1982 Exhaust Emission Systems

HONDA EXHAUST GAS RECIRCULATION

Accord, Civic, Prelude

DESCRIPTION

Honda uses exhaust gas recirculation on all models to reduce oxides of nitrogen (NOx) emissions. The system includes a special intake manifold and cylinder head, EGR valve, EGR control valves, EGR switch, EGR control solenoid valves and a throttle opener solenoid valve. A speed sensor, thermosensor, control switch solenoid valve and vacuum switch complete the system.

OPERATION

The EGR system operates only when the engine is warm and either accelerating or cruising. The vacuum control signal comes from a carburetor port that produces no vacuum at idle, and a thermosensor which eliminates EGR when engine coolant is below normal operating temperature. When vehicle is decelerating, manifold vacuum rises and turns on EGR control switch. The EGR control solenoid valve closes and cuts off EGR flow. Vacuum is provided to EGR control switch only above 15 MPH, when the speed sensor opens the throttle opener solenoid valve.

EGR control valves A and B use a ported vacuum signal to control a manifold vacuum flow large enough to operate the EGR valve. With this system, the EGR valve is operated by a signal proportional to airflow through carburetor venturi, ensuring correct EGR flow.

TESTING

SYSTEM CHECK

1) With engine cold, disconnect vacuum hose from EGR valve at manifold and connect vacuum gauge to hose. Start engine and slowly raise to 4500 RPM. No vacuum should be shown on gauge.

2) If vacuum is present, check for voltage at EGR control solenoid valve A (Blue/Yellow wire at emission control box connector on Accord models or Blue wire at box #2 on Civic and Prelude models).

3) If voltage is present, replace EGR control solenoid valve A (on left side of front row of emission control box on Accord models or on box #2 on Civic and Prelude models) and retest. If no voltage, check wiring, fuse and thermosensor.

4) Disconnect vacuum hose from EGR valve and connect vacuum gauge to hose. Push positive probe of voltmeter into Blue/Yellow terminal at the control box connector on Accord models or into Blue terminal at control box #2 on Civic and Prelude models. Put negative probe to ground.

5) Raise front of vehicle and support with safety stands. Start engine and warm to normal operating temperature (cooling fan on). Vacuum and voltage should match specifications given in "EGR System Test" chart.

6) If all readings are correct, check EGR valve for proper operation. If vacuum of more than 2 in. (51 mm) Hg. is noted (but no voltage) replace EGR control valve and check vacuum hose routing. If any other readings are not correct, perform all other tests in sequence.

EGR SYSTEM TEST

Condition of Engine	EGR Valve Vacuum	Blue/White Wire Voltage
Idle	None	None
4500 RPM	Yes	None
4500 RPM (Blocked EGR Bleed) [1]	Less Than 2 in. Hg	None
Hard Acceleration over 15 MPH [2]	Yes	None
Deceleration over 15 Mph [2]	None	Yes

[1] — *See Fig. 1.*
[2] — In second gear or "2".

INCORRECT READING AT IDLE, 4500 RPM, OR 4500 RPM WITH BLOCKED EGR BLEED

1) Thermosensor should not have continuity. If it does have continuity, replace it and retest. If it does not have continuity, check control switch.

2) Remove hose from control switch and connect vacuum gauge to hose. If there is no vacuum at idle, replace control switch and retest. If there is vacuum at idle, check control switch solenoid valve.

3) With ignition on, check for voltage at Yellow/White negative terminal on Accord or Yellow/Black positive terminal on Civic and Prelude .

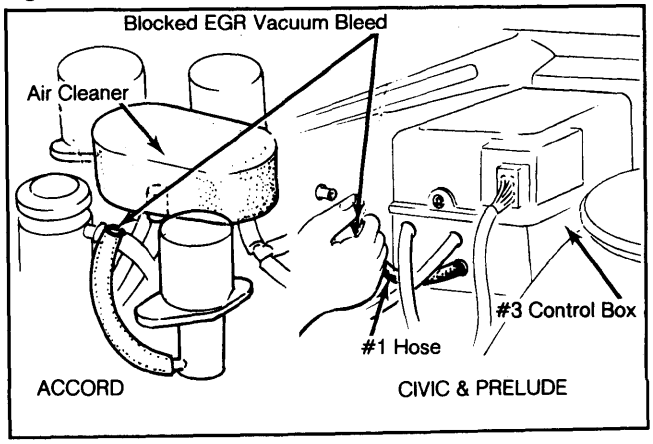
4) If there is no voltage, replace control switch solenoid valve and retest. If there is voltage, replace speed sensor and retest.

