Symptom-to System Chart

(Except KS, KX, KG, KQ)

NOTE:

- Across each row in the chart, the sub systems that could be sources of a symptom are ranked in the order they should be inspected, starting with ①. Find the symptom in the left column, read across to the most likely source, then refer to the page listed at the top of that column. If inspection shows the system is OK, try the next system ②, etc.
- Before starting inspection, check that other items that affect engine performance are within specification. Check the self-diagnosis indicator, 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 in pages 6-52 and 6-53.

PAGE / SYSTEM / SYMPTOM		CARBURETOR			
		IDLE SPEED/ MIXTURE	IDLE BOOST	AUTOMATIC CHOKE/ FAST IDLE SYSTEM	AIR VENT CUT-OFF SOLENOID VALVE FLOAT LEVEL
		80	55	84	83, 121
ENGINE WON'T START					①
DIFFICULT TO START ENGINE	WHEN COLD			①	②
	WHEN WARM				②
IRREGULAR IDLING	WHEN COLD FAST IDLE OUT OF SPECIFICATION		②	①	
	WHEN WARM ENGINE SPEED TOO HIGH	①	②	③	
	WHEN WARM ENGINE SPEED TOO LOW	①	①		
	ROUGH IDLE/ FLUCTUATION	①	③		②
FREQUENT STALLING	WHILE WARMING UP		②	①	
	AFTER WARMING UP	①	②		②
POOR PERFORMANCE	MISFIRE OR ROUGH RUNNING			①	①
	LOSS OFF POWER				②
	AFTERBURN	①			
	HESITATION/SURGE				

CARBURETOR				FUEL SUPPLY	AIR INTAKE	EMISSION CONTROLS
POWER VALVE	PRIMARY SLOW MIXTURE CUT-OFF SOLENOID VALVE	VACUUM CONTROLLED SECONDARY	ACCELERATOR PUMP			
70	75	66	83	93	98	102
	②			①		③
	①		②			③
	①					③
②	②					③
						③
						②
		②				②
②	①					③
	①					③
		②		③		③
③		①	③	②	①	①
					②	①
②			③	②	①	①

Idle Control System

Testing

(KX, KS, KG, KQ)

1. Start the engine and warm up to normal operating temperature (the cooling fan comes on).
2. Check the idle speed with headlights, heater blower, rear window defogger, cooling fan and air conditioner off.

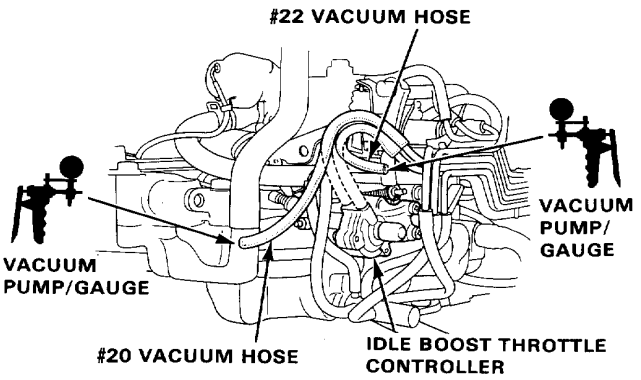
Idle speed should be:

Manual	800 ± 50 min^{-1} (rpm)
Automatic	750 ± 50 min^{-1} (rpm) (in "D")

- If OK, go to step 4.
- If not, go to step 3.

3. Disconnect the two vacuum hoses at idle boost throttle controller and check each for vacuum.

   There should be no vacuum in both hoses.



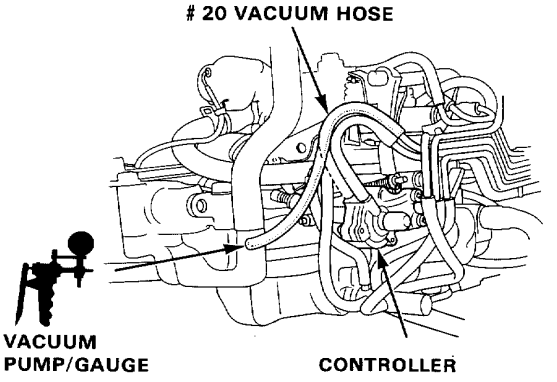
- If there is no vacuum, check the throttle valve shaft for binding or sticking and replace the idle boost throttle controller.
- If there is vacuum at the #20 vacuum hose, go to idle boost solenoid valve troubleshooting (page 6-56).
- If there is vacuum at the #22 vacuum hose, go to A/C idle boost solenoid valve troubleshooting (page 6-61).

