Carbureted Engine

Description

Automatic Choke

This system provides easy engine starting under a wide range of air temperatures.

The system consists of the following:

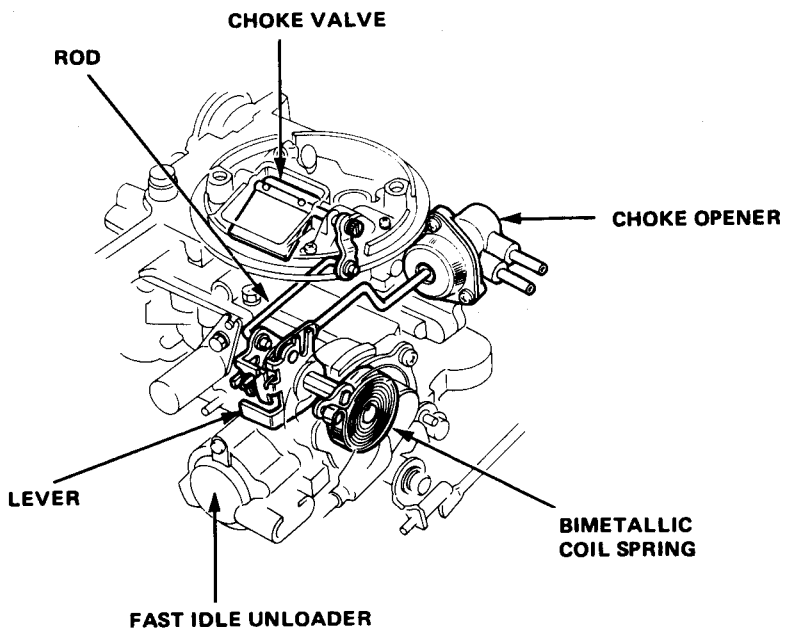
a) The choke valve and its linkage system
b) The choke heater electrical circuit
c) The choke opener (page 11-3)
d) The fast idle and fast idle unloader system (page 11-3)

The choke valve is located in the primary throttle bore of the carburetor. When the engine is not running, the chokevalve angle is determined by the bimetallic coil spring acting against the choke return spring. When the engine is running, the choke opener also affects the choke valve angle.

When the engine is started, electric current supplied to the main choke heater causes the bimetallic coil spring to open the choke valve. As the air temperature in the choke cap rises, the thermal switch turns on and electric current is also directed to the secondary choke heater. This speeds the opening of the choke valve during its final stages. The combination of heater and thermistor keeps the bimetallic coil spring at a constant high temperature.

The choke opener adjusts the choke valve for increased air flow once the engine begins to fire. It operates in two steps according to coolant temperature and operates independently of the fast idle setting.

The fast idle unloader operates in two steps according to the characteristics of thermovalves A and B, which sense the engine coolant temperature differently.

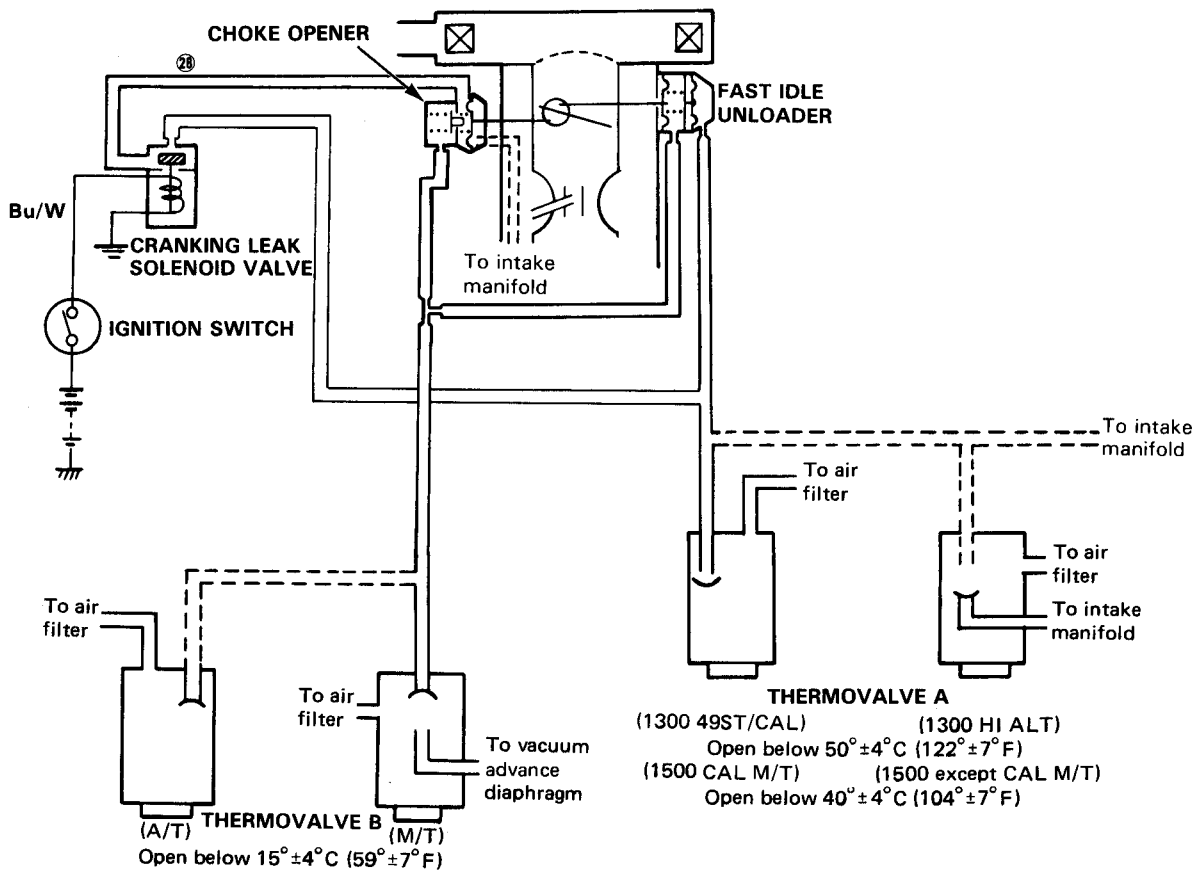


Choke Opener System

Fast Idle Unloader

The fast idle cam is engaged and disengaged by depressing the accelerator pedal, and is also disengaged by the fast idle unloading mechanism.

The unloading mechanism consists of a fast idle unloader, and thermovalves A and B. The unloader has two diaphragms to release the throttle valve in two steps. When the coolant temperature reaches the set temperature of thermovalve B, it closes to shut off the vacuum bleed. This allows the inside diaphragm of the unloader to retract to the first step by manifold vacuum. Then, as the coolant temperature rises further and reaches the set temperature of thermovalve A, it closes and manifold vacuum is applied to the outside diaphragm of the unloader. This allows the unloader to operate on the second step.



Choke Opener

This system is designed to promote easy starting. When starting the engine, manifold vacuum is transmitted to the choke opener; thus the choke valve is opened a fixed amount.

When cranking the engine to start, the cranking leak solenoid valve is activated and manifold vacuum is released from the valve so that the choke opener does not operate.

Thermovalve B works to open the choke valve in response to engine coolant temperature. When the engine coolant temperature is below the set temperature of thermovalve B, it opens and manifold vacuum is bled from the valve. In this situation the choke opener diaphragm is retracted to an intermediate position because of the balance between the vacuum and the spring force of the choke opener.

When the engine coolant temperature exceeds the set temperature of thermovalve B, it closes to shut off the vacuum bleed and this allows the choke opener to retract fully and pull the choke valve open.

Description

Carburetor

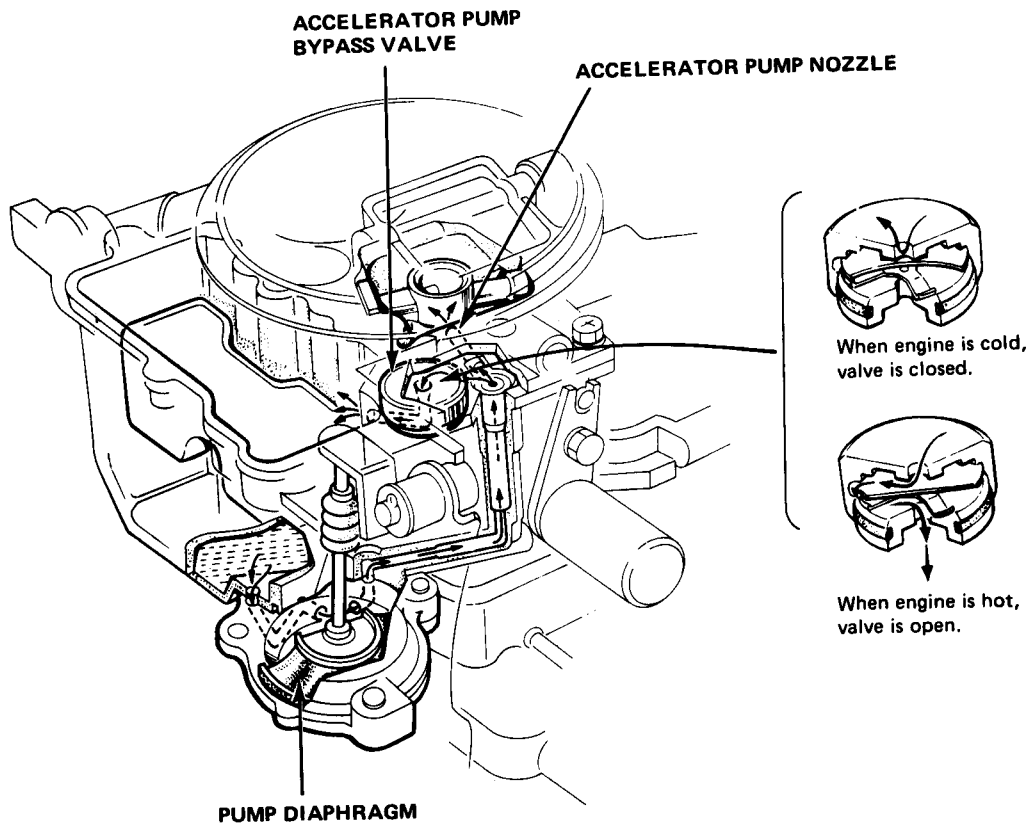
Accelerator Pump

The accelerator pump supplies the extra fuel necessary to maintain the ideal air/fuel mixture when the accelerator pedal is depressed suddenly at low engine speeds.

When the accelerator pedal is depressed, the pump rod, which is connected to the throttle lever, pushes down on the accelerator pump diaphragm. This opens the outlet check valve and allows fuel to be pumped up to the accelerator pump nozzle, where it is sprayed into the carburetor's primary throat.

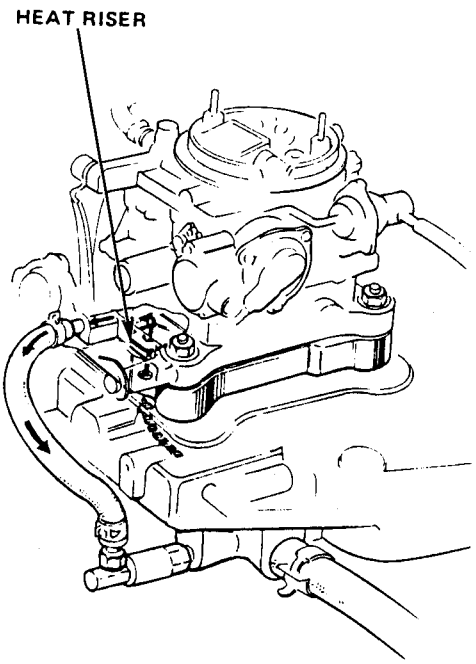
When the accelerator pedal is released, the accelerator pump diaphragm is pushed up by its spring and this closes the outlet check valve. Fuel, from the float chamber, flows into the accelerator pump chamber through the inlet check valve so that the pump will be ready when the accelerator pedal is again depressed suddenly.

The fuel flow from the accelerrator pump is further regulated by the temperature-sensitive bypass valve in the carburetor. When the engine is cold, the bypass portion of the valve is closed so that the accelerator pump nozzle will get the maximum of fuel available. When the engine warms up to its normal operating temperature, the bypass valve opens and this allows some of the fuel, which would ordinarily be routed to the nozzle, to be bled back into the float chamber of the carburetor.



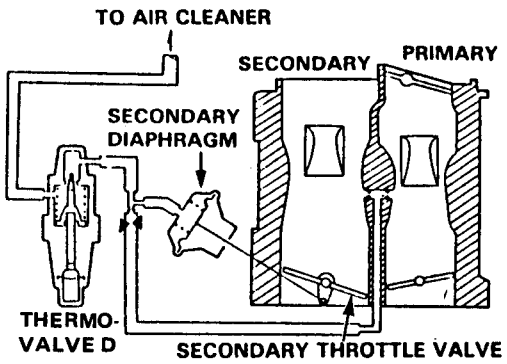
Carburetor Heat Riser

A heat riser, utilizing engine coolant, is built into the intake manifold to prevent carburetor icing and to improve cold driveability. This improves air-fuel mixture automization. Since excessive heat can cause fuel percolation, a bypass valve with a thermostat shuts off coolant flow, at normal operating temperatures.



Vacuum Controlled Secondary

The secondary throttle valve is controlled by venturi vacuum, and thermovalve D.
When thermovalve D is below its specified temperature, vacuum to secondary diaphragm is bled to the air cleaner.
Above that temperature, thermovalve D gradually closes the air bleed, and applies venturi vacuum to the secondary diaphragm.



