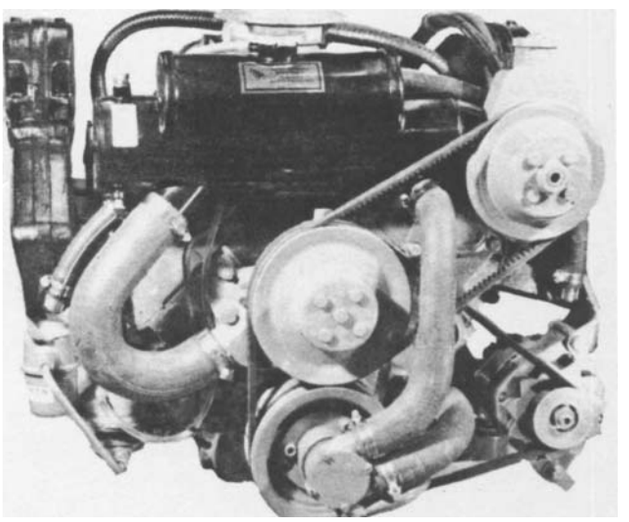
SAN JUAN FRESH WATER COOLING SYSTEMS

VOLVO E-V8

290 Drive w/Power Steering

 # V-104



NO EXTRAS TO BUY

SPECIAL ADVANTAGES

OF THE SAN JUAN COOLING SYSTEMS

Longer Engine Life.

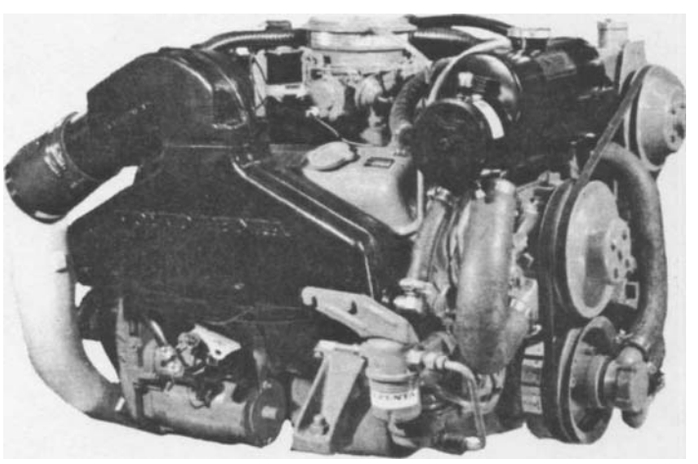
No corrosion or harmful salt deposits.

More uniform operating temperatures are assured for greater fuel economy and the elimination of harmful sludge.

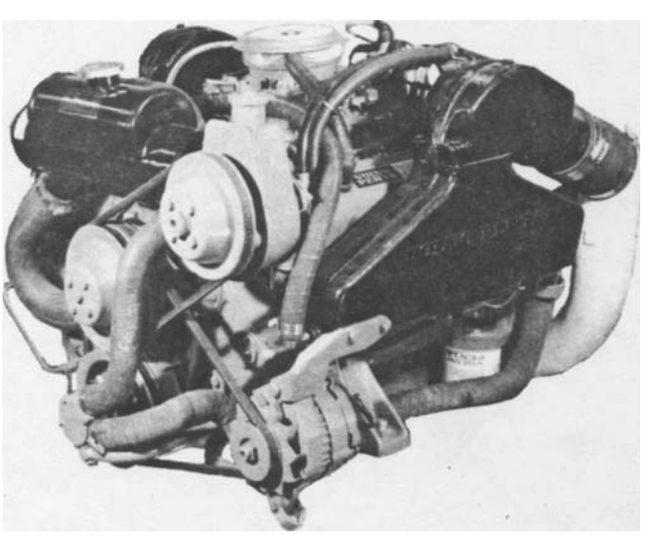
Permanent-type Anti-freeze may be used to insure year around protection.

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. 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 ENGINEERING & MANUFACTURING CO.

766 MARINE DRIVE • BELLINGHAM, WASHINGTON 98225 • (360) 734-1910

VOLVO "E" MODEL / V8
INSTALLATION INSTRUCTIONS
P/N #V104

t. Disconnect hoses. Remove and discard the original THERMOSTAT HOUSING which is located at top, front center of the engine. It is held in place with TWO 9/16" HEX bolts, about 3-1/4" apart, going straight down just in front of the carburetor. Push hoses out of the way. (Save hose clamps for re-use). The larger hoses (one to engine pump and one to sea water pump), should be disconnected from the thermostat housing only. Leave the other ends clamped in their original location. Save and re-use hose clamps from upper ends.

2. Be sure gasket surface on engine is clean, then take the new thermostat supplied and place it into the recess around the 2" diameter hole in the intake manifold. BE SURE POINTED END OF THERMOSTAT IS UP.

