



## Troubleshooting

Before starting troubleshooting on the PGM-FI system, check that other items that affect engine performance are within specification. Check the valve clearance, air cleaner, and PCV valve. In addition, check the ignition timing, function of the vacuum and centrifugal advance, and the condition of the spark plugs. If those items are all within specifications, begin with the troubleshooting listed on pages 11-10 and 11-11.

(cont'd)

# PGM-FI

## Troubleshooting (cont'd)

CAUSAL PART SYMPTOM		ELECTRONIC POWER SOURCE	ECU	INJECTOR	FUEL PUMP	FUEL LINE	FAST IDLE MECHANISM	THROTTLE BODY	CRANK ANGLE SENSOR	MANIFOLD ABSOLUTE PRES- SURE SENSOR
ENGINE WON'T START	WHEN COLD	· BLOWN FUSE · FAULTY MAIN RELAY	FAULTY ECU	· OPEN/SHORT CIRCUIT · DAMAGED INJECTORS	· FAULTY PUMP/MAIN RELAY · POOR GROUNDING	· FROZEN FUEL LINE · BLOCKED FILTER			· OPEN/SHORT CIRCUIT · FAULTY SENSOR	
	AT RESTART- ING WHEN HOT	↑	↑	↑	↑				↑	
DIFFICULT TO START ENGINE	WHEN COLD		↑	· OPEN/SHORT CIRCUIT · FAULTY INJECTOR	↑	· ICE IN FUEL LINE · CLOGGED FILTER	· STUCK AIR BYPASS VALVE		↑	
	AT RESTART- ING WHEN HOT		↑	↑ VAPOR LOCK	↑	VAPOR LOCK			↑	
IRREGULAR IDLING	WHEN COLD		↑	· OPEN/SHORT CIRCUIT · STUCK INJECTOR			STUCK AIR BYPASS VALVE		↑	· OPEN/SHORT CIRCUIT · BROKEN/DIS- CONNECTED HOSE · FAULTY SENSOR
	AFTER WARMING UP		↑	↑			↑		↑	↑
	AFTER RESTARTING WHEN HOT		↑	↑ VAPOR LOCK		VAPOR LOCK	IDLE ADJUST- ING SCREW OUT OF AD- JUSTMENT		↑	↑
	RPM TOO HIGH						STUCK AIR BYPASS VALVE	THROTTLE VALVE STUCK OPEN		↑
	RPM TOO LOW						IDLE ADJUST- ING SCREW OUT OF AD- JUSTMENT			
FREQUENT STALLING	WHILE WARMING UP			· OPEN/SHORT CIRCUIT · STUCK INJECTOR	· FAULTY PUMP/MAIN RELAY · POOR GROUNDING	· IMPROPER LINE PRES- SURE · CLOGGED FILTER	STUCK AIR BYPASS VALVE			· OPEN/SHORT CIRCUIT · BROKEN/DIS- CONNECTED HOSE · FAULTY SENSOR
	AFTER WARMING UP		↑	↑	↑	↑	IDLE ADJUST- ING SCREW OUT OF AD- JUSTMENT		· OPEN/SHORT CIRCUIT · FAULTY SENSOR	↑
POOR PER- FORMANCE	POOR DRIVE- ABILITY HIGH FUEL CONSUMPTION		↑	↑	↑	↑	STUCK AIR BYPASS VALVE		↑	↑
	AFTERBURN		↑	↑						↑
	BACK FIRE		↑	↑	· FAULTY PUMP/MAIN RELAY · POOR GROUNDING	· IMPROPER LINE PRES- SURE · CLOGGED FILTER				↑
	KNOCKING		↑	↑	↑	↑				
	LACK OF POWER AT LOW RPM		↑	↑	↑	↑				
	LACK OF POWER AT MID RPM		↑	↑	↑	↑				· OPEN/SHORT CIRCUIT · BROKEN/DIS- CONNECTED HOSE · FAULTY SENSOR
	LACK OF POWER AT HIGH SPEED		↑		↑	↑		SECONDARY VALVE NOT OPENED FULLY		↑
WARNING/ INDICATOR LIGHT TURNS ON	PGM-FI WARNING LIGHT		↑							
	SELF-DIAG- NOSIS INDICATORS		↑						· OPEN/SHORT CIRCUIT · FAULTY SENSOR	· OPEN/SHORT CIRCUIT · BROKEN/DIS- CONNECTED HOSE · FAULTY SENSOR