4. Disconnect the connector on the P/S oil pressure switch, and check the idle speed.
   Idle speed should be:

Manual	950 ± 50 min^{-1} (rpm)
Automatic	820 ± 50 min^{-1} (rpm) (in "D")

- If OK, go to step 6.
- If not, go to step 5.

5. Disconnect the #20 vacuum hose at idle boost throttle controller and check vacuum wheel is turning. There should be vacuum.



- If there is vacuum, check the throttle valve shaft for binding or sticking and replace the idle boost throttle controller.
- If there is no vacuum, check the #20 and #12 vacuum line for proper connection, cracks, blockage or disconnected hose. If OK, go to the idle boost solenoid valve troubleshooting (page6-56).

6. Check the idle speed with the A/C on.

Idle speed should be:

Manual	800 ± 50 min^{-1} (rpm)
Automatic	750 ± 50 min^{-1} (rpm) (in "D")

- If not, disconnect the two vacuum hoses at idle boost throttle controller and check each for vacuum.
  - If there is no vacuum at the #20 vacuum hose, check the #20 and #12 vacuum line for proper connection, cracks, blockage or disconnected hose. If OK, go to the idle boost solenoid valve troubleshooting (page6-56).
  - If there is no vacuum at the #22 vacuum hose, check the #22 and #12 vacuum line for proper connection, cracks, blockage or disconnected hose. If OK, go to the A/C idle boost solenoid valve troubleshooting (page 6-61).

Testing
(Except KX, KS, KG, KQ)

1. Start the engine and warm up to normal operating temperature (the cooling fan comes on).

2. Check the idle speed with headlights, heater blower, rear window defogger, cooling fan and air conditioner off.

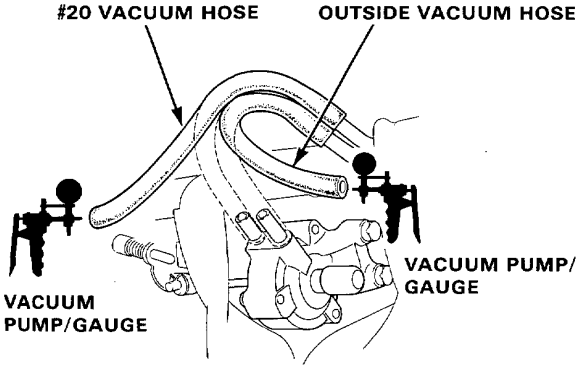
   Idle speed should be:

Manual	800 ± 50 min^{-1} (rpm)
Automatic	750 ± 50 min^{-1} (rpm) (in "D")

   - If OK, go to step4.
   - If not, go to step3.

3. Disconnect the vacuum hoses at idle boost throttle controller and check each for vacuum.

   There should be no vacuum in both hoses.



   - If there is no vacuum, check the throttle valve shaft for binding or sticking and replace the idle boost throttle controller.
   - If there is vacuum at the #20 vacuum hose, go to idle boost solenold valve troubleshooting (page 6-58).
   - If there is vacuum at the outside vacuum hose, go to A/C idle boost solenoid valve troubleshooting (page 6-63).

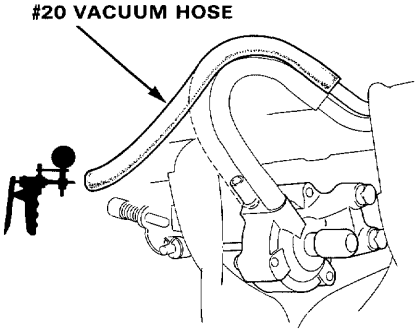
4. Disconnect the connector on the P/S oil pressure switch. Connect a jumper wire between the RED terminal and the BLK terminal.
   Check the idle speed.
   Idle speed should be:

Manual	950 ± 50 min^{-1} (rpm)
Automatic	820 ± 50 min^{-1} (rpm) (in "D")

   - If ok, go to step 6.
   - If not, go to step 5.

5. Disconnect the #20 vacuum hose at idle boost throttle controller and check vacuum.

   There should be vacuum.



   - If there is vacuum, check the throttle valve shaft for binding or sticking and replace the idle boost throttle controller.
   - If there is no vacuum, check the #20 and # 2 vacuum line for proper connection, cracks, blockage or disconnected hose. If OK, go to the idle boost solenoid valve troubleshooting (page 6-58).

6. Check the idle speed with the A/C on.

   Idle speed should be:

Manual	800 ± 50 min^{-1} (rpm)
Automatic	750 ± 50 min^{-1} (rpm) (in "D")

   - If not, disconnect the two vacuum hoses at idle boost throttle controller and check each for vacuum.

     There should be vacuum in both hoses.

