

SAN JUAN FRESH WATER COOLING SYSTEMS

* **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. Also equipped with standard zinc pencil to protect against local electrolytic action.

* **QUICKLY INSTALLED**

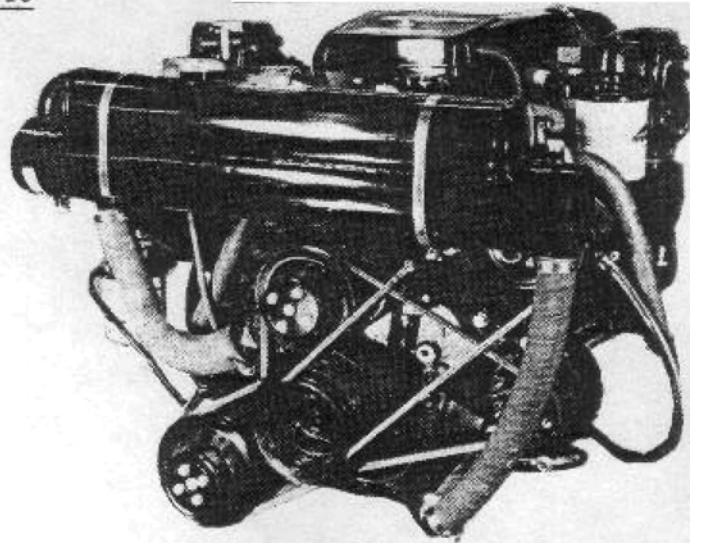
This kit can be installed by anyone with a few common hand tools,

* **COMPLETELY ON ENGINE**

This San Juan Cooler is completely on engine, including cooler, mounting brackets, etc. Nothing in the "Bilge,"

SAN JUAN COOLING SYSTEM FOR A
MERCURIER 330 TR
w/Center Rise Exhaust
Manifolds

MC 310



NO EXTRAS TO BUY

This is a complete cooling system which includes fresh water cooling of the Engine and Exhaust

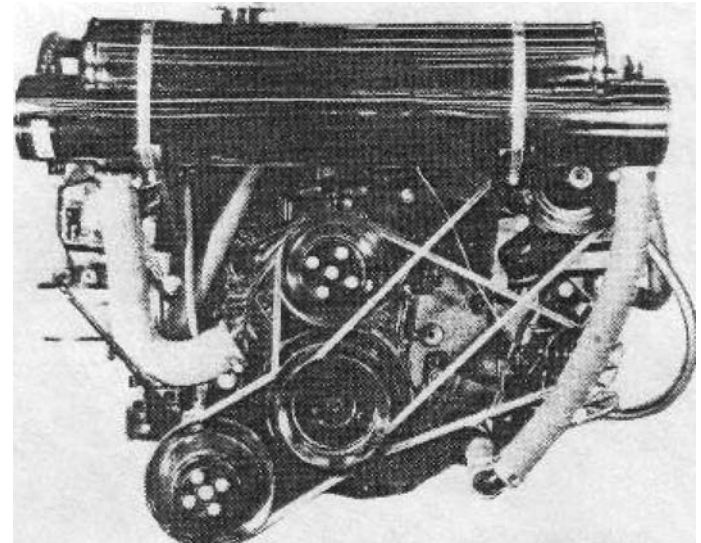
THIS UNIT CONSISTS OF:

Cooler Assembly with Expansion Tank. Fill Cap and Mounting Brackets, Manifold end Plate and Thermostat with outlet housing.

Other components to complete system include all hose, hose clamps, nuts and bolts and water fittings.

Ample clearance is provided for engine control cables as well as access to the electrical connections and routine maintenance.

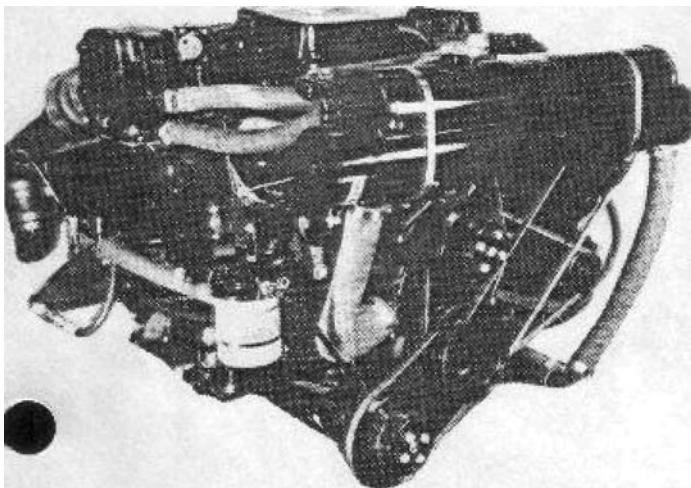
All metal parts in kits are painted glossy black.



SPECIAL ADVANTAGES

OF THE SAN JUAN COOLING SYSTEMS

- Fresh water cooled exhaust manifolds.
- 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.



SAN JUAN ENGINEERING & MANUFACTURING CO.


766 MARINE DRIVE • BELLINGHAM, WASHINGTON 96225 • P6°) 734-1910

#MC310

Instructions for Installing a San Juan Fresh water Cooling System onto the 330 TR Mercruiser with New Center Rise Exhaust Manifolds and Power Steering.

NOTE: In these instructions, the words, "Right Hand" and "Left Hand" will be used. This corresponds to the engine as if you were standing in the STERN of an average craft and looking toward to BOW.