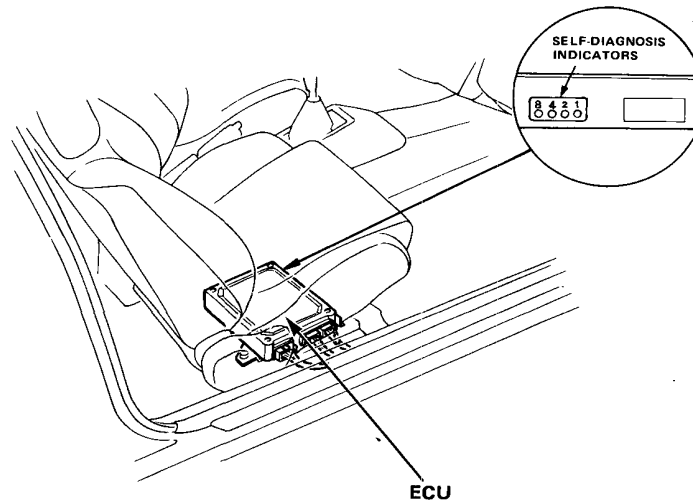
ATMOSPHERIC AIR PRESSURE SENSOR	OXYGEN SENSOR [KX model only]	COOLANT TEMPERATURE SENSOR	THROTTLE ANGLE SENSOR	INTAKE AIR TEMPERATURE SENSOR	IDLE MIXTURE ADJUSTER SENSOR [except KX model]	IDLE CON- TROL SYSTEM [KX model only]	IMPORTANT POINTS
							• CHECK FUEL PUMP/INJECTOR
							↑
(AT HIGH ALTITUDE) • OPEN/SHORT CIRCUIT • FAULTY SENSOR		• OPEN/SHORT CIRCUIT • FAULTY SENSOR					• CHECK FUEL PUMP/INJECTOR • POSSIBLE TO START BY OPERATING THROTTLE? (STUCK AIR BYPASS VALVE)
							• CHECK FOR VAPOR LOCK IN INJECTOR • POSSIBLE TO START BY OPERATING THROTTLE? (VAPOR LOCK IN INJECTOR)
(AT HIGH ALTITUDE) • OPEN/SHORT CIRCUIT • FAULTY SENSOR		• OPEN/SHORT CIRCUIT • FAULTY SENSOR					• CHECK IGNITION SYSTEM (SPARKS) AND EACH INJECTOR, POSSIBLE TO START BY OPERATING THROTTLE (STUCK AIR BYPASS VALVE)
						FAULTY SOLE- NOID VALVE	↑
							• CHECK FOR VAPOR LOCK IN FUEL LINE • CHECK PCV VALVE FOR CLOGGING BY OPERATING THROTTLE
							• DISCONNECTED OR LEAKY VACUUM LINES • CHECK AIR BYPASS VALVE • CHECK SELF DIAGNOSIS INDICATORS
			SENSOR OUT OF ADJUST- MENT				
		• OPEN/SHORT CIRCUIT • FAULTY SENSOR		• OPEN/SHORT CIRCUIT • FAULTY SENSOR			• CHECK AIR BYPASS VALVE • CHECK COOLANT TEMPERATURE SENSOR
						FAULTY SOLE- NOID VALVE (RPM DOWN)	• CHECK IDLE SPEED • CHECK FOR FUEL CUT-OFF OPERATION
	• OPEN/SHORT CIRCUIT • FAULTY SENSOR	• OPEN/SHORT CIRCUIT • FAULTY SENSOR	• OPEN/SHORT CIRCUIT • FAULTY SENSOR	• OPEN/SHORT CIRCUIT • FAULTY SENSOR		FAULTY SOLE- NOID VALVE (STUCK OPEN)	• CHECK IGNITION TIMING • CHECK FOR FUEL CUT-OFF OPERATION
		↑	↑				↑
		↑	↑				• CHECK IGNITION TIMING • CHECK MANIFOLD AIR PRESSURE SENSOR/ INJECTORS
		↑	↑				• CHECK IGNITION TIMING
	• OPEN/SHORT CIRCUIT • FAULTY SENSOR	↑	↑				• CHECK IGNITION TIMING (DISCONNECTED OR BROKEN LINES) • CHECK INJECTORS
	↑	↑	↑				• CHECK IGNITION TIMING
							• IS SECONDARY THROTTLE VALVE OPEN FULLY? • CHECK MANIFOLD AIR PRESSURE SENSOR • CHECK IGNITION TIMING
[except KX model] • OPEN/SHORT CIRCUIT • FAULTY SENSOR	• OPEN/SHORT CIRCUIT • FAULTY SENSOR			• OPEN/SHORT CIRCUIT • FAULTY SENSOR	• OPEN/SHORT CIRCUIT • FAULTY SENSOR		• CONSULT TROUBLESHOOTING CHART ON PAGE 13 or 15
• OPEN/SHORT CIRCUIT • FAULTY SENSOR	↑	• OPEN/SHORT CIRCUIT • FAULTY SENSOR	• OPEN/SHORT CIRCUIT • FAULTY SENSOR	↑	↑		↑

# Self-Diagnosis Indicator

## Troubleshooting

### [Except KX model]

The PGM-FI system's ECU is equipped with a self-diagnosis function. When an abnormality is detected, the PGM-FI dash warning light and/or the LED display on the ECU come on. The location of the PGM-FI control system's trouble can be diagnosed from the LED display pattern. There are four LED displays. They are part of the ECU, which is located under the passenger's seat (KE model: driver's seat). They are numbered 1, 2, 4 and 8, as counted from right to left.



The quick reference chart on the next page covers the failure modes and possible causes for the PGM-FI. If you run through all the possible causes listed and the problem is still unsolved, go on to the more detailed troubleshooting on the following pages.

Sometimes the PGM-FI dash warning light and/or ECU LED display will come on, indicating a system problem, when, in fact, there is a bad or intermittent electrical connection. To troubleshoot bad connections, note the ECU LED display pattern, refer to the diagnosis chart on page 11-13 and check the connectors associated with the items mentioned in the "Possible Cause" column. Clear or repair connections if necessary.

