

### EXHAUST SYSTEM MAINTENANCE:

In-board engine installations on sailboats differ from the engine installations on power boats. The primary difference is that the engine is usually installed below the waterline of the vessel.

The benefits of these locations are that the weight of the engine is where it will not adversely effect trim and that the shaft is at an efficient angle for powering and minimum drag when sailing.

Engine installations below the waterline require special attention to the design of the exhaust system. The discharged cooling water must be exhausted above the waterline to avoid excessive back pressure on the engine and prevent sea water from traveling up the exhaust line and entering the engine.

To exhaust the engine above the waterline, the discharged cooling water and exhaust gas must be "lifted" to a level above the through hull fitting on the transom.

In the Capri 26, the exhaust cooling water and exhaust gas are lifted above the waterline by an "Aqua-lift" type muffler. The Aqua-lift muffler performs three jobs:

1. It mixes engine gas and water to cool the gas and lower exhaust line temperature.
2. It baffles and deadens engine exhaust noise.
3. It creates pressure required to lift and expell cooling water.

As shown in the illustration (Figure 3), the inlet tube into the Aqua-lift is short and the outlet tube is long, near the bottom of the tank.

As water accumulates in the bottom of the tank, exhaust gas pressure builds in the top of the tank. This forces the cooling water up the exit tube and through exhaust line overboard.

The system requires exhaust pressure in the tank to function. When the starter motor is turning over, before the engine starts, water is being pumped through the cooling system by the belt driven cooling water pump. It is very important not to operate the starter motor for more than 30 seconds if the engine does not start. Should it be necessary to operate the starter motor more than 30 seconds, water must be drained from the Aqua-lift by opening the drain at the base of the Aqua-lift. The drain valve may be opened until the engine starts, if desired, and closed immediately after the engine starts. All Capri 26's are equipped with anti-siphon valves as an additional precaution to prevent cooling water from entering the engine. See Figure 4.