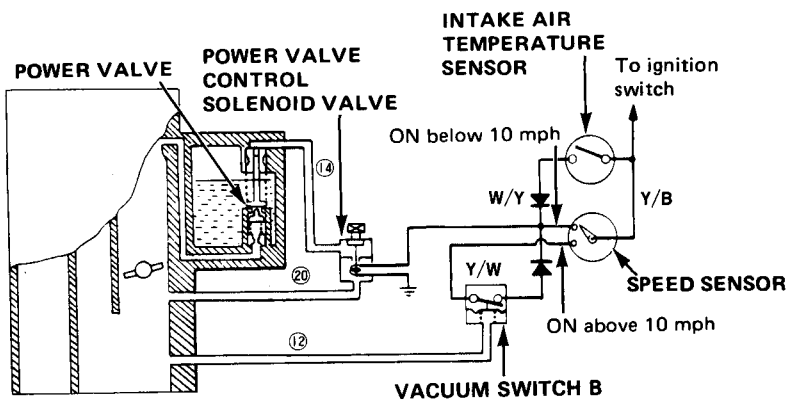
Description

Power Valve

This system provides supplementary fuel to the primary main fuel passage when the car is run in the power mode.

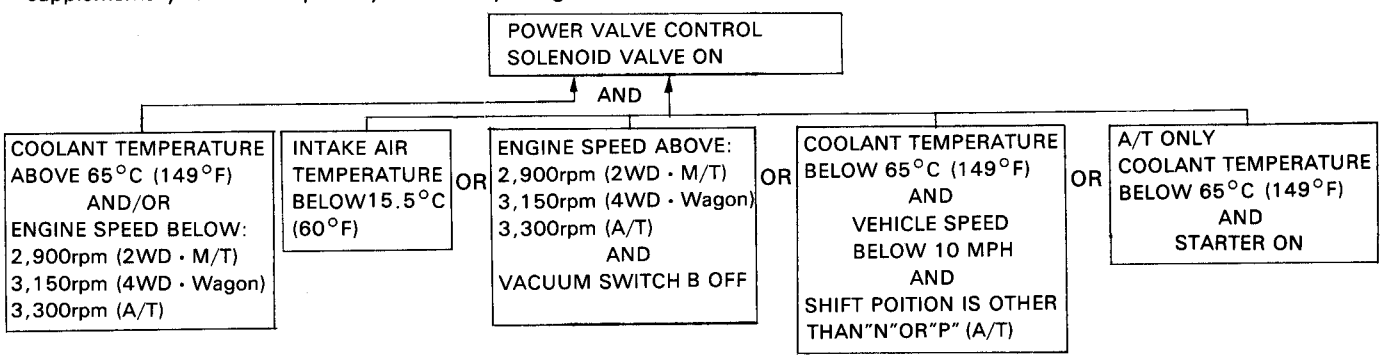
1300

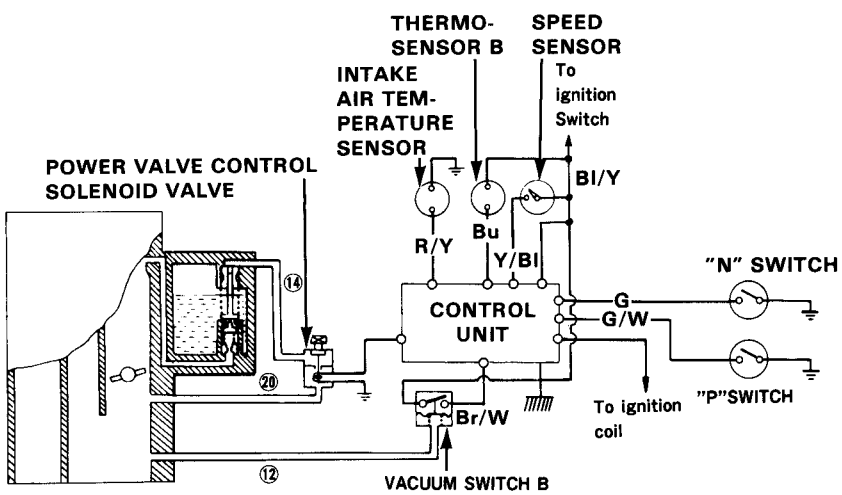
When the intake air temperature is below 15.5°C (60°F), the power valve is open because the power valve control solenoid valve does not allow vacuum to the power valve.
When the vehicle speed is below 10 mph, with the intake air temperature above 15.5°C(60°F), the power valve is open because the power valve control solenoid valve will not allow vacuum to the power valve.
When the vehicle speed exceeds 10 mph, the power valve is then controlled by the signal from vacuum switch B to the power valve control solenoid valve. The power valve control solenoid valve is energized by low manifold vacuum to the vacuum switch.



1500

The control unit energizes the power valve control solenoid valve to cut off manifold vacuum to the power valve which supplies supplementary fuel to the primary main fuel passage.

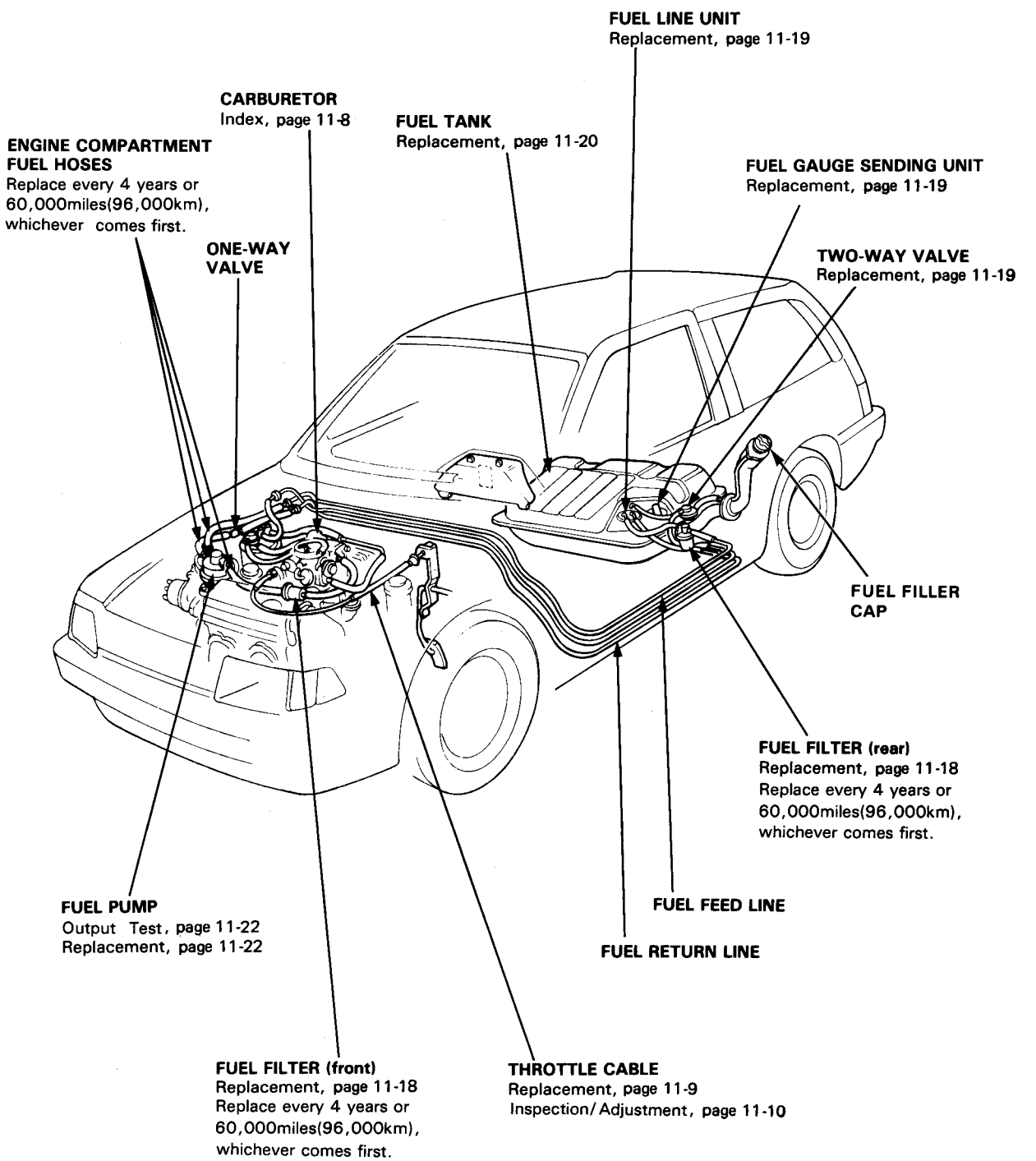




Index

Fuel System

Carburetor Adjustments:



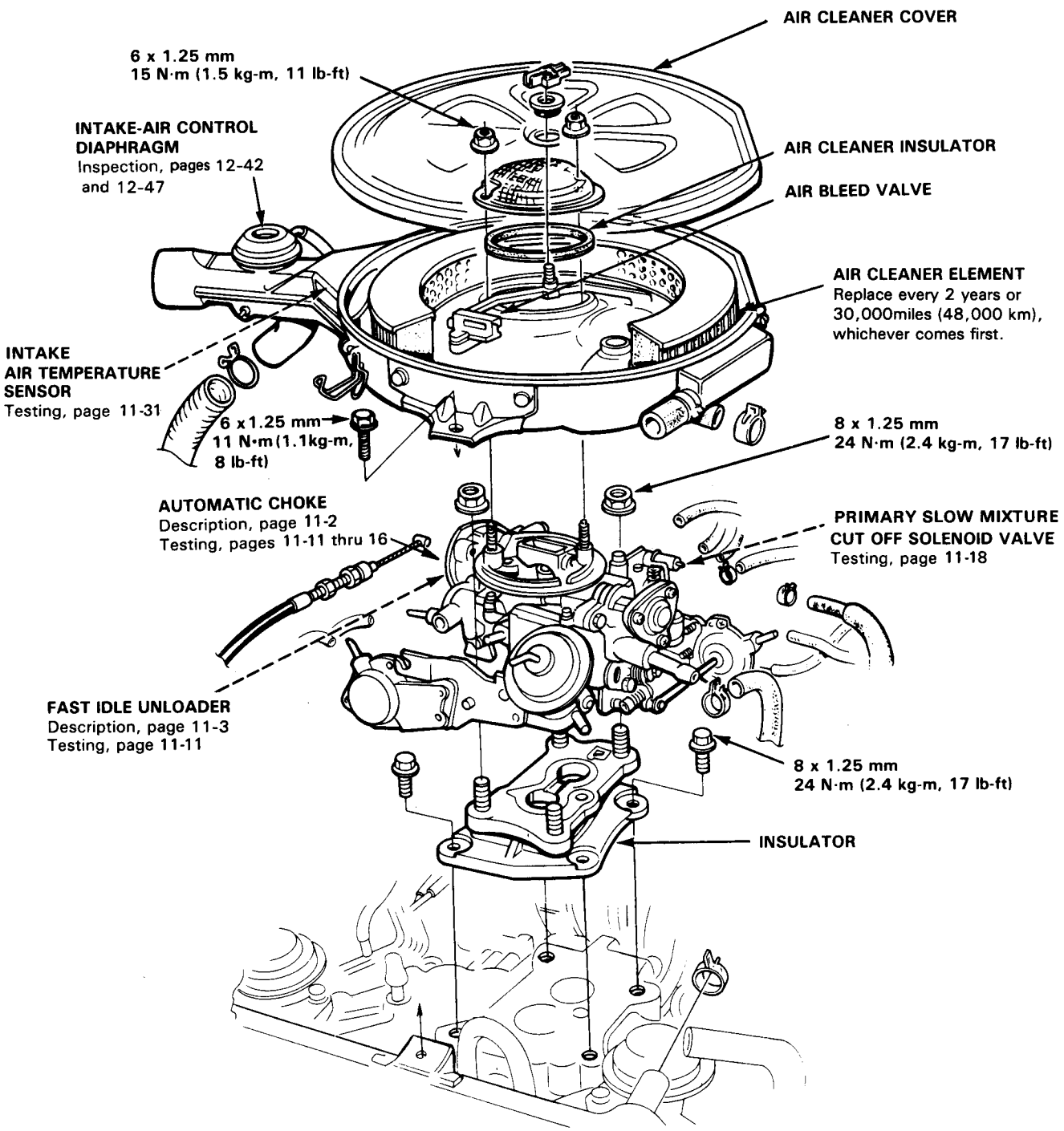
Carbuletor

Carburetor Identification

			CAL	49 ST and HI ALT	
1300			EA18C	EA17B	EA18D
1500	Manual	2WD	EA10C	EA10D	
		4WD	EA22D	EA22C	
	Automatic		EA11C *EA21D	EA11D *EA21C	