#### NOTE:

- The memory for the "PGM-FI" dash warning light will be erased when the ignition switch is turned off; however, the memory for the LED display will not be cancelled. Thus, the warning light will not come on when the ignition is again turned on unless the trouble is once more detected. Troubleshooting should be done according to the LED display even if the warning light is OFF.  
If the LED display fails to come on when the ignition switch is turned on again, check for:
  - Blown No. 10 fuse
  - Open circuit in White/Green wire between ECU A17 terminal and No. 10 fuse.Then, if there is no problem, substitute a known-good ECU and re-check.
- Turn the ignition switch ON. The PGM-FI dash warning light should come on for about 2 seconds. If the warning light won't come on, check for:
  - Blown No. 3 fuse (also the fuse for the back-up lights).
  - Open circuit in Yellow wire between No. 3 fuse and combination meter.
  - Open circuit in Green/Orange wire between combination meter and ECU B6 terminal.
  - Open circuit in Black wires between ECU A2, A4 and ground.
  - Blown warning light bulbThen, if there is no problem, substitute a known-good ECU and recheck.
- After making repairs, disconnect the No. 10 fuse for at least 10 seconds and reset the ECU memory. After reconnecting the cable, check that the LED display is turned OFF.



LED Display	PGM-FI dash warning light	Symptom	Possible causes
		<ul style="list-style-type: none"> <li>Engine will not start.</li> </ul>	<ul style="list-style-type: none"> <li>Loose or poorly connected power line to ECU</li> <li>Disconnected control unit ground wire</li> <li>Faulty ECU</li> </ul>
		<ul style="list-style-type: none"> <li>Engine will not start</li> <li>No particular symptom shown</li> </ul>	<ul style="list-style-type: none"> <li>Disconnected control unit ground wire</li> <li>Short circuit in combination meter or warning light wire</li> <li>Faulty ECU</li> </ul>
		<ul style="list-style-type: none"> <li>Fuel fouled plug</li> <li>Frequent engine stalling</li> <li>Hesitation</li> </ul>	<ul style="list-style-type: none"> <li>Disconnected manifold absolute pressure sensor coupler</li> <li>Short or open circuit in manifold absolute pressure sensor wire</li> <li>Faulty manifold absolute pressure sensor</li> </ul>
		<ul style="list-style-type: none"> <li>Hesitation</li> <li>Fuel fouled plug</li> <li>Frequent engine stalling</li> </ul>	<ul style="list-style-type: none"> <li>Disconnected manifold absolute pressure sensor piping</li> </ul>
		<ul style="list-style-type: none"> <li>High idle speed during warm-up</li> <li>High idle speed</li> <li>Hard starting at low temp</li> </ul>	<ul style="list-style-type: none"> <li>Disconnected coolant temperature sensor coupler</li> <li>Open circuit in coolant temperature sensor wire</li> <li>Faulty coolant temperature sensor (thermostat housing)</li> </ul>
		<ul style="list-style-type: none"> <li>Poor engine response to opening throttle rapidly</li> <li>High idle speed</li> <li>Engine does not rev up when cold</li> </ul>	<ul style="list-style-type: none"> <li>Disconnected throttle angle sensor coupler</li> <li>Open or short circuit in throttle angle sensor wire</li> <li>Faulty throttle angle sensor</li> </ul>
		<ul style="list-style-type: none"> <li>Engine does not rev up</li> <li>High idle speed</li> <li>Erratic idling</li> </ul>	<ul style="list-style-type: none"> <li>Short or open circuit in crank angle sensor wire</li> <li>Crank angle sensor wire interfering with spark plug wires</li> <li>Faulty crank angle sensor</li> </ul>
		Same as above	Same as above
		<ul style="list-style-type: none"> <li>High idle speed</li> <li>Erratic idling when very cold</li> </ul>	<ul style="list-style-type: none"> <li>Disconnected intake air temperature sensor</li> <li>Open circuit in intake air temperature sensor wire</li> <li>Faulty intake air temperature sensor</li> </ul>
		<ul style="list-style-type: none"> <li>No particular symptom shown</li> <li>High idle speed</li> </ul>	<ul style="list-style-type: none"> <li>Disconnected idle mixture adjuster sensor coupler</li> <li>Open or short circuit in idle mixture adjuster sensor wire</li> <li>Faulty idle mixture adjuster sensor</li> </ul>
		<ul style="list-style-type: none"> <li>Poor acceleration at high altitude</li> <li>Hard starting at high altitude when cold</li> </ul>	<ul style="list-style-type: none"> <li>Disconnected atmospheric pressure sensor coupler</li> <li>Open or short circuit in atmospheric pressure sensor wire</li> <li>Faulty atmospheric pressure sensor</li> </ul>

**NOTE:**

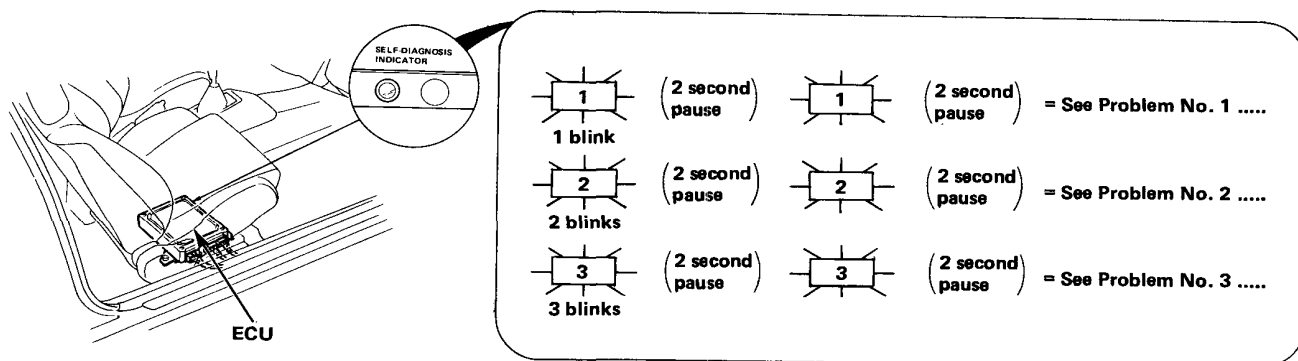
- If the LED display is out of above patterns, substitute a known-good ECU and re-check. If symptom/indication goes away, replace the ECU.
- Some failure indicators require the full test procedures to confirm that the failure has or has not been eliminated.

