

MAZDA ROTARY ENGINE CHOKE RETURN SYSTEM

RX-7

TESTING

DESCRIPTION

The Choke Return system prevents the choke knob from being left unreturned to prevent overheating of the thermal reactor. The system components include control unit (Federal models), choke return solenoid valve (delay valve on Calif. models), choke return diaphragm, full choke switch, choke switch and connecting hoses and wiring.

OPERATION

Federal Models — When the choke is pulled out with ignition switch "ON", the No. 2 timer of control unit is activated. The timer provides power to the choke magnet and choke return solenoid valve. After 1 minute, the timer releases and choke knob returns halfway. Final full release of the choke knob is controlled by the No. 1 water temperature switch when coolant temperature reaches 158° F (70° C).

Calif. Models — When cold engine is started with assist of choke knob, the knob is held in pulled position for 1 minute. The choke diaphragm and choke return delay valve return the knob halfway. Full release of choke knob is achieved as engine coolant temperature reaches 158°F (70°C). The water temperature switch stops the flow of electrical current to magnet which holds choke knob.

CHOKE RETURN SYSTEM

- 1) With engine cold and ignition switch "OFF", pull choke knob out fully. Choke knob should return automatically.
- 2) Connect tachometer to engine. Start engine with choke knob pulled out fully. Choke knob should automatically return halfway within 48-72 seconds (20-72 seconds on Calif. models).
- 3) Set engine speed to 2000 RPM, using choke knob. With engine running, choke knob should automatically return when engine temperature reaches 158° F (70° C).
- 4) Stop engine. Turn ignition switch "ON" and pull choke knob out fully. Choke knob should be held in position.

CHOKE MAGNET

Disconnect electrical coupler from choke switch. Using an ohmmeter, check continuity between terminals. Continuity should exist between No. 6 and No. 8.

