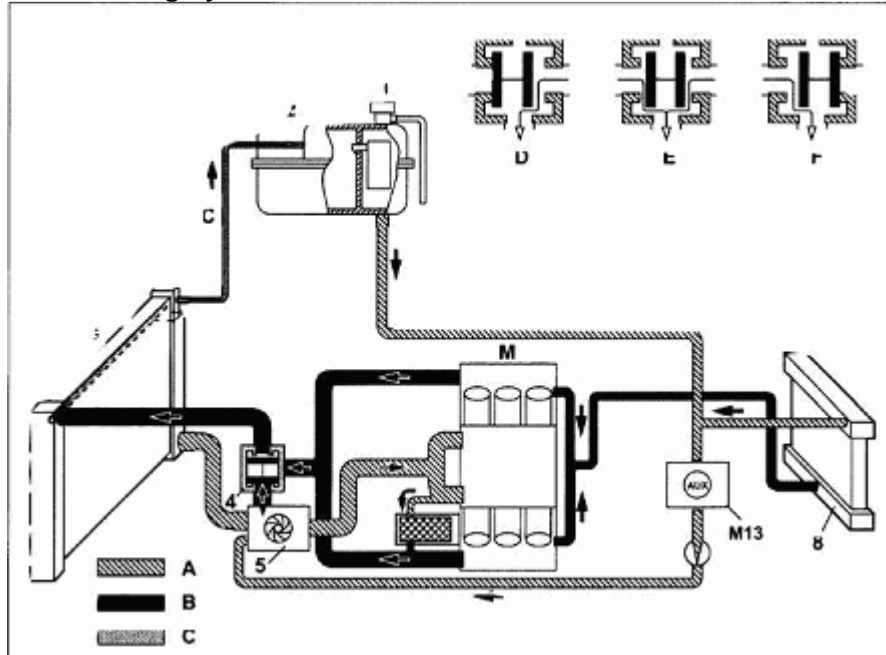


Engine**20****Engine Cooling System****System Description**

The cooling system is conventional. However, an auxiliary electric coolant pump is added to provide consistent engine temperature control during warmups and after engine shut down.

The engine coolant flow path diagram shows the coolant circulation through the engine, cabin heater, cross-flow radiator, and auxiliary components.

M112 Cooling System

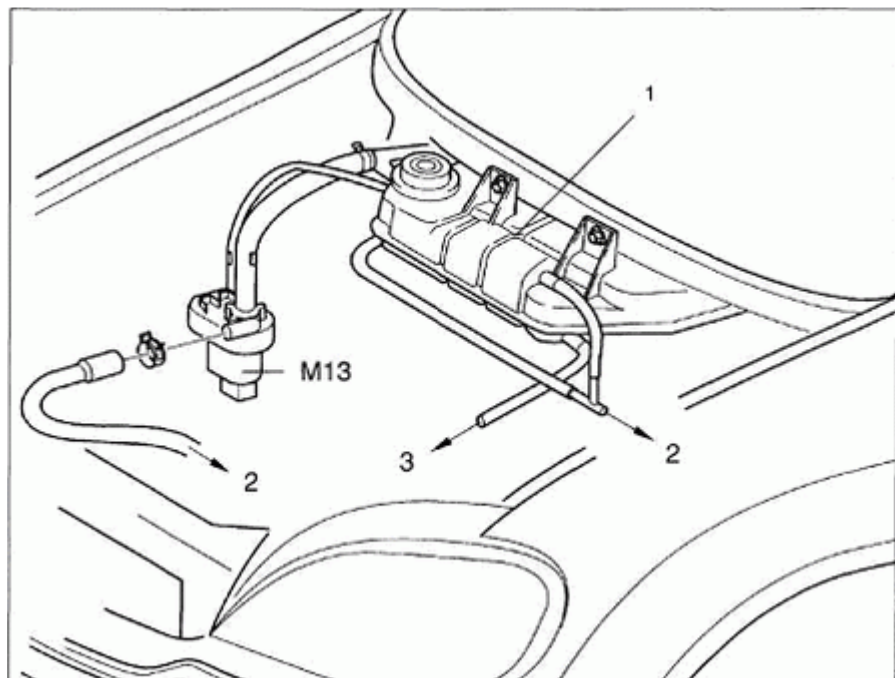
- 1 Coolant filler fitting
- 2 Coolant expansion reservoir
- 3 Radiator
- 4 Thermostat
- 5 Water pump
- 8 Heat exchanger
- A Coolant return
- B Coolant feed
- C Vent
- D Bypass operation ($<87^{\circ}\text{C}$)
- E Mixed phase ($>87^{\circ}\text{C} <102^{\circ}\text{C}$)
- F Operating state ($>102^{\circ}\text{C}$)
- M Engine
- M13 Coolant circulation pump

MBSI.20-0001

Component Location

The auxiliary coolant pump is bracket-mounted on the passenger side inner fender next to the engine block

- 1 Radiator coolant tank
- 2 To engine
- 3 To radiator
- M13 Auxiliary coolant pump

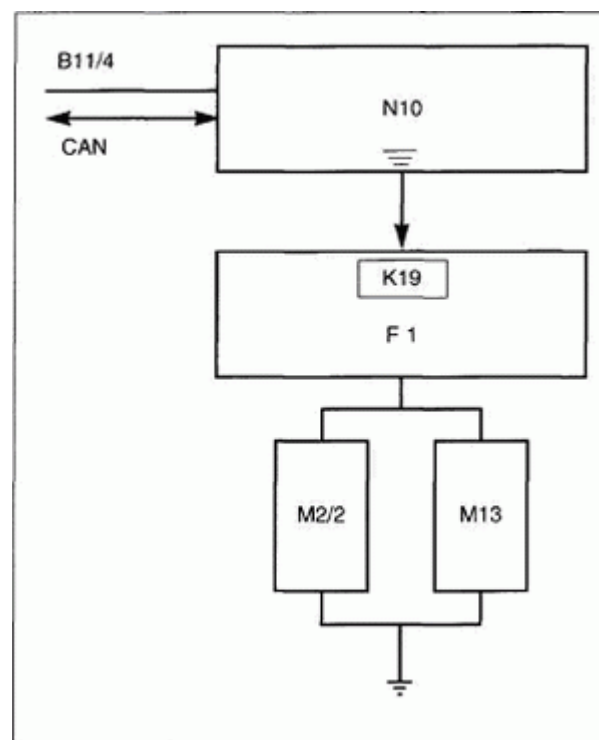


3830010

Component Description**Auxiliary Coolant Pump**

The auxiliary coolant pump is controlled by the All Activity Module (AAM N10).

B11/4 Coolant Temperature Sensor
 F1 Fuse Box
 N10 All Activity Module
 K19 Relay
 M2/2 E-box fan
 M13 Auxiliary water pump



System Operation

Besides maintaining a consistent coolant flow at low road speeds, the auxiliary coolant pump circulates coolant during cold engine operation to circulate warm coolant to the heater core and continues to operate as long as the engine is running (or the key is in position 2). The pump continues to operate after the engine is shut down to prevent hot spots and heat soak conditions. When the coolant temperature is 110°C (212°F) or below, the auxiliary pump runs for 5 minutes after engine shutdown. If the coolant temperature is above 110°C (212°F), the auxiliary pump runs for 10 minutes after engine shut down.

Service Tips

The radiator drain is on the right front of the radiator, accessed through the bumper side. There are 2 drain valves to drain the engine of coolant, one over each engine mount.