## 4,3 - 5.0 - 5.7 LITRE **MERCRUISER** 262-305-350 V-6 and V-8

**Centerise Manifold** 



SAN JUAN ENGINEERING & MANUFACTURING CO.

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## INSTRUCTIONS FOR INSTALLING THE SAN JUAN COOLING SYSTEM ONTO THE V6/V8 MERCRUISER STERN DRIVE ENGINE

NOTE: R & L In these instructions correspond to the engine's Right and Left sides when standing at the stern and looking Forward toward the Bow.

- 1. a. Drain Engine Block. Right drain cock is located down and behind the R. Front engine mount, just forward of the starter motor.
  - b. L. Block drain is located Low on the engine block, just forward of the oil filter.
  - c. Also drain both exhaust manifolds. The drain cocks are at the lower rear end of each manifold.
- 2. Remove all hoses from the original thermostat housing. Discard the hoses that connect to the exhaust risers. Also the curved hose that connects down to the oil cooler located low on the left side of the engine.
- 3. Remove and Discard the thermostat housing (two 9/16" bolts straight down at the Top Front Center of the engine). Be sure to UNSCREW and SAVE the temperature sending unit AND the temperature warning unit from the original housing.
- 4. a. Take the NEW thermostat housing, thermostat, gasket and the two 3/8" n.c. x 1" bolts from kit and install it with the large outlet pointing up and forward.

  Also, BE SURE to install the new thermostat with the pointed end UP. Tighten bolts evenly and firmly.
  - b. Using the 1/2" x 3/8" n.p.t. adaptor bushing, Screw the temperature warning unit into the new thermostat housing. Note: The temperature warning unit has an 11/16" HEX and connects to the longer white wire that has a BLUE Tracer.
- 5. a. Remove and Discard the Hollow, square socket pipe plug from the intake manifold located just to the R. of the new thermostat housing.
  - b. Screw into this hole the 1/2" x 1-1/2" pipe nipple supplied in Kit, then the brass cross "Tee" into the nipple and into the top of the "Tee" screw the 90 Brass hose adaptor. Tighten it all up so the Brass elbow is pointing to the R. and slightly forward (so it points just forward of the R. valve cover).
  - c. Into the SIDE leg of the "Tee" reinstall the temperature sending unit (3/4" HEX) Tighten. Connect the Short White wire to this unit.
  - d. Notice another square headed pipe plug in the R. side of the engine's water pump, located just above the large Inlet spud on the water pump. Remove Plug and screw into that hole the straight brass hose adaptor. At this time connect the 5/8" x 25", wire reenforced hose between the two brass adaptors. (Installed in Paragraph 5b.) Clamp.
    - Note: If a hot water heater is going to be used, discard this 5/8" x 25" hose and connect the two hoses from the heater, one to each of the brass fittings.
- 6. Remove and Discard the original 45° brass elbows from the front of each exhaust RISER. Use the 3/4" n.p.t. pipe plugs, supplied in the kit, to plug off the holes
- 7. Installing the mounting Plate for the heat exchanger.

  Note: This plate is secured to the engine by using long bolts with spacers. The bolts screw into the existing threaded holes in the front of the cylinder heads. The spacers hold the mounting plate out, in the proper position.

## **CONTINUED**

- a On the R. cylinder head use the two upper holes (of three). On the far R. there is a bracket that holds the Red "Reset" button assembly. Remove that bolt and use that threaded hole. The wire harness bracket will be held under the 5" spacer end when installed using the 6" bolt.
- b. In toward the center of the engine (about 4") is another threaded hole. Use this hole for the second 6" bolt and 5-1/8" long spacer.
- c. On the front of the cylinder head notice that the power steering pumps mounting bracket is secured to the cylinder head with two bolts. Remove the Upper bolt and use that hole for the Left 5" long bolt and 3-3/4" spacer.
- d Put the long bolts through the mounting plate, then place the correct length spacers over the bolts and hold the plate up to the front of the engine. Screw the long bolts into the corresponding holes in the cylinder heads. Tighten firmly.
- Install HEAT EXCHANGER ONTO MOUNTING PLATE. With the Heat Exchanger Mounting Plate securely in place, put the two "U" bolts around the Heat Exchanger body and place the two aluminum cradle spacers over the "U" bolt ends. Hold the Heat Exchanger with the Fill-cap straight-up and the large Lower outlet to the right side of the engine, place the "U" bolt ends thru the corresponding holes in the Mounting-plate. Use the four self locking 3/8" n.c. nuts to hold the Heat Exchanger to the Mounting plate. Center the expansion tank between the "U" bolts. Again, be sure the Fill-cap is straight up. Do Not over tighten the "U" bolt nuts. One thread through these nuts is usually "just right."
- 9. Connecting the Hoses:
  - a Use the 90°-1-1/2 i.d. hose supplied to connect the thermostat housing to the Inlet elbow on the Heat Exchanger's Tank. Clamp.
  - b. Use the original curved hose to connect between the water pump inlet and the large 1-1/2" fitting under the R. end of the Heat Exchanger. CUT upper end of hose off to appropriate length. <u>USE CARE</u> not to cut hose too short.
  - c. Take the 7/8" I.D. x 14" Hose supplied along with the 1-1/4" x 3-1/2" Hose and connect them together with the 1-1/4" x 7/8" reducing elbow. Push the 7/8" hose up from below, behind the alternator belt and past the mount spacer onto the 7/8" hose spud under the L. end of the front hose spud on the oil cooler. Clamp. Note: Oil cooler may slip back in its clamp mount.
  - d. Supplied in kit is a Tee with a long leg and a short leg with an elbow on it. This divides the sea water from the Heat Exchanger's outlet elbow into the bottom of each exhaust manifold. The short leg of the Tee connects down to the elbow on the L. end and back side of the Heat Exchanger using a 7/8" x 3" hose. The Tee's long leg reaches over to the R. side. Connect to the original hose from under the R. exhaust manifold. The elbow on the Tee's L. end connects to the original hose from under the left manifold. Clamp all connections.
  - e. Check over all hoses to be sure none will chaff or touch moving parts. Re-tighten all clamps

Now read and follow the START-UP instructions Sheet #1A

Note: This system's coolant capacity is approximately 8 U.S. Quarts.