CATALYTIC CONVERTERS

All Light Duty Emissions Models

NOTE — *Light Duty Emission vehicles are those vehicles whose Gross Vehicle Weight (GVW) does not exceed 8,500 lbs.*

DESCRIPTION & OPERATION

The catalytic converter(s) is installed in the exhaust system in front of the muffler so that all exhaust gas must pass through the converter(s). The converter is a stainless steel muffler shapped device that reduces exhaust emissions. The catalyst reduces hydrocarbons (HC) and carbon monoxide (CO) emissions. The material inside the converter is one of 2 types: a coated 1-piece honeycombed block (monolithic type), or small beads of catalyst-coated material.

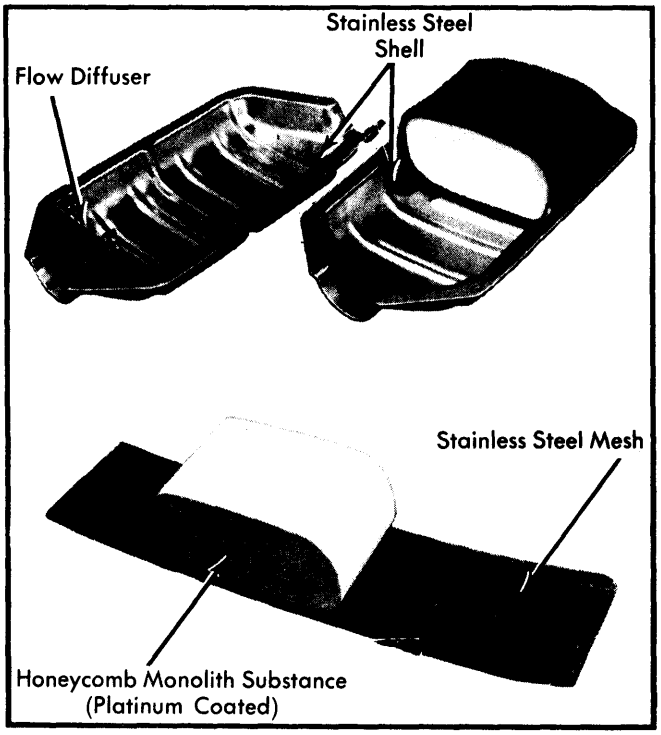

Fig. 1 Cutaway View of Monolithic Catalytic Converter (Chrysler Corp. Shown, Ford Motor Co. Similar)

NOTE — *Use unleaded fuel only on vehicles using catalytic converters. If leaded fuel is used, the Tetra Eythel Lead will coat the palladium, platinim and rhodium, rendering these catalysts inoperative. If this happens, the converter must be replaced.*

HEAT SHIELDS

The combustion reaction, which is furthered by the converter, releases additional heat. Temperature in the catalytic converter can reach 1600° F under normal conditions. Special heat shields are used to protect underbody and components from this extreme heat.

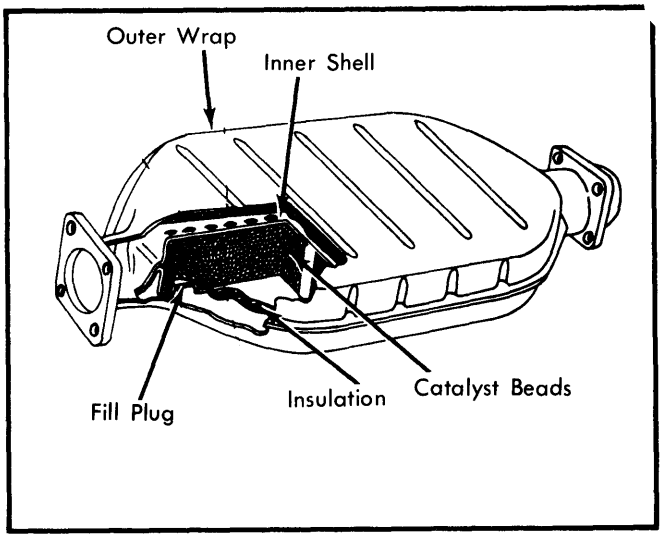

Fig. 2 Cutaway View of Bead-Type Catalytic Converter (General Motors, International Harvester and Jeep)

SERVICE

MAINTENANCE

There is no scheduled maintenance required for catalytic converters. However, on General Motors and Jeep with bead-type converters, bead removal and replacement is possible.

BOTTOM COVER REPLACEMENT (GENERAL MOTORS ONLY)

1) Remove bottom cover by making a shallow, close cut to bottom outside edge.

NOTE — *A shallow cut is required to avoid damage to inner shell.*

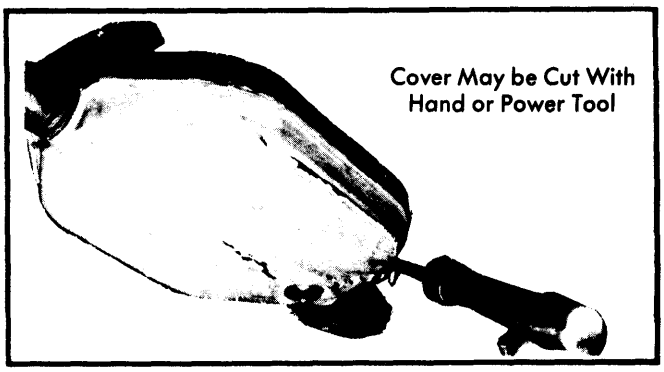

Fig. 3 Removal of Converter Bottom Cover on General Motors Vehicles Only

2) Remove insulation and check inner shell for damage. If damage is found, entire converter must be replaced.