* with power steering

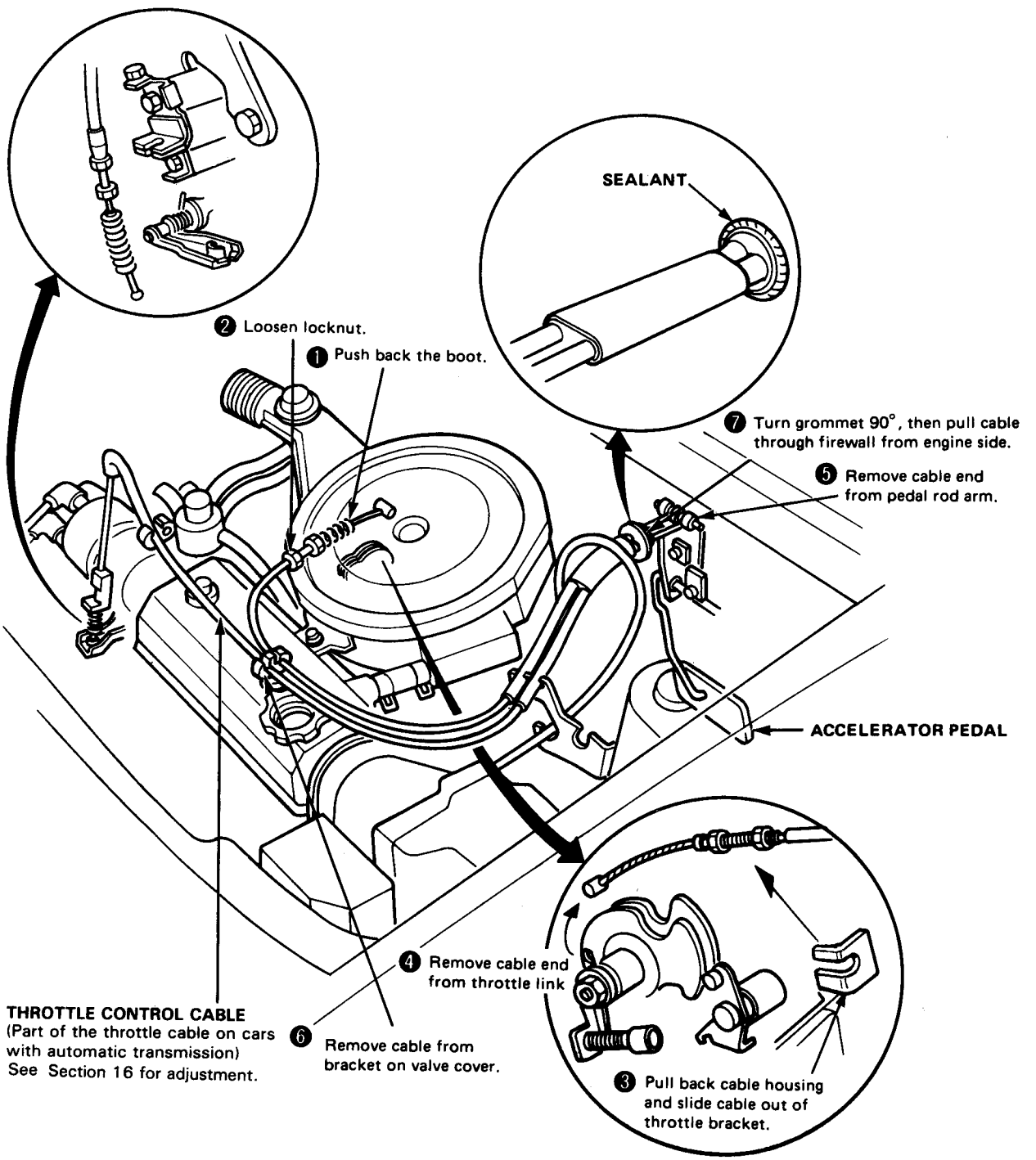
NOTE: Use new gaskets and O-rings whenever reassembling.



Throttle Cable

Replacement

NOTE : Remove in the numbered sequence shown.

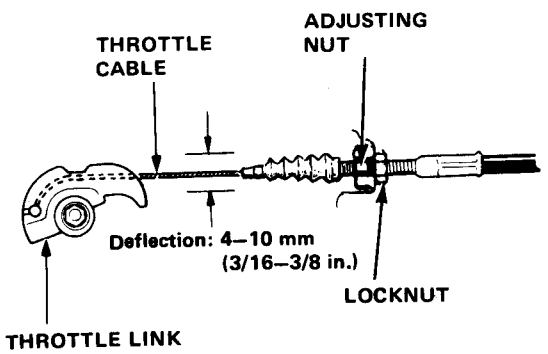


❽ Install the cable in reverse order of removal.
Apply sealant to grommet mating surface, when installing cable.

Throttle Cable

Inspection/Adjustment

1. Warm up engine to normal operating temperature (cooling fan comes on).
2. Check that throttle cable operates smoothly with no binding or sticking. Repair as necessary.
3. Check cable free-play at throttle linkage. Cable deflection should be 4—10 mm (3/16—3/8 in.).

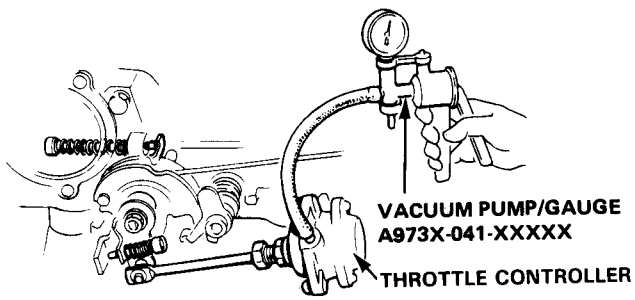


4. If deflection is not within specs, loosen locknut and turn adjusting nut until you can deflect cable as specified. Then tighten locknut.
5. With cable properly adjusted, check throttle valve to be sure it opens fully when you push accelerator pedal to the floor.

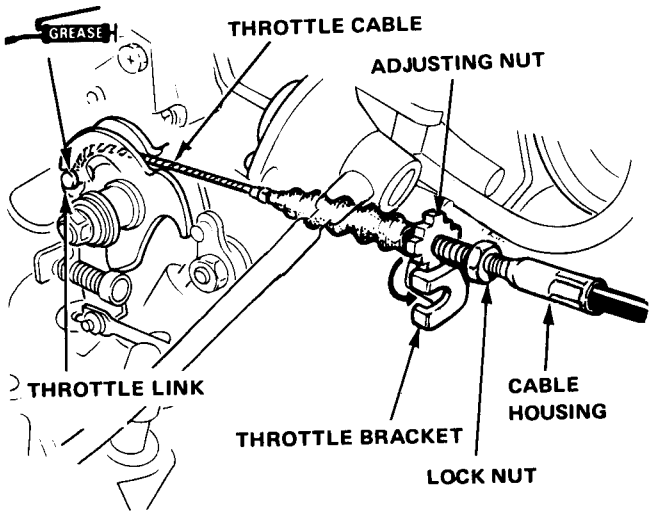
NOTE:
- **Check throttle valve to be sure it returns to idle position whenever yor release accelerator.**
- **On cars with A/T, adjust the A/T throttle control cable after adjusting the throttle cable (section 16).**

Installation

1. Disconnect the hose from the throttle controller and connect a hand vacuum pump to the controller, then apply vacuum.



2. Fully open the throttle and choke valves, then close the throttle valve. Now, release the choke valve; the throttle linkage will be off the fast idle cam.
3. Install the throttle cable in the throttle link.



4. Slip the cable housing into the throttle bracket and adjust the cable deflection as described in the previous procedure. Tighten the locknut.
5. Disconnect the hand vacuum pump and reconnect the throttle controller hose.

NOTE: On models with automatic transmission, adjust A/T throttle control cable(section 16).

Automatic Choke

Choke Coil Tension and Linkage

COLD ENGINE

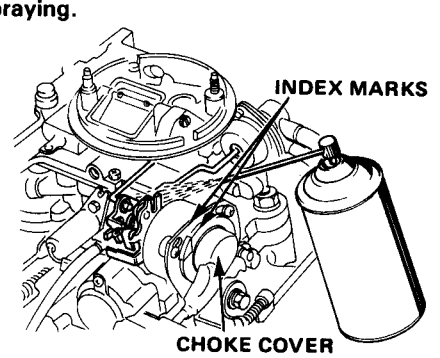
1. Remove the air cleaner.
2. Open and close the throttle fully to let the choke close.

   The choke valve should close completely.

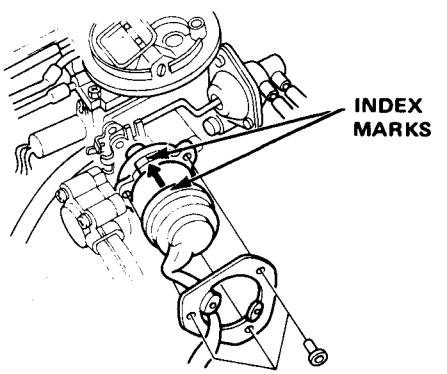
   NOTE: Above about 28°C (82°F), the choke will not close completely, but should still close to less than 3 mm (1/8 in.).

   - If the choke closes properly, go on to the fast idle unloader test in the next column.
   - If the choke does not close properly, spray its linkage with carburetor cleaner, and check it again (use a spray can with an extension on the nozzle to reach the linkage).

   CAUTION: Carburetor cleaner is very caustic; always wear safety goggles or a face shield when spraying.



   - If the choke still does not close properly, remove the choke cover (page 11-16) and inspect the linkage for free movement. Repair or replace parts as necessary. Then reinstall the cover and adjust it so the index marks line up, and re-test.
   - If the choke still does not close properly, replace the cover. (page 11-16)



Fast Idle Unloader

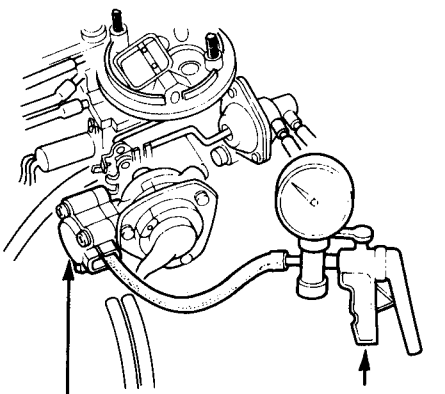
COLD ENGINE

1. Disconnect the two hoses from the fast idle unloader.
2. Open and close the throttle fully to engage the fast idle cam.
3. Start the engine.

   The engine should run at fast idle.

   - If the engine has fast idle, go on to step 4.
   - If the engine does not run at fast idle, remove the choke cover (page 11-16) and check the operation of the fast idle cam.

4. Connect a hand vacuum pump to the inside fitting of the unloader and draw vacuum.



   The fast idle speed should drop.

   - If idle speed drops, go on to page 11-14 for hot engine inspection.
   - If idle speed does not drop, check the unloader for leaks, blockage or damaged diaphragm. Remove the choke cover and check the unloader rod for free movement. Repair or replace as necessary.

5. Reconnect the hoses.

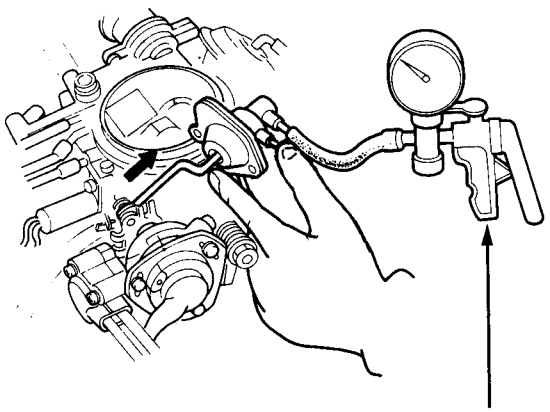
Automatic Choke

Choke Opener

COLD ENGINE

1. Disconnect the choke heater wire.
2. Open and close the throttle fully to let the choke close.
3. Start the engine.
   The choke valve should partially open.

   - If the choke partially opens, go on to step 4 or step 5, depending on coolant temperature.
   - If the choke does not partially open, check the linkage for free movement, repair as necessary, and re-test.
   - If the choke valve still does not partially open, check the choke opener diaphragm: Remove its two screws, and attach a hand vacuum pump to the upper hose fitting. Block the lower fitting and the orifice in the opener while you draw enough vacuum to pull the opener rod all the way in, then stop.

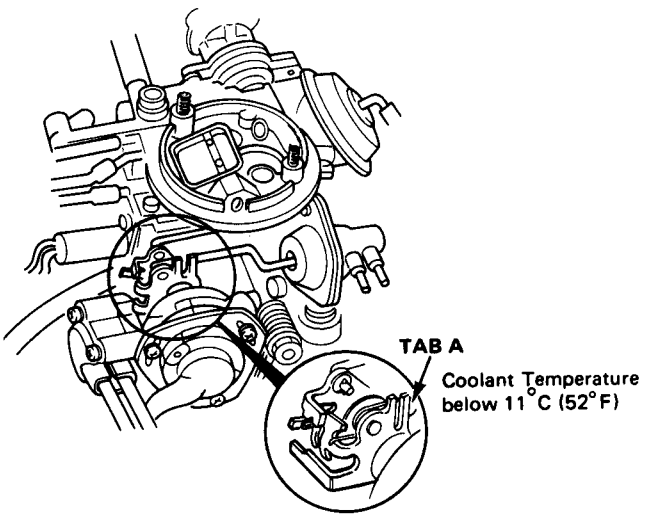


VACUUM PUMP/GAUGE
A973X-041-XXXXX

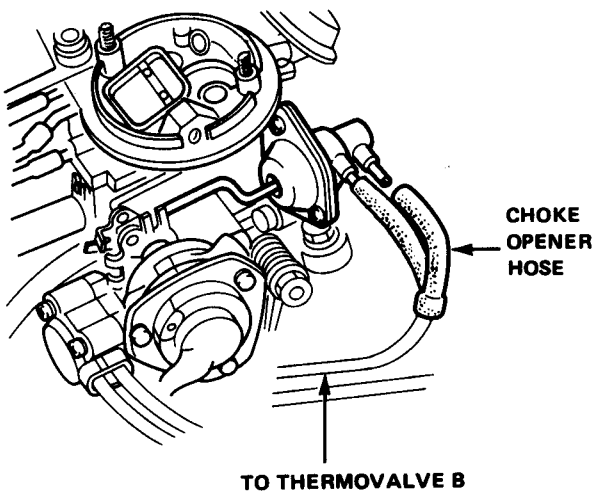
   – If the rod will not stay in, replace the opener.
   – If the rod stays in, check the vacuum port in the carburetor for blockage. If it is clean, check the cranking leak system (page 11-13).

   After replacing or re-installing the choke opener, re-test it, then adjust it if necessary (page 11-15).

4. If coolant temperature is below about 11°C (52°F), Tab A on the choke opener lever should not be seated against the carburetor.

