

MINOR ENGINE

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TROUBLESHOOTING

Problem	Possible cause	Remedy	Page
Engine overheats	Cooling system faulty Incorrects ignition timing	Troubleshoot cooling system Reset timing	6-2 3-16
Engine will not crank or cranks slowly	Starting system faulty	Troubleshoot starting system	7-2
Engine will not start/ Hard to start (cranks okay)	No fuel supply to carburetor Carburetor problems <ul style="list-style-type: none"> • Choke operation • Flooding • Needle valve sticking or clogged • Vacuum hose disconnected or damaged • Fuel cut solenoid valve not open Ignition problems <ul style="list-style-type: none"> • Ignition coil • Igniter • Distributor Spark plugs faulty Ignition wirings disconnected or broken Vacuum leaks <ul style="list-style-type: none"> • PCV line • EGR line • MC line • Intake manifold Compression low	Troubleshoot fuel system Repair as necessary Inspect coil Inspect igniter Inspect distributor Inspect plugs Inspect wiring Repair as necessary Check compression	5-2 3-19 3-19 3-19 3-19 3-7, 9 3-8, 10 3-11 3-6 3-46 3-60 3-55 4-2
Rough idle or stalls	Spark plugs faulty Ignition wirings faulty Ignition problems <ul style="list-style-type: none"> • Ignition coil • Igniter • Distributor Incorrect ignition timing Vacuum leaks <ul style="list-style-type: none"> • PCV line • EGR line • MC line • HAC line • Intake manifold Incorrect valve clearance Carburetor problems <ul style="list-style-type: none"> • Idle speed incorrect • Slow jet clogged • Idle mixture incorrect • Fuel cut solenoid valve not open • Fast idle speed setting incorrect (cold engine) • Choke system faulty 	Inspect plugs Inspect wiring Inspect coil Inspect igniter Inspect distributor Reset timing Repair as necessary Adjust valve clearance Repair as necessary	3-6 3-7, 9 3-8, 10 3-11 3-16 3-46 3-60 3-55 3-78 2-7 3-39, 40 3-19 3-37 3-19 3-35 3-85

TROUBLESHOOTING (CONT'D)

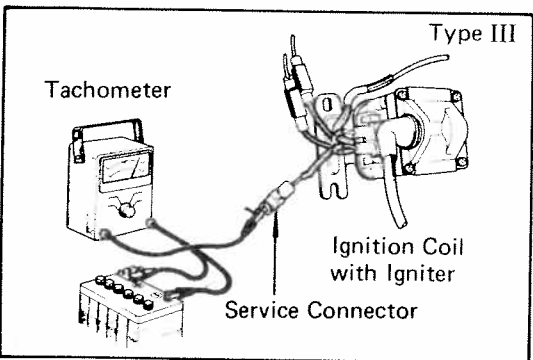
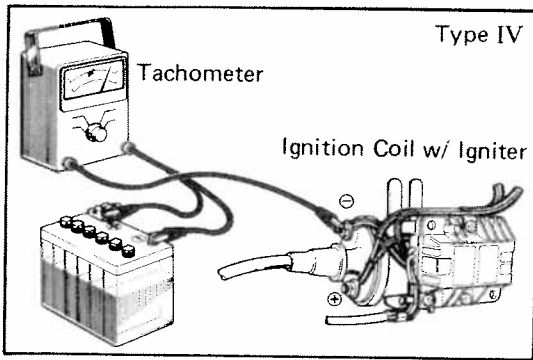
Problem	Possible cause	Remedy	Page
Rough idle or stalls (cont'd)	HAI system faulty	Check HAI system	3-83
	Engine overheats	Check cooling system	6-2
	EGR valve faulty	Check EGR valve	3-60
	MC valve faulty	Check MC valve	3-55
	Compression low	Check compression	4-2
Engine hesitates/ Poor acceleration	Spark plugs faulty	Inspect plugs	3-6
	High tension wires faulty	Inspect wiring	3-6
	Vacuum leaks	Repair as necessary	
	• PCV line		3-46
	• EGR line		3-60
	• HAC line		3-78
	• Intake manifold		
	Incorrect ignition timing	Reset timing	3-16
	Air cleaner clogged	Check air cleaner	2-29
	Fuel line clogged	Check fuel line	5-2
	Carburetor problems	Repair as necessary	
	• Float level too low		3-19
	• Accelerator pump faulty		3-19
	• Power valve faulty		3-19
	• Choke system faulty		3-85
	Emission control system problem		
	• HAI system always on (hot engine)	Check HAI system	3-83
	• EGR system always on (cold engine)	Check EGR system	3-60
	• AAP system faulty (cold engine)	Check AAP system	3-91
	• HAC system faulty	Check HAC system	3-78
	Engine overheats	Check cooling system	6-2
	Compression low	Check compression	4-2
Engine dieseling (turns when ignition switch is turned off)	Carburetor problems	Repair as necessary	
	• Linkage sticking		3-39, 40
	• Idle speed or fast idle speed out of adjustment		
	• Fuel cut solenoid faulty		3-93
	Incorrect ignition timing	Reset timing	3-16
Muffler explosion (after fire) on deceleration only	EGR system faulty	Check EGR system	3-60
	AI system faulty	Check AI system	3-66
	AS system faulty	Check AS system	3-73
	Deceleration fuel cut system always off	Check fuel cut system	3-93
	MC system faulty	Check MC system	3-55
Muffler explosion (after fire) all the time	Air cleaner clogged	Check air cleaner	2-29
	Choke system faulty	Check choke system	3-85
	Incorrect ignition timing	Reset timing	3-16
	Incorrect valve clearance	Adjust valve clearance	2-7

TROUBLESHOOTING (CONT'D)

Problem	Possible cause	Remedy	Page
Engine backfires	Choke valve open (cold engine)	Check choke system	3-85
	Carburetor vacuum leak	Check hoses and repair as necessary	
	Insufficient fuel flow	Troubleshoot fuel system	5-2
	Incorrect ignition timing	Reset timing	3-16
	Incorrect valve clearance	Adjust valve clearance	2-7
	Carbon deposits in combustion chambers	Inspect cylinder head	4-8
Excessive oil consumption	Oil leak	Repair as necessary	
	PCV line clogged	Check PCV system	3-46
	Piston ring worn or damaged	Check rings	4-31
	Valve stem oil seal worn or damaged	Check oil seal	4-3
	Valve stem and guide worn	Check valve and guides	4-9
Poor gasoline mileage	Fuel leak	Repair as necessary	
	Air cleaner clogged	Check air cleaner	2-29
	Incorrect ignition timing	Reset timing	3-16
	Carburetor problems	Repair as necessary	
	• Choke system faulty		3-85
	• Idle speed too high		3-39, 40
	• Deceleration fuel cut system faulty		3-93
	• Power valve always open		3-19
	Spark plugs faulty	Inspect plugs	3-6
	SC system faulty	Check SC system	3-57
	EGR system always on	Check EGR system	3-60
	Compression low	Check compression	4-2
	Tires improperly inflated	Inflate tires to proper pressure	13-3, 28
	Clutch slips	Troubleshoot clutch	9-2
	Brakes drag	Troubleshoot brakes	15-2

SPECIAL TOOLS AND TEST EQUIPMENT

Tool	SST No.	Use
Voltmeter/ohmmeter	Commercial	To check ignition and emission control systems
Carburetor driver set	09860-11011	To disassemble carburetor
5 mm wrench	09922-00010 or Commercial	To remove and install slow jet
Carburetor adjustment gauge set	09240-00014	To adjust carburetor
Air pump tester	09258-14010	To check air pump