   — If there is vacuum in both hoses, replace the idle boost throttle controller.
   — If there is no vacuum at the # 20 vacuum hose, check the #20 and #2 vacuum line for proper connection, cracks, blockage or disconnected hose. If OK, go to the idle boost solenoid valve troubleshooting (page6-58).
   — If there is no vacuum at the outside vacuum hose, check the vacuum line for proper connection, cracks, blockage or disconnected hose.
   If OK, go to the A/C idle boost solenoid valve trouble shooting (page 6-63).

(cont'd)

Idle Control System (cont'd)

Troubleshooting Flowchart (KX, KS, KG, KQ)

Inspection of Idle Boost Solenoid Valve.

Open the control box.

Disconnect the lower vacuum hose of the solenoid valve from the joint and connect a vacuum pump.

Disconnect #20 vacuum hose of the solenoid valve from the vacuum hose manifold and connect a vacuum gauge.

Start the engine.

Apply vacuum.

Is vacuum indicated on the gauge ? YES → Turn the ignition switch OFF.

NO

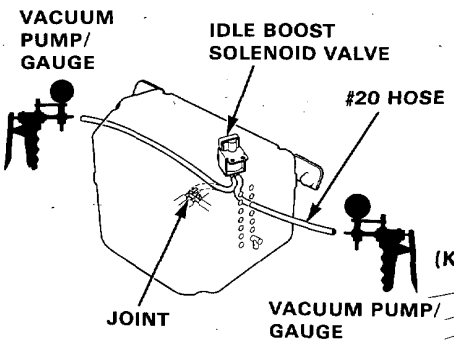
Turn steering wheel slowly.

Apply vacuum.

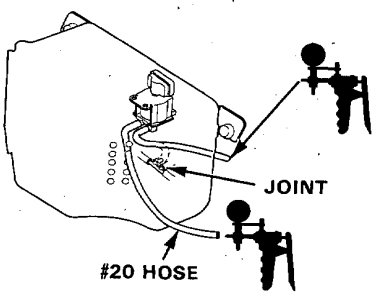
(To page 6-57)

Idle Boost Solenoid Valve

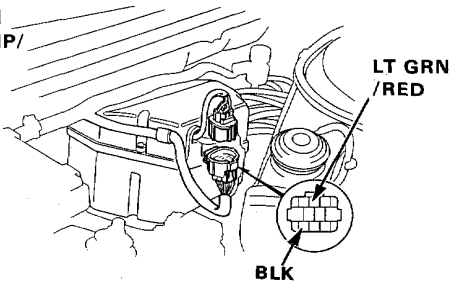
(KX. KS. KG)



(KQ)



(KX. KS. KG)



Turn the ignition switch OFF.

Disconnect the connector on the control box.

Start the engine.

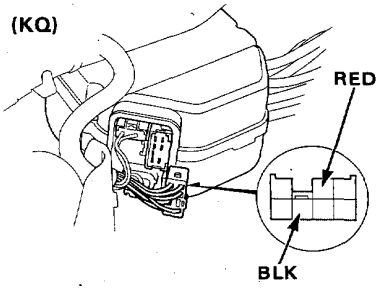
Measure voltage between;
KX, KS, KG: LT GRN (+) and BLK (−) terminals
KQ: RED (+) and BLK (−) terminals