# Self-Diagnosis Indicator

## Troubleshooting

### [KX model]

The PGM-FI system's ECU is equipped with a self-diagnosis function. When an abnormality is detected, the PGM-FI dash warning light comes on, and the LED display on the ECU blinks. The location of the PGM-FI control system's trouble can be diagnosed from the frequency of the LED display blinks.



The quick reference chart on the next page covers the failure modes and possible causes for PGM-FI. If you run through all the possible causes listed and the problem is still unsolved, go on to the more detailed troubleshooting on the following pages.

Sometimes the PGM-FI dash warning light and/or ECU LED display will come on, indicating a system problem, when, in fact, there is a bad or intermittent electrical connection. To troubleshoot bad connections, note the ECU LED display blink frequency, refer to the diagnosis chart on page 11-15 and check the connectors associated with the items mentioned in the "Possible Cause" column. Clean or repair connections if necessary.

#### NOTE:

- The memory for the "PGM-FI" dash warning light will be erased when the ignition switch is turned off; however, the memory for the LED display will not be cancelled. Thus, the warning light will not come on when the ignition is again turned on unless the trouble is once more detected. Troubleshooting should be done according to the LED display even if the warning light is OFF.  
If the LED display fails to come on when the ignition switch is turned on again, check for:
  - Blown No. 10 fuse.
  - Open circuit in White/Green wire between ECU A17 terminal and No. 10 fuse.Then, if there is no problem, substitute a known-good ECU and re-check.
- Turn the ignition switch ON. The PGM-FI dash warning light should come on for about 2 seconds. If the warning light won't come on, check for:
  - Blown No. 3 fuse (also the fuse for the back up lights.)
  - Open circuit in Yellow wire between No. 3 fuse and combination meter.
  - Open circuit in Green/Orange wire between combination meter and ECU B6 terminal.
  - Open circuit in Black wires between ECU A2, A4 and ground.
  - Blown warning light bulb.Then, if there is no problem, substitute a known-good ECU and re-check.
- After making repairs, disconnect the No. 10 fuse for at least 10 seconds to reset the ECU memory. After reconnecting the fuse, check that the LED display is turned off.



No. of LED Blinks between 2 second pauses	PGM-FI dash warning light	Symptom	Possible causes
0		• Engine will not start	• Loose or poorly connected power line to ECU • Disconnected control unit ground wire • Faulty ECU
		• Engine will not start • No particular symptom shown	• Disconnected control unit ground wire • Short circuit in combination meter or warning light wire • Faulty ECU
1		• No particular symptom shown • Erratic idling (Erratic injector, coupler and wiring/Insufficient fuel)	• Disconnected oxygen sensor coupler • Spark plug mis-fire • Short or open circuit in oxygen sensor circuit • Faulty oxygen sensor • Faulty fuel system
3		• Fuel fouled plug • Frequent engine stalling • Hesitation	• Disconnected manifold absolute pressure sensor coupler • Short or open circuit in manifold absolute pressure sensor wire • Faulty manifold absolute pressure sensor
5		• Hesitation • Fuel fouled plug • Frequent engine stalling	• Disconnected manifold absolute pressure sensor piping
6		• High idle speed during warm-up • High idle speed • Hard starting at low temp	• Disconnected coolant temperature sensor coupler • Open circuit in coolant temperature sensor wire • Faulty coolant temperature sensor (thermostat housing)
7		• Poor engine response to opening throttle rapidly • High idle speed • Engine does not rev up when cold	• Disconnected throttle angle sensor coupler • Open circuit in intake air temperature sensor wire • Faulty throttle angle sensor
8		• Engine does not rev up • High idle speed • Erratic idling	• Short or open circuit in crank angle sensor wire • Crank angle sensor wire interfering with spark plug wires • Crank angle sensor at fault
9		Same as above	Same as above
10		• High idle speed • Erratic idling when very cold	• Disconnected intake air temperature sensor • Open circuit in intake air temperature sensor wire • Faulty intake air temperature sensor
13		• Poor acceleration at high altitude • Hard starting at high altitude when cold	• Disconnected atmospheric pressure sensor coupler • Open or short circuit in atmospheric pressure sensor wire • Faulty atmospheric pressure sensor

**NOTE:**

- If the number of blinks between 2 second pauses is out of above numbers or if the LED indicator stays on, substitute a known-good ECU and re-check. If symptom/indication goes away, replace the ECU.
- Some failure indicators (such as, one blink) require the full test procedures on the following pages to confirm that the failure has or has not been eliminated.

