

SECTION 12—EXHAUST SYSTEM

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EXHAUST SYSTEM DESCRIPTION

Two types of exhaust systems are used, a dual exhaust system, and the single type exhaust system.

The engine has independent exhaust manifolds, which help to reduce exhaust back pressure and increase engine performance. An exhaust thermostat valve is mounted between the right hand manifold and exhaust inlet pipe. The purpose of this exhaust thermostat valve is to aid in quicker engine warm-up. During the engine warm-up period, the heat from the engine exhaust expands the bi-metal spring of the exhaust control valve, permitting the external counterweight to assist in opening the valve.

All cars have a reverse flow oval muffler to reduce noise. All cars with single exhaust system have a "Y" type inlet pipe assembly. The inlet pipe leading from left exhaust manifold crosses over beneath the transmission and is welded to right hand muffler inlet pipe. Cars with dual exhausts have the inlet pipe leading directly back from the exhaust manifold to the muffler. See figures 1 and 2.

SERVICING THE EXHAUST SYSTEM

The exhaust system must be free of leaks, grounding and objectional vibration. All parts of the system can be serviced. Exhaust gas leaks in the system are dangerous to the occupants of the vehicle and the resultant noise objectionable. Vibrations due to broken or misaligned hangers are also objectionable and should be eliminated by the proper replacement or adjustment of the parts involved.

TROUBLE SHOOTING THE EXHAUST CONTROL VALVE

The following checks and corrective procedures should be performed before condemning and replacing an exhaust control valve:

1. Check the thermostatic spring to make certain it is hooked on stop pin. The spring stop is at the top of the valve housing when the valve is properly installed. See figure 2.

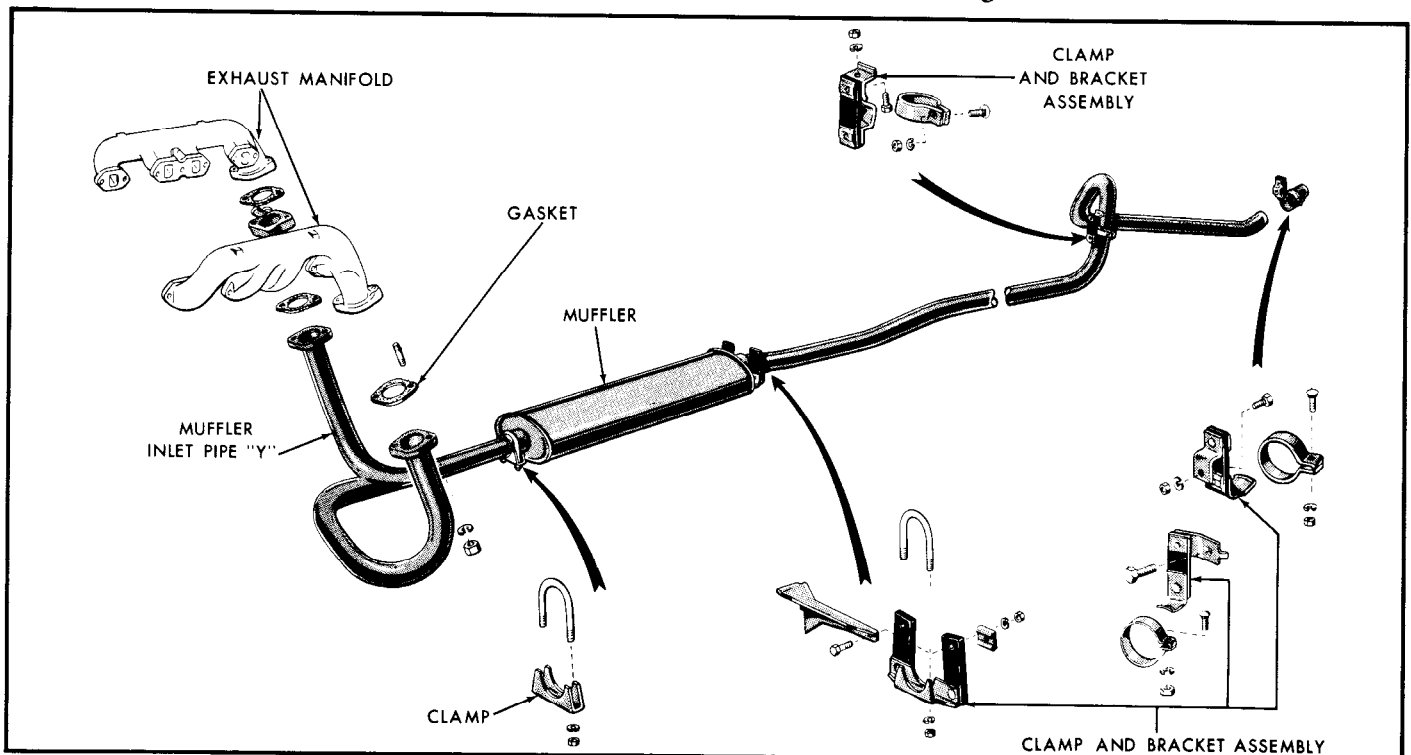


Fig. 12-1—Single Exhaust System Components

1957 MERCURY MAINTENANCE MANUAL

2. Check to make sure the spring holds the valve closed when the engine is cold. Actuate the counterweight by hand to make sure it moves freely through approximately 90° of rotation without binding.
3. The valve is closed when the engine is at normal operating temperature and running at idle speed. A properly operating valve, however, will open when very light finger pressure is applied to the counterweight. Rapidly accelerate the engine to make sure the valve momentarily opens. The valve is designed to open when the engine is at normal operating temperature and is operated at high R.P.M. Free the stuck valves with a penetrating oil or graphite mixture.