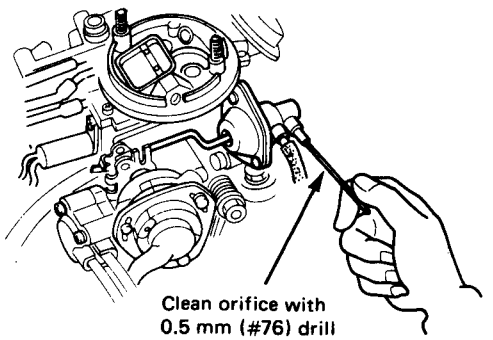


   - If Tab A is not seated, go on to step 5.
   - If Tab A is seated, disconnect the choke opener hose #18 from upper fitting.



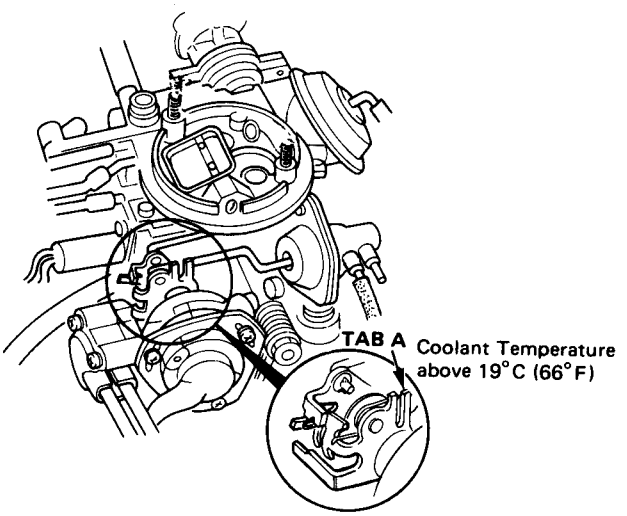
   – If Tab A comes off its seat, check line #18 to thermovalve B for blockage and check that the thermovalve is open.

– If Tab A does not come off its seat, press down on the choke opener lever until it does; if it won't stay off, clean out the choke opener fitting with a 0.5 mm (#76) drill bit, then re-test.



– If Tab A still does not come off its seat, replace the choke opener.

5. If coolant temperature is above about 19°C (66°F), Tab A on the choke opener lever should be seated against the carburetor.

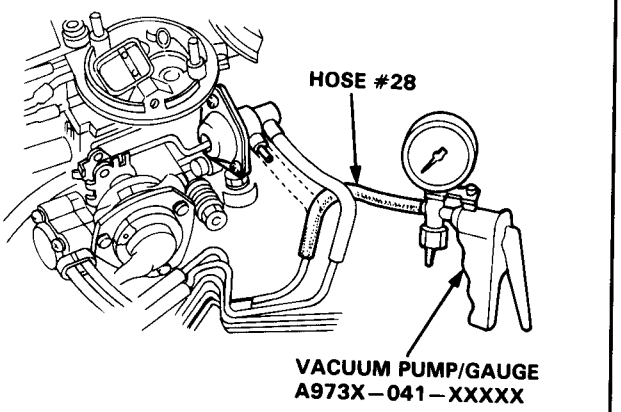


- If Tab A is seated, reconnect the choke heater wires, then go on to the Cranking Leak System test in the next column.
- If Tab A is not seated, check line #18 for leaks and check that thermovalve B is closed.

Cranking Leak System

1. Disconnect hose #28 from the lower fitting of the choke opener, attach a hand vacuum pump to the hose and draw vacuum.

   Vacuum should remain steady.

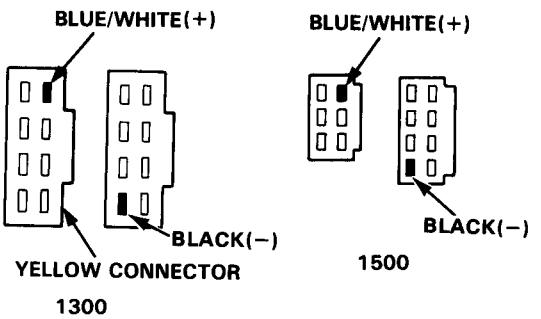


- If vacuum remains steady, go on to Step 2.
- If vacuum drops, check line #28 for leakage. If OK, replace the cranking leak solenoid valve and re-test.

2. Turn the ignition switch to III (START).

   Vacuum should be released.

- If vacuum is released, the test is complete.
- If vacuum is not released, check for voltage at the cranking leak solenoid valve (control box #1, with the ignition switch turned to III.



– If there is no voltage, check the wiring and fuse, and re-test.
– If there is voltage, check line #28 for blockage. If OK, replace the cranking leak solenoid valve and re-test.

Automatic Choke

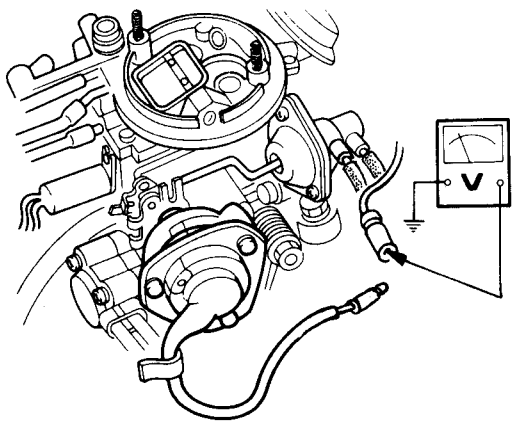
Choke Coil Heater

COLD ENGINE

Start the engine and let it run. As the engine reaches normal operating temperature, the choke valve should fully open:

- If it does, go on to the fast idle unloader test in the next column.
- If it doesn't, inspect the linkage, and clean or repair it as necessary (page 11-11).
- If the choke still does not open all the way, disconnect the white/blue choke cover wire from the engine compartment wire harness and check for voltage.

There should be battery voltage with the engine running.



– If the voltmeter reads 0 volts, check for an open circuit in the white/blue wire between the choke cover connector and voltage regulator connector, then check the charge warning light circuit.

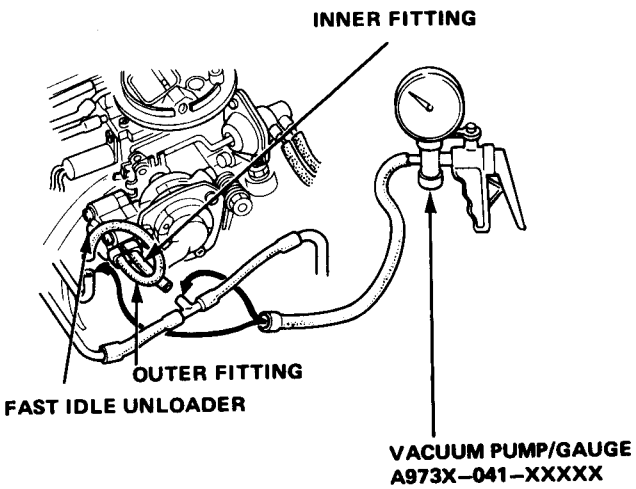
Fast Idle Unloader

HOT ENGINE

When the engine warms up, its speed should drop below 1400 rpm as the unloader pulls the internal choke linkage off the fast idle cam.

- If fast idle drops below 1400 rpm, go on to the Fast Idle check on page 11-16.
- If fast idle does not drop below 1400 rpm, disconnect the two unloader hoses, and check that vacuum is present.

– If vacuum is present, check the unloader for leaks or blockage. Remove the choke cover, and check the unloader rod for free movement. Repair or replace parts as necessary, and retest.
– If there is no vacuum at the inner fitting, check for vacuum at the choke opener (see page, 11-12) and thermovalve B.
– If there is no vacuum at the outer fitting, check thermovalve A.
– Repair or replace as necessary.



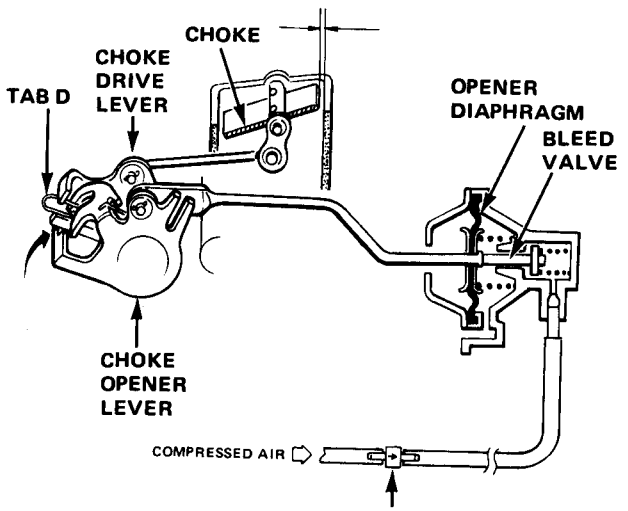
Linkage Adjustment

NOTE:
- This check is not necessary unless the linkage has been bent, choke opener has been replaced, or the car has poor cold starting.
- This check can be made with the engine HOT or COLD.

1. Remove the choke cover (page 11-16).

2. While holding the choke valve closed, open and close the throttle fully to engage the choke and fast idle linkage.

3. Disconnect the choke opener hose from the steel tubing manifold, and attach a check valve to it as shown. Then pressurize the choke opener with compressed air, 103-586 kPa (15-85 psi) is OK, to hold the bleed valve in it closed.



CHECK VALVE
H/C 0890053
P/N, 36145-PA6-004
– or use ignition check valve from 80 Accord or Prelude (except CAL Automatic)

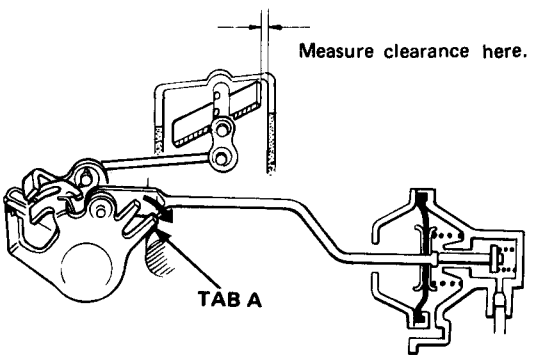
4. Push the choke opener lever towards the opener until it stops (the opener rod seats against the pressurized bleed valve), then pull the choke drive lever down against the opener lever (to take all free play out of the linkage), and measure the clearance between the choke valve and casting:

1st Stage Clearance:
1500 M/T: 1.27 ± 0.07 mm (0.050 ± 0.003 in)
1500 A/T: 1.10 ± 0.07 mm (0.043 ± 0.003 in)
1300 49ST: 0.86±0.07mm(0.34±0.003 in) and CAL
1300 HI ALT: 1.02 ± 0.07 mm (0.040 ± 0.003 in)

Adjust clearance by bending Tab D.

5. Remove the check valve, and reconnect the choke opener hose.

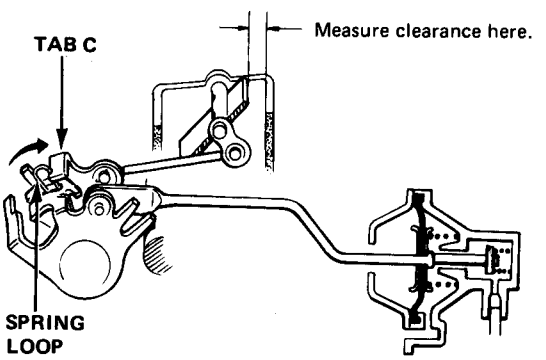
6. Hold both levers together, then push them toward the diaphragm again until they stop (Tab A on the opener lever seats against the carburetor), and measure the clearance at the choke valve.



2nd Stage clearance:
1,500 M/T: 1.80±0.09mm (0.071±0.004 in)
1300 and 1500 A/T: 1.93±0.09 mm (0.076±0.004 in)

Adjust clearance by bending Tab A.

7. While still holding opener lever Tab A against its seat, release the choke drive lever, and measure the clearance at the choke valve (Tab C on the drive lever should stay seated against the spring loop; if not, repeat step 2 and re-check):



3rd Stage Clearance:
1500: 5.26 ± 0.20 mm (0.207 ± 0.008 in)
1300: 3.87 ± 0.20 mm (0.152 ± 0.008 in)

Automatic Choke

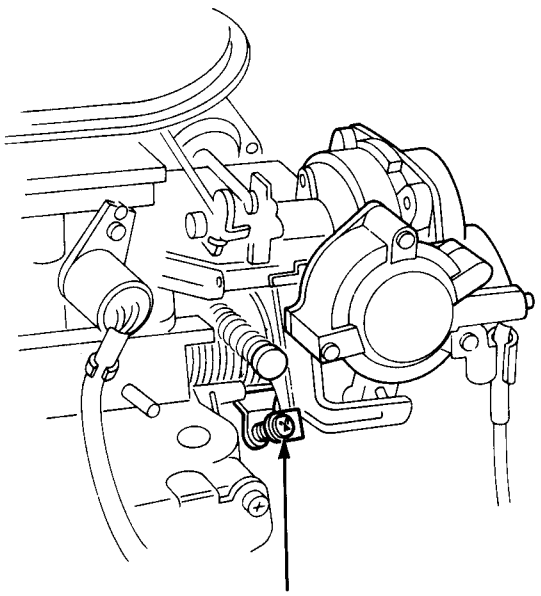
Fast Idle

HOT ENGINE

1. Stop the engine and connect a tachometer to it.
2. Disconnect and plug the inside vacuum hose of the fast idle unloader.
3. To engage the fast idle cam, open and close the throttle fully while holding the choke valve closed.
4. Re-start the engine.

   Fast idle should be 3000 ± 500 rpm.

   - If not OK, reset the fast idle speed by turning the screw shown.



