

1975-79 EXHAUST EMISSION SYSTEMS

Catalytic Converters

3-25

All Manufacturers

DESCRIPTION & OPERATION

A catalytic converter is installed in the exhaust system in front of the muffler so that all exhaust gases must pass through the converter. The converter is a stainless steel muffler shaped device that reduces hydrocarbons (HC), carbon monoxide (CO) and oxides of nitrogen (NOx) 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.

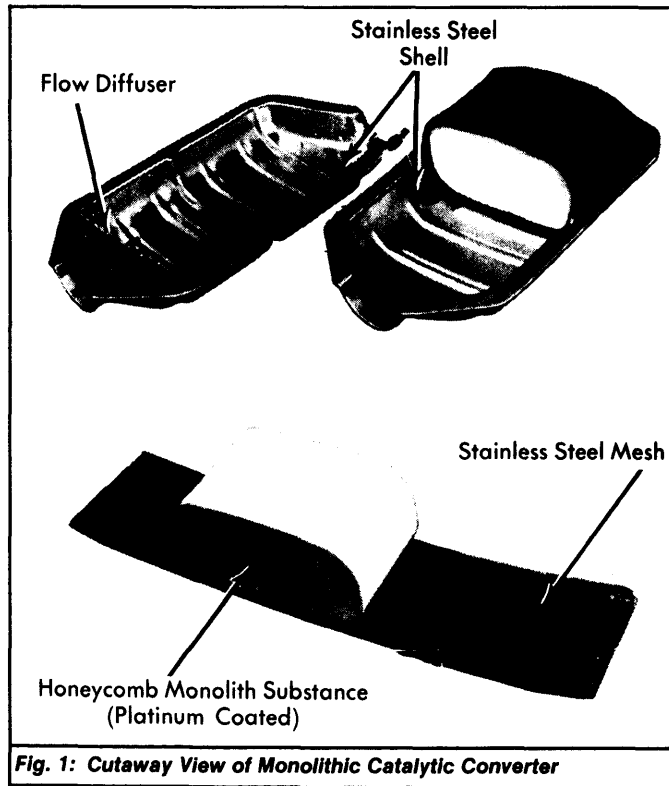


Fig. 1: Cutaway View of Monolithic Catalytic Converter

NOTE: Use unleaded fuel only in vehicles equipped with catalytic converters. If leaded fuel is used, the Tetra Ethyl Lead will coat the palladium, platinum and rhodium, rendering these catalysts inoperative. If this happens, the converter must be replaced.

HEAT SHIELDS

The exhaust gases react with the catalytic converter causing additional heat in the exhaust system. Temperature in the catalytic converter can reach 1600°F under normal conditions. Special heat shields are used to protect underbody components from this extreme heat.

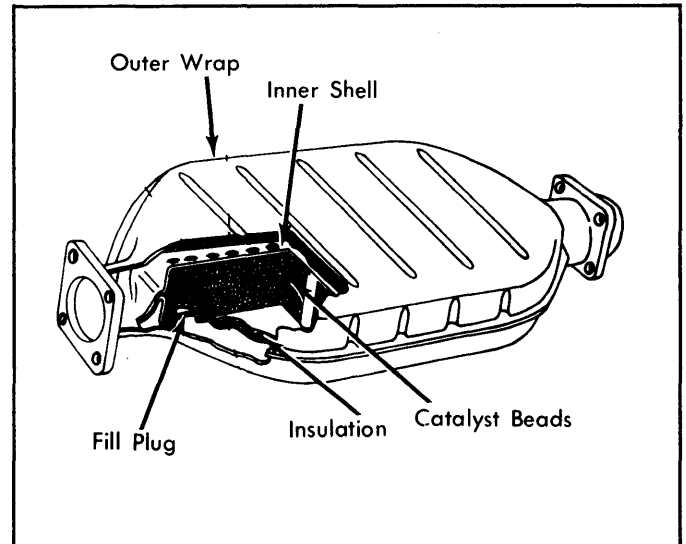


Fig. 2: Cutaway View of Bead-Type Catalytic Converter (General Motors, International Harvester & Jeep)

SERVICE

MAINTENANCE

There is no scheduled maintenance for the catalytic converter since they are designed to last the life of the car. However, on General Motors and Jeep bead-type converters, bead removal and replacement is possible.

BOTTOM COVER REPLACEMENT

General Motors - 1) Remove bottom cover by making a shallow, close cut to bottom outside edge. Use caution not to damage inner shell.

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

3) If no damage is found, position new insulation into replacement cover. Apply Sealer (8998245) 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.