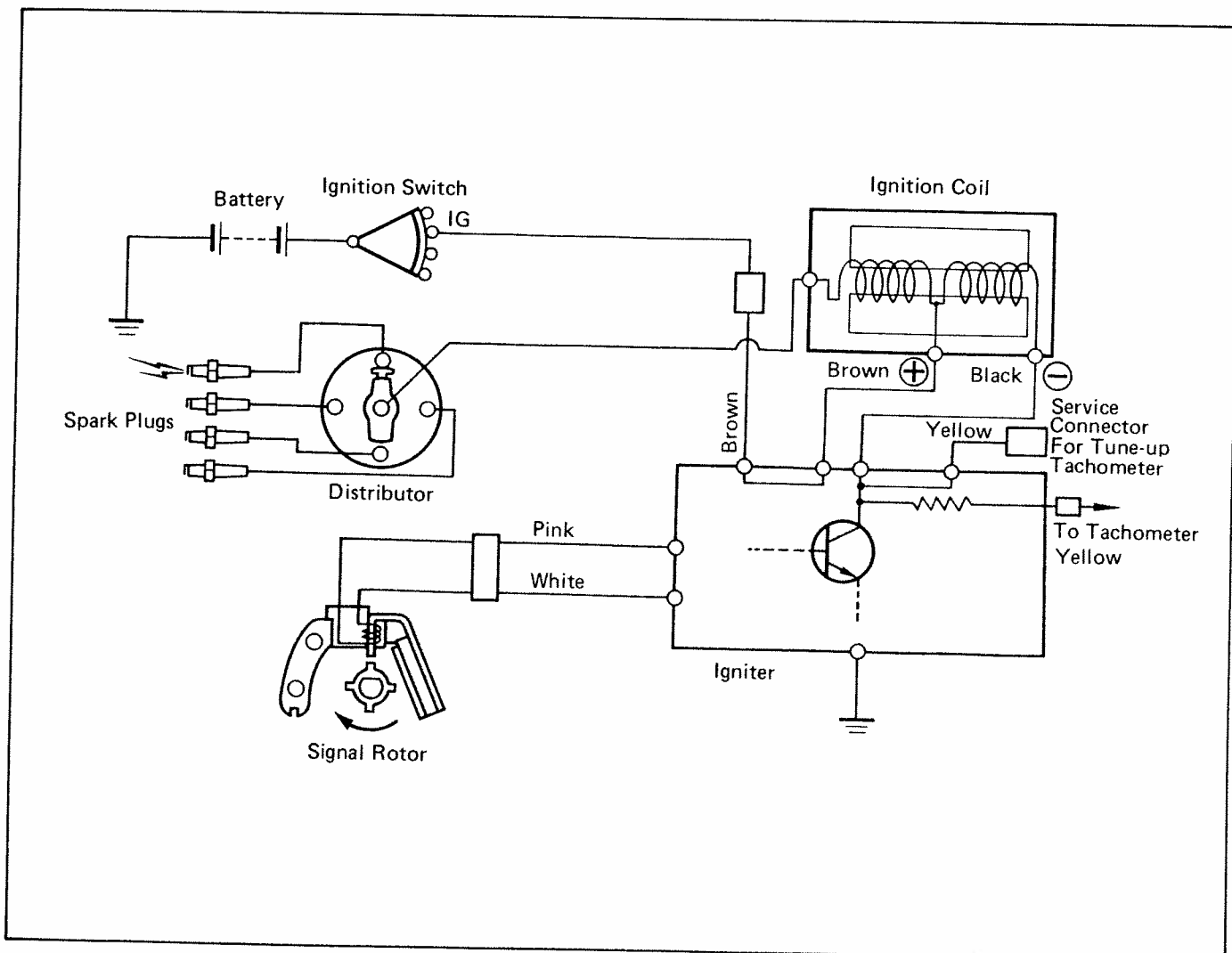


IGNITION SYSTEM

Precautions

1. Do not allow the ignition switch to be ON for more than 10 minutes if the engine will not start.
2. As some tachometers are not compatible with this ignition system, it is recommended that you consult with the manufacturer.
3. NEVER allow the ignition coil terminals to touch ground as it could result in damage to the igniter and/or ignition coil.
4. Do not disconnect the battery when the engine is running.
5. Make sure that the igniter is properly grounded to the body.
6. When a tachometer is connected to the system, connect the tachometer test probe to the ignition coil negative terminal.

System Circuit



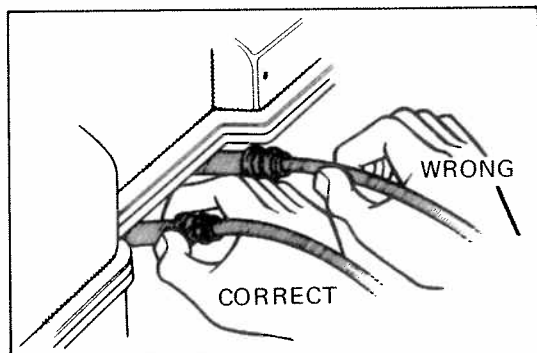
On-Vehicle Inspection

SPARK TEST

NOTE: Perform this test to check that voltage is coming from the distributor.

1. CONNECT TIMING LIGHT TO EACH SPARK PLUG
2. CRACK ENGINE AND CHECK THAT LIGHT FLASHES

If the timing light does not flash, check the wiring connections, ignition coil, igniter, distributor or ignition switch.



INSPECTION OF HIGH TENSION WIRE

1. CAREFULLY REMOVE HIGH TENSION WIRES BY RUBBER BOOT

CAUTION: DO NOT pull on or bend the wires to avoid damaging the conductor inside.

2. INSPECT WIRE TERMINALS

Check the terminals for corrosion, breaks or distortion. Replace wires as required.

3. CHECK WIRE RESISTANCE

Using an ohmmeter, check that the resistance does not exceed the maximum. Replace the wires as required.

Maximum resistance: 25 k Ω

INSPECTION OF SPARK PLUGS

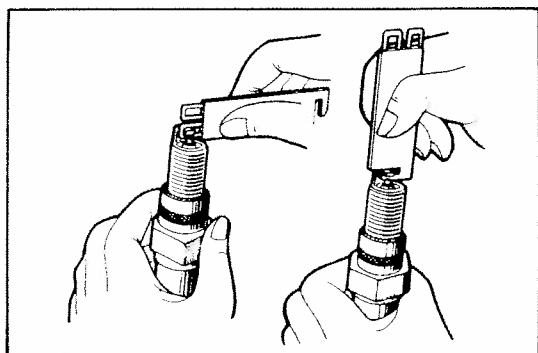
1. REMOVE SPARK PLUGS

2. CLEAN AND INSPECT SPARK PLUGS

- (a) Clean the spark plugs with a spark plug cleaner or wire brush.
- (b) Inspect the spark plugs for electrode wear, thread damage and insulator damage.

If a problem is found, replace the plugs.

Spark plug: ND W16XR-U
NGK BPR5EY



3. ADJUST ELECTRODE GAP

Carefully bend the outer electrode to obtain the correct electrode gap.

Correct electrode gap: 0.8 mm (0.031 in.)

4. INSTALL SPARK PLUGS

(FOR TYPE III)

INSPECTION OF IGNITION COIL

1. DISCONNECT HIGH TENSION WIRE AND IGNITION COIL CONNECTOR

2. CLEAN COIL AND CHECK FOLLOWING:

- (a) Check for cracks or damage.
- (b) Check the terminals for carbon paths.
- (c) Check the high-tension wire hole for carbon deposits and corrosion.

3. MEASURE PRIMARY COIL RESISTANCE

Using an ohmmeter, measure the resistance between the positive \oplus (Brown side) and negative \ominus (Black side) terminals.

Primary coil resistance (cold): 0.4 — 0.5 Ω

4. MEASURE SECONDARY COIL RESISTANCE

Using an ohmmeter, measure the resistance between the positive \oplus terminal (Brown side) and the high tension terminal.

Secondary coil resistance (cold): 8.5 — 11.5 k Ω

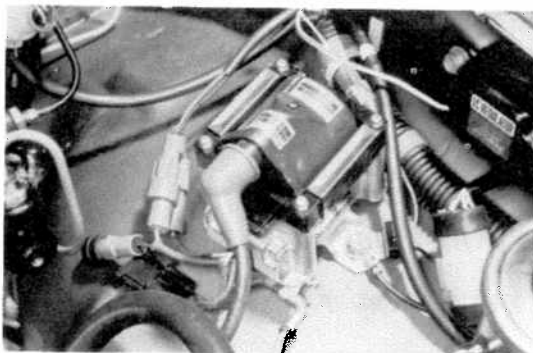
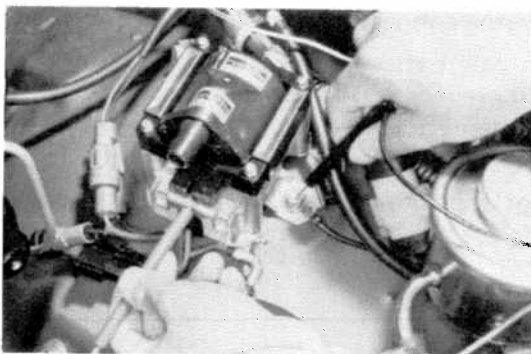
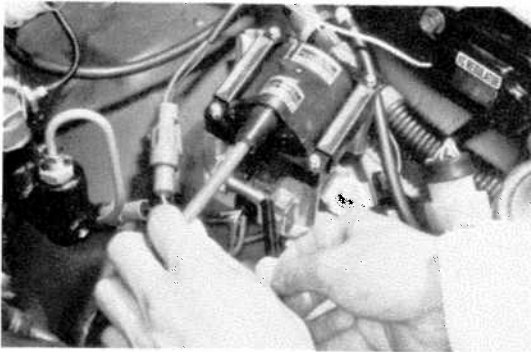
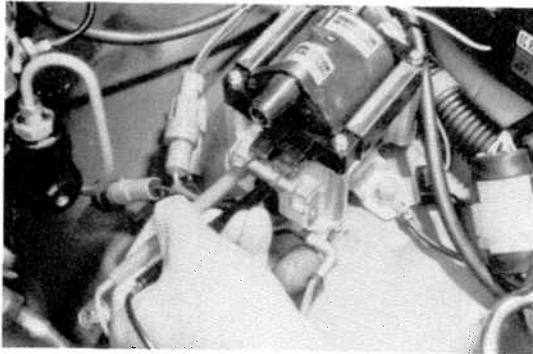
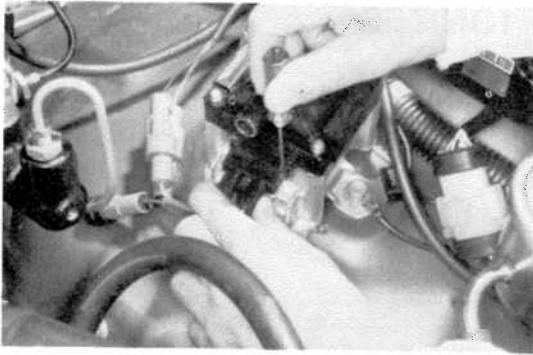
5. MEASURE INSULATION RESISTANCE

Using an ohmmeter, measure the resistance between the positive \oplus terminal and the igniter body.

