

Idle Control

Troubleshooting

NOTE:

- First, confirm that the idle speed is normal by pinching the No. 10 vacuum hose slightly. Then inspect the air cleaner element, ignition timing, spark plug and valve clearance.
- Before going through the Electrical Troubleshooting Charts, make sure that the vacuum hoses are not loose and securely tightened, and that the solenoid valves, throttle body and fast idle mechanism are in good order.

Part Symptom	Idle control solenoid valve	A/C idle boost solenoid valve	A/C idle boost valve	Throttle body	Fast idle mechanism	Starter switch signal	Alternator FR terminal signal	A/C switch signal	ECU	Remarks
Idle speed does not increase after initial start-up.	Valve failure/pinched hose				Adjust screw out of adjustment	Open circuit			Failure in ECU	Is signal available at ECU?
Idle speed too high in neutral	Leaky solenoid valve			Valve stuck open	Adjust screw out of adjustment. Leaky fast idle valve.				Failure (signal not stopped)	Pinch idle control solenoid valve hose and re-adjust.
Idle speed changes under electrical load.	Valve failure/pinched vacuum hose			Throttle angle sensor out of adjustment. Valve stuck open.	Adjust screw out of adjustment				Failure (signal not available)	<ul style="list-style-type: none"> Is idle control solenoid valve working? Is fast idle adjust screw adjustment correct?
Idle speed drops when blipping throttle with electrical load.							Open circuit		Failure in ECU	Is there big difference between no-load and loaded conditions?
Idle speed drops when A/C switch is turned ON.		Valve failure Pinched vacuum hose	Adjusting bolt out of adjustment		Operer opening out of adjustment			Open circuit	Failure in ECU	<ul style="list-style-type: none"> Is vacuum applied to opener? Is opener opening adjusted properly?
Idle speed fluctuates when idle control comes into operation.	Valve failure								Failure in ECU	<ul style="list-style-type: none"> Is condition improved when solenoid valve is replaced?



Starter Switch Signal Inspection

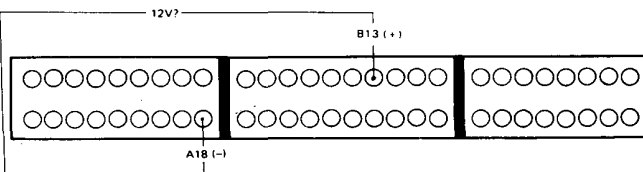
Connect system checker harness between ECU and wire harness coupler.

Turn ignition switch to START.

Measure voltage between B13 terminal (Blue/Red (+)) and A18 terminal (Black/Red (-)) of system checker harness.

Is battery voltage available?

NO



Blown starter signal fuse

Open circuit in Blue/White wire between starter signal fuse and ECU

Alternator FR Terminal Signal Inspection

Before inspection, check operation of alternator as follows:

With the engine running, and the vacuum hose #10 pinched (to cut off the idle control system), turn the headlight on and off.

Engine speed should be changed. If engine speed remains steady, re-charge battery and re-test.

Connect system checker harness between ECU and wire harness coupler.

Attach positive probe of voltmeter to B14 terminal (White/Red (+)), and negative probe to A18 terminal (Black/Red (-)) of system checker harness.

Start engine.

Turn headlights ON and OFF.

Check that voltage drops when headlights are ON, and rises when headlights are OFF, within 0 and 5 V.

Is voltage changed?

NO

Stop engine.

Check for continuity in White/Red wire between alternator and ECU.

Is there continuity?

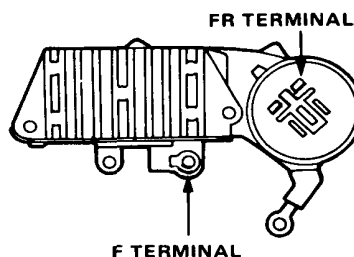
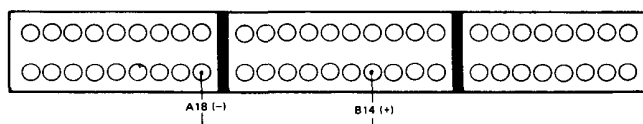
NO

NOTE: FR terminal diode is faulty if continuity or no continuity exists in both directions between F and FR terminals of voltage regulator.

Open circuit in harness

YES

Faulty voltage regulator or alternator



(cont'd)

Idle Control

Troubleshooting (cont'd)

Air Conditioner Switch Signal Inspection

Connect system checker harness between ECU and wire harness coupler.

Start engine.

Blower switch ON.

A/C switch ON.

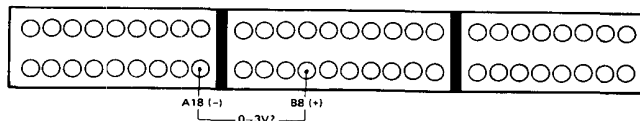
Check that compressor and condenser cooling fan work.

Measure voltage between B8 terminal (Blue/Red (+)) and A18 terminal (Black/Red (-)) of system checker harness.

Is 0–3 V available?

NO

Open circuit in Blue/Red wire between A/C, diode coupler and ECU.



NOTE: Voltage will be over 9 V if compressor or condenser cooling fan stops when power is cut off by pressure switch or thermostat.

Idle Control Solenoid Valve Inspection

Connect system checker harness between ECU and wire harness coupler.

Attach positive probe of voltmeter to A11 terminal (Green/Black (+)) and negative probe to A18 terminal (Black/Red (-)) of system checker harness.

Start engine.

NOTE: Measure within 10 seconds.

Is 0–1.5 V available?

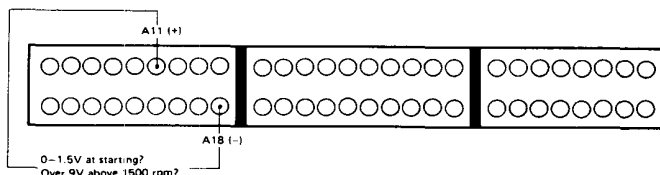
NO

Open circuit in Yellow/Black wire between Main Relay and idle control solenoid valve.

Open circuit in Red wire between idle control solenoid valve and ECU.

Open circuit in idle control solenoid valve.

Faulty ECU. **NOTE:** Voltage should be above 9 V.



NOTE: No voltage available.

Raise engine speed over 1,500 rpm.

Is more than 9 V available?

NO

Faulty ECU.



A/C Idle Boost Solenoid Valve Inspection

Connect system checker harness between ECU and wire harness connector.

Start engine.

Turn A/C switch ON.

Check that compressor and condenser cooling fan work

Measure voltage between B1 terminal (Blue/Yellow (+)) and A18 terminal (Black/Red (-)) of system checker harness.

Is 0—1.5 V available?

NO

Open circuit in Black/Yellow wire between Regulator fuse and A/C idle boost solenoid valve

Open circuit in Red wire between A/C idle boost solenoid valve and ECU

Open circuit in A/C idle boost solenoid valve

Faulty ECU. NOTE: Voltage should be above 9 V.

NOTE: No voltage available.

