

1982 Exhaust Emission Systems

PEUGEOT PULSE AIR INJECTION

505 Gasoline

DESCRIPTION

Peugeot gasoline engines use pulse air injection to decrease exhaust emissions. The system injects fresh air into exhaust manifold. This air mixes with exhaust gases and permits any unburned gases to burn in exhaust pipe. System includes an air filter with additional fitting, electrovalve, cut-out valve, thermocontact, air distributor housing, 4 pulse air valves, a diffuser plate, and a special cylinder head with exhaust valve port passages.

OPERATION

The 4 pulse air valves deliver fresh air from the air filter and distribute it to each exhaust port located under the valve head. These valves allow passage of the air in one direction (air filter-to-cylinder head), and do not allow exhaust gases to return to the intake. The exhaust ports in the cylinder head are subjected to variations in pressure and vacuum due to the evacuation of the gases and the cycling operation of the engine.

When the exhaust valves are open, exhaust gases are evacuated at varying speed and pressure and

no air is injected. When the exhaust valves are closed, exhaust gases remaining in the manifold and exhaust pipes retain a certain evacuation speed and momentum, thus creating a momentary vacuum with the exhaust ports. This vacuum brings about the air induction.

When engine is below 104°F (40°C), air is injected into exhaust ports. The electrovalve is triggered electrically and allows vacuum to act on air injection cut-out valve. When engine is above 104°F (40°C) air injection is stopped by closing of air injection cut-out valve. The thermocontact opens circuit to electrovalve. At the same time, air injection cut-out valve, which was kept open by manifold vacuum, is now linked to atmosphere through the electrovalve and closes.

TESTING

- 1) Start the engine. Disconnect upper wire from the thermocontact and alternately put it in contact with lower wire on thermocontact.
- 2) The pulse air valve should hum slightly and diaphragm movement should be seen through the upper section. If so, system is okay. Reconnect wire.
- 3) If not, check operation of the electrovalve, electrical and vacuum hose connections. If okay, replace electrovalve.

Fig. 1: Peugeot 505 Pulse Air Injection System