3.a. Place one of the two gaskets supplied over thermostat.
b. Place heat exchanger mounting plate down over the thermostat with the "V" cradle up.
c. Place the remaining gasket on top of the mount.
d. Take new, small thermostat housing from kit and place on top of the second gasket. Align bolt holes and gasket holes and secure mount in place with the two 3/8" X 1-1/4" long bolts supplied. Tighten evenly and firmly.
e. Note third bolt hole just ahead of new thermostat housing. Place into that hole the 3/8" X 3/4" long bolt. Tighten.

4.a. Take the heat exchanger and the 5" X 3" rubber pad from the kit. Place the rubber pad between the heat exchanger and the "V" cradle of the mounting plate. The fill cap must be STRAIGHT UP and the 90° elbow on the tank must point toward the new thermostat housing. Allow some clearance at both ends of the heat exchanger.
b. Use the large #80 clamps supplied to re-secure the heat exchanger in place. Route the clamps through the slots in the side of the mounting plate. Position the clamps worm screws at the bottom under the mount. Do Not overtighten clamps.
c. Use the 1-1/2" 90° hose from the kit to connect the new thermostat housing to the 90° elbow on the heat exchanger. NOTE: Be sure all hose clamps are tight.

5.a. Hold the large 1-3/4" hose that connects to the circulation pump up to the spud on the heat exchanger, leave enough to slip over the spud. Cut and install. Now re-route the 1-1/4" hose attached to the upper fitting on the sea water pump. Cut and install (see picture).
b. Connect the 1" X 8" hose to the 1" 90° elbow that angles inward. Connect the other end to the 90° fitting on the copper tee provided.
c. Bring the two 3/4" hoses that are connected to the front of the manifold up behind the heat exchanger and connect each hose to the copper tee.

salt water divider tee

NOTE: Be sure the heat exchanger body is clear of the fuel line and also the power steering pump belt. If necessary, loosen mounting clamp and the heat exchanger can be shifted slightly, re-tighten clamps.

NOTE: This system holds approximately 8 quarts, U.S.

NOW READ AND FOLLOW START UP INSTRUCTION SHEET 1A.

In freezing weather be sure to drain manifolds and other parts not protected by anti-freeze. Consult your engine instruction manual.

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KIT #V-104
225 VOLVO

INSTALLING BY-PASS

Disconnect the wire from the temperature sending unit located on the intake manifold left of the thermostat housing.
Remove sending unit.
Remove the 1/2" plug from the side of the circulating pump, located* just above the 1-3/4" hose spud on the left side of the pump.
Install the 1/2" X 5/8" straight adapter above the 1-3/4" hose fitting,
Now for installing the intake manifold fittings, place the 1/2" X 2" nipple where you removed the sending unit. Screw the 1/2" tee into the nipple with the side opening pointing inward. Install the sending unit in the side fitting, connect wire, the 1/2" X 5/8" 90° adapter goes in the upper fitting. Be sure the 90° fitting is located at the top of the tee with the temperature sender in the center or you will get a false temperature reading.
Now connect the two adapters with 5/8" hose and clamps that are provided.

VOLVO"E" 290 DRIVE BLOCK ONLY COOLING KIT#V-104

PARTS LIST	QTY	DESCRIPTION
V104-0	1	Installation Manual
V104-1	1	Heat Exchanger, SJE ID # located on top RH end
V104-2	1	Thermostat Housing #2025
V104-3	1	Mounting Bracket Volvo "E" Steel
V104-4	1	Thermostat 330-160
V104-5	1	Pressure Cap, 14 lb.
		HOSES
V104-6	1	Curved Hose #70541
V104-7	1	5/8" X 13" Fresh Water By-Pass
V104-8	1	5/16" X 26" Expansion Tank Overflow
V104-9	1	1" ID X 8" Long H.E. to Tee
V104-10	1	1-1/4" ID X 14" Long Wire Inserted Hose
V104-11	1	3/4"ID X 31" Long
V104-12	1	3/4"ID X 6" Long
		HOSE CLAMPS
V104-13	2	#80 H.E. to Left Hand Bracket
V104-14	2	#24 H.E. to Thermostat Assembly
V104-15	2	#16 Raw Water Cross Over "T"
V104-16	2	#10 Fresh Water By-Pass
		GASKETS
V104-17	2	Thermostat, SJE 023-4A/GMT-1
		FITTINGS
V104-18	1	1/2" X 5/8" NPT to Hose, Straight, Fresh Water By-Pass (Use Steel Fitting)
V104-19	1	1/2" X 2" Pipe Nipple, Fresh Water By-Pass & Temp Sender
V104-20	1	1/2" NPT Tee Fresh Water By-Pass & Temp Sender 1/2" NPT
V104-21	1	X 5/8" OD 90° By-Pass 54-EB 1/2" NPT Plug Hollow Head
V104-22	1	3/4" X 3/4" X 1" OD 1-1/4" Wide X 2-3/4"Long Rubber
V104-23	1	Strips
V104-24	2	
		BOLTS, NUTS AND WASHERS
V104-25	1	3/8" X 3/4"
V104-26	1	3/8" X 1-1/4"
V104-27	1	3/8" Zinc Anode