FAST IDLE ADJUSTING SCREW

Choke Cover

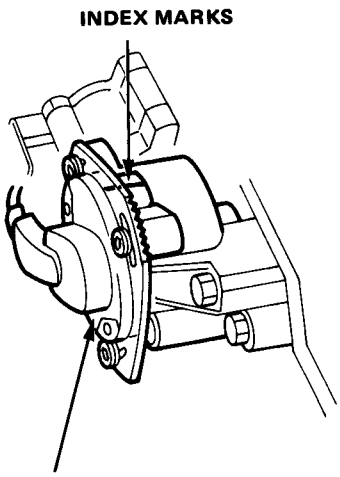
Removal:

1. Remove the air cleaner.
2. Using a 5/32" or 4.1 mm diameter drill, drill out the rivets and remove the choke cover.

   CAUTION: Cover the carburetor with a clean shop rag to prevent chips from falling into the carburetor throat.

Installation:

1. Reinstall the cover and adjust it so that index marks align, then secure it with rivets.
2. Reinstall the air cleaner.

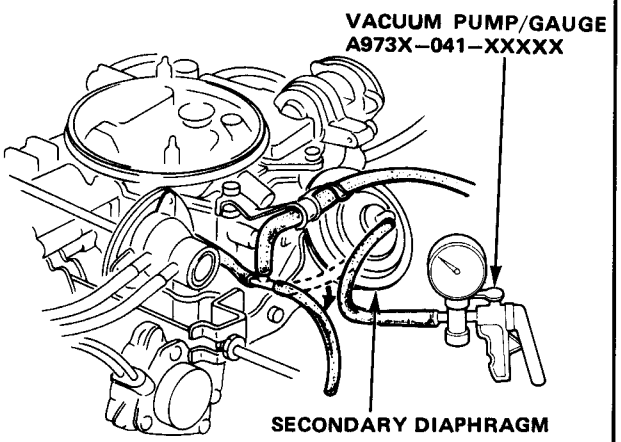


Vacuum Controlled Secondary

Testing

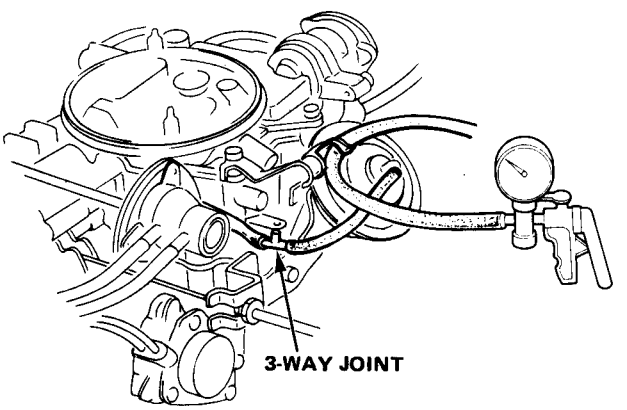
1. Disconnect the secondary diaphragm vacuum hose and attach a spare piece of hose between the diaphragm and a vacuum pump.

2. Open the throttle valve fully and apply a vacuum. Check that the diaphragm rod moves as vacuum is applied and that the vacuum then remains steady.



- If the vacuum does not hold or the rod does not move, first check the hose for proper connection and condition, then replace the diaphragm and re-check.

3. With the engine cold [water temperature below 50°C 122°F)] disconnect the vacuum hose from the 3-way joint, connect a vacuum pump and apply a vacuum.
Vacuum should not hold.

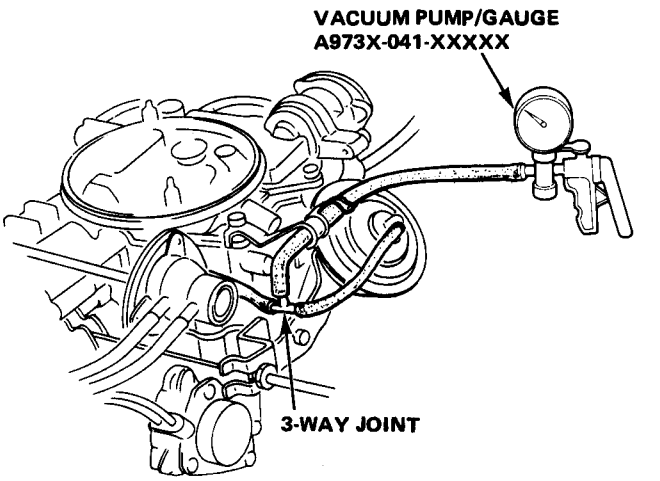


- If vacuum holds, first make sure the hose is not clogged, then replace thermovalve D.

4. After the engine has warmed up, disconnect the vacuum hose from the 3-way joint, connect a vacuum pump, and apply vacuum.
Vacuum should remain steady.

- If it does not remain steady, check the hose for proper connection and condition and replace thermovalve D.

5. Disconnect the vacuum hose from the 3-way joint and connect to a vacuum gauge. Apply a vacuum.
It should not hold vacuum.



- If vacuum does not hold, test is complete.
- If vacuum is held, check the hose, the 3-way joint and clean the carburetor port.

Primary Slow Mixture Cut-off Solenoid Valve

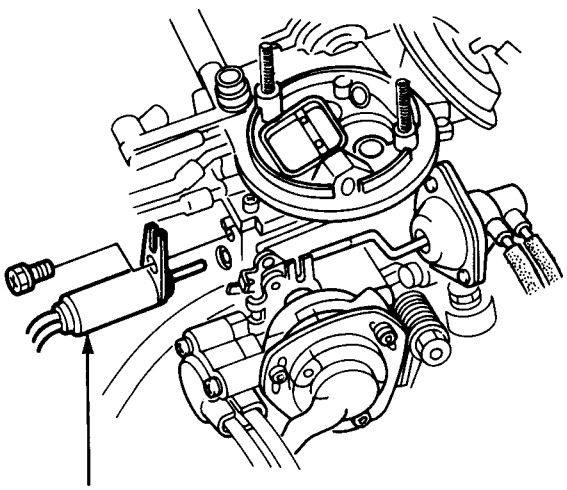
Testing

The Fuel cut-off solenoid valve is energized when the engine speed is below 1,400 rpm and/or the control switch is OFF and/or vacuum switch A is OFF.

1. Place a clean shop towel around the solenoid valve, to soak up any gasoline, then loosen the screws and remove the solenoid valve.

WARNING

- **Wipe up any spilled gasoline before testing.**
- **If cut-off valve is removed for testing, be sure you ground it to prevent sparking or fire when the key is turned on.**



PRIMARY SLOW MIXTURE CUT-OFF SOLENOID VALVE

2. Ground the valve as far from the carburetor as possible and turn on the ignition while you watch the valve needle.

- If the needle retracts, the valve is OK.
- If the needle doesn't retract, check for voltage at the solenoid.

– If voltage is present, replace the solenoid valve.
– If voltage is not present, check the fuse and wiring.

Fuel Filters

Replacement

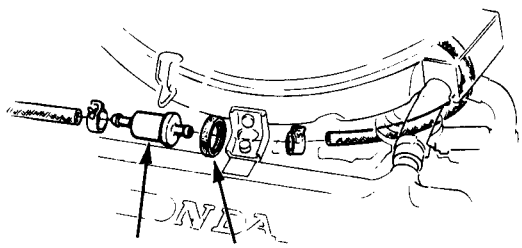
Replace both front and rear filters every 4 years or 60,000 miles (96,000 km), whichever comes first.

WARNING

- **Do not smoke while working on the fuel system. Keep open flame away from work area.**
- **Block front wheels before jacking up rear of car.**

Front

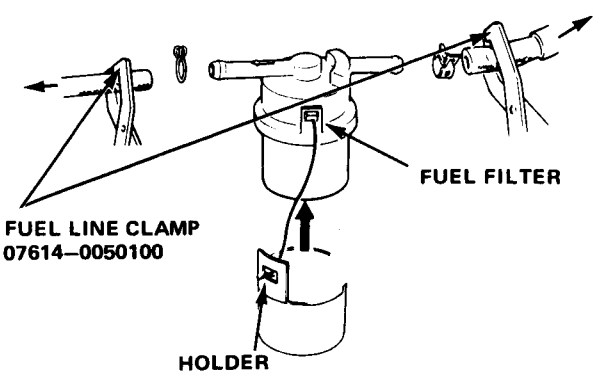
1. Use fuel line clamps to pinch off the fuel lines.
2. Disconnect the fuel lines and remove the fuel filter.
   CAUTION: When disconnecting the fuel lines, slide back the clamps then twist the lines as you pull, to avoid damaging them.
3. Remove the filter cover from the old filter and install it on the new filter.
4. Install the new fuel filter.
5. Remove the fuel line clamps.



FUEL FILTER **FILTER COVER**

Rear

1. Raise the rear of the car and place jackstands in proper locations.
2. Push in the tab of the fuel filter to release the holder, then remove the filter from its bracket.
3. Attach fuel line clamps to the fuel lines and disconnect the lines from the filter.
   CAUTION: To avoid damaging the fuel lines when disconnecting, slide back the clamps then twist the lines as you pull.
4. Install in the reverse order of removal.



FUEL FILTER

FUEL LINE CLAMP 07614–0050100

HOLDER

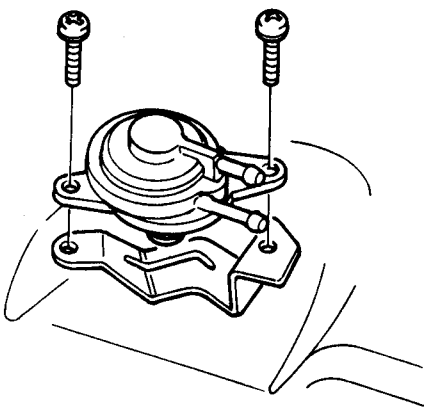
Two-way Valve

Replacement

WARNING **Do not smoke while working on the fuel system. Keep open flame away from work area.**

1. Block front wheels.
2. Jack up rear of the car and support with jackstands.
3. Place jack under fuel tank.

   CAUTION: Place a flat piece of wood on the jack lifting pad to prevent damage to the fuel tank.
4. Remove the tank mounting nuts.
5. Lower fuel tank only enough to gain access to two-way valve.
6. Remove screws holding two-way valve to fuel tank and remove valve.



7. Install in reverse order of removal.

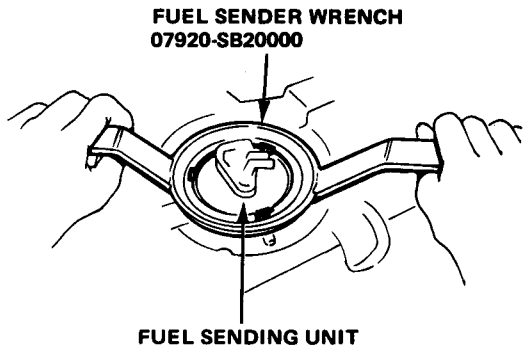
Fuel Gauge Sending Unit and Fuel Line Unit

Replacement

WARNING **Do not smoke while working on the fuel system. Keep open flame away from work area. Drain fuel only into an approved container.**

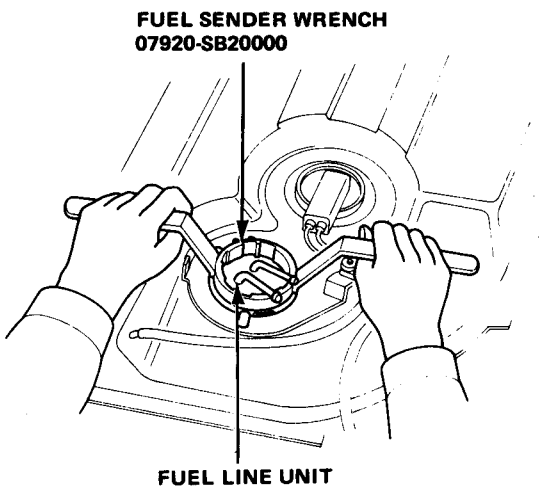
Fuel Gauge Sending Unit

1. Check that ignition switch is OFF, then disconnect the fuel sending unit connector at tank.
2. Drain and remove fuel tank as shown on page 11-20.
3. Remove fuel sending unit from tank.