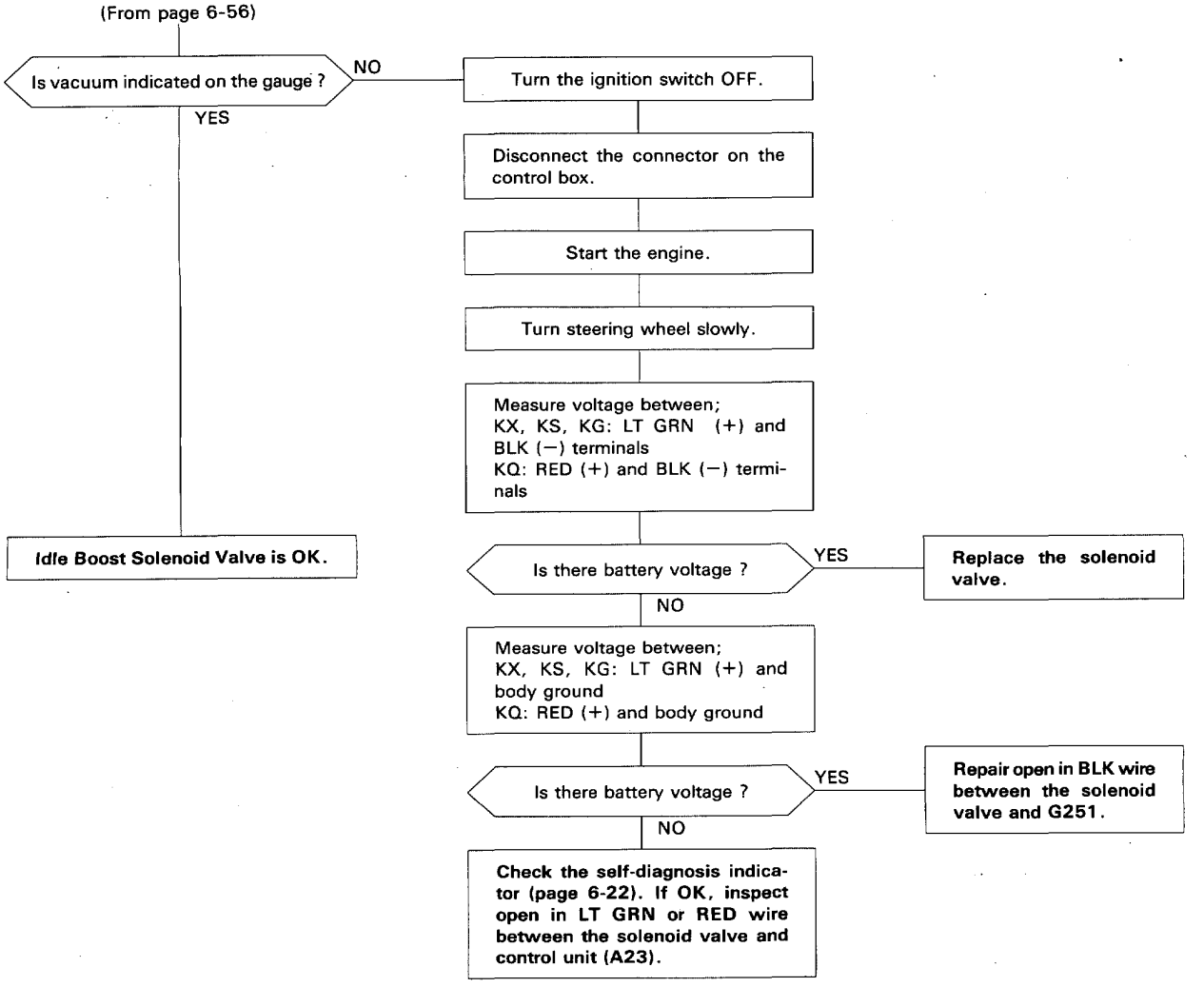
Is there voltage ? YES → **Check the self-diagnosis indicator (page 6-22). If OK, check the input troubleshooting (page 6-22).**

NO

Replace the solenoid valve.

(KQ)




(From page 6-56)
Is vacuum indicated on the gauge ?
NO
YES
Turn the ignition switch OFF.
Disconnect the connector on the control box.
Start the engine.
Turn steering wheel slowly.
Measure voltage between;
KX, KS, KG: LT GRN (+) and BLK (−) terminals
KQ: RED (+) and BLK (−) terminals
Idle Boost Solenoid Valve is OK.
Is there battery voltage ?
YES
Replace the solenoid valve.
NO
Measure voltage between;
KX, KS, KG: LT GRN (+) and body ground
KQ: RED (+) and body ground
Is there battery voltage ?
YES
Repair open in BLK wire between the solenoid valve and G251.
NO
Check the self-diagnosis indicator (page 6-22). If OK, inspect open in LT GRN or RED wire between the solenoid valve and control unit (A23).

(cont'd)

Idle Control System (cont'd)

Troubleshooting Flowchart (Except KX, KS, KG, KQ)

Inspection of Idle Boost Solenoid Valve.

Disconnect the lower vacuum hose of the solenoid valve from the joint and connect a vacuum pump.

Disconnect #20 vacuum hose of the solenoid valve from the vacuum hose manifold and connect a vacuum gauge.

Start the engine.

Apply vacuum.

Is vacuum indicated on the gauge ? YES → Turn the ignition switch OFF.

NO

Turn steering wheel slowly.

Apply vacuum.

Disconnect the connector on the solenoid valve.

Turn the ignition switch ON.

Measure voltage between BLK/YEL (+) terminal and RED (−) terminal on the solenoid valve.

