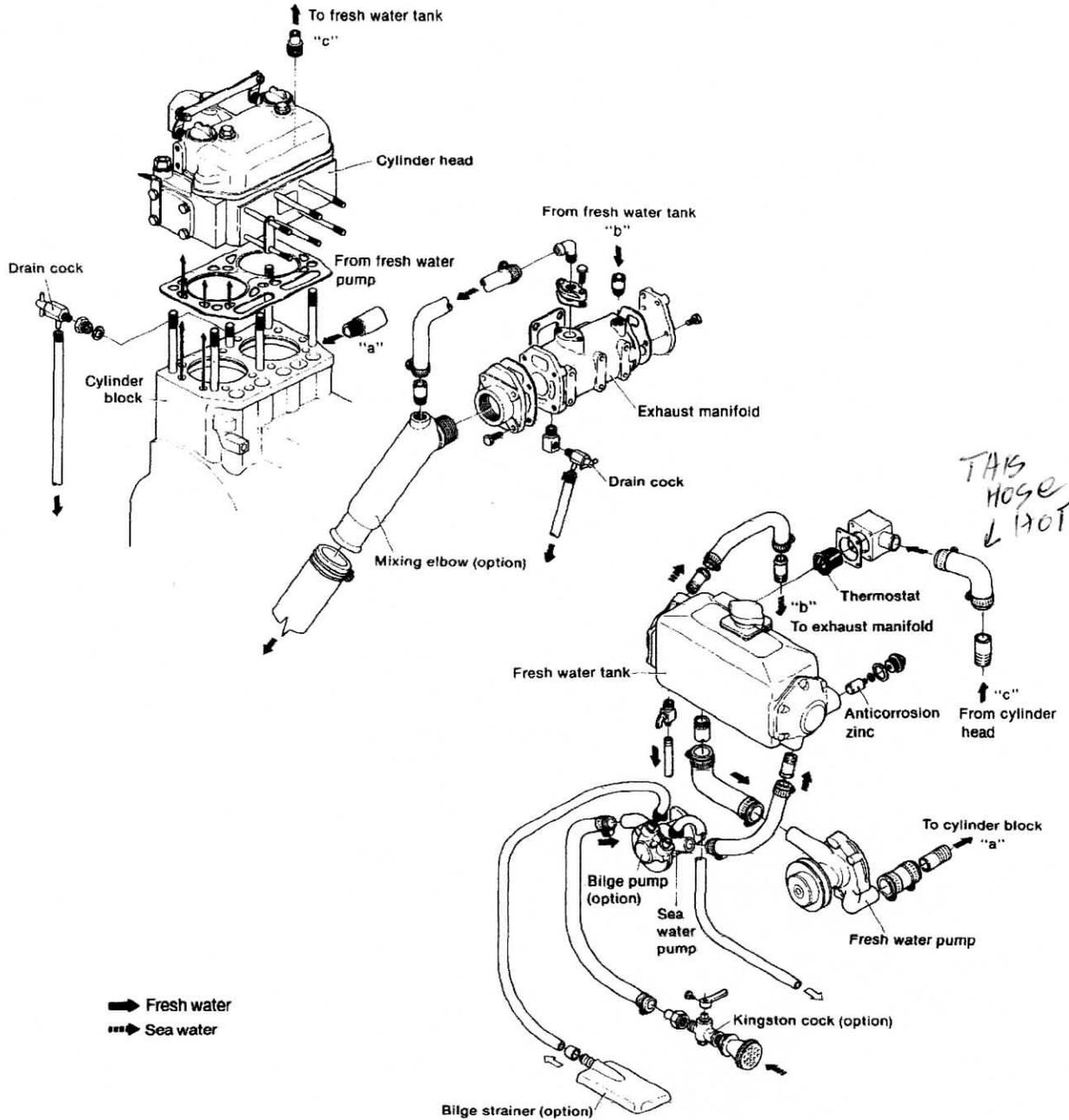


1. Cooling System

1-1 Composition

Models 2QM20Y(F) and 3QM30Y(F) are constructed from different parts but use the same water flow. The illustration below is of Model 2QM20Y(F).



NOTE: On Model 3QM30Y(F), a flanged joint is used on the sea-water side of the exhaust manifold.

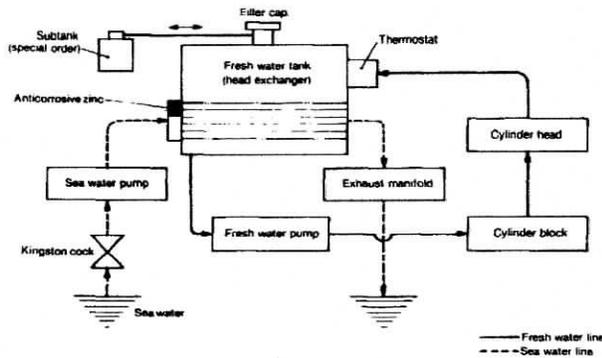
Chapter 7 Cooling System

B. Fresh water cooling [For model 2QM20Y(F), 3QM30Y(F)]

1. Cooling System

SM/2QM20(H)•3QM30(H)

1-2 Cooling system diagram



Sea water cooling pump. Specifications

	Water pump	Bilge pump
Rated speed	1400 rpm	
Suction head	1 (39.37)	1 (39.37)
Total head	4 (157.48)	2 (78.74)
Delivery Capacity	2QM20F 2QM20Y	800l/hr.
	3QM30F 3QM30Y	300l/hr.

Note: Refer to Page 7-A-4 for the Construction

1-3 Cooling system configuration

With fresh water cooled engines, fresh water from the fresh water tank is circulated around the cylinder block and cylinder head. The fresh water itself is cooled by sea water.

The fresh water pump forces the fresh water through the cylinder block and cylinder head cooling passages and back to the fresh water tank. The fresh water is kept in constant circulation.

Sea water is delivered by the sea water pump and fed through tubes located inside the cooling pipe to cool the fresh water.

The sea water then is routed around the exhaust manifold for cooling purposes before being discharged back into the sea.

A thermostat at the inlet port of the fresh water tank closes when fresh water temperature is low (e.g. when engine is first started or during low-load operation) to restrict the flow.

When fresh water temperature reaches a certain point, the thermostat opens to allow water to flow through the cooling pipes so that the fresh water is cooled by the sea water. In this way, the temperature of the fresh water is kept within the specified range.

The sea water pump, bilge pump, bilge strainer and kingston cock are the same for both fresh water and sea water cooled engines. For details about these parts, refer to the information provided for sea water cooling systems. Below, only parts unique to the fresh water cooling system are described.