Fuel Line Unit

1. Drain and remove fuel tank as shown on page 11-20.
2. Remove fuel line unit from tank.



Fuel Tank

Replacement

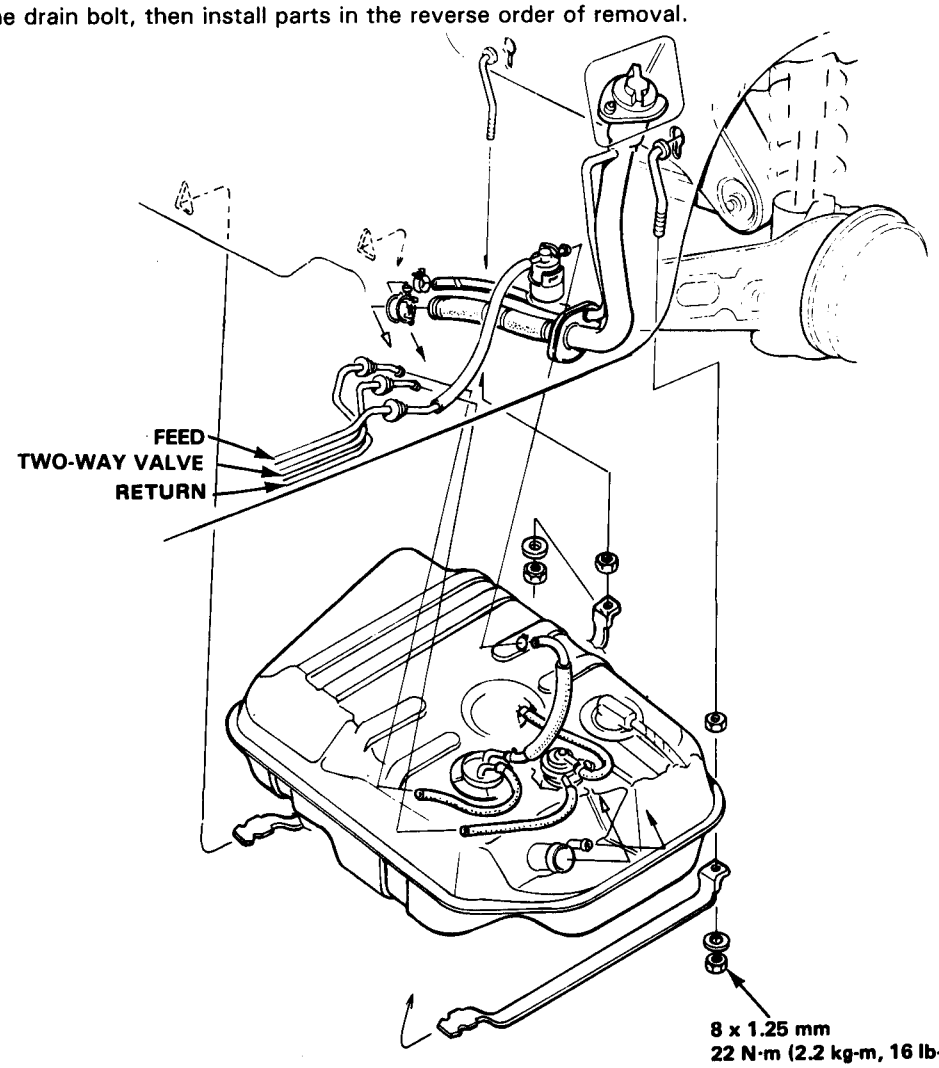
2WD

WARNING **Do not smoke while working on fuel system. Keep open flame away from work area.**

1. Block front wheels.
2. Jack up the rear of the car and support with jackstands.
3. Remove the drain bolt and drain the fuel into an approved container.
4. Disconnect the fuel gauge sending unit connectors.
5. Disconnect the hoses.

   CAUTION: When disconnecting the hoses, slide back the clamps, then twist hoses as you pull, to avoid damaging them.

6. Place a jack, or other support, under the tank.
7. Remove the strap nuts and let the straps fall free.
8. Remove the fuel tank.
9. Install a new washer on the drain bolt, then install parts in the reverse order of removal.



4WD Wagon

WARNING **Do not smoke while working on fuel system. Keep open flame away from work area.**

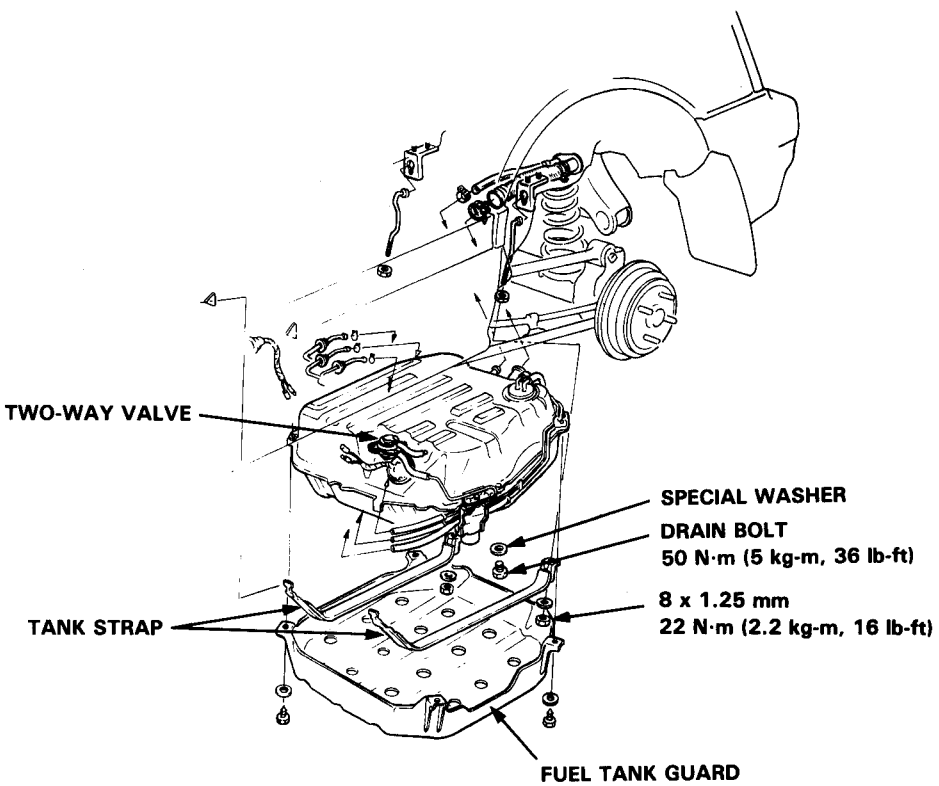
1. Block front wheels.
2. Jack up the rear of the car and support with jackstands.
3. **Remove the fuel tank guard.**
4. **Remove the drain bolt and drain the fuel into an approved container.**
5. **Disconnect the fuel gauge sending unit connectors.**
6. **Disconnect the hoses.**

   CAUTION: When disconnecting the hoses, slide back the clamps, then twist hoses as you pull, to avoid damaging them.

7. **Place a jack, or other support, under the tank.**
8. **Remove the strap nuts and let the straps fall free.**
9. **Remove the fuel tank.**

   NOTE: The tank may have to be pulled to free it from the undercoating.

10. **Install a new washer on the drain bolt, then install parts in the reverse order of removal.**



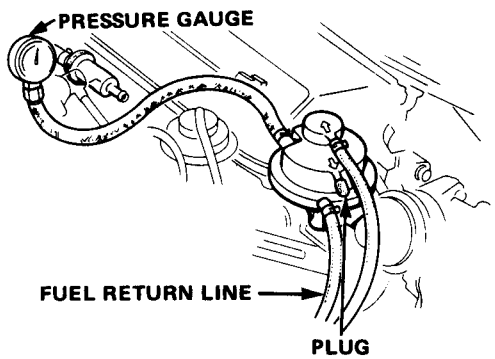
Fuel Pump

Output Test

WARNING Do not smoke during the test. Keep any open flame away from your work area.

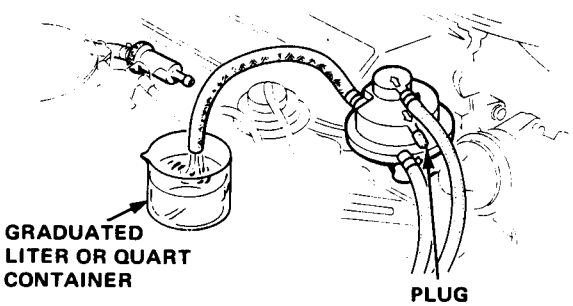
NOTE: Check for a clogged fuel filter and/or fuel line before checking fuel pump pressure.

1. Disconnect the fuel line at the fuel filter in the engine compartment, and connect a pressure gauge to it as shown.
2. Disconnect the fuel return line at the fuel pump, and plug the return fitting with a cap.



3. Start the engine and allow it to idle until pressure stabilizes, then stop engine.
   Pressure should be 17.7-26.5 kPa (2.7-3.8 psi) at idle.
   - If gauge shows at least 17.7 kPa (2.7 psi) go on to step 4.
   - If gauge shows less than 17.7 kPa (2.7 psi), replace pump and re-test.
4. Remove pressure gauge and hold a graduated container under the hose.
5. Start the engine, and allow it to idle for 60 seconds, then stop the engine. Fuel volume should be 170 cc (5.7 oz.) or more.
   - If fuel volume is less than specified, replace the fuel pump and re-test.

   NOTE: Check for a clogged fuel filter and/or fuel line before replacing pump.



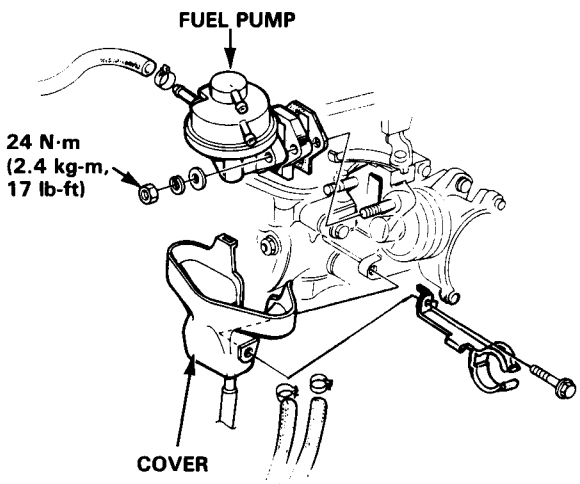
6. Remove plug from fuel pump return fitting and reconnect return line.

Replacement

WARNING Do not smoke while working on fuel system. Keep open flame away from work area.

1. Attach fuel line clamps to fuel pump lines.
2. Disconnect fuel lines at fuel pump.

   CAUTION: When disconnecting fuel lines, slide back clamps then twist lines as you pull, to avoid damaging them.

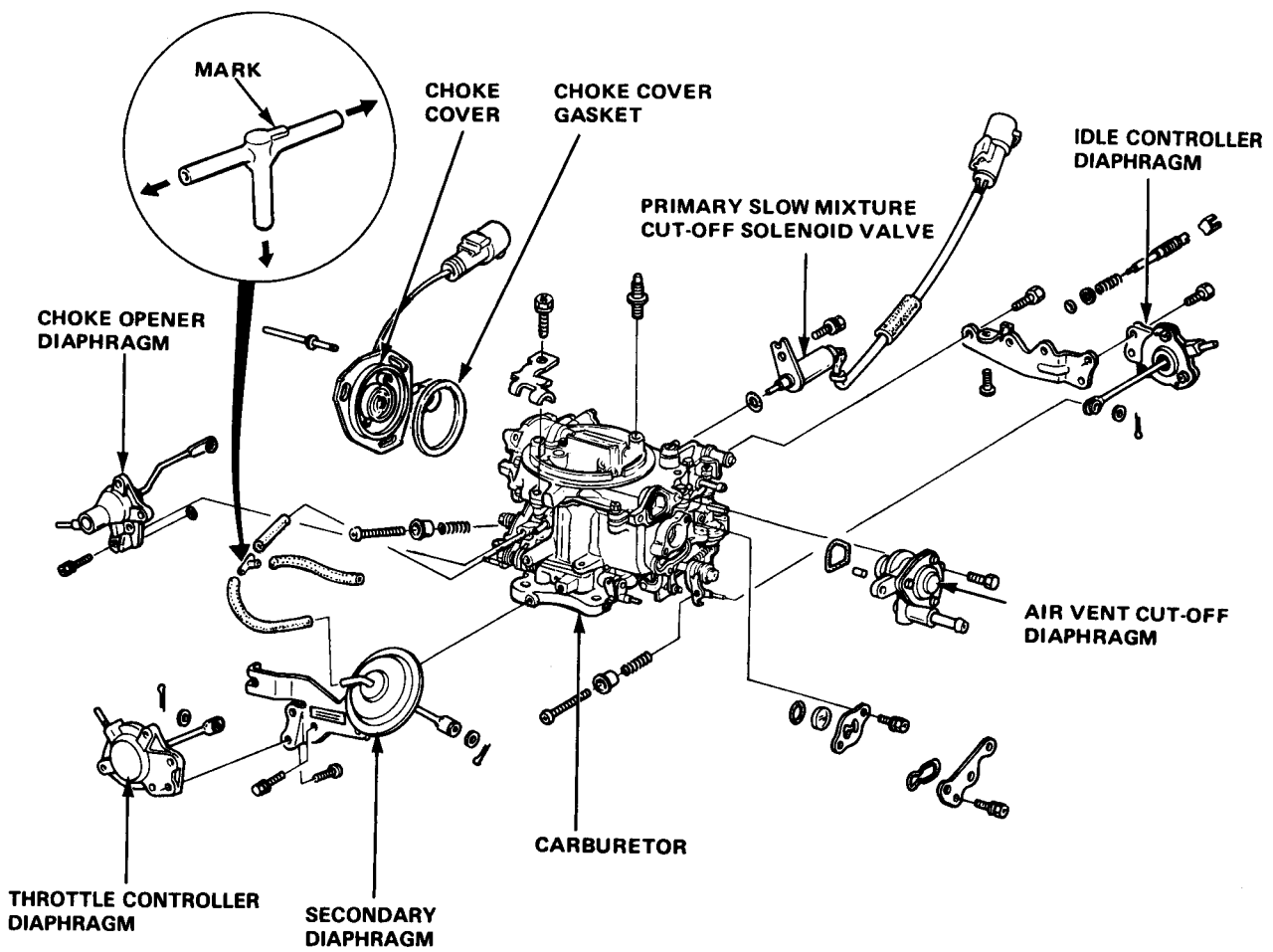


3. Remove fuel pump.
4. Install in the reverse order of removal.

   CAUTION: Make sure that the fuel lines are connected properly and securely.

Replacement of Attached Parts

WARNING Do not smoke during this procedure. Keep any open flame away from your work area. Drain fuel only into an approved container.



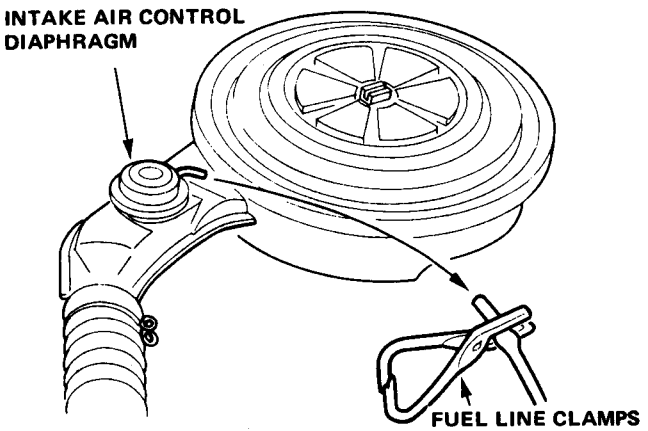
Idle Speed/Mixture Inspection

Propane Enrichment Method

WARNING Do not smoke during this procedure. Keep any open flame away from your work area.