Insulation resistance: Infinity

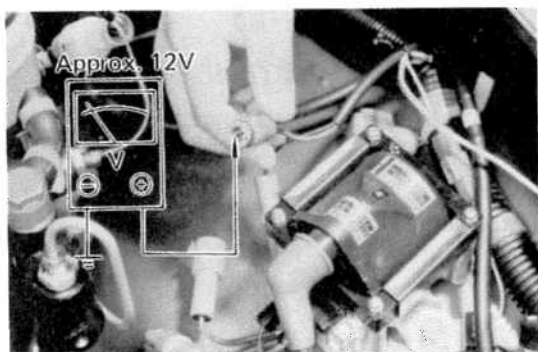
If a problem with the coil is found, replace the coil.

6. CONNECT HIGH TENSION WIRE AND IGNITION COIL CONNECTOR



INSPECTION OF IGNITER

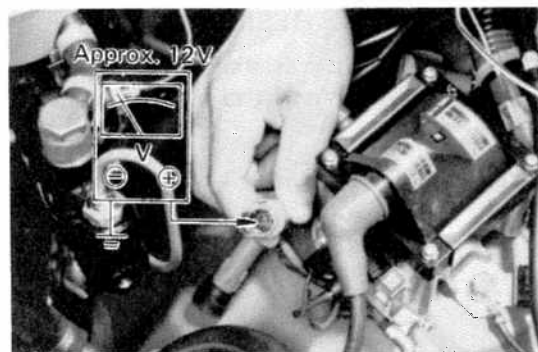
1. TURN IGNITION SWITCH ON



2. CHECK POWER SOURCE LINE VOLTAGE

- (a) Disconnect the wiring connector for Brown and Yellow.
- (b) Using a voltmeter, connect the positive \oplus probe to the Brown connector for wire harness side and the negative \ominus probe to the body ground.

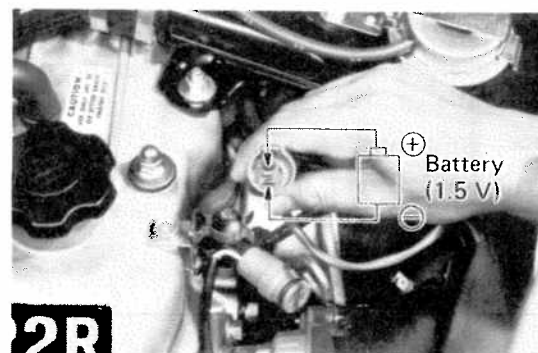
Voltage: Approx. 12 V



3. CHECK POWER TRANSISTOR IN IGNITER

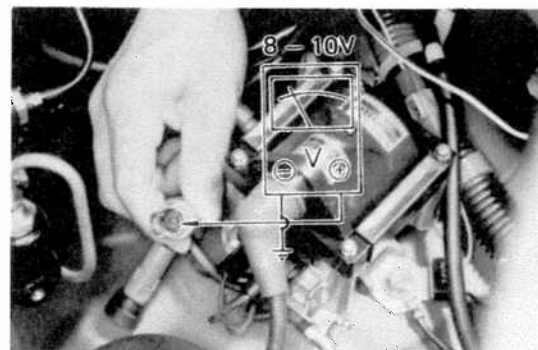
- (a) Connect the wiring connector for Brown.
- (b) Using a voltmeter, connect the positive \oplus probe to the Yellow connector for igniter side and the negative \ominus probe to the body ground.

Voltage: Approx. 12 V



- (c) Unplug the wiring connector from the distributor.
- (d) Using a dry cell battery (1.5 volts), connect the positive \oplus pole of the battery to the Pink wire terminal and the negative \ominus pole to the White wire terminal.

CAUTION: Do not apply the voltage more than 5 seconds to avoid destroying the power transistor in the igniter.



- (e) Using a voltmeter, connect the positive \oplus probe to the Yellow connector for igniter side and the negative \ominus probe to the body ground.

Voltage: 8 – 10 V

If a problem is found, replace the igniter.

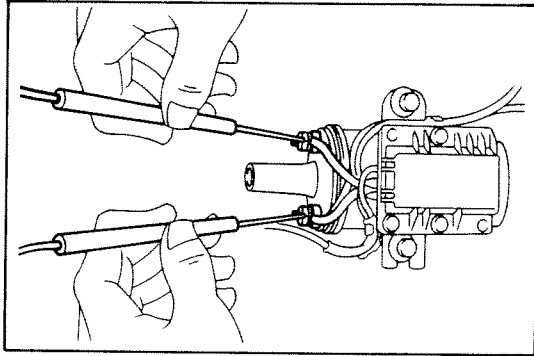
4. TURN IGNITION SWITCH OFF

5. REMOVE TEST EQUIPMENT AND RECONNECT WIRING

[FOR TYPE IV]

INSPECTION OF IGNITION COIL

1. DISCONNECT HIGH TENSION WIRE

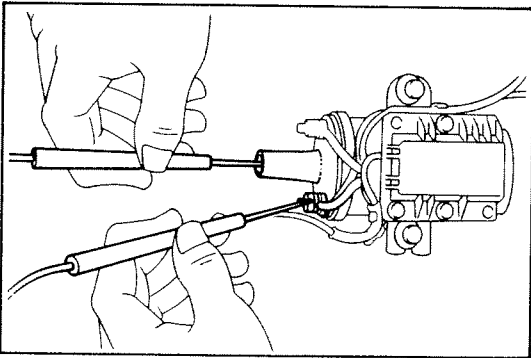


2. MEASURE COIL RESISTANCE

(a) Measure Primary Coil Resistance

Using an ohmmeter, measure the resistance between the positive (+) and negative (–) terminals.

Primary coil resistance (cold): 0.8 – 1.1 Ω



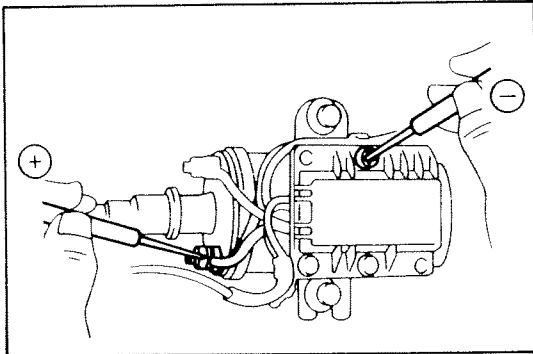
(b) Measure Secondary Coil Resistance.

Using an ohmmeter, measure the resistance between the positive (+) terminal and high-tension terminal.

Secondary coil resistance (cold): 10.7 – 14.5 k Ω

INSPECTION OF IGNITER

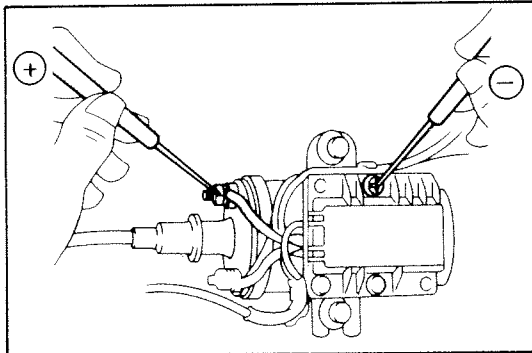
1. TURN IGNITION SWITCH ON



2. CHECK POWER SOURCE LINE VOLTAGE

Using a voltmeter, connect the positive (+) probe to the ignition coil positive (+) terminal and the negative (—) probe to the body ground.

Voltage: Approx. 12V

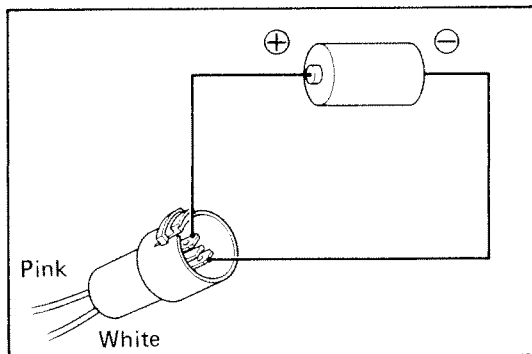


3. CHECK POWER TRANSISTOR IN IGNITER

(a) Using a voltmeter, connect the positive (+) probe to the ignition coil negative (—) terminal and the negative (—) probe to the body ground.

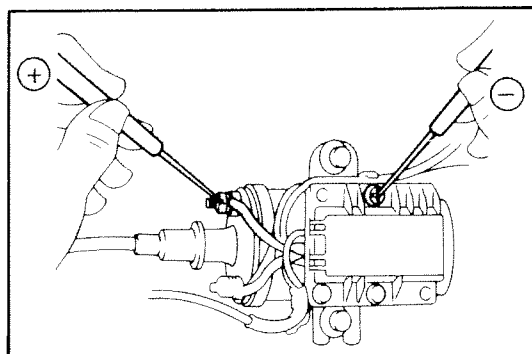
Voltage: Approx. 12V

(b) Unplug the wiring connector from the distributor.



(c) Using a dry cell battery (1.5V), connect the positive (+) pole of the battery to the pink wire terminal and the negative (—) pole to the white wire terminal.

