VARIABLE SPEED COOLING FANS (Cont.)

FAN CLUTCH WITH THERMOSTATIC CONTROL

American Motors
Chrysler Corp.
Ford Motor Co
General Motors

DESCRIPTION

Most air conditioned models use a thermostatically controlled fluid fan and torque control clutch. The thermal control drive is a silicone filled coupling connecting the fan to the fan pulley, and is operated by a control valve. Control valve is operated by a temperature sensitive bimetal coil or strip and controls the flow of silicone through the clutch. During periods of operation when radiator discharge air temperature is low, the fan clutch limits the fan speed. High radiator discharge air temperature causes bimetal to allow a greater flow of silicone to enter the clutch. This increases the drag between the driven member and driving member resulting in a higher fan speed and increased cooling.

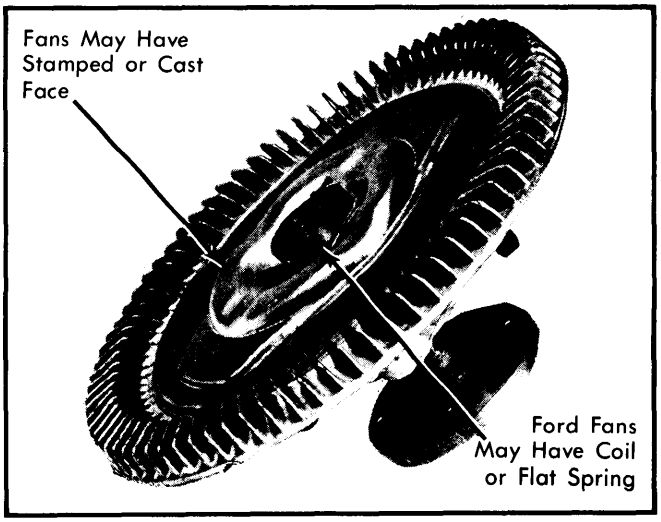

Fig. 7 Thermostatically Controlled Fan (Shown with Stamped Face and Bimetal Coil Spring)

TESTING

In cases of engine overheating or insufficient air conditioning proceed with the following:

1) Start with a cool engine to ensure complete fan clutch disengagement.

2) Cover radiator grille sufficiently to induce high engine temperature.

3) Start engine and operate at 2000 RPM, turn on air conditioning if equipped (except Chrysler).

4) A fan roar will be noticed when the fan clutch engages.

NOTE – *It will take approximately 5 to 10 minutes for the temperature to become high enough to allow engagement of the fan clutch. While operating engine under these conditions, observe temperature light to prevent overheating. If hot light comes on, remove cover from radiator grille.*

5) As soon as the clutch engages, remove the radiator grille cover and turn the A/C off to assist in engine cooling.

6) After several minutes the fan clutch should disengage. This can be determined by a reduction in fan speed and roar. If the fan fails to function as described, it should be replaced.

ENGINE COOLANT SPECIFICATIONS

AMERICAN MOTORS

THERMOSTAT

Thermostat is located in water outlet elbow. Thermostat starts to open at 195°F and is fully open at 218°F on all engines.

NOTE – *Maintain coolant level with a mixture of ethylene glycol based anti-freeze and low mineral content water.*

PRESSURE CAP

All American Motors models use a 14 lb. pressure cap. Test at 12-15 psi for 30 seconds or more.

WATER PUMP

Water pump impeller is pressed on the rear of pump shaft and bearing assembly. Pump is serviced as an assembly only.

CAPACITY (Qts.)

Application	Standard	With A/C
All Models		
151" 4-Cyl.	6.5	6.5
258" 6-Cyl.	11.0	14.0

MAINTENANCE

At 15,000 miles or 15 months, change engine coolant. Thereafter, change coolant every 12 months, at the start of winter.

CHRYSLER CORP.

THERMOSTAT

Thermostat is a wax pellet type with an opening temperature of 195°F. Bring engine to normal operating temperature and check coolant temperature. It should be stable at a temperature no lower than 187°F. Replace thermostat if it fails to stabilize temperature at 187°F or higher.

