

PCV System Test

Meets NATEF Task: (A8-E-2) Inspect, test and service positive crankcase ventilation (PCV) filter/breather cap, valve, tubes, orifices, and hoses; perform necessary action. (P-2)

Name _____ Date _____ Time on Task _____

Make/Model/Year _____ VIN _____ Evaluation: 4 3 2 1

The purpose of the "positive crankcase ventilation" (PCV) system is to use engine intake manifold vacuum to draw crankcase vapors that occur due to blow-by past the piston rings into the engine to be burned.

NOTE: If there is gasoline in the engine oil, gasoline vapors will be drawn into the engine and the intake charge will be richer. Therefore, if black exhaust smoke or a rich condition is being diagnosed, check the crankcase for the presence of gasoline.

A good PCV system should draw fresh air into the engine through a filter usually located in the air cleaner or on the valve (cam) cover. This filtered air then is mixed with the blow-by gases in the crankcase and through a PCV valve which regulates the flow into the engine.

PCV Valve Operation:

- a. Idle = high vacuum = PCV valve almost closed by high vacuum.
- b. At cruise = 10-15 in. Hg. = PCV valve is opened to allow the crankcase gases to be drawn into the engine (vacuum and internal spring are almost balanced).
- c. At wide open throttle (WOT) low vacuum = PCV valve is fully opened by internal spring permitting maximum flow.

Testing the System:

- _____ 1. Start the engine and allow it to idle.
- _____ 2. Remove the oil fill cap.
- _____ 3. Place a piece of paper or a 3" x 5" card over the filler. (The PCV system is functioning correctly if the paper is held down tight onto the filler by vacuum in the crankcase).
- _____ 4. Seal off the oil fill opening and measure the crankcase vacuum at the dipstick tube = _____ (should be about 0.5 in. Hg. or 7 in. or more of water if using a water manometer).



OK _____ NOT OK _____