## FORD COURIER THERMACTOR AIR INJECTION

**Ford Courier**
**California Vehicles Only (1972)**
**All Vehicles (1973)**

### DESCRIPTION

The Thermactor Air Injection System is designed to reduce the emissions of hydracarbon, carbon monoxide and oxides of nitrogen gases in the exhaust. This is achieved by burning the gases in the exhaust ports of each cylinder. Air is injected into exhaust port near each exhaust valve. Oxygen in the air reacts with hot exhaust gases to burn more of the exhaust before it flows into exhaust manifold. System consists of an air supply pump, an air manifold for cylinder head, a check valve, an air by-pass valve, and an air nozzle for exhaust port of each cylinder.

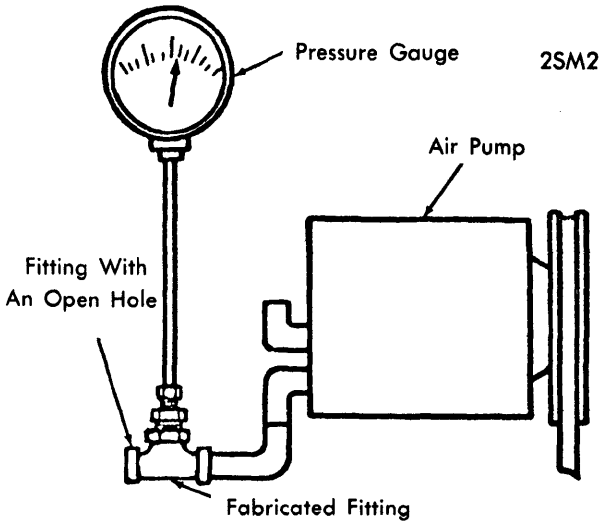
### OPERATION

1) Air, under pressure from the pump, flows through a hose to the air manifold to be distributed to the air passage in each exhaust port. A check valve is incorporated in the intake air side of the air manifold. The check valve prevents a backflow of exhaust gases into the air pump during operating periods when the exhaust back pressure exceeds the air pump delivery pressure.

2) All the air from the pump passes through the by-pass valve. Normally, air is directed to check valves and into the air manifold. When choke cable is pulled out, an air by-pass cable pulls by-pass valve plunger up, and allows air to be pumped to the atmosphere instead of to the air injection manifold. By cutting off air to the injection system during choking, exhaust system overheating is prevented.

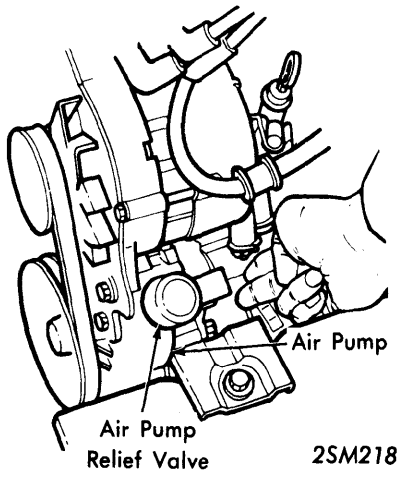
### TESTING

**Air Pump Drive Belt** – To check belt tension, press down on the belt at a point midway between air pump pulley and the water pump pulley. The belt should deflect ½ -⅝ " under about 22 lbs. downward pressure.




**CHECKING AIR PUMP PRESSURE**

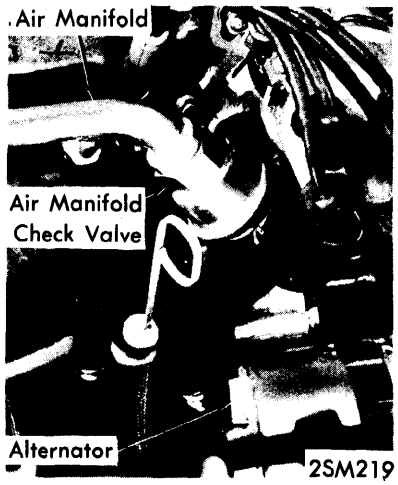
**Air Pump** – 1) Disconnect air pump outlet hose from the air manifold check valve and connect a T-fitting and pressure gauge in the outlet hose. Make sure belt tension is correct. *Start engine and run at 1500 RPM (1250 RPM on 1973 vehicles). Make sure choke is pushed all the way in. Check pressure gauge reading. If reading is less than 2 psi (1 psi on 1973 vehicles), replace pump.*




**AIR PUMP RELIEF VALVE**

**Air Pump Check Valve** – Remove check valve from air injection manifold and blow through the valve from the intake side of the valve. Air should pass through valve. Now blow air through the valve from the outlet side. If air passes through the valve, valve should be replaced.

**Air Pump Relief Valve** – Operate engine at idle speed and check relief valve for air flow. No flow should be evident. If air flow is detected, replace valve. Increase engine speed to 3000 RPM. Air should now be vented at this speed.




**AIR MANIFOLD CHECK VALVE**

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## COURIER THERMACTOR AIR INJECTION (Cont.)

**Air By-Pass Valve** – 1) Disconnect air hose at air pump check valve and push choke knob all the way in. Start engine and run at about 1500 RPM.

2) Hold hand over end of air pump air hose. Air should flow from hose. Pull choke knob all the way out. No air should now be flowing from the hose at full choke. If valve is not operating properly, it should be replaced.

### ADJUSTMENT

**Air Pump Drive Belt** – Loosen air pump adjusting bolt and the lower attaching bolt. Pry air pump outward until belt can be deflected ½ -⅝ " at a point midway between air pump drive pulley and crankshaft pulley. Tighten adjusting bolt and lower bolt.

**Air By-Pass Valve** – 1) Push choke all the way in. Loosen cable retaining screw in valve plunger and screw in cable retaining bracket. Make sure plunger is fully bottomed.


**AIR BY-PASS VALVE ADJUSTMENT**

2) Insert cable into the plunger and tighten retaining screw. Pull upward on cable to remove all slack between plunger and cable bracket and tighten the bracket screw.

3) Pull choke all the way out. Valve plunger should be pulled to the top of the bracket.

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