Service Bulletin

Group	Number	Version
23-0	2	04

VOLVO PENTA

Volvo Penta of the Americas
1300 Volvo Penta Drive
Chesapeake, Virginia 23320-9810

Storage Requirements for Fuel Systems

Gas Engines

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This bulletin clarifies our requirements for fuel and fuel system treatment during storage or other periods of limited use. Current fuel is not as stable as in years past, this must be addressed whenever the boat is stored or not used for periods of time.

Electric Fuel Pumps and Fuel Cells

Preventing Failures

Failure analysis on pumps returned to us indicates that a large percentage of these parts failed due to varnish build up. Varnish build up is significantly reduced by following the fuel stabilizer and storage procedures that follow.

NOTICE! **Failure to follow the fuel stabilzer and storage procedures below can damage fuel system components and is not considered as warrantable.**

Use of Fuel Stabilizer

Use a fuel stabilizer such as STA-BIL®, if the vessel's fuel will not be used within 30 days. Marine fuel stabilizer provides the best results. Add the stabilizer according to the stabilizer manufacturer's instructions. This will help prevent the fuel from breaking down, which can lead to reduced engine performance and engine damage.

See Service Bulletin 18-8

Volvo Penta has discontinued fuel stabilizer 3855832, noted in earlier manuals. Many brands of stabilizer are available and can be obtained locally.

Storage

If the boat will not be used for two months or longer, the boat and engine must be prepared for this storage period. This procedure has been covered in many earlier bulletins and operator's and workshop manuals. This bulletin clarifies the storage preparations needed for the **fuel system** and replaces any earlier information.

Both the fuel in the tank(s) and the engine must be treated.

Tank

If the boat is being stored, the fuel must be treated with fuel stabilizer. Add stabilizer according to the manufacturer's instructions.

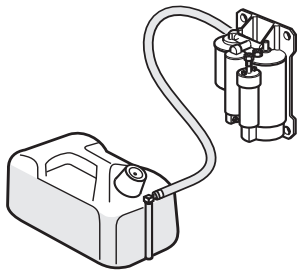
Engine and fuel system

If the boat is being stored, engine and fuel system internal components should be coated with a light film of oil to prevent corrosion. This was previously accomplished by "fogging" the engine. The design of multi-port fuel injected engines does not permit the introduction of fogging oil through the intake system. The following **Fuel Storage Mixture** procedure introduces the oil through the fuel system, protecting both the fuel system and engine during storage. This procedure applies to all gas engines, carburetted or fuel injected.

Fuel Storage Mixture

1. Prepare the storage mixture:

Using a six-gallon portable fuel tank, add:
One pint two-cycle motor oil
Fuel stabilizer, per manufacturer's instructions
Six gallons fresh fuel (50:1 ratio to two-cycle oil)



⚠ **DANGER! Fuel and vapors will be present during procedure, provide ventilation and eliminate spark/flame sources.**

2. Disconnect the fuel line at the inlet fitting of the engine's fuel pump. Connect a line from the portable tank (with storage mixture) to the fuel pump inlet.

⚠ **CAUTION!Engine must be run to complete process. Take precautions to ensure safety and prevent engine damage:**
- run engine with drive out of gear and in trim position
- boat must be properly supported
- must have adequate cooling water, monitor engine temperature gauge
- do not run fuel pumps dry

3. Run the engine on the storage mixture for five minutes at 1500 RPM. This will ensure that all fuel system and internal engine components are protected.
4. Reduce the engine speed to idle and stop the engine.
5. Reconnect the boat fuel line to the fuel inlet fitting and check for fuel leaks. Do not start engine.

DANGER! Any fuel leaks should be corrected immediately to prevent possible fire and/or explosion.

6. Continue with storage (winterization) procedures.

Other Storage Requirements

Storage time limit

Fuel storage times are extended by the use of stabilizer, however the storage time is still limited. See the stabilizer manufacturer's instructions for specifics. If this time limit is exceeded varnish and other problems may occur. The fuel should be removed from the boat and the **Storage** procedure above should be repeated to protect the engine and fuel system.

Boat manufacturers

Fuel systems on Volvo Penta engines are sealed with stabilized fuel prior to shipment. If the engine was run after it was recieved from Volvo Penta, follow the **Storage** section above prior to storage or shipment of the boat or engine.

Boats in inventory

Boats and engines should be protected by stabilized fuel, however the same storage limitations apply. If the boat is still in inventory six months after boat build date, the **Storage** procedure should be performed.

Pumps from Volvo Penta Parts

NOTICE! To extend pump shelf life, replacement fuel cells and pumps are sealed with testing fluid. The testing fluid is flammable, safety regulations prohibit shipment via air freight.

Noisy Pumps

Electric pumps will often cavitate and become noisy if they are starving for fuel.

Before replacing noisy fuel pumps

Before replacing low-pressure pumps (carbureted engines, fuel cells) check the fuel supply, condition of the fuel hose, anti-siphon valve operation, and fuel filter before replacing the fuel pump.

A noisy high-pressure pump on a fuel cell may indicate a low fuel level in the reservoir. Check the fuel supply and low pressure pump operation to be sure the reservoir is receiving the correct volume of fuel.

This information may prevent needless pump replacement and reduce the down time for the boat owner.