CAUTION: Do not apply voltage more than 5 seconds to avoid destroying the power transistor in the igniter.



(d) Using a voltmeter, connect the positive (+) probe to the ignition coil negative (—) terminal and the negative (—) probe to the body ground.

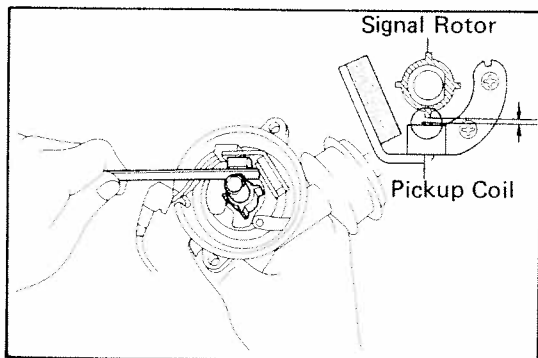
(e) Check the voltage reading.

Voltage: 5 — 8V

If a problem is found, replace the igniter.

4. TURN IGNITION SWITCH OFF

5. REMOVE TEST EQUIPMENT AND RECONNECT WIRING



ON-VEHICLE INSPECTION OF DISTRIBUTOR

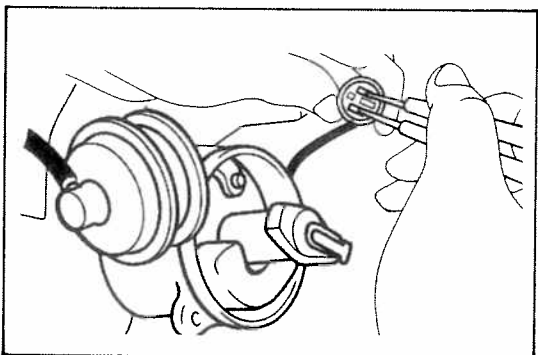
1. CHECK AIR GAP

- (a) Using a feeler gauge, measure the gap between the signal rotor and the pickup coil projection.

Air gap: 0.2 – 0.4 mm (0.008 – 0.016 in.)

- (b) Adjust the gap if necessary.

- Loosen the two screws and move the signal generator until the gap is correct. Tighten the screws and recheck the gap.

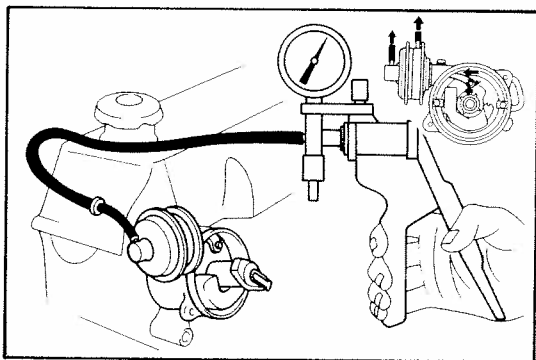


2. CHECK SIGNAL GENERATOR

Using an ohmmeter, check the resistance of the signal generator.

Generator resistance: 130 – 190Ω

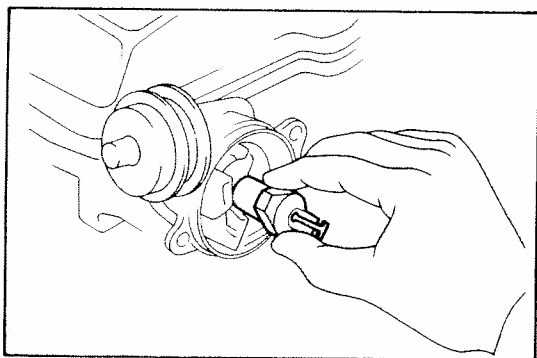
If the resistance is not correct, replace the signal generator.



3. CHECK VACUUM ADVANCE

- (a) Disconnect the vacuum hose and connect a vacuum pump to the diaphragms.
- (b) Apply the vacuum and check that the vacuum advance moves.

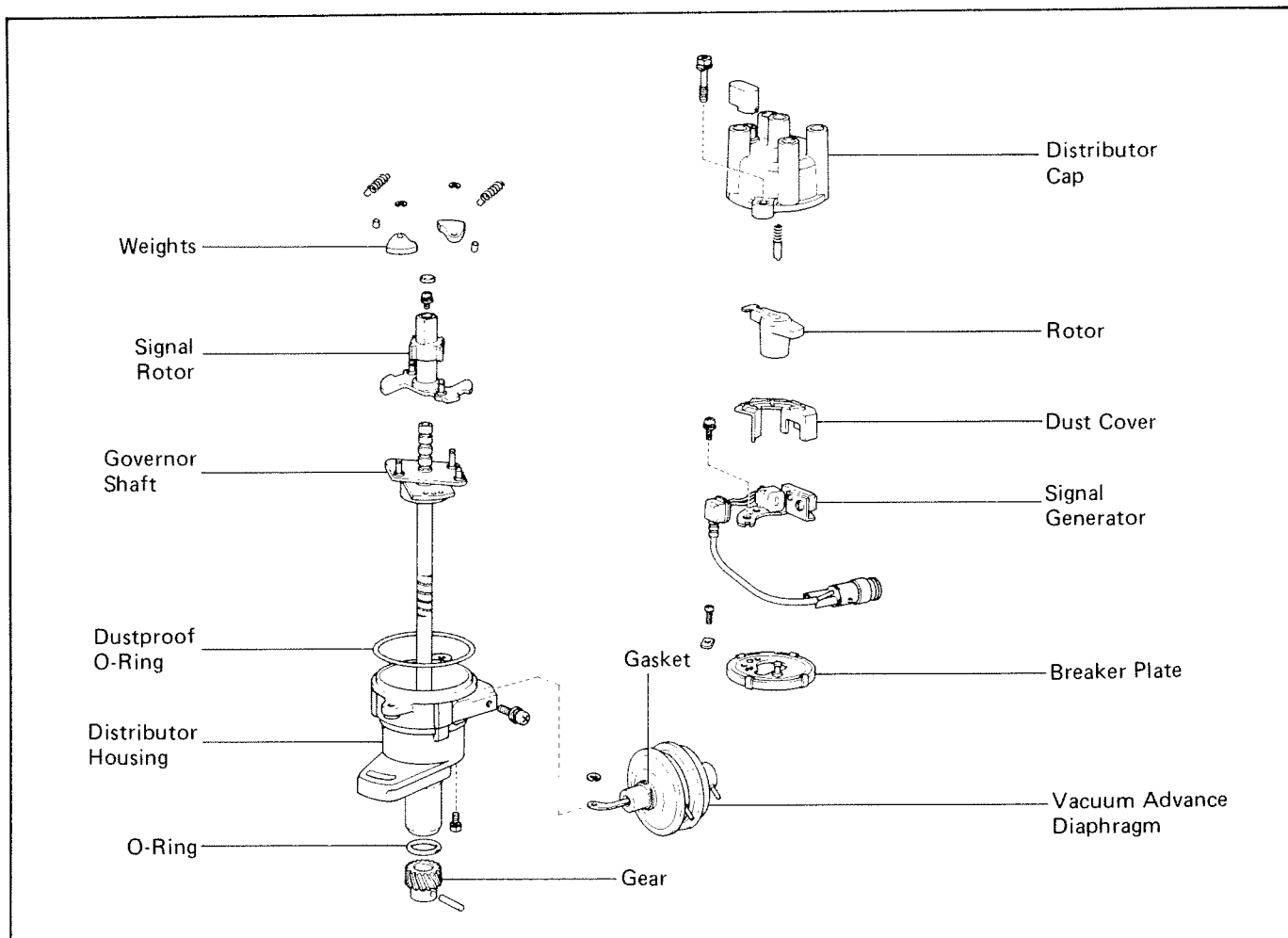
If the vacuum advance does not work, repair or replace as necessary.



4. CHECK GOVERNOR ADVANCE

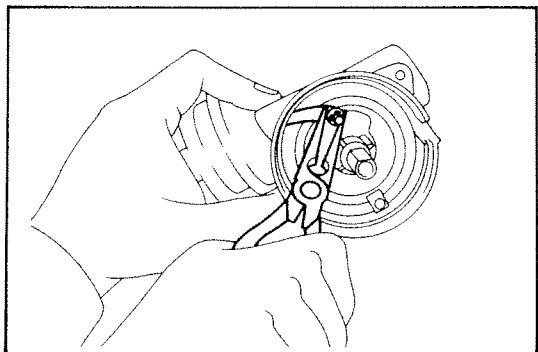
- (a) Turn the rotor shaft clockwise, release it and check that the rotor returns slightly counterclockwise.
- (b) Check that the rotor shaft is not excessively loose.