INCORRECT READING ON HARD ACCELERATION ABOVE 15 MPH

1) If voltage is noted but not vacuum, replace control switch. If neither vacuum nor voltage were noted, check for ported vacuum at 4500 RPM at EGR control solenoid valve A inlet.

2) If vacuum is found, replace EGR control solenoid valve A. If no vacuum, check hose routing, clean carburetor port and retest.

Fig. 1: EGR Vacuum Bleed Location



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INCORRECT READING ON DECELERATION

1) If there is no voltage, check EGR control switch. With speed sensor jumped and engine at idle, remove vacuum hose at EGR control switch and check for vacuum at control switch.

2) If vacuum is available, reconnect hose and check for voltage at EGR control solenoid valve A. If there is no voltage, replace EGR control switch and retest.

Fig. 2: Accord Exhaust Gas Recirculation System

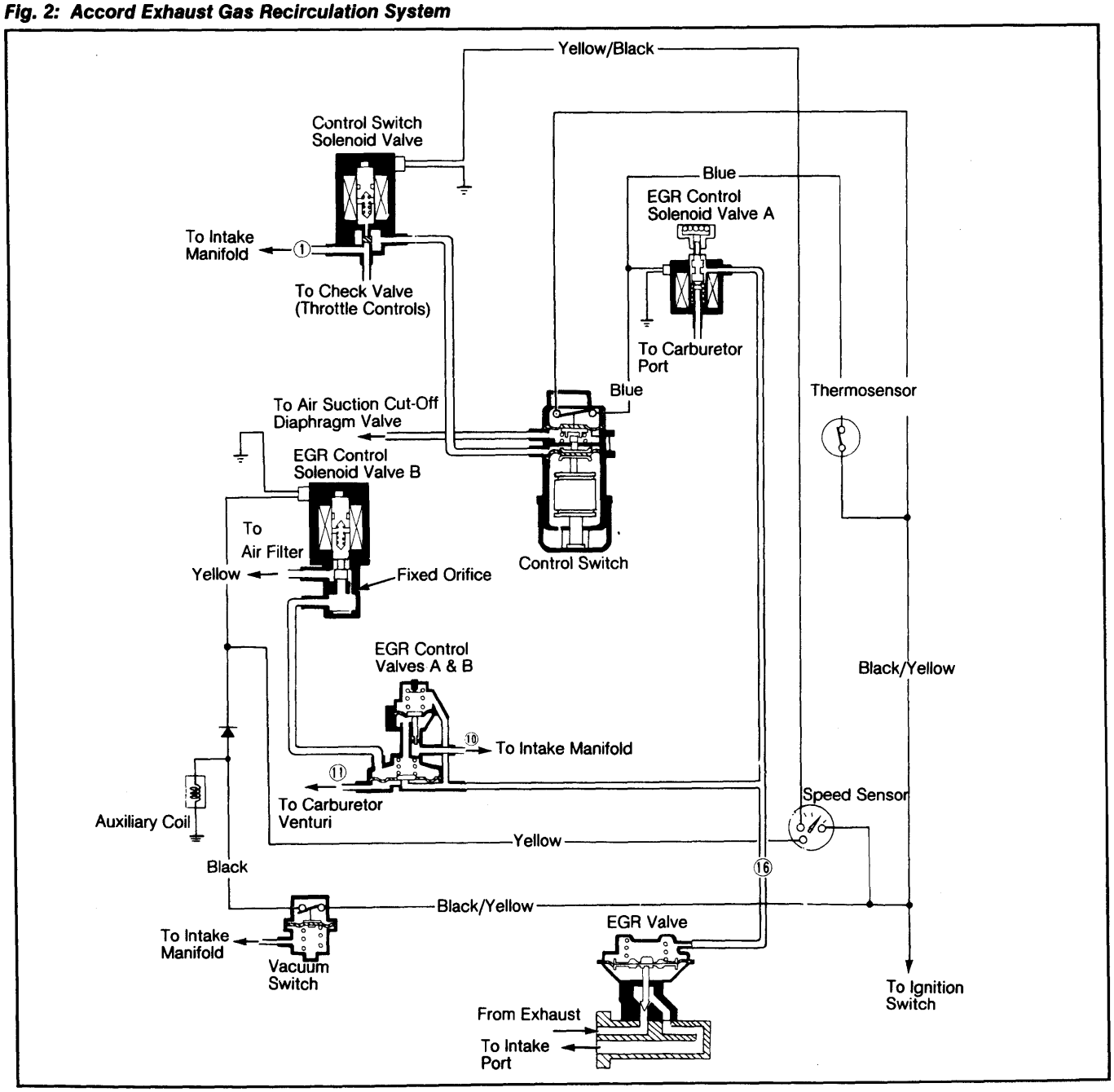

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Fig. 3: Civic Exhaust Gas Recirculation System

