and diesel propulsion and generator engines. It is designed to withstand many times the normal operating pressures. However, this does not mean that it can withstand the extreme instantaneous pressures associated with back-fire.

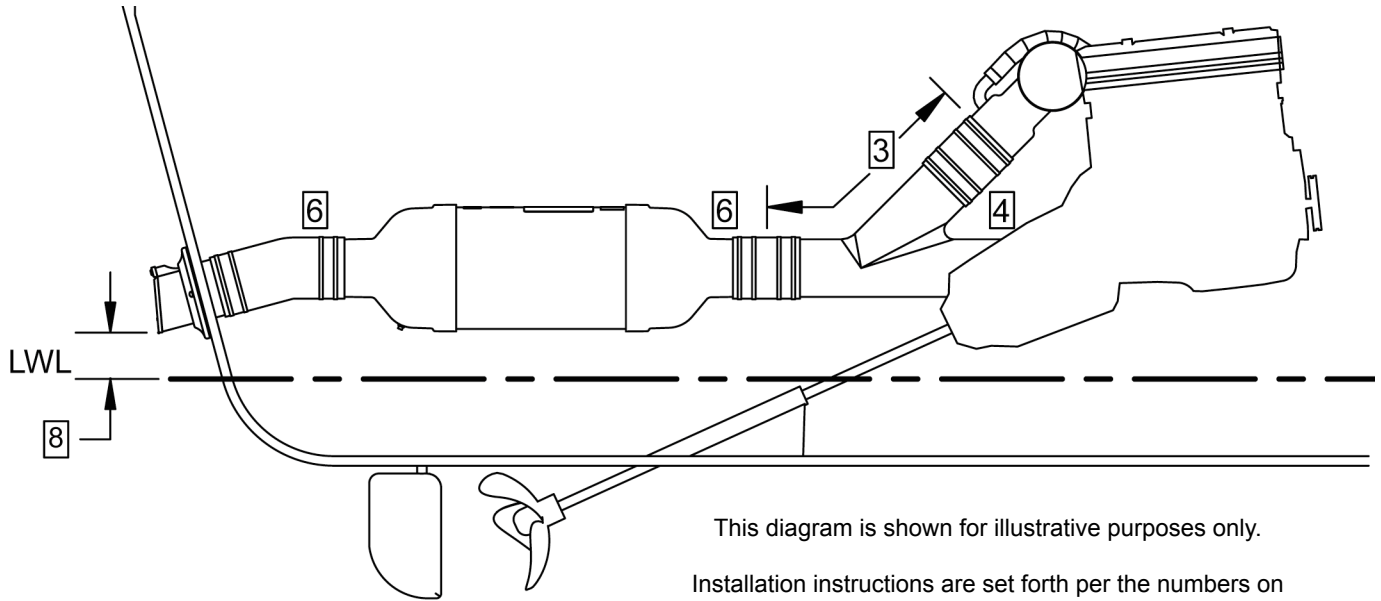
**WARNING!** Should a back-fire occur, an immediate and thorough inspection of the entire exhaust system is recommended.

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Warning! Gasoline engines produce dangerous levels of carbon monoxide that will pass through this product as part of a properly designed and installed exhaust system. Per ABYC A-24 Standards, this product must be used in conjunction with working carbon monoxide detectors installed in the boat's living quarters.



This diagram is shown for illustrative purposes only.

Installation instructions are set forth per the numbers on the diagram which correspond to the numbered paragraphs in the instruction.