Is there voltage ? NO → **Replace the solenoid valve.**

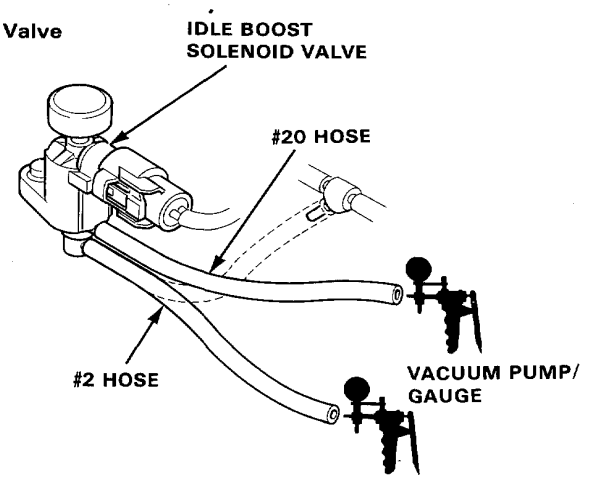
YES

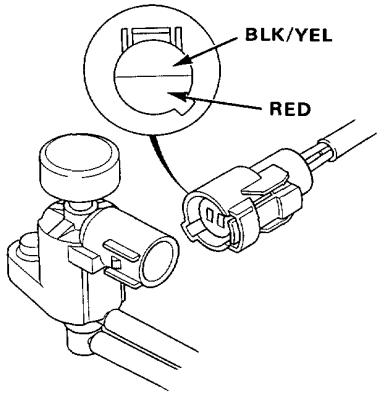
Disconnect the connector on the P/S oil pressure switch.

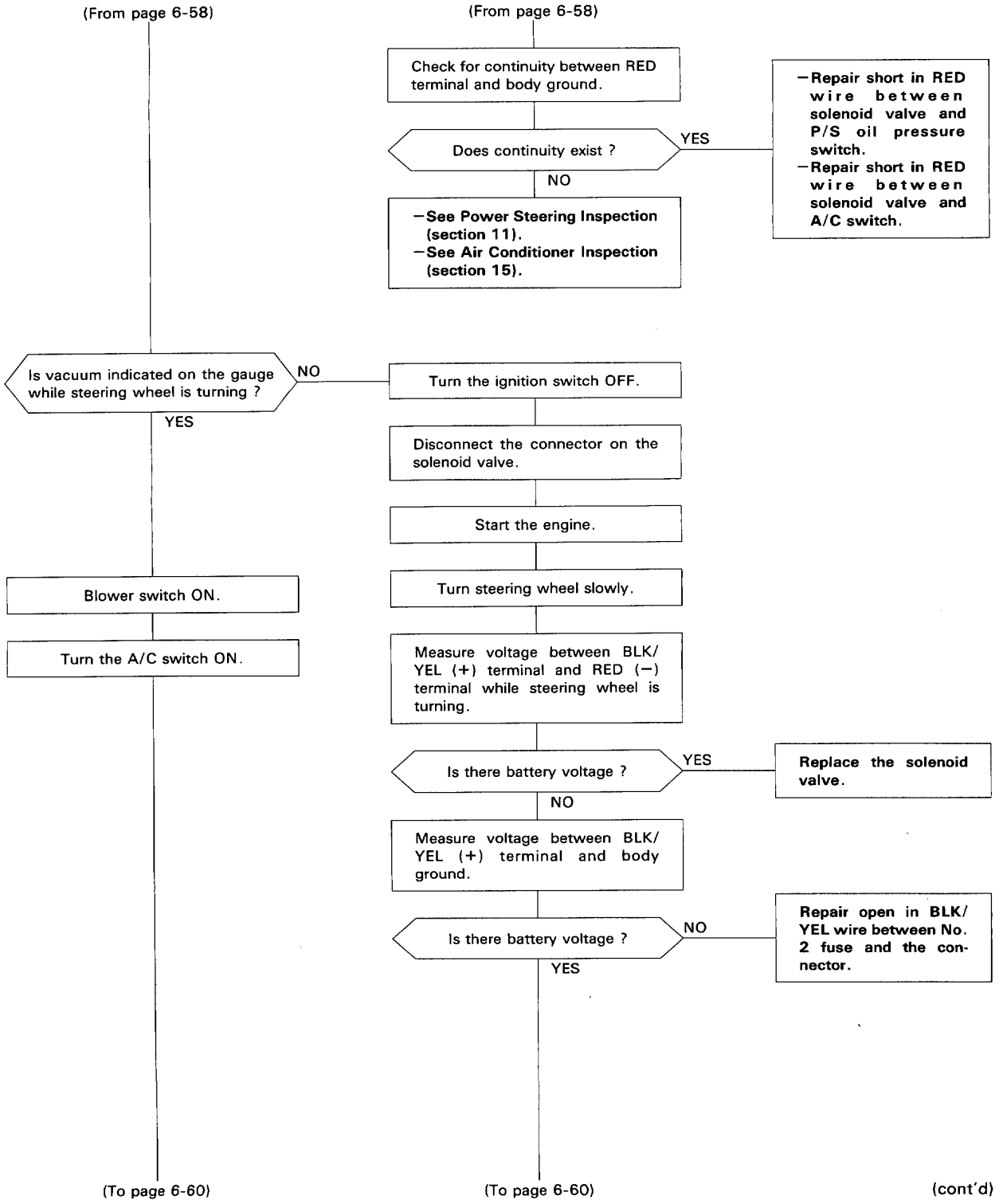
(To page 6-59)