Distributor COMPONENTS



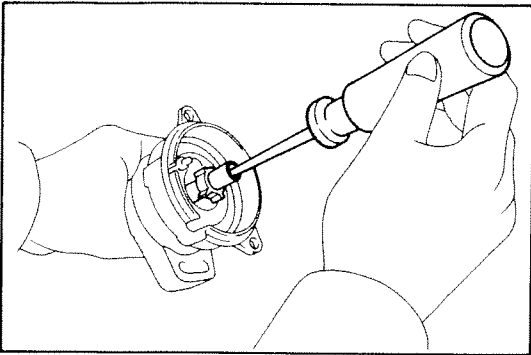
REMOVAL OF DISTRIBUTOR

1. DISCONNECT VACUUM HOSES, HIGH TENSION WIRES AND WIRING CONNECTOR
2. REMOVE TWO SCREWS AND PULL OFF DISTRIBUTOR CAP
3. REMOVE HOLD-DOWN BOLT AND PULL OUT DISTRIBUTOR



DISASSEMBLY OF DISTRIBUTOR

1. REMOVE ROTOR, DUST COVER AND O-RING
2. REMOVE SIGNAL GENERATOR
Remove the two screws and pull out the signal generator.
3. REMOVE VACUUM ADVANCE
Remove the screw and E-ring. Pull out the vacuum advance.

**4. REMOVE BREAKER PLATE**

Remove two screws and pull out the breaker plate.

5. REMOVE GOVERNOR SPRINGS**6. REMOVE SIGNAL ROTOR**

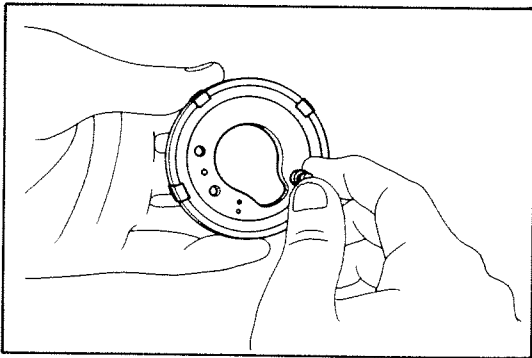
(a) Pry out the grease stopper.

(b) Remove the screw at the top of the governor shaft.

(c) Pull off the signal rotor.

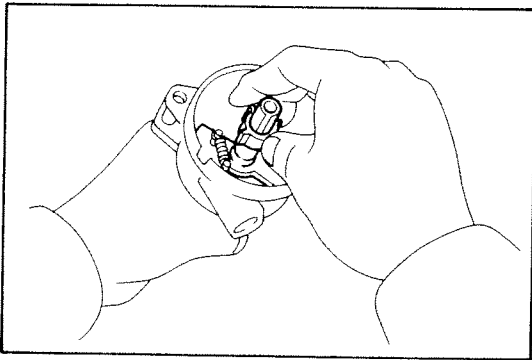
7. REMOVE GOVERNOR WEIGHT SNAP RINGS AND WEIGHTS

Using a screwdriver, remove the E-rings and pull off the governor weights.

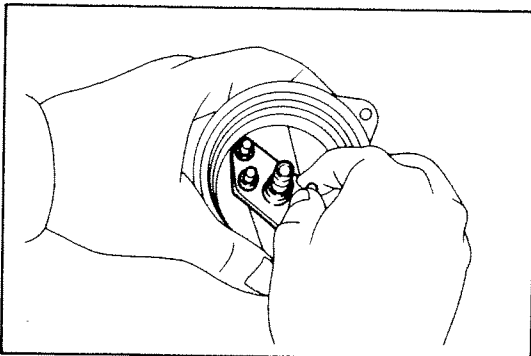
**INSPECTION AND REPLACEMENT OF DISTRIBUTOR****1. CHECK BREAKER PLATE**

Turn the plate and check that it has a slight drag.

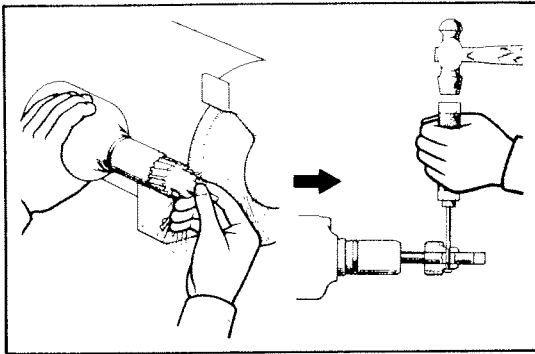
If strong resistance or sticking is felt, replace the plate.

**2. CHECK SIGNAL ROTOR**

Check the signal rotor for damage and correct fit on the distributor shaft.

**3. INSPECT GOVERNOR SHAFT BEARING**

If necessary, replace the governor shaft bearing.

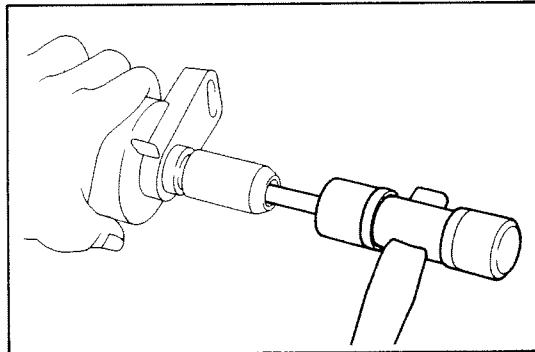


4. IF NECESSARY, REPLACE DRIVE GEAR OR GOVERNOR SHAFT

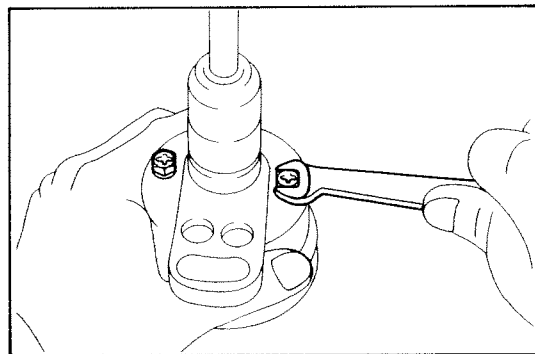
- (a) Using a grinding wheel, grind the gear and pin as shown.

CAUTION: Be careful not to damage the shaft.

- (b) Using a punch and hammer, drive out the pin.
 (c) Remove the drive gear and discard it.
 (d) Remove two screws from the bottom of the distributor housing.

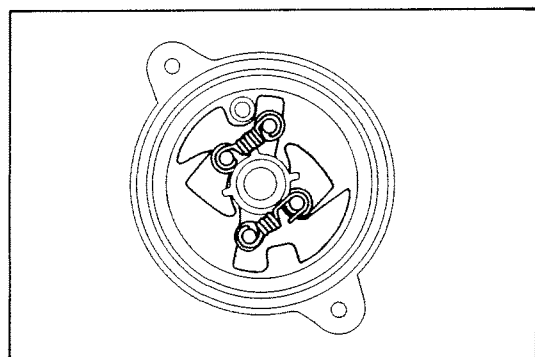


- (e) Using a plastic hammer, carefully drive out the shaft.



- (f) Align the holes in the bearing retainer and housing.
 (g) Push in the shaft and install two screws.
 (h) Align the holes in the shaft and gear.
 (i) Using a hammer, install the pin.
 (j) Secure both ends of the pin in a vise.

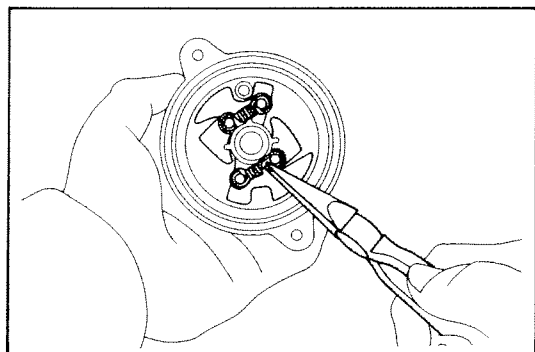
NOTE: Align the notch on the signal rotor with the punch mark of the gear, and install.

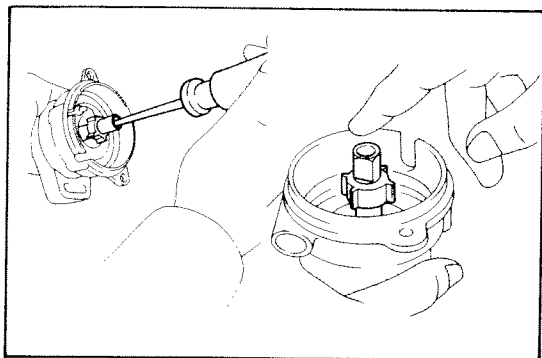


ASSEMBLY OF DISTRIBUTOR

(See page IG-7)

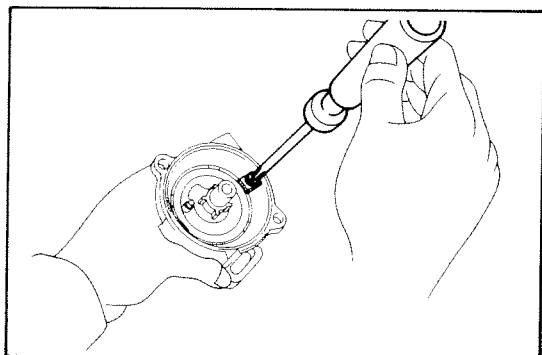
1. LIGHTLY COAT GOVERNOR SHAFT WITH OIL
2. INSTALL SIGNAL ROTOR ON GOVERNOR SHAFT
Align the "10.5" mark with the stopper.
3. INSTALL GOVERNOR WEIGHTS
 (a) Slide the bearings and weights over the small shafts.
 (b) Install the E-rings.
4. INSTALL WEIGHT SPRINGS





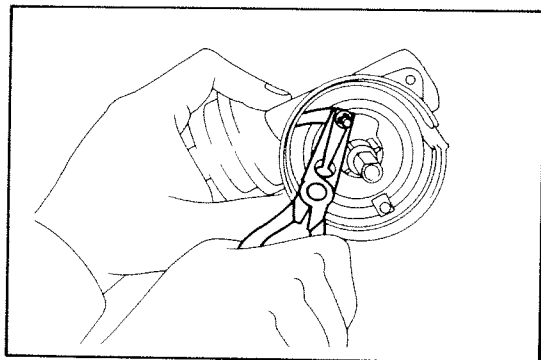
5. INSTALL SCREW AND GREASE STOPPER ON SIGNAL ROTOR

Apply grease and push on the grease stopper with your finger.