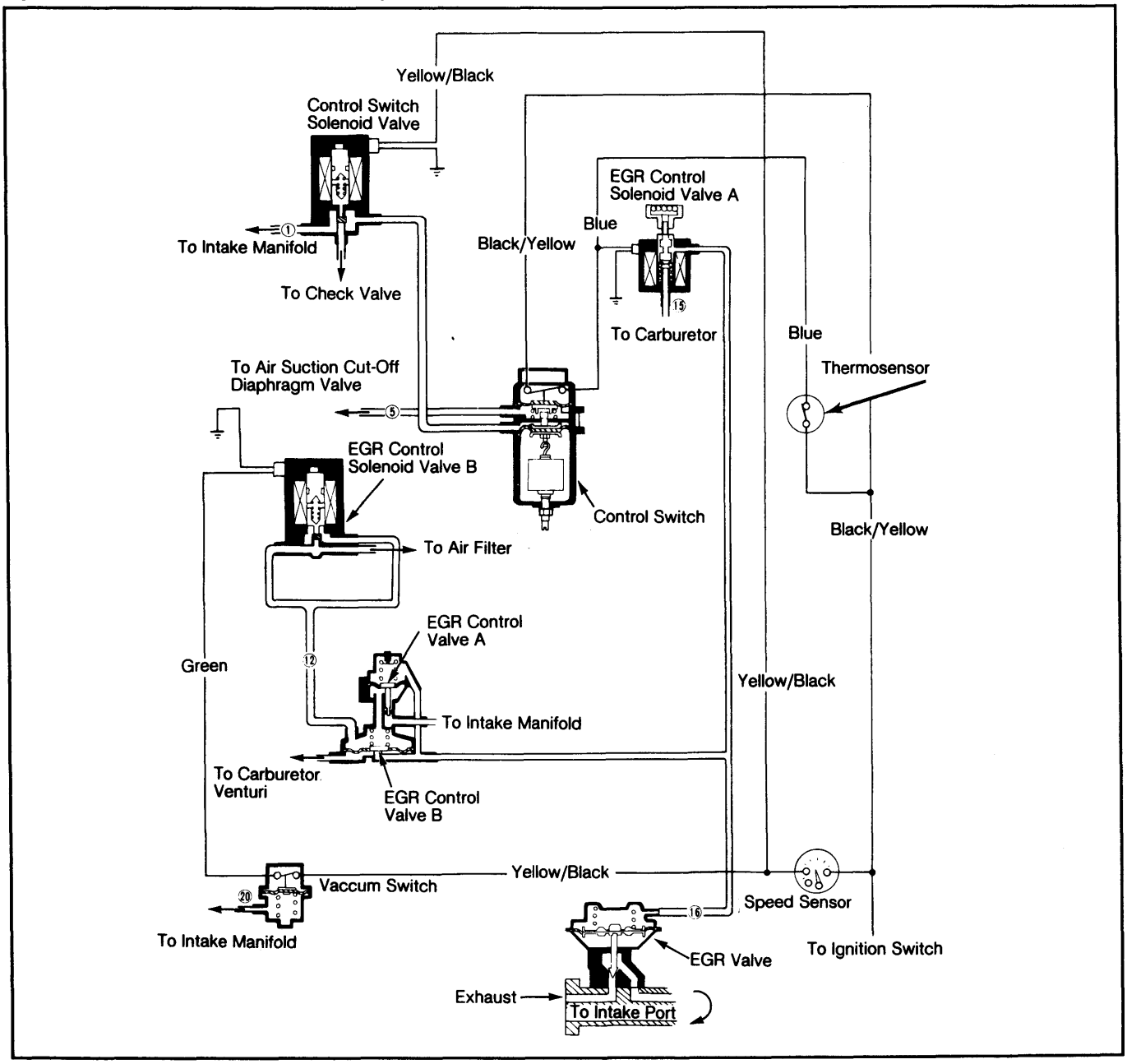

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Fig. 4: Prelude Exhaust Gas Recirculation System