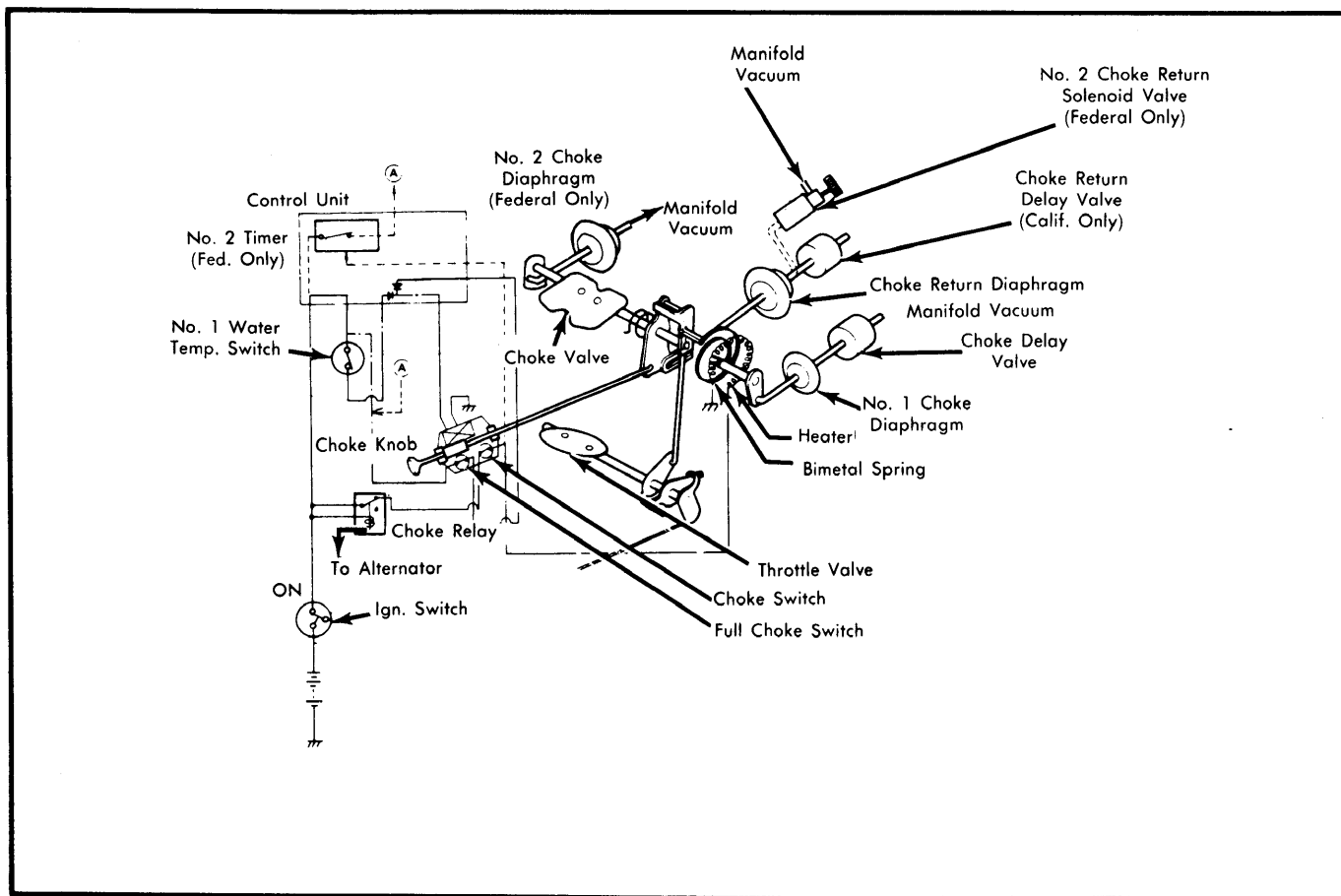


Fig. 1 Schematic of Mazda RX-7 Choke Return System

1980 Exhaust Emission Systems

MAZDA ROTARY ENGINE CHOKE RETURN SYSTEM (Cont.)

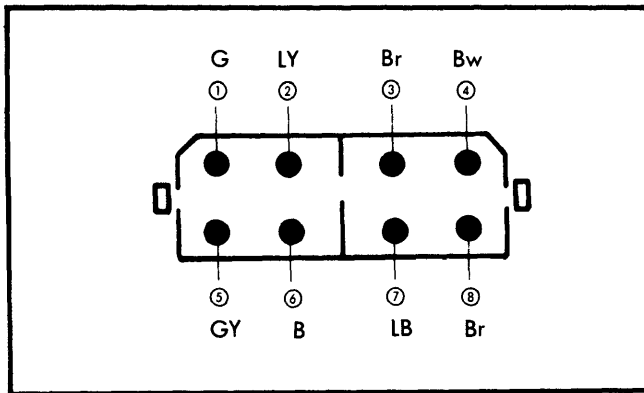


Fig. 2 Choke Switch Terminal Numbering

CHOKE RETURN DIAPHRAGM & CHOKE RETURN DELAY VALVE (CALIF. ONLY)

1) Warm engine to normal operating temperature. Stop engine and remove air cleaner. Disconnect vacuum sensing tube from choke return diaphragm.

2) Start engine and run at idle speed (Auto. Trans. in "N" range). Reconnect disconnected vacuum hose to choke return diaphragm. Diaphragm shaft should be fully pulled into the diaphragm within 20-70 seconds.

CHOKE RETURN SOLENOID VALVE (FEDERAL ONLY)

1) Disconnect vacuum sensing tubes from solenoid valve (green dot) and diaphragm. Blow through disconnected diaphragm tube. Air should pass through valve and come out at filter.

2) Disconnect electrical coupler from solenoid valve and connect battery voltage to valve terminal. Blow through hose again. Air should pass through valve and come out at manifold port.

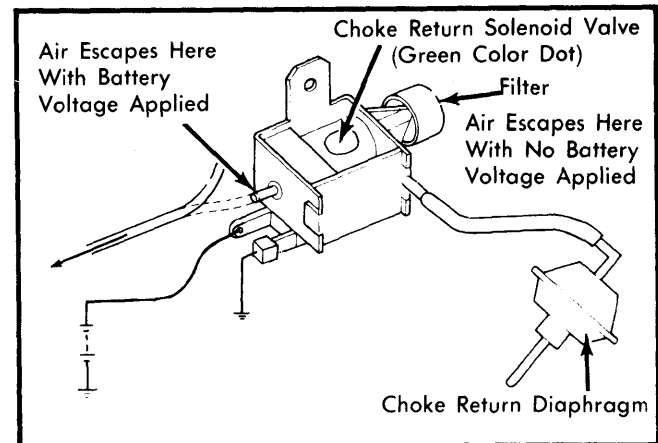


Fig. 3 Testing Choke Return Solenoid Valve (Federal Models Only)