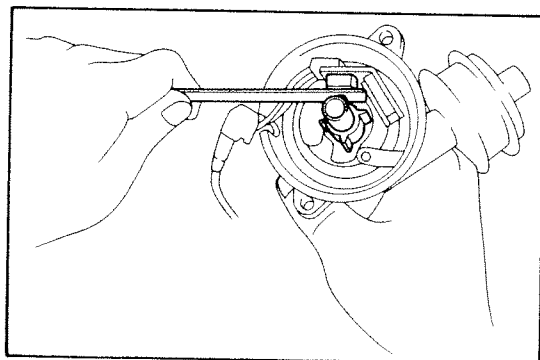
6. INSTALL BREAKER PLATE

- (a) Fit the four clips on the breaker plate into the housing slots.
- (b) Install two hold-down clips with two screws.



7. INSTALL VACUUM ADVANCER

- (a) Insert the vacuum advancer with a gasket into the distributor and place the lever hole over the plate pin.
- (b) Install the E-ring on the pin.
- (c) Install and tighten the advancer screw.

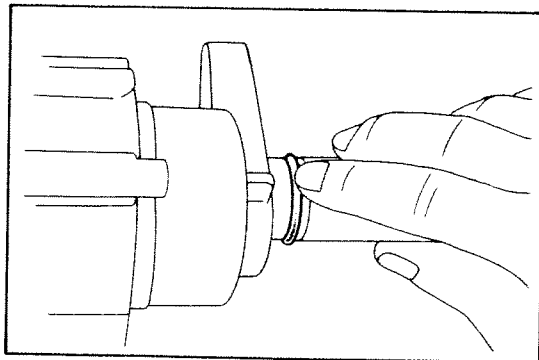


8. INSTALL AND ADJUST SIGNAL GENERATOR

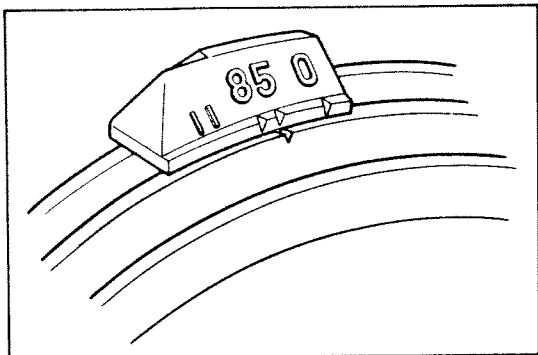
- (a) Loosely install the signal generator with two screws.
- (b) Align the rotor tooth with the pickup coil.
- (c) Using a feeler gauge, set the air gap and tighten two screws.

Air gap: 0.2 – 0.4 mm (0.008 – 0.016 in.)

9. INSTALL DUST COVER, O-RING AND ROTOR



10. INSTALL NEW O-RING

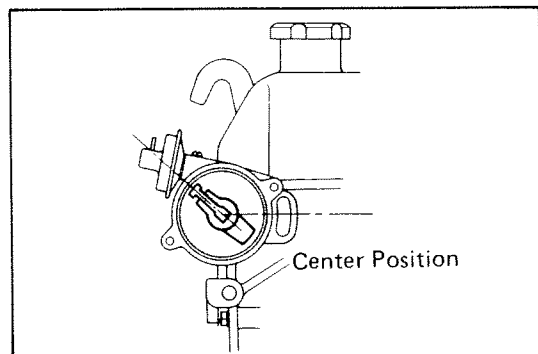


INSTALLATION OF DISTRIBUTOR

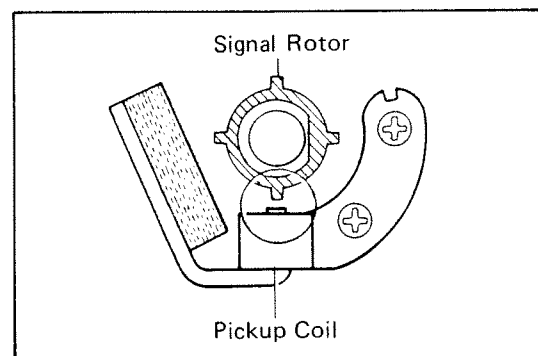
1. INSTALL DISTRIBUTOR AND SET TIMING

- (a) Turn the crankshaft pulley until the timing mark is aligned with the 5° BTDC mark.

NOTE: Check that the rocker arms on the No. 1 cylinder are loose. If not, turn the crankshaft one full turn.



- (b) Temporarily install the rotor.
- (c) Begin insertion of the distributor with the rotor pointing up and the distributor mounting hole approximately at center position of the bolt hole.
- (d) When fully installed, the rotor will rotate to the position shown.



- (e) Align the rotor tooth with the pickup coil projection.
- (f) Coat the distributor set bolt with sealer and install the bolt. Torque the bolt.

Torque: 180 – 260 kg-cm (14 – 18 ft-lb)

- (g) Install the rotor and distributor cap with wires.

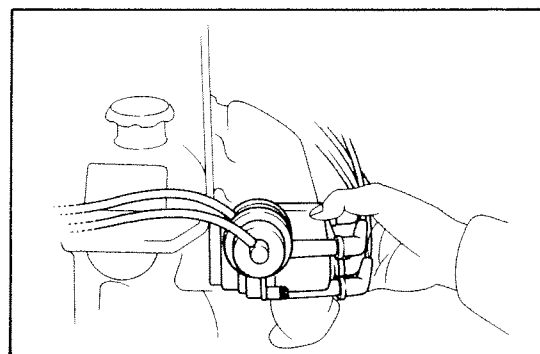
2. INSTALL FOLLOWING PARTS:

- (a) Vacuum hose(s)
- (b) Wiring connector

3. ADJUST IGNITION TIMING

- (a) Connect a timing light to the engine.
- (b) Start the engine and run it at idle.
- (c) Using a timing light, slowly turn the distributor until the timing mark on the crankshaft pulley is aligned with the 5° mark. Tighten the distributor bolt.

**Ignition timing: 5° BTDC at idle (950 rpm max.)
(with vacuum advance cut)**



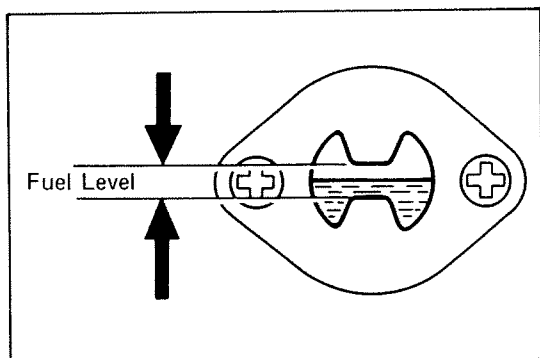
CARBURETOR

PRECAUTIONS

1. Before working on the carburetor, disconnect the cable from the negative battery terminal.
2. When working on the carburetor, keep away from possible fire hazards and do not smoke.
3. Keep gasoline off rubber or leather parts.
4. Work on only one component group at a time to avoid confusion between similar looking parts.
5. Keep work area clean to avoid contamination of the carburetor and components.
6. Be careful not to mix up or lose clips or springs.

ON-VEHICLE INSPECTION

1. REMOVE AIR CLEANER (See page 3-20)
2. CHECK CARBURETOR AND LINKAGE
 - (a) Check that the various set screws, plugs and union bolts are tight and correctly installed.
 - (b) Check the linkage for excessive wear and missing snap rings.
 - (c) Check that the throttle valves open fully when the accelerator pedal is fully depressed.



3. CHECK FLOAT LEVEL

Check that the fuel level is about even with the correct level in the sight glass.

If not, check the carburetor needle valve and float level, and adjust or repair, as necessary.

