

# 1982 Exhaust Emission Systems

## JEEP SYSTEMS

### DESCRIPTION

Several systems are used to control polluting 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.

### THERMOSTATIC AIR CLEANER (TAC)

TAC assembly is used to keep incoming air in carburetor at a stable temperature which is able to promote complete combustion (resulting in fewer emissions). The system consists of a heat shroud at exhaust manifold, a hot air hose, an air cleaner assembly with a thermal sensor, an air door, a vacuum motor and a delay valve on all models. *For additional information, see "Jeep Thermostatic Air Cleaner" article in this section.*

### 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 further consumes unburned material in engine's exhaust. *For additional information, see "Air Injection Systems — Air Pump Type" article in this section.*

### EXHAUST GAS RECIRCULATION (EGR)

EGR system uses a vacuum operated EGR valve to introduce metered amounts of exhaust gas into engine's combustion chambers. This introduction of inert exhaust gas lowers peak combustion temperatures and thus lowers NOx formations.

### C-4 COMPUTER EMISSION SYSTEM

Used on 4-cylinder California "CJ" & Scrambler models, this system reduces exhaust emissions by maintaining an optimum air/fuel mixture. System consists of an Electronic Control Module, an oxygen sensor in exhaust manifold, a mixture control solenoid, 4 sensors to monitor engine conditions and a 3-way catalytic converter.

### COMPUTERIZED EMISSION CONTROL (CEC) SYSTEM

Used on 6-cylinder models, CEC system closely controls air/fuel ratio through a feedback system from an oxygen sensor in exhaust system. The major components of this system include an exhaust gas oxygen sensor, vacuum switches, temperature switches, a Micro Computer Unit (MCU) and a special carburetor with a stepper motor that controls air/fuel mixture.

### 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). CTO system improves driveability by alternating vacuum advance source between manifold vacuum and carburetor ported vacuum, depending upon temperature.

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. In addition, a forward delay valve, a reverse delay valve, a thermal vacuum spark control valve and a vacuum spark control delay valve are used with various applications.

### CATALYTIC CONVERTER (CAT)

The converter is installed in vehicle's exhaust system to aid in the reduction of exhaust emissions. This unit changes unburned hydrocarbons (HC) and carbon monoxide (CO) into water vapor and carbon dioxide. *For additional information, see "Catalytic Converter" article in this section.*

### POSITIVE CRANKCASE VENTILATION

Positive Crankcase Ventilation (PCV) 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. Key device in PCV system is vacuum-controlled PCV valve. *For additional information, see "Crankcase Ventilation" article in this section.*

### EVAPORATIVE EMISSION CONTROL

All models use this closed tank (sealed) system, which returns raw fuel vapors and routes them to intake manifold for burning. A carbon canister stores vapors until they are burned. *For additional information, see appropriate "Fuel Evaporation System" article in this section.*