REMOVAL AND INSTALLATION OF EXHAUST CONTROL VALVE

1. Disconnect muffler inlet pipe from right exhaust manifold. Remove exhaust control valve, and gaskets (one on each side of valve).
2. Clean mating surfaces of exhaust manifold and muffler inlet pipe.
3. Before installing a new exhaust thermostat valve, check action of valves. Make sure the spring holds the valve closed. Make sure valve moves through approximately 90° of rotation freely.
4. Using new gaskets, one on each side of exhaust thermostat, install exhaust thermostat on manifold.

Install exhaust inlet pipe; tighten retaining nuts 23-28 lbs. ft. torque.

5. Perform steps 1-4 of trouble diagnosis.

REMOVAL AND INSTALLATION OF MUFFLER INLET PIPE, MUFFLER AND MUFFLER OUTLET PIPE

1. For removal of outlet pipe (tail pipe), loosen clamp that secures outlet pipe to bracket attached to frame rear crossmember. Slide clamp forward on outlet pipe.
2. Remove "U" bolt clamp that secures pipe to muffler.
3. Slide outlet pipe to rear and remove.

NOTE: It is not necessary to remove bracket and insulator assemblies attached to frame unless damaged. On outlet pipes using a resonator, an additional clamp must be removed holding the outlet pipe extension to the resonator.

4. Remove "U" bolt clamp located at front of muffler.
 5. Remove muffler by separating from inlet pipe and sliding to rear of vehicle.
 6. Remove two nuts that secure muffler inlet pipe to rear of right hand exhaust manifold. Remove muffler inlet pipe and gasket.
- NOTE: On single exhaust equipped vehicles, the muffler inlet pipe must also be removed from the rear of the left side manifold.
7. For installation, reverse the removal procedure.

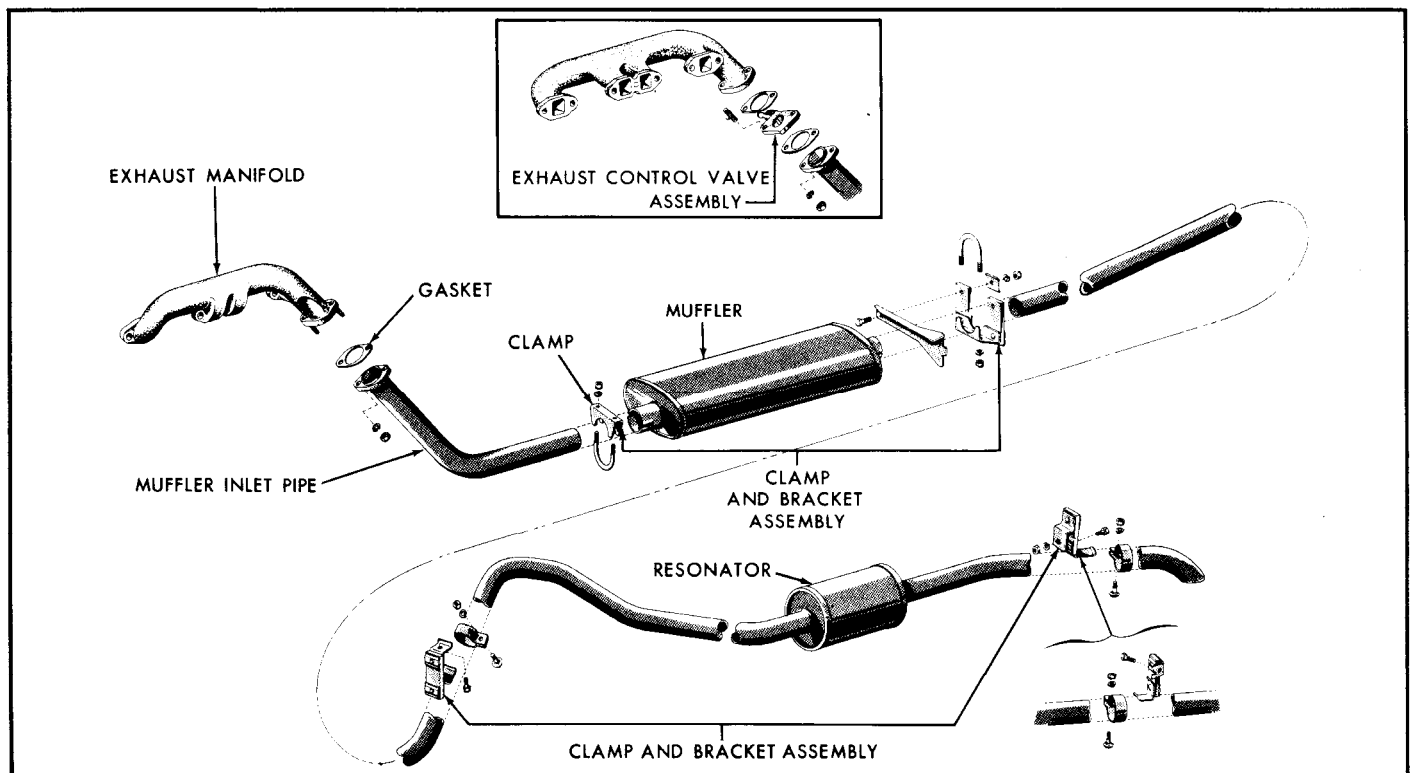


Fig. 12-2—Dual Exhaust System Components