(To page 6-59)

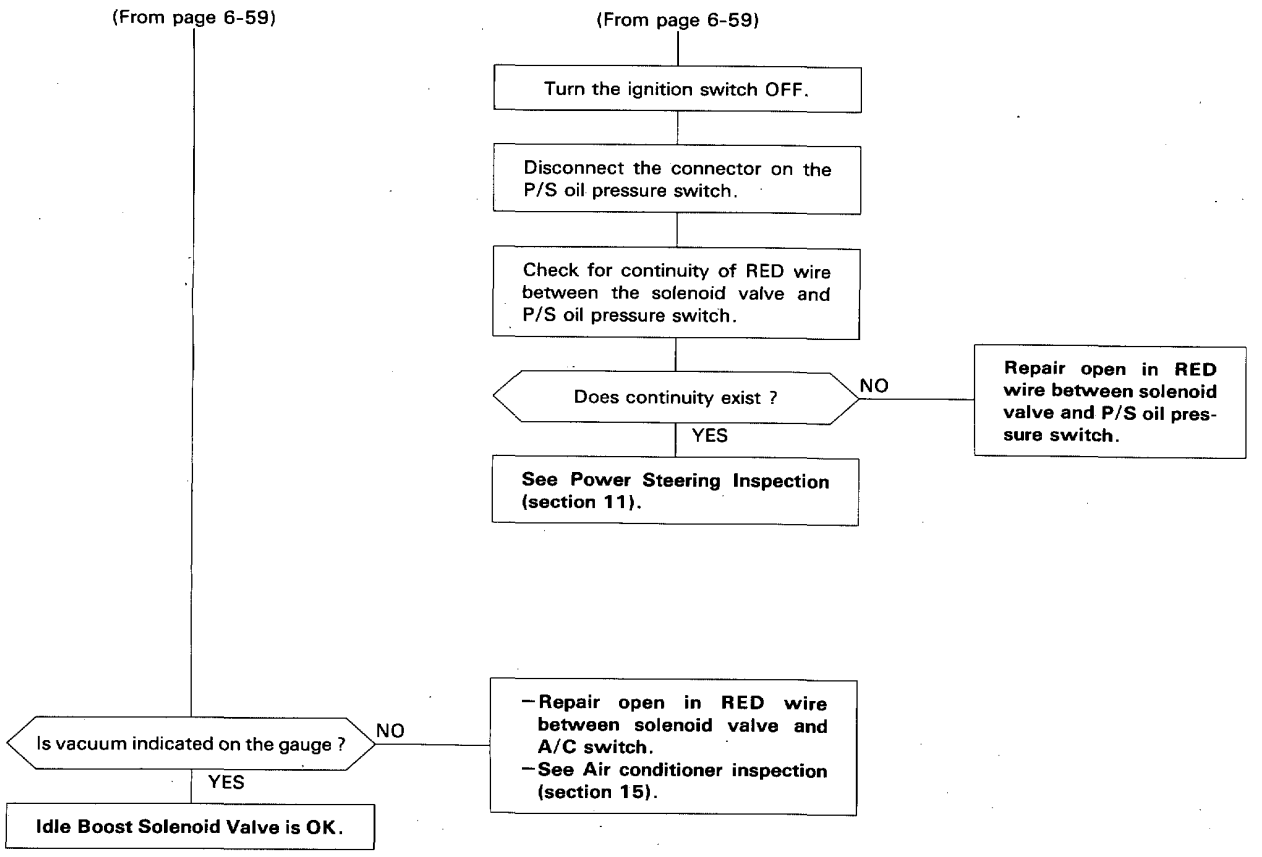
Idle Boost Solenoid Valve






(From page 6-58)
(From page 6-58)
Check for continuity between RED terminal and body ground.
Does continuity exist ?
YES
NO
–Repair short in RED wire between solenoid valve and P/S oil pressure switch.
–Repair short in RED wire between solenoid valve and A/C switch.
–See Power Steering Inspection (section 11).
–See Air Conditioner Inspection (section 15).
Is vacuum indicated on the gauge while steering wheel is turning ?
NO
YES
Turn the ignition switch OFF.
Disconnect the connector on the solenoid valve.
Start the engine.
Turn steering wheel slowly.
Measure voltage between BLK/YEL (+) terminal and RED (–) terminal while steering wheel is turning.
Blower switch ON.
Turn the A/C switch ON.
Is there battery voltage ?
YES
NO
Replace the solenoid valve.
Measure voltage between BLK/YEL (+) terminal and body ground.
Is there battery voltage ?
NO
YES
Repair open in BLK/YEL wire between No. 2 fuse and the connector.
(To page 6-60)
(To page 6-60)
(cont'd)

Idle Control System (cont'd)



Troubleshooting Flowchart (KX, KS, KG, KQ) **A/C Idle Boost Solenoid Valve**

Inspection of A/C Idle Boost Solenoid Valve

Open the control box.

