JEEP SYSTEMS & SERVICE PROCEDURES

DESCRIPTION

Several systems are used to control emission of pollutants. 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 – The TAC assembly is used to keep the incoming air in the carburetor at a stable temperature which is able to promote complete combustion (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, a vacuum motor and a delay valve on all models. *For additional information, see "Jeep Thermostatic Air Cleaners" 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" in this section.*

EGR – Exhaust gas recirculation 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 – Use 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 the 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, the CEC system closely controls air/fuel ratio through a feedback system from an oxygen sensor in the 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). The CTO system improves driveability by alternating vacuum advance source between manifold vacuum and carburetor ported vacuum, depending upon 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. 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 – The converter is installed in the 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 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 retains 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.*

SERVICE PROCEDURES

IGNITION TIMING

See appropriate article in TUNE-UP SERVICE PROCEDURES.

CARBURETION

Carburetor Models

Application	Models
2.5L (151") 4-Cyl. 2-Bbl.	
Federal	Rochester 2SE
Calif.	Rochester E2SE
2.5L (258") 6-Cyl. 2-Bbl.	Carter BBD
5.0L (304") V8 2-Bbl.	Motorcraft 2150
6.0L (360") V8 2-Bbl.	Motorcraft 2150

IDLE SPEED & MIXTURE

See appropriate article in TUNE-UP SERVICE PROCEDURES.