CATALYTIC CONVERTERS (Cont.)

3) If no damage is found, position new insulation into replacement cover. Apply suitable sealer (8998245 or equivalent) around edge of cover, using extra sealer at front and rear pipe openings.

4) Install replacement cover on converter and position retaining channel along edges. Complete the installation by attaching clamps (provided with replacement cover) to both ends of converter.

CATALYST REPLACEMENT (JEEP ONLY)

1) Raise vehicle and attach vacuum aspirator device (J-25077-01 or equivalent) to exhaust pipe as shown in *Fig. 4*.

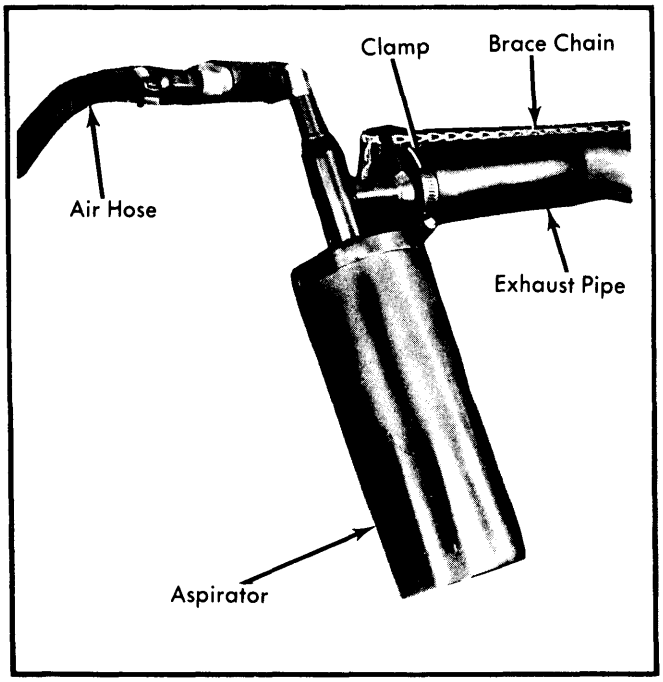

Fig. 4 Vacuum Aspirator Installation Jeep Vehicles Only

2) Apply enough air pressure (minimum 80 lbs.) to hold catalyst beads in place while converter fill plug is removed.

3) Clamp on vibrator and catalyst receptacle as shown in *Fig. 5*. Disconnect air supply from vacuum aspirator and attach it to vibrator unit.

4) Using similar air pressure, vibrator should operate to empty the converter of the catalytic beads in about 10 minutes.

5) When all catalyst material is removed, disconnect air supply and remove container from converter and discard beads.

6) Fill container with approved replacement catalyst and install a fill tube fixture to the vibrator device.

7) Attach air supply to both vibrator and aspirator. With container attached to fill tube, catalyst will begin to move into converter.

8) When catalyst stops flowing, disconnect air supply to vibrator and note level of catalyst. It should be even with fill plug. Add more catalyst if required.

9) Apply nickle-base, anti-seize compound to fill plug. Install plug and tighten to 60 ft. lbs. If equipped with press-type fill plug, install "bridge-and-bolt" type service plug and torque to 28 ft. lbs.

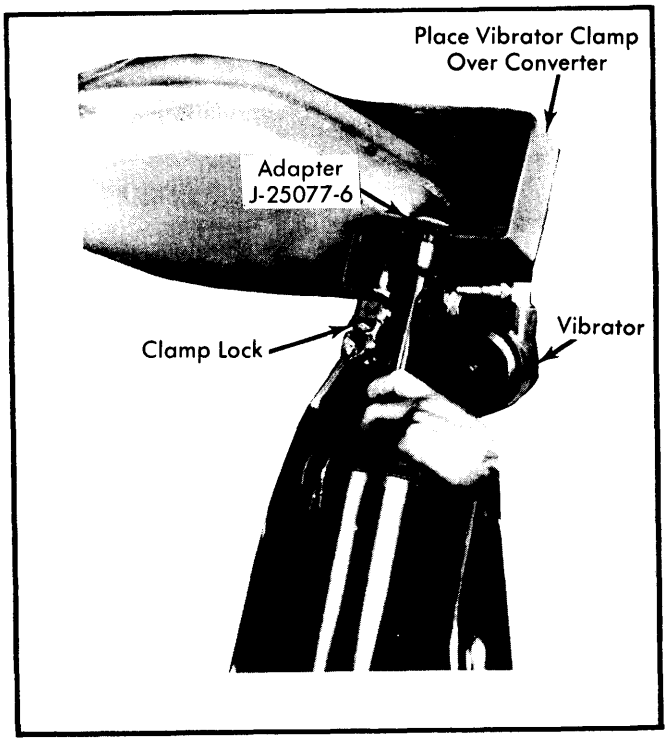

Fig. 5 Placement of Vibrator & Catalyst Container Jeep Vehicles Only.

CATALYST REPLACEMENT (GENERAL MOTORS ONLY)

1) With converter removed from vehicle, remove fill plug by driving a small chisel between converter shell and fill plug. Continue to deform plug until it can be removed with pliers.

CAUTION — *Do no pry plug from opening as damage to plug sealing surface may result.*

2) Hold converter over a container, and by shaking it, remove catalyst beads.

3) Raise front of converter to 45° and fill through opening with new catalyst beads. Light tapping on the converter side belt will facilitate bead installation.

4) Install bridge into fill plug opening and thread bolt into bridge. Move bridge back and forth to loosen catalyst and position bridge.

5) Remove bolt, and place washer and fill plug (with dished side out) in place. Install bolt and tighten to 28 ft. lbs.