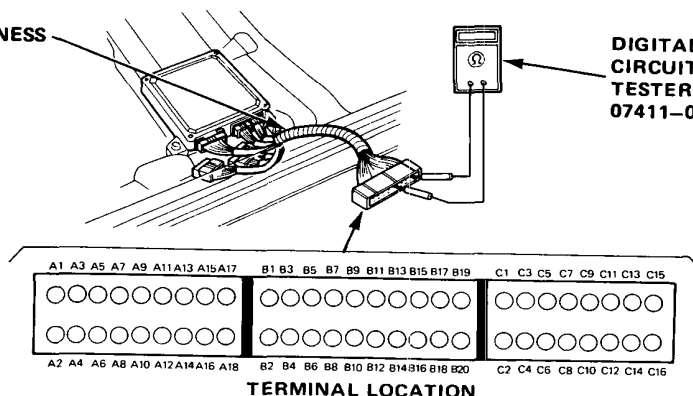
# Self-Diagnosis Indicator

## Troubleshooting (cont'd)

Use the system checker harness and digital circuit tester to check the system.

**SYSTEM CHECKER HARNESS**  
07999-PD6000A

**DIGITAL  
CIRCUIT  
TESTER**  
07411-0020000



**Self-diagnosis indicator(s) remain(s) off – The dash warning light is not lit.**

Connect the system checker harness between the ECU and connector.

Check for continuity between the A2 (Black) and the A4 (Black) terminals, and body ground.

Does continuity exist?

NO

Faulty ground circuit

YES

Turn the ignition switch ON.

Measure voltage between A15 (Yellow/Black (+)) terminal and the A4 terminal (Black (-)).

Is 12 V available?

NO

YES

Substitute a known-good ECU and re-check.  
If symptom goes away, replace the original ECU.  
If symptom does not go away, check to see if the dash warning light is on and the LED indicator now displays a pattern or blinks, and troubleshoot the true cause.

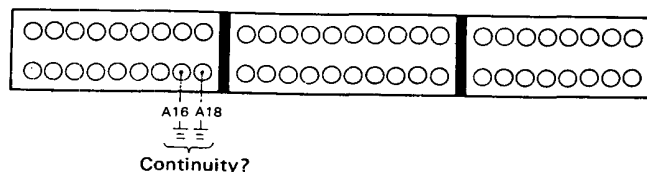
- PGM-FI (ECU) fuse blown
- Open circuit in Yellow/White wire between PGM-FI (ECU) fuse and main relay
- Faulty main relay
- Open circuit in Yellow/Black wire between main relay and ECU
- No. 4 fuse (10A) blown (fuel pump is not working).
- Open circuit in Black/Yellow wire between No. 4 fuse and main relay
- Open circuit in main relay ground wire (Black)
- Faulty ECU

NOTE: No voltage available.

**Self-diagnosis indicator(s) remain(s) off – The dash warning light is not lit.**

Connect the system checker harness between the ECU and connector.

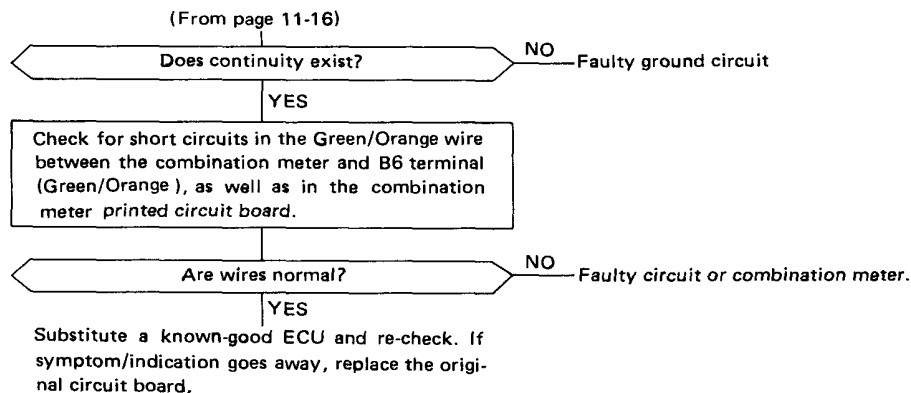
Check for continuity between the A16 (Brown/Black) and the A18 (Black/Red) terminals, and body ground.



(To page 11-17)

Continuity?





Self-diagnosis indicator blinks once.

NOTE: First, check the spark plugs.

Plug mis-fire can be another source of this trouble.

Warm up engine to operating temperature.

Rev up and slow down engine between idle and 4,000 rpm quickly.

Stop engine.

Connect system checker harness between ECU and connector.

Attach positive probe of voltmeter to C16 terminal (White) of checker, and negative probe to A18 (Black/Red) terminal.

Restart the engine, then open the throttle wide open and close it.

Check that voltage rises over 0.6 V at wide open throttle, and falls below 0.4 V at full close.

Is voltage above 0.6 V ... below 0.4 V? NO — Stop engine.

YES

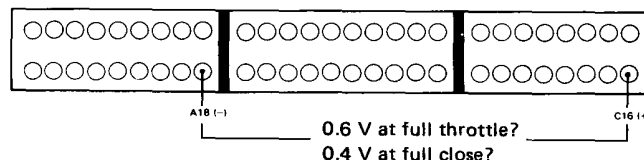
Disconnect engine wire harness from oxygen sensor.

Check oxygen sensor (page 11-28).

Is oxygen sensor normal? NO — Faulty oxygen sensor

YES

Check for open or short circuit in White wire between oxygen sensor and ECU.