ENGINE COOLANT SPECIFICATIONS (Cont.)

CHRYSLER CORP. (Cont.)

PRESSURE CAP

All models use a 16 lb. pressure cap which should be tested at 14-17 lbs. Cap is also equipped with a vent valve in center of cap that allows a small flow through the cap when temperature is below boiling, but closes when boiling point is reached. Valve also opens when coolant is cooling and contracting, permitting coolant to return to radiator from coolant reserve tank.

CAUTION – *Warning words "DO NOT OPEN HOT" printed on radiator pressure cap are a safety precaution and should be heeded whenever engine is warm.*

WATER PUMP

Pump is serviced as an assembly only. When replacing water pump do not install a standard pump on any air conditioned vehicle or vice versa. It is possible to replace pump without discharging air conditioning system. When replacing a water pump because of a bearing or shaft failure, carefully inspect the fan for cracks, loose blades or rivets caused by excessive vibration. If any of these problems are found, fan should also be replaced.

CAPACITY (Qts.)

Application	Standard	With A/C
Horizon & Omni		
105" 4-Cyl.	6.0	6.0
Aspen, Cordoba, Diplomat, LeBaron, Mirada & Volare		
225" 6-Cyl.	11.5	①12.5
318" V8	15.0	②15.5
360" V8	15.0	①15.0
Gran Fury, Newport, New Yorker & St. Regis		
225" 6-Cyl.	11.5	①14.5
318" V8	15.0	①17.5
360" V8	16.0	①16.0

① – Hvy. Duty; same as A/C.
② – Hvy. Duty; 16.5.

MAINTENANCE

After 24 months or 30,000 miles of operation and every 12 months or 15,000 miles thereafter, inspect, drain, clean and back-flush entire cooling system.

FORD MOTOR CO.

CAPACITY (Qts.)

Application	Standard	With A/C
Pinto & Bobcat		
2300 cc 4-Cyl.	8.6	8.9
Mustang, Capri, Zephyr & Fairmont		
2300 cc 4-Cyl.	8.6	9.0
2300 cc Turbo	9.2	9.2
200" 6-Cyl.	8.1	8.1
255" V8	13.4	13.5
Granada & Monarch		
250" 6-Cyl.	10.6	10.8
255" V8	14.6	14.7
302" V8	14.2	14.3
Versailles		
302" V8	13.9	13.9
Thunderbird & Cougar		
302" V8	12.7	12.8
Ford & Mercury		
255" V8	12.6	12.8
302" V8	13.0	13.3
351" V8	13.9	14.0
Continental & Mark VI		
302" V8	13.0	13.3
351" V8	13.9	14.0

THERMOSTAT

On all engines, thermostat housing connects to lower radiator hose. Test thermostat to see that it starts to open and is fully open at specified temperatures.

Thermostat Opening Temperatures (°F)

Application	Starts Open	Fully Open
2300 cc 4-Cyl.	188-195	212
200" 6-Cyl.	193-200	212
250" 6-Cyl.	193-200	221
All V8	193-200	221

PRESSURE CAP

All Pinto, Bobcat, Mustang, Capri, Fairmont and Zephyr models with standard cooling use 13 psi pressure cap which should be tested at 11-17 psi. All other models (Fairmont & Zephyr with A/C) use a 16 psi cap which should be tested at 13-19 psi.

WATER PUMP

Ford Motor Co. recommends replacement of water pump if wear or damage exists. No attempt to overhaul or repair pump should be made.

MAINTENANCE

NOTE – *Vehicles designate maintenance schedule "A" or "B" on glovebox and engine emission control information decal.*

Check coolant condition annually. Drain, clean, flush and refill system if inspection indicates sufficient dirt or rust to impair cooling ability. Ford Motor Company recommends that hoses and clamps be inspected every 50 months or 50,000 miles and that coolant should be replaced every 50,000 miles, or every 3 years whichever occurs first.