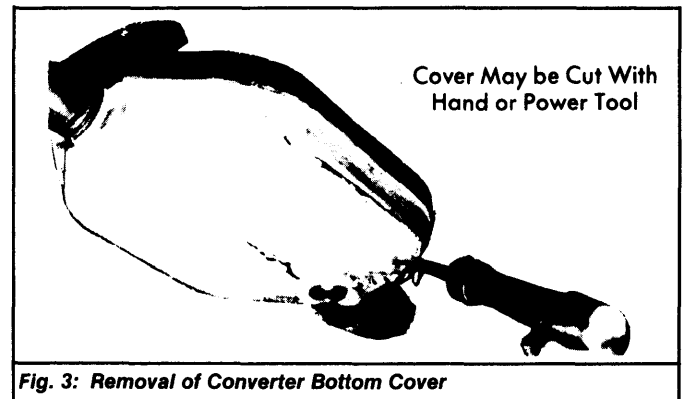


Fig. 3: Removal of Converter Bottom Cover

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Catalytic Converters (Cont.)

CATALYST (BEAD) REPLACEMENT

American Motors & General Motors – 1) Raise vehicle and attach Vacuum Aspirator Device (J-25077) to exhaust pipe. See Fig. 4.

2) Apply enough air pressure (minimum 60 psi) to hold catalyst beads in place while converter fill plug is removed.

3) Clamp on vibrator and catalyst receptacle. See 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.

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

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

9) Apply nickle-base, anti-seize compound to fill plug. Install plug and tighten to 60 ft. lbs. (81 N.m). If equipped with press-type fill plug, install "bridge-and-bolt" type service plug and torque to 28 ft. lbs. (38 N.m).

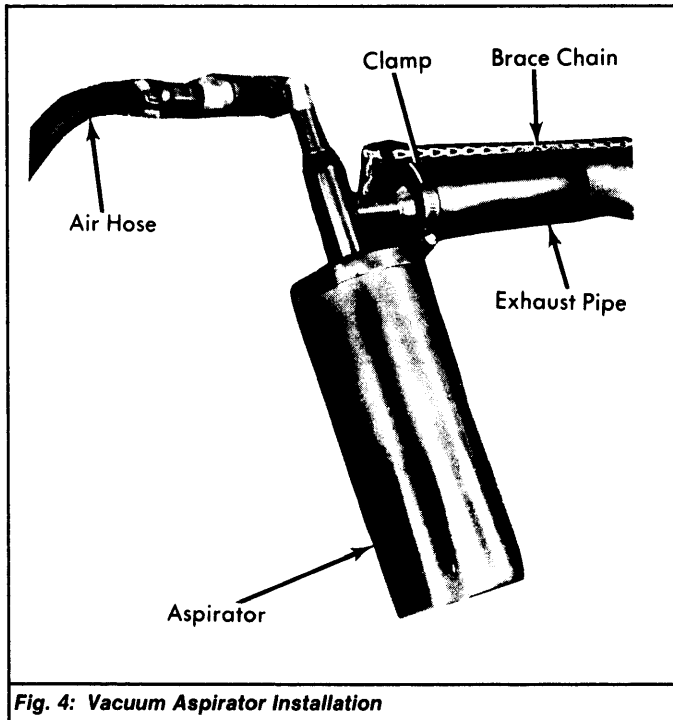


Fig. 4: Vacuum Aspirator Installation

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 beads and install a fill tube fixture to the vibrator device.

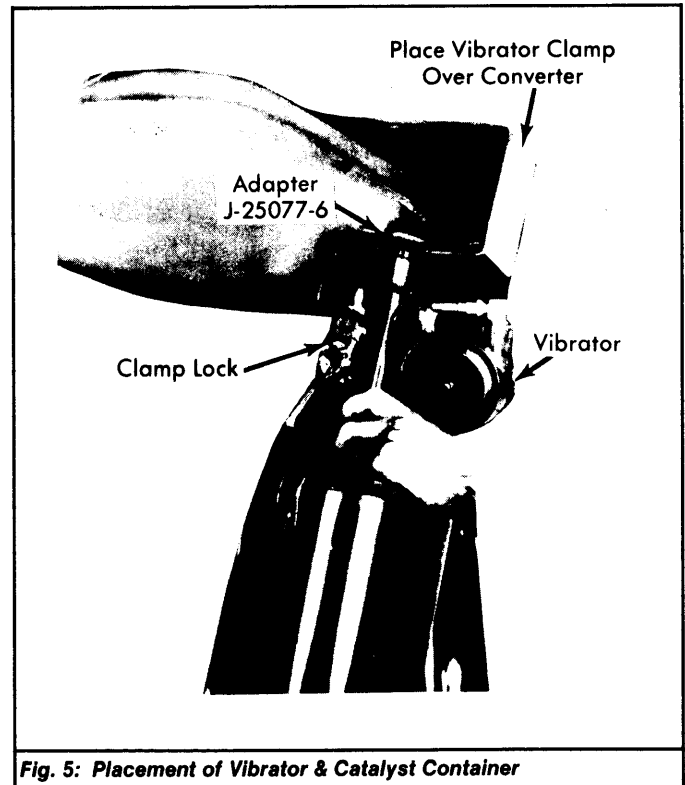


Fig. 5: Placement of Vibrator & Catalyst Container