

JEEP EMISSION SYSTEMS

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.

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.

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.

Electric Assist Choke — This unit is supplied power from a stator terminal on alternator. Contained in choke cap is an electric heating element. At any underhood temperature above 60°F choke mechanism heats up causing a more rapid choke opening time, thus helping to lean mixtures much sooner. Below 60°F normal choking operation occurs.

Transmission Controlled Spark — Transmission controlled spark is designed to allow distributor vacuum advance in high gear only. System is made up of a solenoid control switch, an ambient temperature override switch (on pre 1973½ models only), and a coolant temperature override switch. Transmission switch is mechanically operated by shifter shaft on manual transmission models, and by speedometer gear speed on most automatic transmissions. Solenoid control switch opens or closes to allow or disallow vacuum advance.

Decel Valve — This unit is used to control vacuum that is applied to distributor vacuum advance mechanism. During acceleration, decel valve applies carburetor vacuum to distributor, but during deceleration decel valve applies intake manifold vacuum to distributor. By applying intake manifold vacuum during deceleration, timing is advanced sufficiently to prevent backfiring in exhaust system.

Thermostatic Air Cleaner — Regardless of type of thermostatic air cleaner used; air valve or thermostat, function is the same, and that is to provide hot air from exhaust manifold shroud to carburetor during warm up conditions.

Evaporative Emission 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 not allowed to evaporate from carburetor or fuel tank, instead they are routed to charcoal canister for storage. Carburetor vacuum later purges canister of stored fuel vapors.

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.

SERVICE PROCEDURES

IGNITION TIMING

See appropriate article in TUNE-UP Section.

CARBURETION

Carburetor Models

Application	Models
4-Cyl. Engines	
134" (1965-71)	Carter YF 1-Bbl.
6-Cyl. Engines	
225" V6 (1965-71)	Rochester 2G 2-Bbl.
225" V6 (1965-71)	Rochester 2GC 2-Bbl.
232" (1965-71)	Carter RBS 1-Bbl.
232" (1972-74)	Carter YF 1-Bbl.
258" (1971-74)	Carter YF 1-Bbl.
V8 Engines	
304" (1971-74)	Ford 2100 2-Bbl.
304" (1973)	Ford 4300 4-Bbl.
327" (1965-69)	Holley 2209 2-Bbl.
327" (1965-69)	Holley 4160 4-Bbl.
350" (1969-71)	Rochester 2GV 2-Bbl.
360" (1971-74)	Ford 2100 2-Bbl.
360" (1973-74)	Ford 4300 4-Bbl.
401" (1974)	Ford 4300 4-Bbl.

IDLE SPEED & MIXTURE

See appropriate article in TUNE-UP Section.