(To page 11-18)

(To page 11-18)

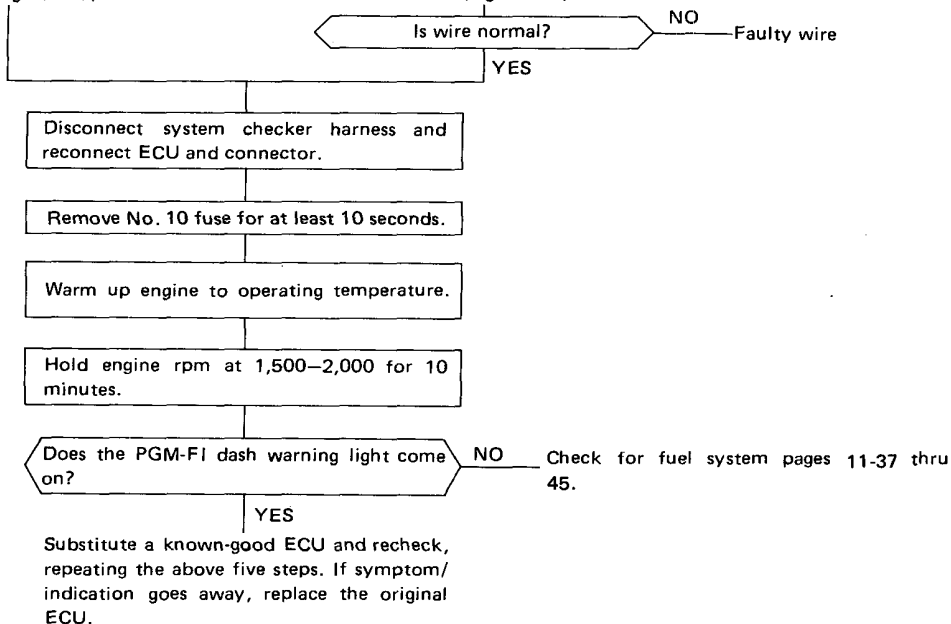
(cont'd)




# Self-Diagnosis Indicator

## Troubleshooting (cont'd)

(From page 11-17)

(From page 11-17)



No. 1 and No. 2 indicators are lit. (   ) /  3 Self-diagnosis indicator blinks three times.

Connect system checker harness between the ECU and coupler.

Turn ignition switch ON.

Measure voltage between C15 terminal (Red/White (+)) of system checker harness and C14 terminal (Blue/White (-)).

Is voltage between 4.75 and 5.25 V?

NO

Substitute a known-good ECU and re-check. If prescribed voltage is now available, replace the original ECU.

YES

Measure voltage between C11 terminal (White/Blue (+)) of system checker harness and C14 terminal (Blue/White (-)).

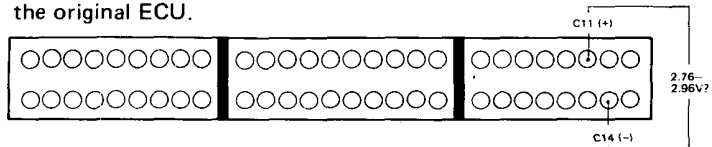
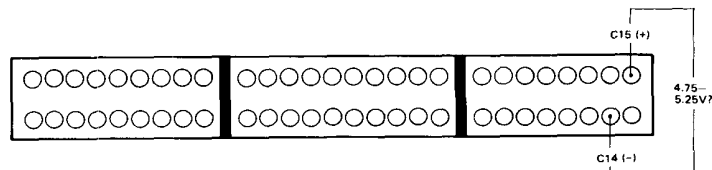
Is voltage between 2.76 and 2.96 V?

NO

Open or short circuit in White wire or Brown/White wire between manifold absolute pressure sensor and ECU. Faulty manifold absolute pressure sensor.

YES

Substitute a known-good ECU and re-check. If symptom/indication goes away, replace the original ECU.



NOTE: If the voltage is below the specified range, there are open or poorly connected wires. If the wires are normal, the manifold absolute pressure sensor is at fault.



No. 1 and No. 4 indicators are lit (     ) /  Self-diagnosis indicator blinks five times.

Check that the manifold absolute pressure sensor pipe is connected securely.

NOTE: Also check hose routing inside control box.

Is routing normal?

NO

Reconnect routing

YES

Disconnect pipe from manifold absolute pressure sensor and plug open end.

Disconnect vacuum hose (between the manifold absolute pressure sensor and throttle body) from throttle body.

Connect hand vacuum pump to vacuum hose (between the manifold absolute pressure sensor and throttle body) and check for leak.

Is vacuum maintained?

NO

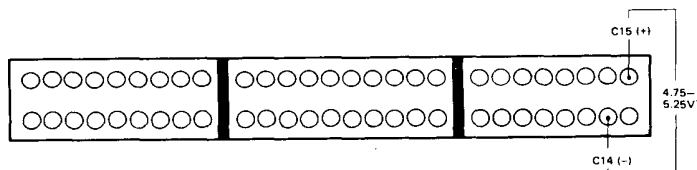
Replace vacuum hose.

YES

Connect system checker harness between the ECU and coupler.

Turn ignition switch ON.

Measure voltage between C15 terminal (Red/White (+)) of system checker harness and C14 terminal (Blue/White (-)).



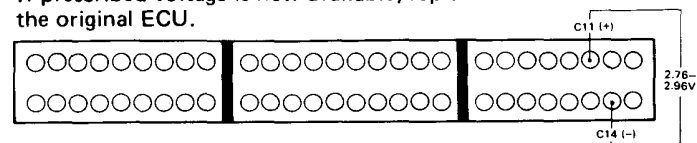
Is voltage between 4.75 and 5.25 V?

