

Instructions for Vacuum Gauge/Pressure Tester

Cranking Vacuum Test For Engine Condition

1. Start Engine and warm to normal operating temperature.
2. Turn engine off and disable ignition.
3. Remove air filter and back out idle speed screw counting turns until throttle valve is closed.

NOTE: If carburetor is equipped with an idle air bleed screw, turn clockwise, counting number of turns until screw bottoms lightly.

NOTE: If vehicle is equipped with an idle stop solenoid, disconnect electrical wires at base of solenoid under rubber boot or at connector.

NOTE: If vehicle is equipped with a PCV (Positive Crankcase Ventilation) system, remove valve at engine rocker arm cover and plug valve on bottom with tape.

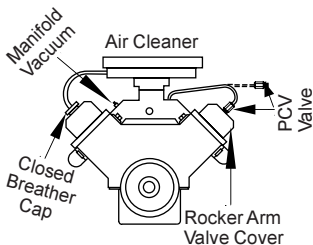
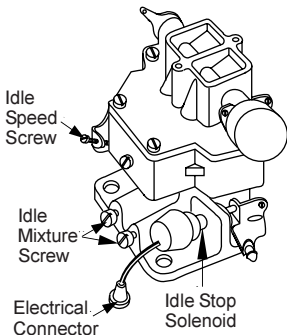
4. Using hose supplied, connect Vacuum Gauge to fitting on carburetor below throttle plate or a fitting on intake manifold.
5. Crank engine and note Vacuum Gauge reading.
6. Return adjustment screws to original positions.

Test Results

3 possible gauge readings are:

A. Steady vacuum reading of the following indicates correct engine vacuum:

- 4 inches or more on emission controlled engines.
- 10 inches or more on non-emission controlled engines



Steady Vacuum of 4 inches or more

NOTE: See Manufacturer's Specifications.

B. Really low, steady vacuum check for:

- Leaking carburetor flange gasket
- Worn carburetor throttle shaft
- Leaking vacuum lines
- Improper valve timing
- Slow engine cranking due to:
 - Battery or cable connections
 - Defective starter motor
- Mechanical drag in engine due to:
 - Tight fitting pistons in rebuilt engine
 - Thickened oil due to excessive oxidation

C. Pulses unsteady indicates a leaky condition that affects one or more cylinders check for:

- Burned or stuck valve
- Intake manifold leak at a cylinder
- Worn intake valve guide
- Broken piston or piston rings

NOTE: A certain amount of even pulsing is normal, notably on 4 and 6 cylinder engines, and does not necessarily indicate a leaky condition.

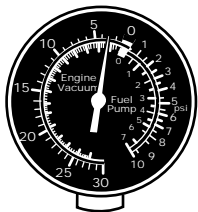
Running Vacuum Test For Engine Condition

NOTE: It is possible to get a different gauge reading than obtained during the Cranking Vacuum Test For Engine Condition.

1. Using hose supplied, connect Vacuum Gauge to fitting on carburetor below throttle plate.
2. Start Engine and let idle until at normal operating temperature.

Test Results

2 possible gauge readings are:



Steady low vacuum



Unsteady vacuum

A. Steady vacuum reading between 15 and 20 inches indicates a mechanically sound engine.

B. If unsteady reading increase engine speed to 2000 RPM:

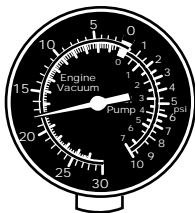
- If evens out check:
 - Ignition and/or timing
 - Carburetor mixture adjustments at idle
- If pointer sweeps get larger check for
 - Weak or broken valve springs
- If pointer sweeps become smaller and more rapid check for:
 - Carburetor or intake manifold leaks
 - Sticky valves

Exhaust Restriction Test

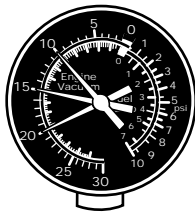
1. Make sure vacuum gauge is connected.
 2. Increase engine speed to 2000 RPM and keep.
 3. Note vacuum gauge reading.
 4. Look for slowly decreasing vacuum reading.
- If vacuum decreases check for a partially blocked muffler or tailpipe.

Positive Crankcase Ventilation (PCV) Valve Test

1. Unplug PCV valve that was plugged with tape.
2. Crank engine
 - If vacuum drops to half the noted vacuum then the PCV valve is good.
 - If vacuum reading is much lower than one-half the problem is usually excessive flow which could upset the proper carburetor air/fuel ratio causing rough idling and burned valves.
- If vacuum does not change the PCV valve is usually clogged.



Steady vacuum between 15 and 20 inches



Unsteady vacuum reading



Vacuum Drops half the noted vacuum

- Return idle screw and idle air bleed screws to original positions, if required.
- Re-enable the ignition system
- Reconnect wire to idle stop solenoid.
- Reconnect all hoses and vacuum lines.
- Reinstall PCV valve.

Distributor Vacuum Advance Mechanisms

- Disconnect hose from distributor
- Insert a tee connector in line with hose and another back to distributor.
- Connect gauge to the tee connector.
- Start engine and note vacuum at idle.
- Slowly increase RPM noting vacuum pressure.

Test Results

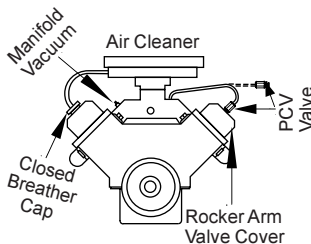
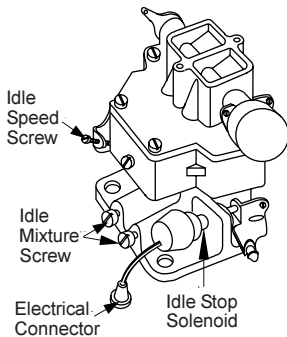
2 possible results are:

- Vacuum manifold pressure should drop as engine speed is increased per vehicle manual
- If vacuum manifold pressure does not change or changes very little check for:
 - Vacuum hose being opened or cracked
 - Diaphragm in advance mechanism punctured.

NOTE: Vacuum reading can appear normal during the above test but still have a bad advance mechanism that is frozen due to corrosion or dirt.

Fuel Pump Testing

Fuel Pump Testing can be done using the 0-10 psi scale on the gauge. Make sure to follow manufacturer's instructions exactly and follow all safety precautions.



Using Fuel Pump Scale