NOTE: This procedure requires a propane enrichment kit.

1. Start engine and warm up to normal operating temperature; the cooling fan will come on.
2. Remove the #8 vacuum hose from the intake air control diaphragm and clamp the hose end.



3. Connect tachometer.
4. Check idle speed with the headlights, heater blower, rear window defroster, cooling fan and air conditioner off.

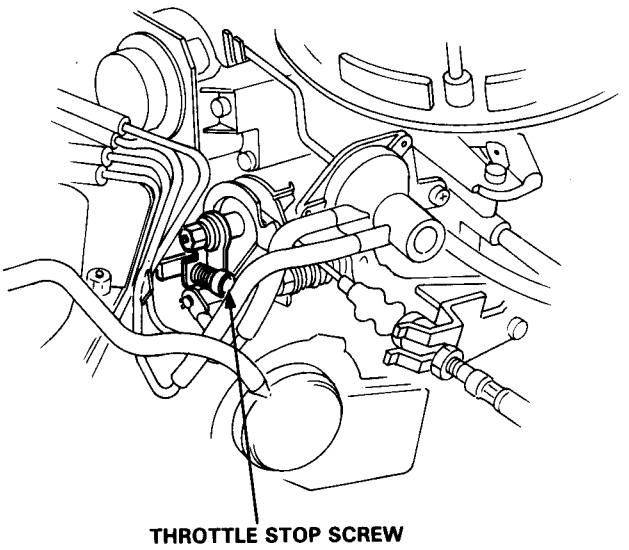
   NOTE: The idle boost solenoid valve will be operated if the steering is turned on power steering model.
   Therefore, check the idle speed with the steering in a straight ahead position.

Idle speed should be:

		CAL	49 ST and HI ALT	
1300		650±50	650±50	750±50 ↕ 800±50
1500	Manual	700±50 *750±50	700±50 ↕ 750±50	
	Automatic	700±50	650±50 ↕ 700±50	

↕: The lower number is if idle is measured at high altitude; the higher number is if idle is measured at low altitude.

*: 4WD Wagon

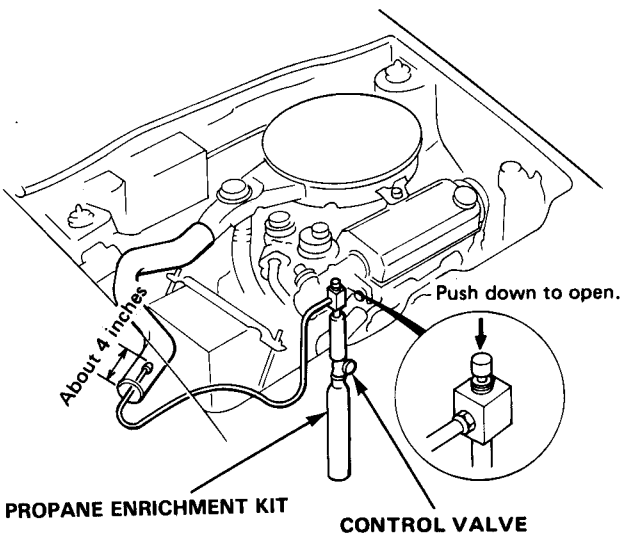


Adjust the idle speed, if necessary, by turning the throttle stop screw.

NOTE: If the idle speed is excessively high, check the dashpot system (page 12-60).

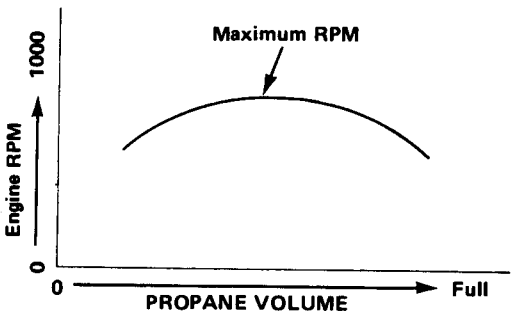
5. Disconnect air cleaner intake tube from air duct on radiator bulkhead.
6. Insert the hose of the propane enrichment kit into the intake tube about 4-inches.

   NOTE: Check that propane bottle has adequate gas before beginning test.



7. With engine idling, depress push button on top of propane device, then slowly open the propane control valve to obtain maximum engine speed. Engine speed should increase as percentage of propane injected goes up.

   NOTE: Open the propane control valve slowly; a sudden burst of propane may stall the engine.



Propane Enriched Maximum RPM

Transmission	RPM Increase	
	1300	1500
Manual	125±25	100±25
Automatic	—	50±20

- If engine speed does not increase per specification, mixture is improperly adjusted. Go to step 8.
- If engine speed increases per specification, go to step 21.

8. Remove the air cleaner and close the propane control valve.

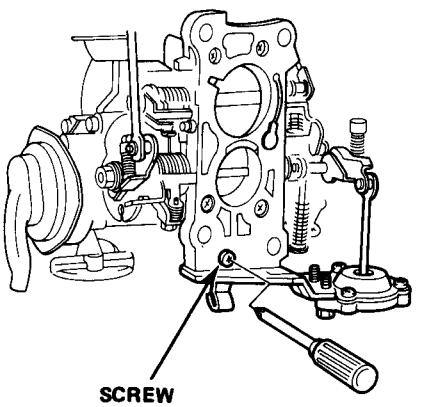
9. Disconnect the vacuum hose to the fast idle unloader.

10. Pull the throttle cable out of the its bracket.

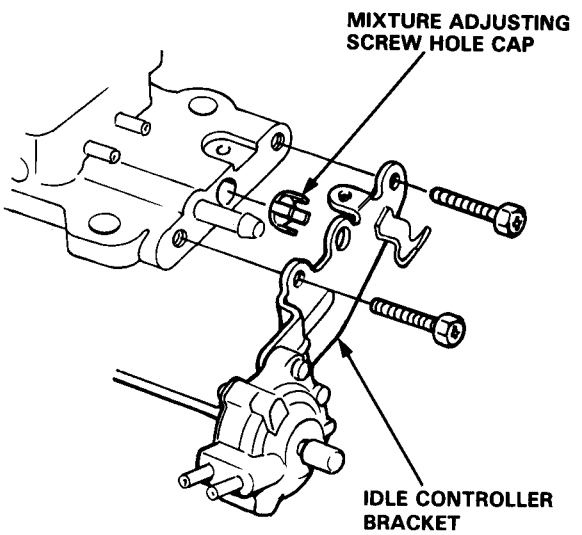
11. Remove the carburetor nuts and the bolt securing the steel tubing vacuum manifold.

12. Lift the carburetor clear of its studs, then tilt it backwards so you can remove the idle controller bracket screws.

13. Remove the idle controller bracket.



14. Remove the mixture adjusting screw hole cap, then reinstall the idle controller bracket.



(cont'd)

Idle Speed/Mixture Inspection (cont'd)

15. Reinstall the carburetor.

16. Reconnect the vacuum hose to the fast idle unloader.

17. Reinstall the air cleaner.

18. Start engine and warm up to normal operating temperature; the cooling fan will come on.

19. Remove the #8 vacuum hose from intake air control diaphragm and clamp the hose end.

20. Reinstall the propane enrichment kit and recheck maximum propane enriched rpm.

    - If the propane enriched speed is too low, mixture is too rich: turn the mixture screw 1/4-turn clockwise and recheck.
    - If the propane enriched speed is too high, mixture is too lean: turn the mixture screw 1/4-turn counterclockwise and recheck.

21. Close the propane control valve and recheck idle speed.

    NOTE: Run the engine at 2,500 rpm for 10 seconds to stabilize condition.

    - If idle speed is as specified (step 4), go to step 23.
    - If idle speed is not as specified (step 4), go to step 22.

22. Recheck idle speed and, if necessary, adjust by turning throttle stop screw, then repeat steps 20 and 21.

23. Remove propane enrichment kit and reconnect air cleaner intake tube on the radiator bulk head.

24. Reinstall the mixture adjusting screw hole cap.

25. Check the idle controller boosted speed.

    NOTE: There is no idle controller on automatic transmission cars without air conditioner and power steering.

    - On 1300 and 1500 manual transmission cars, check the idle speed with the headlights on and the heater blower set to III.
    - On 1500 automatic transmission car with power steering, check the idle speed while turning the steering wheel.

Idle RPM should be:

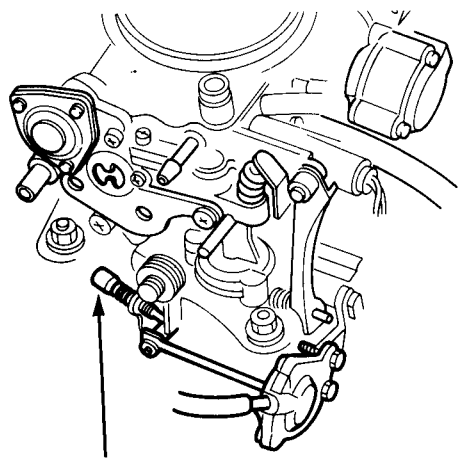
		CAL	49 ST and HI ALT	
1300		650±50	650±50	750±50 ↕ 800±50
1500	Manual	700±50 *750±50	700±50 ↕ 750±50	
	**Automatic	700±50	650±50 ↕ 700±50	

↕: The lower number is if idle is measured at high altitude; the higher number is if idle is measured at low altitude.

*: 4 WD Wagon

**: equipped with power steering

Adjust the idle speed, if necessary, by turning the idle control screw.

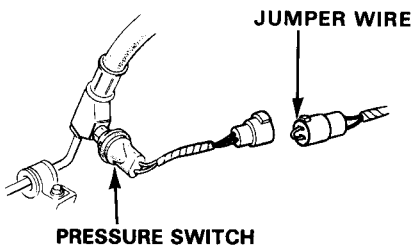


IDLE CONTROL SCREW

- If the idle rpm does not reach the specified idle speeds:
  — ON cars with power steering: go to step 26.
  — On cars with manual transmission: go to inle boost solenoid valve testing (page 11-27).

26. On cars with power steering:

If the idle speed is not as specified disconnect the power steering pressure switch connector and short the terminals with a jumper wire to actuate the idle controller.



Then set the idle speed to the following rpm by turning the idle control screw:

CAL: 770±50 rpm
49ST and HI ALT: 720±50 rpm (at high altitude)
770±50 rpm (at low altitude)

- If the idle rpm does not reach the specified ille speed, go to idle boost solenoid valve testing.

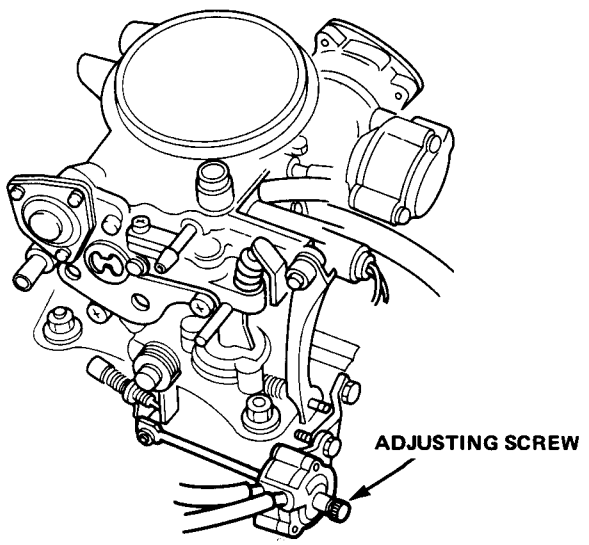
27. If equipped with air conditioning, make a second check with the A/C on.

Idle speed should be:

		CAL	49 ST and HI ALT	
1300		700±50	700±50	750±50 ↕ 800±50
1500	Manual	750±50	750±50	
	Auto-matic	750±50	750±50	

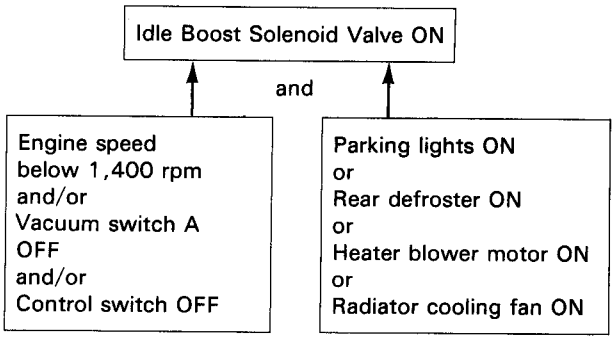
↕: The lower number is if idle is measured at high altitude; the higher number is if idle is measured at low altitude.

Adjust the speed, if necessary, by turning the adjusting screw on the idle boost diaphragm.



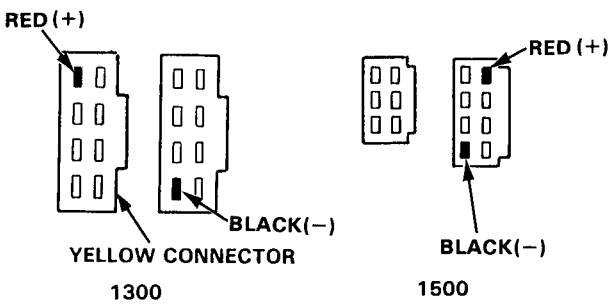
Testing

The idle boost solenoid valve is energized whenever the coolant temperature is below 75°C(167°F), or above 75° C (167°F) with the following conditions:
A/T—when the power steering is turned.
M/T—



If the idle controller does not operate with the headlights on and the heater blower set to III, or while turning the steering wheel, disconnect hose #21 from the idle controller and check for vacuum.