Cold Engine

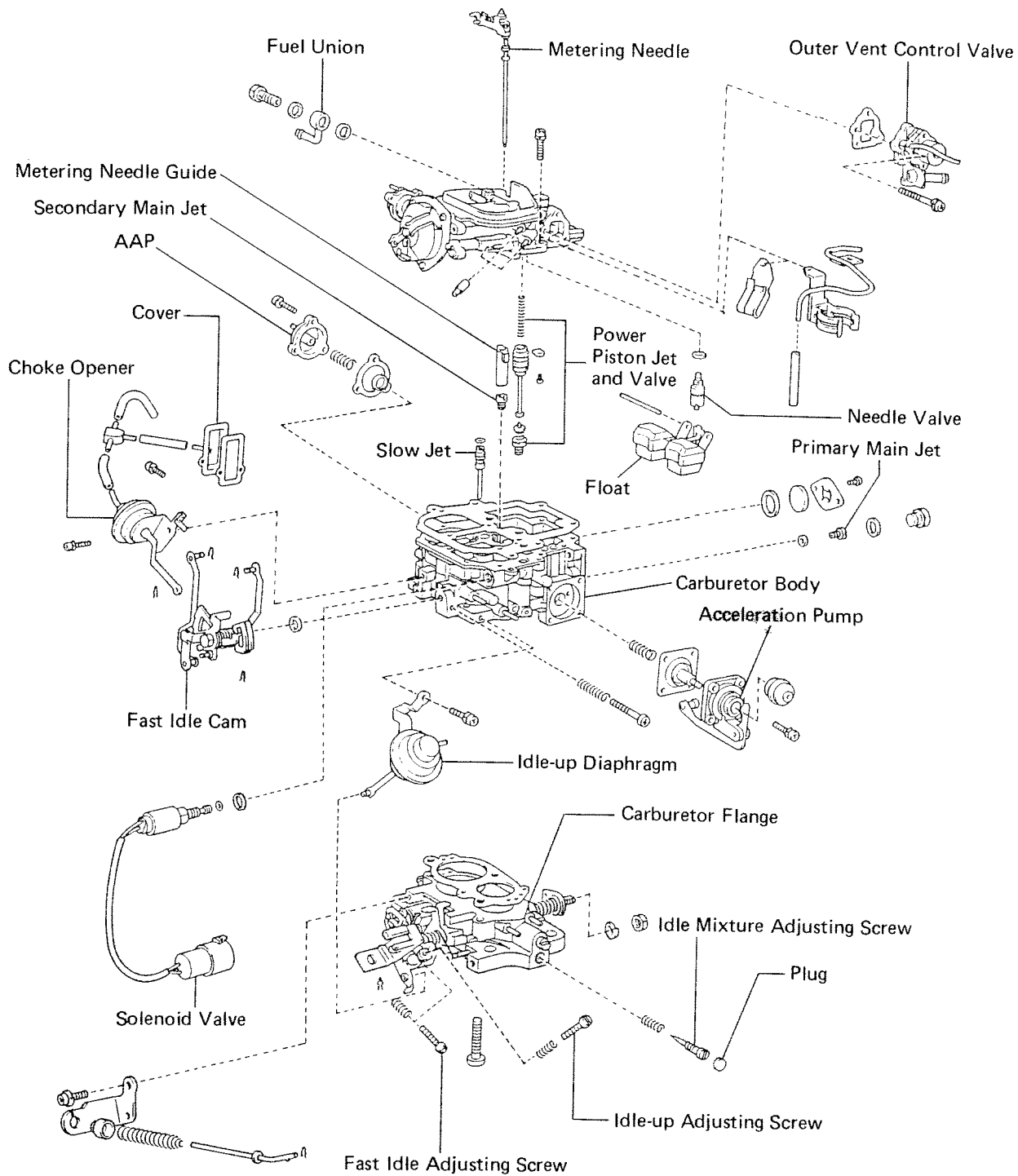
4. CHECK AUTOMATIC CHOKE (See page 3-85)
5. CHECK CHOKE OPENER (See page 3-88)
6. CHECK CHOKE BREAKER (See page 3-87)
7. CHECK AAP SYSTEM (See page 3-91)
8. CHECK OUTER VENT CONTROL VALVE (See page 3-51)

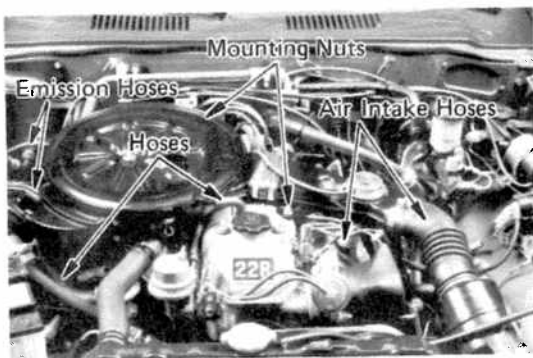
Hot Engine

9. CHECK AUTOMATIC CHOKE (See page 3-85)
10. CHECK CHOKE OPENER (See page 3-88)
11. CHECK AAP SYSTEM (See page 3-91)
12. CHECK ACCELERATION PUMP

Open the throttle valve, and check that gasoline spurts out from the acceleration nozzle.
13. CHECK FUEL CUT SYSTEM (See page 3-93)
14. INSTALL AIR CLEANER (See page 3-36)
15. CHECK AND ADJUST THE IDLE SPEED (See page 3-36)
16. CHECK AND ADJUST FAST IDLE SPEED (See page 3-35)

COMPONENTS

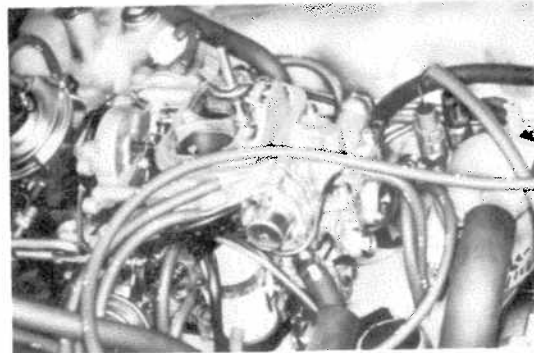




REMOVAL OF CARBURETOR

1. REMOVE AIR CLEANER

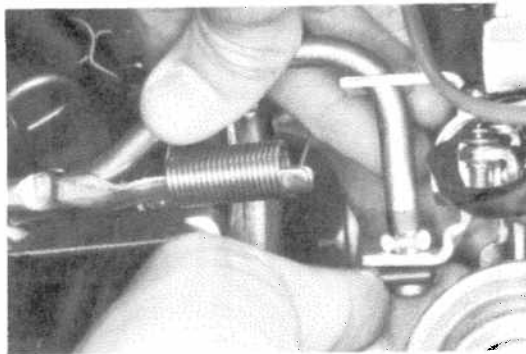
- (a) Disconnect the emission control hoses.
- (b) Disconnect the air intake hose.
- (c) Remove the two mounting nuts and butterfly nut.
- (d) Lift the air cleaner off the carburetor.



2. DISCONNECT THROTTLE CABLE FOR AUTOMATIC TRANSMISSION (See page 10-29)

3. DISCONNECT FOLLOWING HOSES FROM CARBURETOR

- (a) Emission control hoses
- (b) PCV hose from the flange
- (c) Fuel hose
- (d) Wiring connector



4. DISCONNECT ACCELERATOR LINKAGE



5. REMOVE CARBURETOR

- (a) Remove the carburetor mounting bolts and nuts.
- (b) Lift out the carburetor.
- (c) Cover the inlet hole of the intake manifold with a cloth.

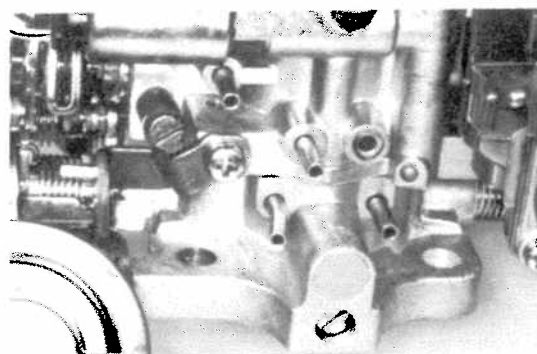
DISASSEMBLY OF CARBURETOR

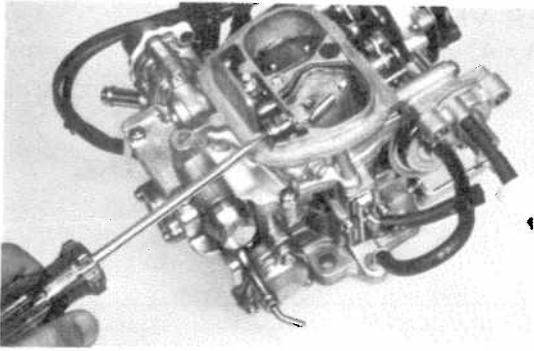
(See page 3-19)

NOTE: To conform with regulations, the idle mixture adjusting screw is adjusted and plugged with a steel plug by the manufacturer. Normally, this steel plug should not be removed. (Except Canada 4 x 4)

The following instructions are organized so that you will work on only one component group at a time. This will help avoid confusion from similar-looking parts from different subassemblies being on your workbench at the same time.

- (a) To facilitate reassembly, arrange parts in order.
- (b) Be careful not to mix up or lose, clips or springs.

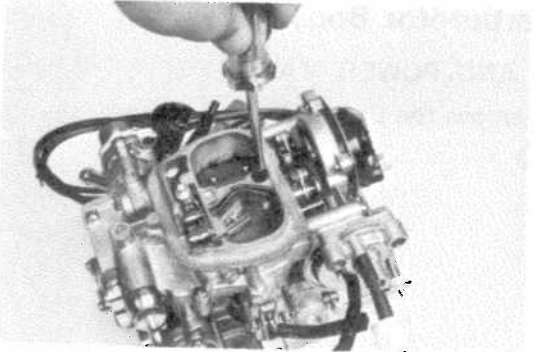




Disassembly of Air Horn

1. REMOVE METERING NEEDLE

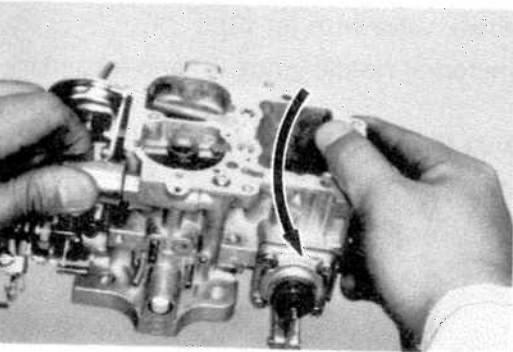
Loosen the screw and remove the metering needle.



