GENERAL MOTORS EXHAUST GAS RECIRCULATION (Cont.)

new gasket, install valve on engine. Reconnect vacuum hose.

EGR-TVS Test (Hot)

1) Remove EGR valve vacuum hose at EGR valve and connect hose to a vacuum gauge. Start engine. With transmission in Park or Neutral, open throttle partially. As throttle is opened, vacuum gauge should respond with an increase in vacuum reading. If operation is satisfactory, remove gauge and reconnect hose to EGR valve. If gauge does not respond to throttle opening, proceed to step **2)**.

2) Remove carburetor-to-TVS hose from switch and connect hose to vacuum gauge. Start engine. With transmission in Park or Neutral open throttle partially. If vacuum gauge responds to throttle opening, switch is defective. Remove switch and replace with new part. If gauge does not respond to throttle opening, check for plugged hose or defective carburetor.

EGR-TVS Test (Cold)

1) Engine coolant must be below 85°F (29°C). Drain coolant to below level of switch. Disconnect vacuum lines and remove switch. Inspect switch to make sure it is in good condition.

2) Connect a vacuum hose to lower nipple of switch, marked "C" or "CARB". Connect a vacuum gauge to upper nipple, marked "E" or "EGR". Place switch in water at 75°F (24°C) and submerge completely for 2 minutes while agitating water thoroughly. Apply 12 in. Hg to hose on lower nipple of switch. Under this condition, switch should be closed.

NOTE: Leakage of up to 2 in. Hg in 2 minutes is allowable and does not mean a defective switch.

3) If operation is satisfactory, reinstall switch. If switch is defective, replace with a new part. Replace coolant and check level.

MAINTENANCE

EGR PASSAGE CLEANING

If inspection of EGR passages in intake manifold indicates excessive build up of exhaust deposits, passages should be cleaned. Care should be taken to ensure that all loose particles are completely removed to prevent them from clogging EGR valve or from being ingested into engine.

GENERAL MOTORS VACUUM ADVANCE SPARK CONTROL

DESCRIPTION

TRAPPED VACUUM SPARK

Trapped vacuum spark is used on all models. A thermal vacuum switch (TVS) is mounted in cylinder head and used to sense engine coolant temperature. A vacuum check valve is mounted between manifold vacuum, distributor and thermal vacuum switch. The system maintains high vacuum levels to distributor during cold engine operation and cold engine acceleration.

SPARK VACUUM DELAY

The spark vacuum delay is used on 5.7L V8 engines with Heavy Duty Emissions. It is installed between TVS check valve and distributor.

OPERATION

TRAPPED VACUUM SPARK

When engine temperature is below a pre-set specified value, manifold vacuum signal is routed through check valve to distributor. Ports on TVS are blocked. The check valve will keep distributor vacuum at levels higher than manifold depression during vehicle acceleration.

A small sintered iron bleed orifice is provided in check valve to allow for a leak-down to enable engine to be restarted if it stalls. (This applies to all models except: Light Duty California and High Altitude Emissions; 5.7L V8 with Heavy Duty Emissions; all 7.4L V8 engines.)

When engine temperature is above pre-set value, TVS ports will be open to allow manifold vacuum to distributor. During this mode of operation, check valve will act as a connector.

SPARK VACUUM DELAY

As manifold vacuum increases, check valve opens and allows distributor vacuum to increase to same level. When vacuum decreases during vehicle acceleration, check valve closes and distributor vacuum will decrease at a rate controlled by internal bleed.