Disconnect the lower vacuum hose of the solenoid valve from the joint and connect a vacuum pump.

Disconnect #22 vacuum hose of the solenoid valve from the vacuum hose manifold and connect a vacuum gauge.

Start the engine.

Apply vacuum.

Is vacuum indicated on the gauge ? YES → Turn the ignition switch OFF.

NO

Blower switch ON.

Turn the A/C switch ON.

Disconnect the connector on the control box.

Start the engine.

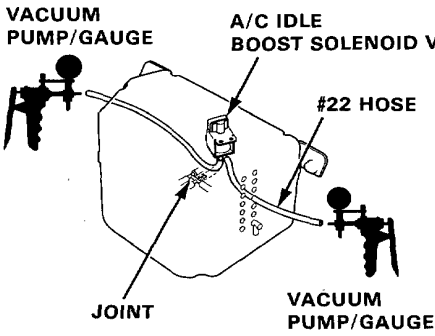
Measure voltage between GRN (+) terminal and BLK (−) terminal.

Is there voltage ? YES → **Check the self-diagnosis indicator (page 6-22). If OK, check the input troubleshooting (page 6-22).**

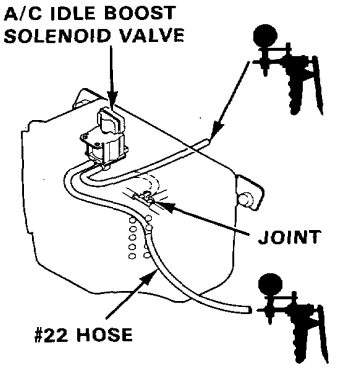
NO

Replace the solenoid valve.

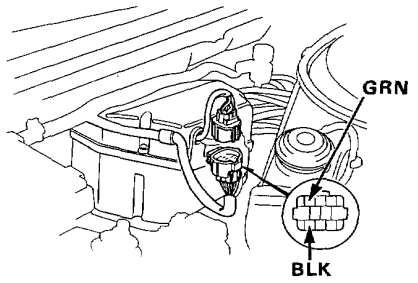
(KX. KS. KG)



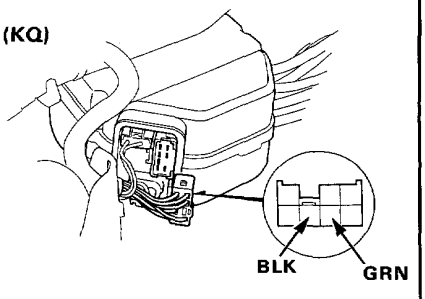
(KQ)



(KX. KS. KG)



