

P - EGR FUNCTION TESTING

1991 Mazda Miata

1989-95 ENGINE PERFORMANCE
Mazda EGR Function Testing

All Models

EGR VALVE

PISTON ENGINES (W/SINGLE OR DUAL VALVES)

1) Check vacuum lines for correct routing. Disconnect vacuum hose at EGR valve, and plug hose end. Connect vacuum pump to valve. Start engine. Apply 6-10 in. Hg to valve and hold.

2) Engine speed should drop at least 100 RPM or engine should stall. Vacuum should not drop more than one in. Hg in 30 seconds. Reconnect EGR vacuum hose.

Modulator Valve

Disconnect all vacuum and exhaust pipe hoses. Cap fitting going to each EGR control solenoid. Blow into bottom fitting from exhaust pipe end. Apply 7 in. Hg to fitting No. 3 (from ported vacuum source). Vacuum should hold until pressure at bottom fitting is released.

Vacuum Amplifier

1) Check for adequate manifold vacuum. With engine warm and at curb idle, connect vacuum gauge to vacuum amplifier port leading to EGR 3-way solenoid. Vacuum should not be more than 1.6-2.4 in. Hg at idle.

2) Disconnect venturi hose at carburetor. Increase engine speed to 3500 RPM. Vacuum should not change. Maintain high engine speed and reconnect carburetor venturi hose.

3) Vacuum gauge should read 3.2-3.8 in. Hg. Return engine to idle. Vacuum gauge should return to initial reading. If vacuum gauge does not return to initial reading, replace vacuum amplifier.

ROTARY ENGINE

Check vacuum hose routing. Disconnect EGR valve hose. Connect vacuum pump to EGR valve. Idle engine and apply 15 in. Hg. EGR valve stem/diaphragm should move and engine speed should drop at least 100 RPM or engine should stall.

EGR Solenoid Valve

1) Remove electrical connector from EGR solenoid valve (Gray dot). Remove vacuum hose at EGR valve. Connect a vacuum gauge to EGR vacuum hose. Warm engine to operating temperature.

2) Increase engine speed to 1100-3300 RPM. Vacuum gauge should not read any vacuum. Allow engine to idle. Apply 12 volts across EGR solenoid valve terminals. Increase engine speed again. Vacuum gauge should now read vacuum.