NO

Substitute a known-good ECU and re-check. If prescribed voltage is now available, replace the original ECU.

YES

Measure voltage between C11 terminal (White/Blue (+)) of system checker harness and C14 terminal (Blue/White (-)).



Is voltage between 2.76 and 2.96 V?

NO

Open or short circuit in White or Brown/White wire between manifold absolute pressure sensor and ECU.  
Faulty manifold absolute pressure sensor.

NOTE: If there is no voltage, or if voltage is low, the possibility is a shorted wire. If voltage is high, wire may be open or poorly connected. If wire is normal, manifold absolute pressure sensor is at fault.

YES

Connect hand vacuum pump to manifold absolute pressure sensor.

Check that voltage changes as vacuum is applied.

Has voltage changed?

NO

Faulty manifold absolute pressure sensor




YES

Substitute a known-good ECU and re-check. If symptom/indication goes away, replace the original ECU.

(cont'd)

# Self-Diagnosis Indicator

## Troubleshooting (cont'd)

No. 2 and No. 4 indicators are lit (   ) /  Self-diagnosis indicator blinks six times.

Connect system checker harness between the ECU and coupler.

Warm up engine until radiator fan comes on twice.

Measure voltage between C6 terminal (Yellow/Green (+)) of system harness checker and C12 terminal (Green/White (-)).

Is voltage between 0.50 and 0.90 V?

YES

Substitute a known-good ECU and re-check. If symptom/indication goes away, replace the original ECU.

NO

Stop engine.

Check for open or short circuit in Red/White and Brown/Black wires between coolant temperature sensor and the ECU.

Are wires normal?

YES

Check coolant temperature sensor (page 11-30).

Is sensor normal?

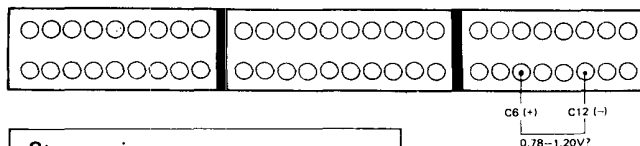
YES

Substitute a known-good ECU and re-check. If prescribed voltage is now available, replace the original ECU.

NOTE: If there is no voltage or if voltage is low, check for shorted wire. If voltage is high, wire may be open or poorly contacted.

NO Faulty wires

NO Faulty coolant temperature sensor



No. 1, No. 2 and No. 4 indicators are lit (    ) /  Self-diagnosis indicator blinks seven times.

Connect system checker harness between ECU and coupler.

Turn ignition switch ON.

Measure voltage between C13 terminal (Yellow/White (+)) of system checker harness and C12 terminal (Green/White (-)).

Is 4.75-5.25 V attained?

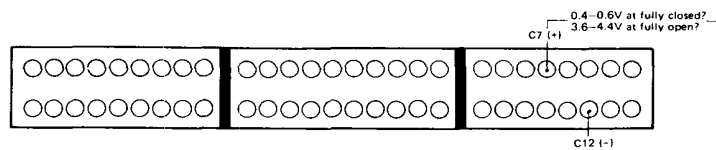
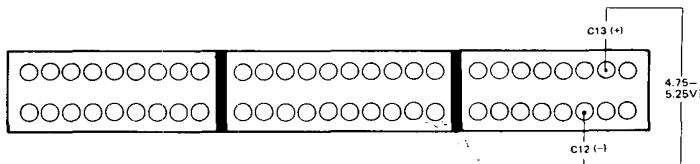
YES

Connect voltmeter positive probe to C7 terminal (Red/Yellow (+)), and negative probe to C12 terminal (Green/White (-)) of system checker harness.

(To page 11-21)

NO

Substitute a known-good ECU and re-check. If prescribed voltage is now available, replace the original ECU.





(From page 11-20)

Operate accelerator pedal from fully closed to fully open.

Check that 0.4–0.6 V is available at fully closed, and 3.6–4.4 V at fully open.

Are voltages within above ranges?

NO

Check for short or open circuit in Red/Blue and Brown/Black wires between the ECU and throttle angle sensor.

Are wires normal?

NO

Replace wires

YES

Adjust or replace throttle angle sensor (page 11-31).

YES

Substitute a known-good ECU and re-check. If symptom/indication goes away, replace the original ECU.

No. 8 indicator is lit (  ) /  Self-diagnosis indicator blinks eight times.

Check for open or short circuit in Orange/Blue and White/Blue wires between the ECU and crank angle sensor.

Are wires normal?

NO

Replace wires

YES

Check crank angle sensor (page 11-30).

Does crank angle sensor operate properly?

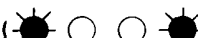

NO

Faulty crank angle sensor

YES

Substitute a known-good ECU and re-check. If symptom/indication goes away, replace the original ECU.

NOTE: Check that crank angle sensor harness is not interfering with the spark plug wires.

No. 1 and No. 8 indicators are lit (  ) /  Self-diagnosis indicator blinks nine times.

Check for open or short circuit in Orange and White wires between the ECU and crank angle sensor.

Are wires normal?

NO

Replace wires

YES

Check crank angle sensor (page 11-30).

Is sensor normal?

NO

Faulty crank angle sensor

YES


Substitute a known-good ECU and re-check. If symptom/indication goes away, replace the original ECU.

NOTE: Check that sensor harness is not interfering with the spark plug wires.

