SAN JUAN FRESH WATER COOLING SYSTEMS

SPECIAL ADVANTAGES

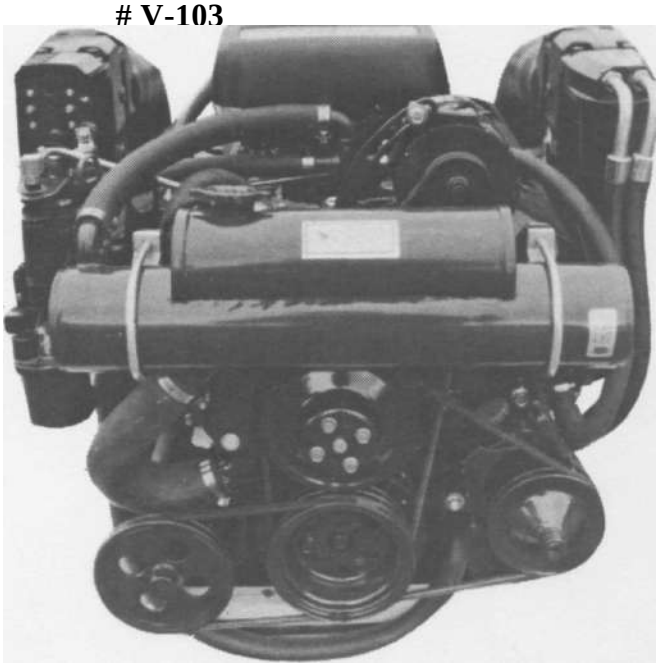
OF THE SAN JUAN COOLING SYSTEMS

- **Longer Engine Life.**
- **No corrosion or harmful salt deposits.**
- **More uniform operating temperatures are assured for greater fuel economy and the elimination of harmful sludge.**
- **Permanent-type Anti-freeze may be used to insure year around protection.**
- **Equipped with standard zinc pencil to protect against electrolytic action.**
- **Workmanship and material fully guaranteed.**

- **COMPACT**
  The San Juan fresh water cooling system does not increase the height, width or length of the engine.
- **EFFICIENT**
  Improved internal design gives generous cooling capacity. Temperatures will not surge after a hard run. Additional efficiency and protection from coolant loss is obtained through the use of a pressure cap.
- **DURABLE**
  To insure years of satisfactory service, entire unit is constructed of pure copper with silver alloys.
- **QUICKLY INSTALLED**
  This kit can be installed by anyone with a few common hand tools.
- **COMPLETELY ON ENGINE**
  This San Juan Cooler is completely on engine, including cooler, mounting brackets, etc. Nothing in the "Bilge."

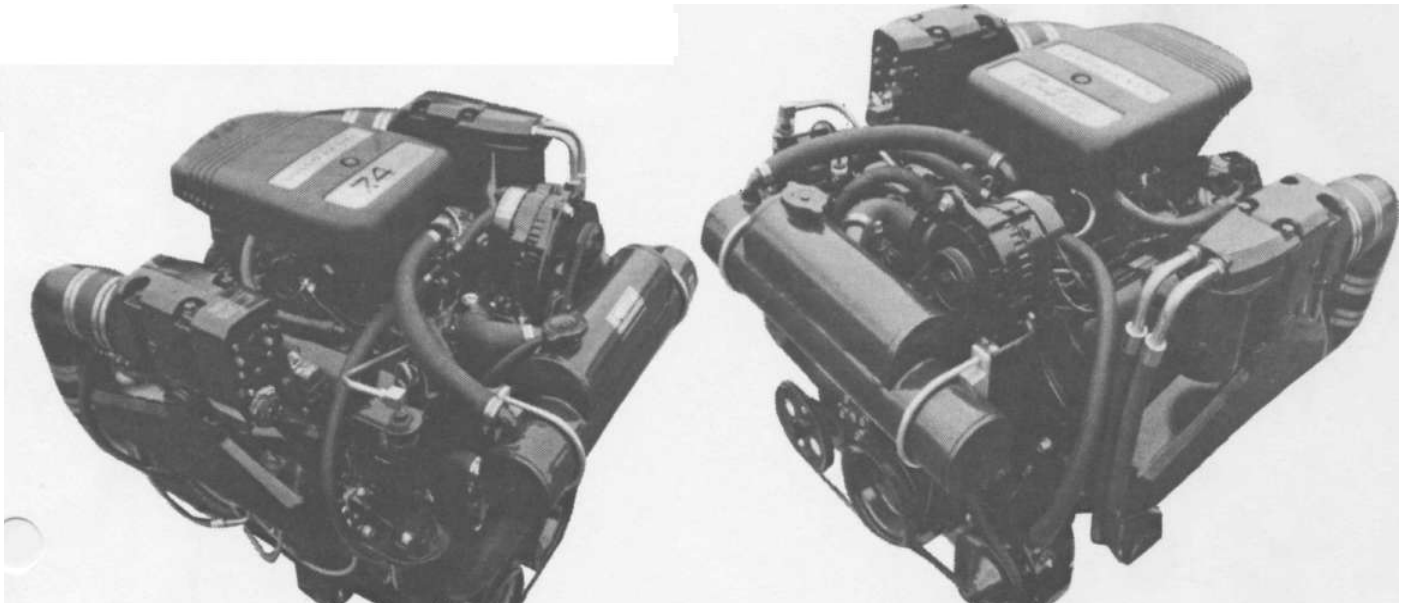
VOLVO
7.4 GL

 # V-103



NO EXTRAS TO BUY

Designed for close tolerance Engine Compartment Installations



7.4 GL VOLVO PENTA

-- INSTALLING THE SAN JUAN COOLING SYSTEM --

P/N# V103 NOTE: In these instructions R. & L. indicates the Right and Left side of the engine as corresponds to your Right & Left, when standing at the transom and looking forward.

