

## GENERAL MOTORS EMISSION SYSTEMS

### DESCRIPTION

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

**Air Injection Reactor (A.I.R.)** — Used on some models. Positive displacement pump adds air to each exhaust port to further burning of combustion mixture. *For additional information see appropriate article in this section.*

**Exhaust Gas Recirculation (EGR)** — This system recirculates exhaust gases into intake manifold and combustion chambers. This has the effect of lowering combustion temperatures and thereby lowering NO<sub>x</sub> emissions.

**Transmission Controlled Spark (TCS)** — This system is designed to regulate vacuum advance through engine speed or transmission gear selection. With regulation of vacuum advance, emissions are controlled.

**Combined Emission Control (CEC)** — This system, like the TCS system, is designed to reduce exhaust emissions by eliminating distributor vacuum advance in low forward gears.

**Thermac Air Cleaner (TAC)** — Used on all models, this unit is designed to aid carburetor in more complete burning of air/fuel mixture and smoother operation by controlling temperature of intake air. Heated or cooled portions of air are fed into air cleaner assembly as temperature sensor regulates.

**Evaporation Emission Control (ECS)** — This system is used on all General Motors vehicles and is designed to keep fuel system vapors from escaping to the atmosphere. This sealed system separates fuel vapors and routes them to engine to be burned, while retaining liquid fuel in tank. A carbon canister stores vapors until engine draws them off for burning. *For additional information, see appropriate article in FUEL EVAPORATION Section.*

**Positive Crankcase Ventilation (PCV)** — System removes engine crankcase vapors which result from normal combustion. Vapors are drawn through a metered PCV valve and routed

back to intake manifold where they are returned in combustion chamber. *For additional information, see appropriate article in CRANKCASE VENTILATION Section.*

### SERVICE PROCEDURES

#### IGNITION TIMING

*See appropriate article in TUNE-UP Section.*

#### CARBURETION

##### Carburetor Models

Application	Model
4-Cyl. Engine	
153" (1965).....	Carter YF 1-Bbl.
6-Cyl. Engines	
194" (1965-66).....	Carter YF 1-Bbl.
194" (1966).....	Rochester B 1-Bbl.
230" (1965-67).....	Carter YF 1-Bbl.
230" (1965-67).....	Rochester B 1-Bbl.
230" (1968-69).....	Rochester M 1-Bbl.
250" (1966-67).....	Carter YF 1-Bbl.
250" (1966-67).....	Rochester B 1-Bbl.
250" (1968-69).....	Rochester M 1-Bbl.
250" (1969-74).....	Rochester MV 1-Bbl.
292" (1965-66).....	Rochester B 1-Bbl.
292" (1968-69).....	Rochester M 1-Bbl.
292" (1969-74).....	Rochester MV 1-Bbl.
305" V6 (1965-68).....	Stromberg WW 2-Bbl.
351" V6 (1967-68).....	Stromberg WW 2-Bbl.
V8 Engines	
283" (1965-67).....	Rochester 2G 2-Bbl.
305" (1969).....	Stromberg WW 2-Bbl.
307" (1968-69).....	Rochester 2G 2-Bbl.
307" (1969-73).....	Rochester 2GV 2-Bbl.
327" (1965-67).....	Rochester 4G 4-Bbl.
327" (1968).....	Rochester 4MV 4-Bbl.
350" (1969-74).....	Rochester 4MV 4-Bbl.
350" (1974).....	Rochester 2GV 2-Bbl.
396" (1968-69).....	Rochester 4MV 4-Bbl.
400" (1970).....	Rochester 4MV 4-Bbl.
402" (1971-72).....	Rochester 4MV 4-Bbl.
454" (1973-74).....	Rochester 4MV 4-Bbl.
455" (1973-74).....	Rochester 4MC 4-Bbl.

#### IDLE SPEED & MIXTURE

*See appropriate article in TUNE-UP Section.*