(cont'd)

# Self-Diagnosis Indicator

## Troubleshooting (cont'd)

No. 2 and No. 8 indicators are lit (● ○ ● ○) /  Self-diagnosis indicator blinks ten times.

Connect system checker harness between the ECU and harness coupler.

Attach voltmeter positive probe to C5 terminal (White/Red (+)), and negative probe to C12 terminal (Green/White (-)) of system checker harness.

Turn ignition switch ON.

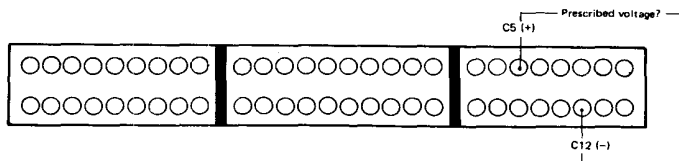
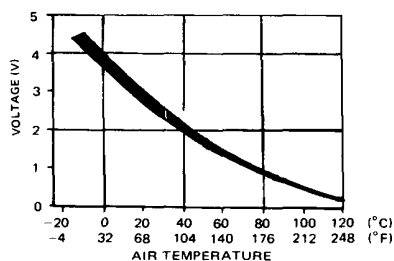
Check that voltage is correct for the intake air temperature.

Is voltage correct?

NO

YES

Substitute a known-good ECU and re-check. If symptom/indication goes away, replace the original ECU.



Turn ignition switch OFF.

Check for open or short circuit in Red/Yellow and Brown/Black wires between intake air temperature sensor and the ECU.

NOTE: If voltage is low, or there is no voltage, check wires for short circuit. If voltage is high, probability is open or poorly contacted wire.

Are wires normal?

NO

Faulty wires

YES

Check intake air temperature sensor (page 11-30).

Is sensor normal?

NO

Faulty intake air temperature sensor

YES

Substitute a known-good ECU and re-check. If prescribed voltage is now available, replace the original ECU.

No. 1, No. 2 and No. 8 indicators are lit (● ○ ● ●)

Connect system checker harness between the ECU and harness coupler.

Turn ignition switch ON.

Measure voltage between C13 terminal (Yellow/White (+)) of system checker harness and C12 terminal (Green/White (-)).

Is 4.75–5.25V available?

NO

YES

Replace ECU

Measure voltage between B20 terminal (Brown (+)) of system checker harness and C12 terminal (Green/White (-)).

Is 0.3–4.9 V available?

NO

YES

Substitute a known-good ECU and re-check. If symptom/indication goes away, replace the original ECU.

Turn ignition switch OFF.

Check for open or short circuit in White/Yellow and Brown/Black wires between idle mixture adjuster sensor and the ECU.

NOTE: If there is no voltage, check for short circuit in the wires. If voltage is high, probability is open or poorly connected wire.

Are wires normal?

NO

Faulty wires

YES

Check idle mixture adjuster sensor (page 11-29).

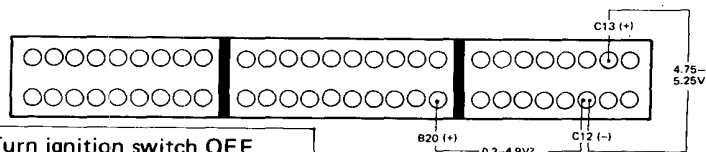
Does sensor operate properly?

NO

Faulty idle mixture adjuster sensor.

YES

Substitute a known-good ECU and re-check. If prescribed voltage is now available, replace the original ECU.





No. 1, No. 4 and No. 8 indicators are lit (●●●○●●) / 13 Self-diagnosis indicator blinks thirteen times.

Connect system checker harness between the ECU and harness coupler.

Turn ignition switch ON.

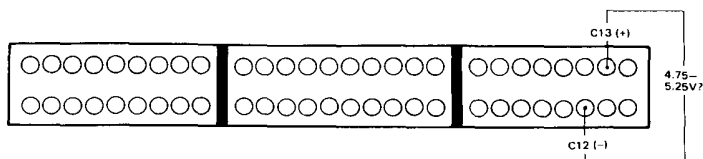
Measure voltage between C13 terminal (Yellow/White (+)) of system checker harness and C12 terminal (Green/White (-)).

Is 4.75–5.25 V available? NO  
YES

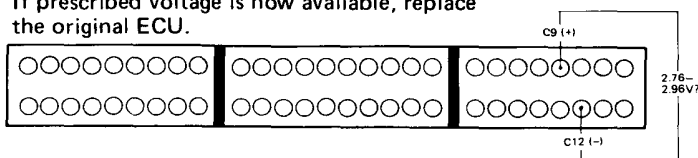
Measure voltage between C9 terminal (Red (+)) of system checker harness and C12 terminal (Green/White (-)).

Is 2.76–2.96 V available? NO  
YES

Substitute a known-good ECU and re-check. If symptom/indication goes away, replace the original ECU.



Substitute a known-good ECU and re-check. If prescribed voltage is now available, replace the original ECU.



Turn Ignition switch OFF.

Check for open or short circuit in Red and Brown/Black wires between atmospheric pressure sensor and the ECU.

NOTE: If there is no voltage, check for a short circuit. If voltage is high, wires may be open or poorly contacted.

Are wires normal? NO Faulty wires.  
YES

Check atmospheric pressure sensor (page 11-29).

Does sensor operate properly? NO Faulty atmospheric pressure sensor.  
YES

Substitute a known-good ECU and re-check. If prescribed voltage is now available, replace the original ECU.