1. Drain engine block both sides. R. drain is just forward of the starter, at oil pan gasket level. L. drain is located again at pan gasket level and just above the rear end of the engine oil cooler. BE SURE TO CLOSE both drains.

2. At the TOP, FRONT, CENTER of the engine is the original thermostat housing.
   a. Remove all four hoses from this housing, leaving the hoses other ends attached.
   b. Remove and discard the thermostat housing and lifting ring. This is held on by Two 9/16" hex headed bolts straight down into the intake manifold.
   c. Thoroughly clean the gasket surface on the manifold.
   d. Take the NEW thermostat, gasket, thermostat housing and two 3/8" X 1" bolts from kit.
   e. Place the NEW thermostat into the recess in the intake manifold. BE SURE POINTED END IS UP. Place the gasket and the NEW thermostat housing down, over the thermostat. Then using the two 3/8" X 1" bolts supplied, secure housing in place. Tighten evenly and firmly.
   f. Just to the R. of the thermostat housing is a hollow headed plug in the intake manifold. Remove this Plug. Discard. Then, screw into that hole the brass, straight, pipe to hose adaptor. Locate on the circulating water pump the hollow headed pipe plug that is just above the large water inlet. Remove. Into this hole screw the 90° pipe to hose adaptor. Tighten so hose spud points straight UP. Now connect these two brass fittings together with the 5/8" X 18" wire reinforced hose. Clamp.

3. Installing Heat Exchanger mounting plate.
   a. Locate on the front of the engine, the water circulating pump bolts. There are two bolts on the R. side that hold the pump to the front of the engine block. Remove and discard this lower bolt, of those two.
   b. There are two threaded holes in the upper front ends of the cylinder heads,each side. The R. hole is empty while the L. head has a bolt in it that holds the alternators mounting bracket. Remove and Discard this bolt.
   c. Take the mounting plate, the three pipe spacers and the three long bolts with washers, from the kit.
   d. Hold the plate up to the front of the engine with the "leg" to the R. then using the 2V long spacer with a 7/16" X 5" bolt through the plate. Start the bolt in through the hole of the alternator mount, (see step b).
   e. Next, using the longest spacer (4V[1]) and the 7/16" X 5*5" bolt, start bolt into the threaded hole in the upper front end of the R. cylinder head.
   f. Now place the remaining 3/8" X 5" bolt with the remaining 2-7/8" spacer through the lower R. "leg" of the mounting plate and into the lower hole of the engines water pump, (see step 3.a.) Tighten all three bolts firmly.

4. Mounting the Heat exchanger.
   a. Take the two aluminum cradles and placing the "U" bolts around the heat exchanger approximately 3" in from each end and through the cradles. Hold the heat exchanger with the fill cap UP and the large lower outlet spud to the R. push the "U" bolts through the corresponding holes in the mounting plates. Start the self locking nuts supplied. Center the heat exchanger and with the fill cap straight up, Tighten nuts on "U" bolts. DO NOT OVERTIGHTEN these nuts. Approximately one thread through each nut is enough.

5. Hosing Up.
   a. Using the "T" supplied, with its elbow UP and pointing to the R, connect the two hoses that go to each (R. & L.) exhaust manifold to the side legs of the "T". This will position the T to just in front of the carburator. Now use the 1" x 15V[1] hose to connect between the 1" elbow on R. top end of the heat exchanger back around to the elbow on the "T". Clamp.
   b. Connect the thermostat housing outlet to the IV diameter spud on the expansion tank with the 90° X IV[1] elbow hose supplied. Clamp.
   c. Now, connect the original curved hose, which runs under the front of the engine and

OVER-

5.c. up on the front, R. side, onto the 1" spud pointing back, on the R. side of the Heat exchanger. Clamp, d. Carefully cut to proper length, the large curved hose on the engines water circulati
pump inlet, so it will be able to be installed onto the large, angled spud (1-3/4" cL~ .) under the lower R. end of the heat exchanger. Clamp, re-using the original hose clamps.

NOW READ AND FOLLOW START UP SHEET 1A.

1. NOTE: The cooling system capacity is approximately 13 quarts U.S.
2. NOTE: Some parts of the engine will not be protected by antifreeze in the cooling system and MUST BE DRAINED in freezing weather. They are as follows:
   a. The sea water pump.— Remove BOTH hoses to drain.
   b. The sea water side of the heat exchanger.— Drain and zinc combination plug under the L. end of heat exchanger.
   c. The engine oil cooler.—Remove the hose on it's forward end. It is back of, and below the power steering pump (on the front, lower left side of engine).
   d. BOTH exhaust manifolds.— Each has a rubber cap at the lower, rear end.

IMPORTANT: BE SURE TO REPIACE ALL HOSES, DRAIN PLUGS, AND RUBBER CAPS as soon as draining is Ganpleted.

PLEASE send these instruction with engine and/or boat.