- If there is vacuum, replace the idle controller.
- If there is no vacuum, check for voltage at the idle boost solenoid valve (emission control box #1).



— If there is no voltage, check the wiring and control unit A.
— If there is voltage, check vacuum lines #12 and #21 for blockage, leaks or disconnected hose and repair or replace as necessary.

If there is no problem, replace the idle boost solenoid valve.

Tailpipe Emission Inspection

WARNING Do not smoke during this procedure. Keep any open flame away from your work area.

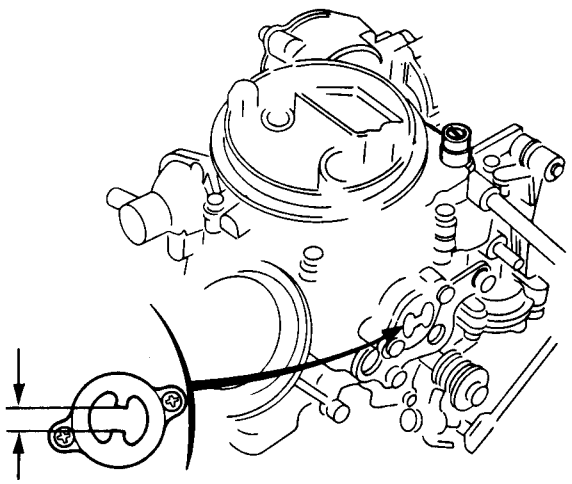
1. Follow steps 1, 3, 4, and 5 of the propane enrichment method.
2. Warm up and calibrate the CO meter according to the meter manufacturer's instructions.
3. Check idle CO with the headlights, heater blower, rear window defroster, cooling fan, and air conditioner off.

   CO meter should indicate 0.1% maximum.

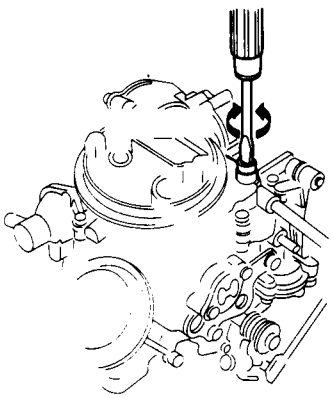
Float Level Adjustment

WARNING Do not smoke while working on fuel system. Keep open flame away from work area.

1. Place the car on level ground.
2. Start and warm up the engine, snap the throttle between idle and 3,000 rpm several times then allow it to idle.
3. When the fuel level stabilizes, check that it is centered in the inspection window.



4. If the fuel level is not centered, adjust it by turning the adjusting screw.



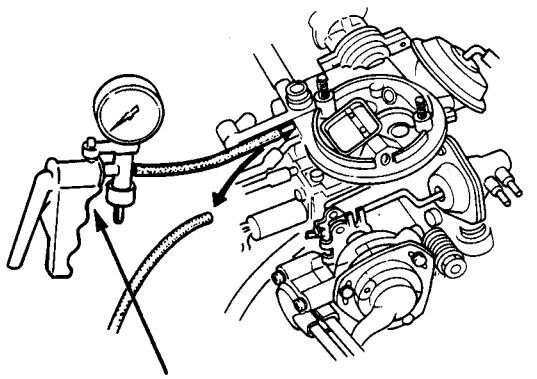
NOTE: Do not turn the adjusting screws more than 1/8-turn every 15-seconds.

5. Paint the adjustment screws with white paint after adjustment.

Power Valve

Inspection (1300)

1. Disconnect the hose from the power valve and connect a hand vacuum pump to the valve. Draw vacuum and listen for a clicking noise from the power valve.

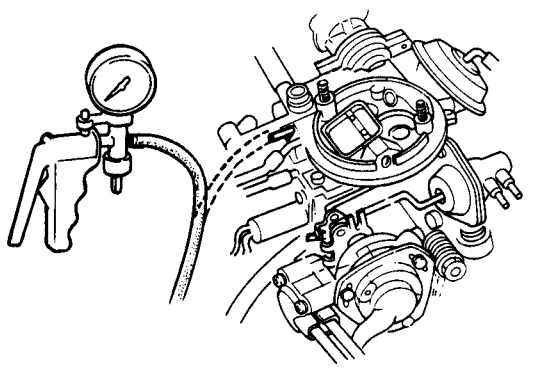


VACUUM PUMP/GAUGE
A973X–041–XXXXX

- If a clicking noise is heard, go on to step 2.
- If no noise is heard, replace the carburetor and re-test.

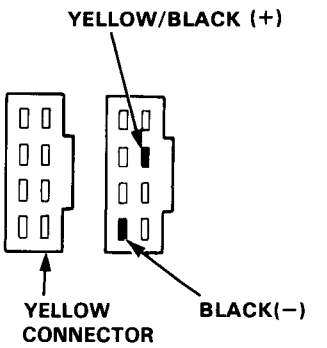
2. Start the engine and wait for it to warm up.

   Disconnect the hose from the power valve and connect a vacuum gauge to the hose.



   Vacuum should not be available.

   - If vacuum is not available, go on to step 3.
   - If vacuum is available, check for voltage at the power valve control solenoid valve (#1 control box).



   – If there is voltage, replace the power valve control solenoid valve and re-test.
   – If there is no voltage, check the fuse, wiring, and speed sensor, then re-test.

3. Jack up the front of the car, support with safety stands, block rear wheel, and set the hand brake.

4. Put the car in 2nd gear and check for vacuum at the power valve above 10 mph.

   There should be vacuum.

   - If there is vacuum, go on to step 5.
   - If no vacuum, remove the control box cover and check for voltage at the power valve control solenoid valve.

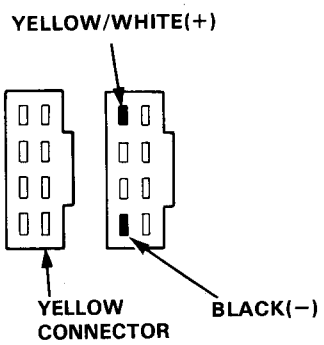
   – If there is voltage, replace vacuum switch B and re-test.
   – If there is no voltage, replace the power valve control solenoid valve and re-test.

(cont'd)

Power Valve (cont'd)

5. With the car still in gear, and speed above 10 mph, disconnect the vacuum hose #12 routed to control box #1, from the vacuum pipe manifold to simulate engine load.
   Vacuum to the power valve should disappear.

   - If vacuum disappears, the system is OK. Reconnect the vacuum hoses, the test is complete.
   - If vacuum doesn't disappear, check for voltage at vacuum switch B with the car above 10 mph.



   — If there is voltage, go on to step 6.
   — If there is no voltage, check the fuse, wiring and speed sensor and re-test.

6. Remove the control box cover and check for continuity between vacuum switch B's wire terminals with hose #12 disconnected.

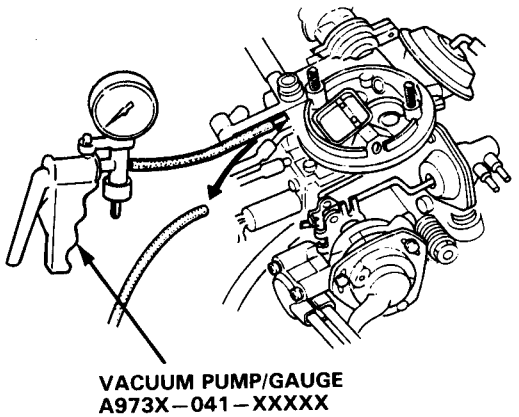
   - If there is continuity, replace the power valve control solenoid valve and re-test.
   - If no continuity, replace vacuum switch B and re-test.

Inspection (1500)

COLD ENGINE

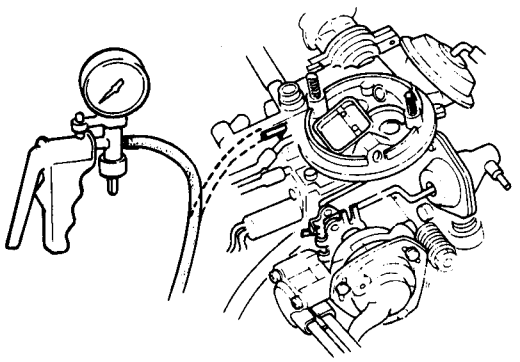
NOTE: Engine coolant temperature must be below 65°C (149°F)

1 Disconnect the hose from the power valve and connect a hand vacuum pump to the valve. Draw vacuum and listen for a clicking noise from the power valve.



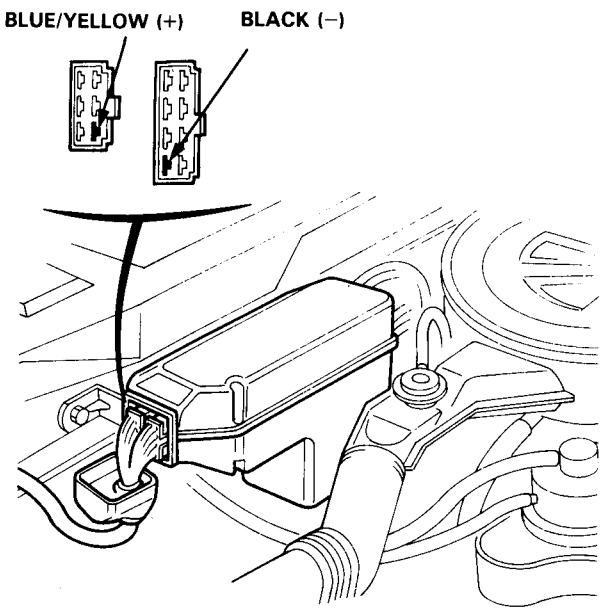
   - If a clicking noise is heard, go on to step 2.
   - If no noise is heard, replace the carburetor and re-test.

2. Start the engine. Disconnect the hose from the power valve and connect a vacuum gauge to the hose.



Vacuum should not be available.

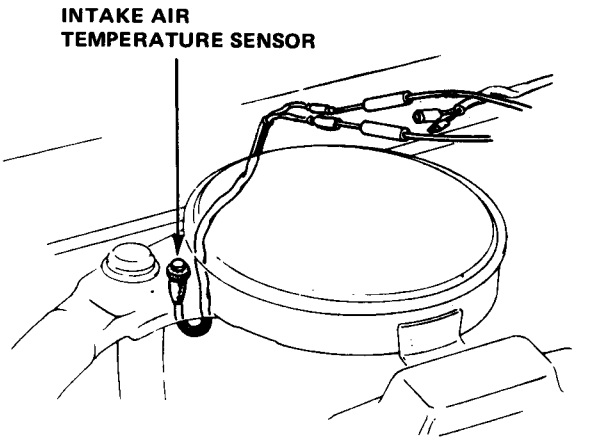
- If vacuum is not available, test is complete.
- If vacuum is available, check for voltage at the power valve control solenoid valve in the emission box.



– If there is voltage, replace the power valve control solenoid valve and re-test.
– If there is no voltage, check the control unit. (See page 12-66).

Intake Air Temperature Sensor

Disconnect the intake air temperature sensor connector, and check for continuity across its terminals:



The sensor should have:

- Continuity, if the air temperature is below 4.5°C (40°F).
- No continuity if the air temperature is above 23°C (73°F).

Replace the sensor if continuity is not as specified.

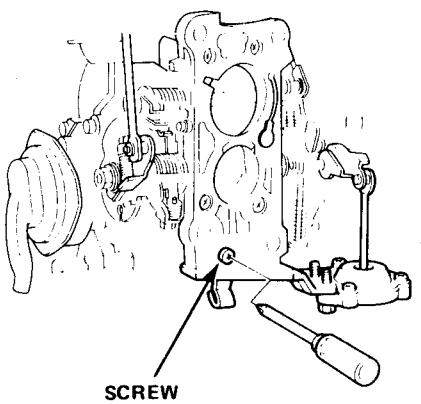
Adjustment to Reduce Emissions at High Altitude

According to EPA regulations you may make the following adjustments to a low altitude car that will be normally driven at high altitude (above 4,000 feet).

NOTE: This procedure is only necessary for Civic 1300's originally sold at low altitude, outside of California. California cars should not be adjusted, 1500 Civic's (and any 1300 originally sold at high altitude) need not be adjusted for use at any altitude.

WARNING Do not smoke during this procedure. Keep any open flame away from your work area.

1. Remove the air cleaner.
2. Disconnect all vacuum hoses from the carburetor.
3. Pull the throttle cable out of its bracket.
4. Remove the carburetor nuts and the bolt securing the steel tubing vacuum manifold.
5. Lift the carburetor clear of its studs, then tilt it backwards so you can remove the idle controller bracket screws.



6. Remove the idle controller bracket and the mixture screw cap from the carburetor, then turn the mixture screw 1/2-turn clockwise.

   NOTE: The end result should be no less than 1 full turn from the seated position.

7. Reinstall the idle controller bracket (2 bolts, and the screw underneath the carburetor).
8. Place the mixture screw plug back into the carburetor, then reinstall the carburetor.
9. Push the throttle cable into its bracket.
10. Reconnect vacuum hoses to the carburetor.
11. Install the air cleaner.
12. Start the engine and let it warm up to normal temperature (radiator fan comes on).
13. Check the idle speed with the headlights, heater blower, radiator fan, and air conditioner off.

    The idle speed should be: 650±50 rpm

14. Check the idle controller boosted speed.

    — Check the idle speed with the headlights ON and the heater blower set to III.

    The idle speed should be: 650±50 rpm

15. Turn the A/C on, and check the idle speed again.

    The idle speed should be: 700±50 rpm

16. Apply an update label to the hood as shown.