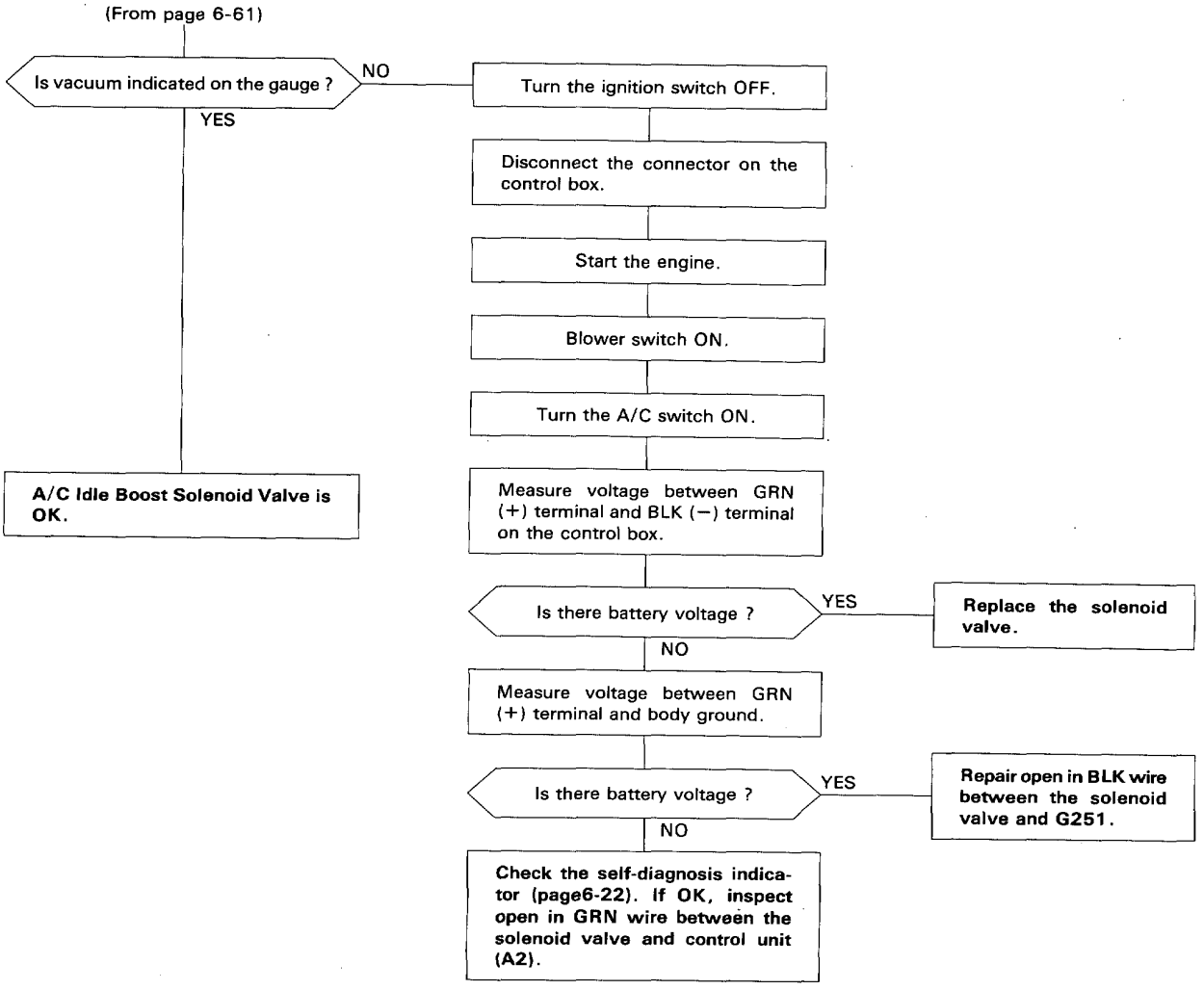
(KQ)



(To page 6-62)

(cont'd)

Idle Control System (cont'd)



Troubleshooting Flowchart (Except KX, KS, KG, KQ) **A/C Idle Boost Solenoid Valve**

Inspection of A/C Idle Boost Solenoid Valve

Disconnect the lower vacuum hose of the solenoid valve from the vacuum hose manifold and connect a vacuum pump.

Disconnect upper vacuum hose of the solenoid valve from the vacuum hose manifold and connect a vacuum gauge.

Start the engine.

Apply vacuum.

Is vacuum indicated on the gauge ?

YES

Turn the ignition switch OFF.

Disconnect the connector on the solenoid valve.

Start the engine.

Measure voltage between RED (+) terminal and BLK (−) terminal.

Is there voltage ?

YES

See Air Conditioner inspection (section 15).

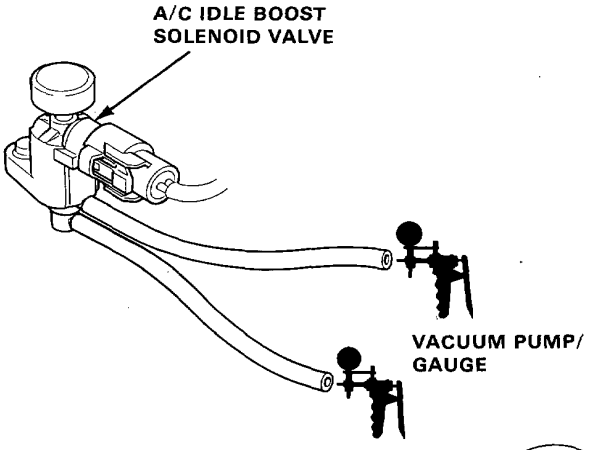
NO

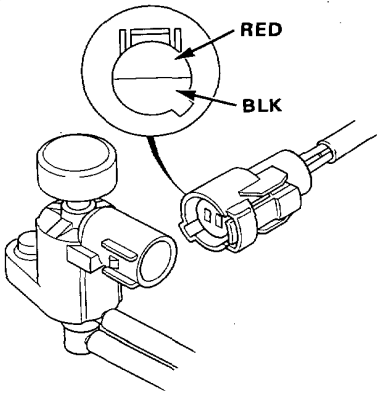
Replace the solenoid valve.

NO

Blower switch ON.

Turn A/C switch ON.





(To page 6-64)

(cont'd)

Idle Control System (cont'd)