

# 1975-79 EXHAUST EMISSION SYSTEMS

## Jeep Systems & Service Procedures

3-199

### DESCRIPTION

Several systems are used to control exhaust emissions. System usage depends on model, engine, and transmission combinations. Each system is designed to control a particular vehicle emission. In addition, specially calibrated carburetors, distributors and modified combustion chambers are used with these systems.

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**NOTE:** There are 2 Light Duty truck emission control standard classifications: Light Duty and Heavy Duty. Light Duty refers to vehicles up through 8500 lbs. GVW; Heavy Duty refers to vehicles over 8500 lbs. GVW.

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### EXHAUST EMISSION SYSTEMS

**Positive Crankcase Ventilation** - Positive crankcase ventilation system is used to control crankcase blow-by gases. This system takes blow-by gases from crankcase and recirculates them back into combustion chamber for reburning.

**Air Injection** - Air injection system consists of an air pump, diverter valve, check valve, and various air distribution lines necessary to inject fresh air adjacent to exhaust valves. Injection of fresh air adjacent to exhaust valves creates an afterburn which reduces exhaust emissions.

**Fuel Evaporative Control** - Fuel evaporative control system consists of a special fuel tank, a liquid vapor separator, a non-vented filler cap, a charcoal filled storage canister located in engine compartment, and plumbing necessary to direct fuel vapors to charcoal canister for storage. With this system fuel vapors are routed to charcoal canister for storage. Engine vacuum later purges canister of stored fuel vapors.

**Thermostatic Air Cleaner (TAC)** - The TAC assembly is used to keep the incoming air in the carburetor at a stable temperature resulting in fewer emissions. The system consists of a heat shroud at the exhaust manifold, a hot air hose, an air cleaner assembly with a thermal sensor, an air door and a vacuum motor.

**Exhaust Gas Recirculation (EGR)** - Exhaust gas recirculation system uses a vacuum operated EGR valve to introduce metered amounts of exhaust gas into engine's combustion chambers. This recirculation of exhaust gas lowers peak combustion temperatures and lowers oxides of nitrogen (NOx) emissions.

**Catalytic Converter** - Catalytic converter reduces exhaust emissions by continuing the burning process of exhaust gasses. As the partially burned and unburned exhaust gasses enter the converter, a combustion type reaction takes place. This provides a more complete burn, lowering emissions. Vehicles equipped with catalytic converters must use unleaded fuel only.

**Spark Control Systems** - Jeep spark control systems are designed to control vacuum spark advance operation. Two systems are used: Coolant Temperature Override (CTO) and Non-Linear Vacuum Regulator (NLVR). The CTO system improves driveability by alternating vacuum advance source between manifold vacuum and carburetor ported vacuum, depending upon coolant temperature. The NLVR system supplies vacuum advance unit with a regulated combination of manifold and carburetor ported vacuum when engine load is low and switches to supply only carburetor ported vacuum as load increases.

**Vacuum Throttle Modulator** - This system is used to reduce emissions during deceleration. System consists of a deceleration valve and a throttle modulating diaphragm. These units are connected to a vacuum source. The purpose is to maintain a slightly open throttle during deceleration so that an overly rich mixture is not introduced into the engine.

### SERVICE PROCEDURES

#### EXHAUST EMISSION SYSTEMS

See appropriate articles in this section.

#### TUNE-UP

See appropriate article in TUNE-UP PROCEDURES section.