1. a. After unscrewing the temperature warning unit, Remove and Discard the original thermostat housing from the top, front center of the engine. Disconnect all the hoses from the housing only, leaving their other ends connected to their original locations Except for the sea water hose that is routed up the left front of the engine, behind the belts. Disconnect this hose at the engine oil cooler just behind the Left Front engine mount. Discard this hose.
b. Install in its place the 1-1/4" I.D. X 9-1/2" straight hose with a 90° copper elbow in the forward end. Clamp with the elbow pointing DP and Left slightly, toward the Power Steering Pump.
c. Clean the engine's thermostat gasket surface. Install the temperature warning unit that was removed from the original thermostat housing, (STEP 1.a), into the top of the NEW Thermostat Housing supplied in the Kit. Install this new housing using the NEW 160° F, thermostat, with the bolts and gasket furnished. Point its two 1" diameter hose spuds Forward and out. Tighten bolts evenly and firmly. BE SURE the correct end (pointed end) of the thermostat is UP. Re-connect wire to the temperature unit.
2. a. Take the Heat Exchanger Mount P/N #3 30TRR from kit. Then remove the two bolts that hold the Fuel Filter bracket onto the front end of the Right Hand cylinder head. Install this Mount using the longer bolts supplied. Be Sure the fuel line to the carburetor has sufficient clearance where it passes near the mount.
b. Take the Heat Exchanger Mount P/N K330TRL from kit. Locate and remove the corresponding bolts in the front of the Left cylinder head which hold the alternator/power steering pump bracket. Again using longer bolts supplied, install the mount with these holes. Note: On this Left side it's best to loosen the power steering and alternator belts Before removing their mounting bolts. Re*tighten belts to their correct tension after mount is securely in place.
3. a. Remove both Exhaust Risers (outlets) from the exhaust manifolds.
CAREFULLY CLEAN ALL gaskets surfaces. Discard the stainless steel plates. Remove a hollow headed pipe plug from each exhaust manifold. The plugs are just Ahead of where the exhaust risers were connected onto the manifold. (Leave the plugs to the Rear in place).
b. Screw into these holes the Brass Elbow Adaptors from kit. On the R. manifold tighten the adaptor so its hose spud points FORWARD and in slightly. On the L. manifold point that brass elbow in much more toward center of engine (about 45°) so the hose will clear the oil filter, when it is re-installed. It will be helpful to install and clamp the 1" I.D. X 17" hose onto this elbow at this time or before the oil filter is put back in place.
c. Install both exhaust risers back onto the manifolds using only the Blank Gaskets supplied. A little soft gasket cement on both sides of the Blank Gasket will help prevent water leaks. USE CARE to tighten each riser's four nuts evenly and firmly. Re-connect the other parts that were attached to the risers.
4. Now place the Heat Exchanger assembly onto the mounts that were installed in STEP 2, a and b. The fill cap should be UP, Level and to the R. aide of the engine. Also center the Heat Exchanger with the engine. Looking along the outside edges of the exhaust manifolds, the ends of the Heat Exchanger should be in about 1" on each side. Use the two large #83 clamps to secure the Heat Exchanger assembly in place. Position the clamps so their worms are under the curved section of the mounts with their screw driver slots pointing Forward. NOW LOOK to be sure there is MOT LESS than 1/4" clearance between the Heat Exchanger body and the HUB of the power steering pump pulley. (Shim the curved section of the L. mount with a 1-1/4" X 4-1/4" piece of rubber or similar material, if necessary).
5. **Hosing Up. See Note 3.**

- a. Loosen the Large hose at the engines pump inlet so it can be rotated around slightly. Cut off the Upper end of this large hose to correspond to the 1-1/2" diameter hose spud under the Heat Exchanger's R. end. Install cut end onto this spud and rotate the other end on the pump around until the hose lies in place nicely and clears the fuel line. Clamp.
- b. Connect the two original hoses from under each exhaust manifold onto the corresponding spuds on the NEW Thermostat housing. Clamp.
- c. Connect the two original hoses from each exhaust riser together, with the "Tee"  water divider fitting supplied, at the center of the engine and just Forward of the new thermostat housing. Elbow UP and pointing toward the R, side of the engine. Use the 1-1/4 X 11-1/2" hose to connect elbow on Tee to the elbow on the TOP Right end of the Heat Exchanger. Clamp. (This is sea water OUT and into the exhaust).
- d. Connect the two Brass Elbow Adaptors (Installed in STEP 3) to the corresponding 1" Diameter hose spuds, which point back on the Heat Exchanger's Expansion Tank. Use the 1" X 14-1/2" hose on the R. spud and the 1" X 17" hose installed onto the brass elbow in STEP 3.b. onto the L. spud.
- e. Use the copper elbow supplied and a 1-1/4" X 16" hose to connect the sea water out of the front of the L. oil cooler (see STEP 1.b.) FORWARD and UP to the 1-1/4" diameter hose spud under the L. end of the Heat Exchanger. Clamp both hose ends. (This is sea water into the Heat Exchanger). Re-check for tightness all other hose clamps.

NOW READ AND FOLLOW START UP SHEET 1A.

NOTE 2: Remember to firm up the four nuts on each exhaust riser after engine is warmed up.

NOTE 3: On later model engine when the fuel pump has been moved. Discard the original Large hose from the engine's pump inlet. Instead, use the two 1 3/4" Diameter Flex hoses with copper ell connected between the™, to route the coolant from the Heat Exchanger large, lower, Outlet around the pump and into the engine's large water pump Inlet. Clamp all connections.