2. REMOVE AIR HORN ASSEMBLY

- (a) Disconnect the fast idle link and air valve connecting rod.
- (b) Remove the five air horn screws and lift the air horn from the body.

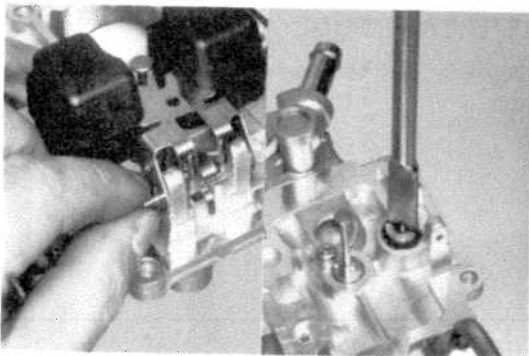
NOTE: Place the air horn next to the body.



- (c) Loosen the solenoid valve and remove it from the body by rotating the body counterclockwise.

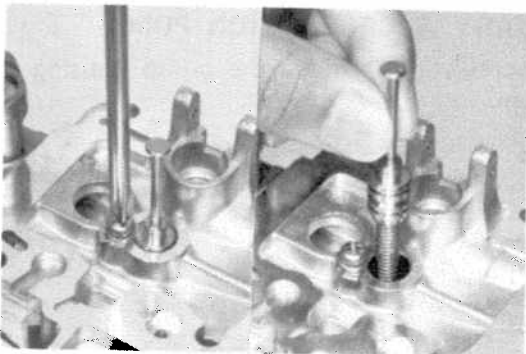
3. REMOVE FLOAT AND NEEDLE VALVE

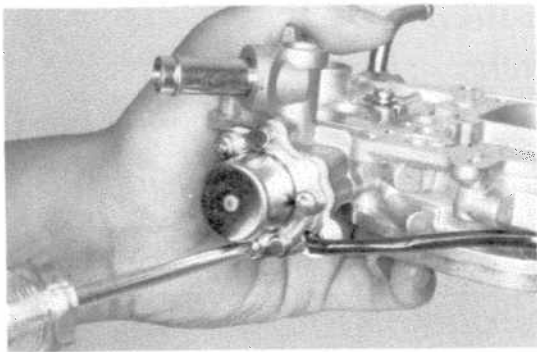
- (a) Remove the pivot pin and float with the needle valve.
- (b) Remove the needle valve seat.



4. REMOVE POWER PISTON

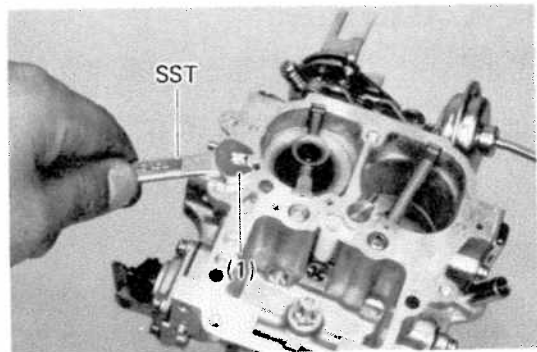
- (a) Loosen the retainer screw.
- (b) While holding the piston, rotate the retainer.
- (c) Remove the power piston and spring.





5. REMOVE OUTER VENT CONTROL VALVE (Except Canada 4 x 4)

Loosen the three screws and remove the outer vent control valve.



Disassembly of Carburetor Body

1. REMOVE JETS AND POWER VALVE

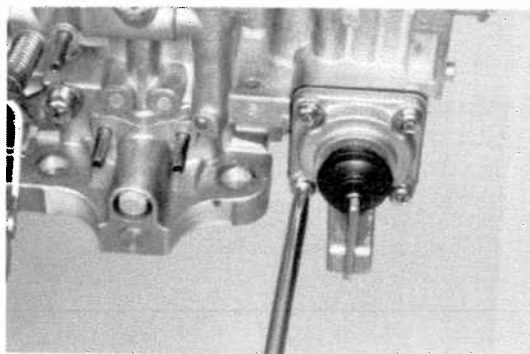
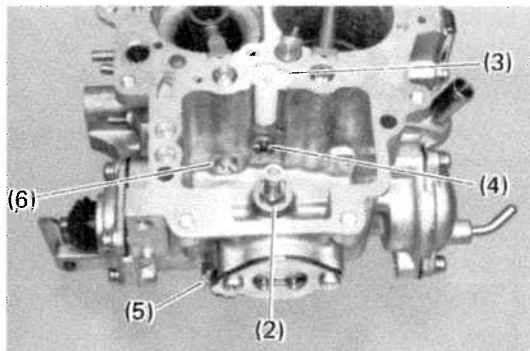
(a) Using SST, remove the slow jet (1)

SST 09922-00010

(b) Remove the power valve with jet (2).

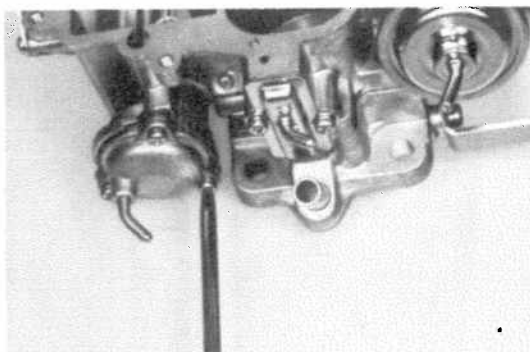
(c) Remove the metering needle guide (3) and secondary main jet (4).

(d) Remove the plug (5) and primary main jet (6).



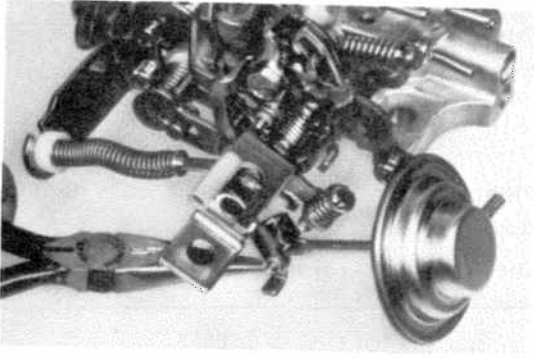
2. REMOVE ACCELERATION PUMP

Loosen the four screws and remove the pump housing, diaphragm and spring.

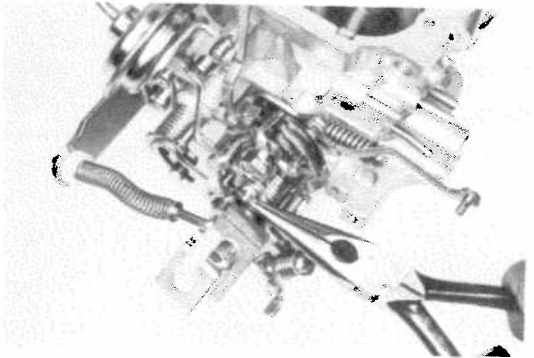


3. REMOVE AUXILIARY ACCELERATION PUMP

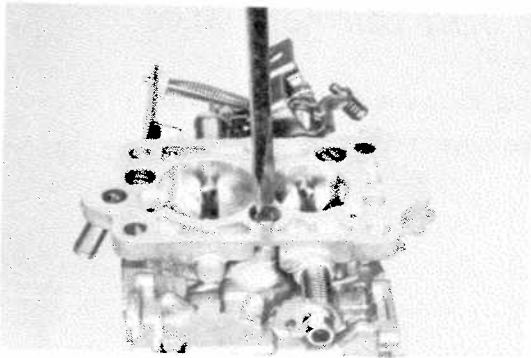
Loosen the three screws and remove the pump housing, spring and diaphragm.

**4. REMOVE IDLE-UP DIAPHRAGM**

- (a) Disconnect the idle up diaphragm link.
- (b) Remove the idle up diaphragm.

**5. REMOVE CHOKE OPENER**

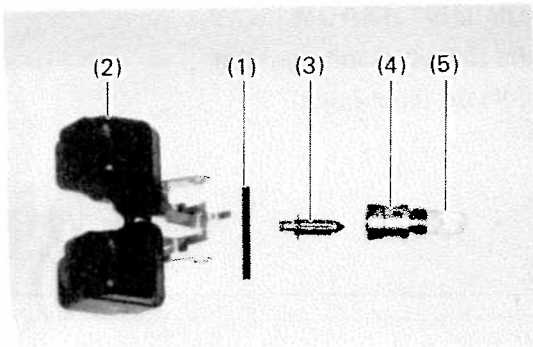
- (a) Disconnect the choke opener link.
- (b) Remove the choke opener.

**6. SEPARATE BODY AND FLANGE**

- (a) Remove the three screws.
- (b) Separate the body and flange.

GENERAL CLEANING PROCEDURE**CLEAN DISASSEMBLED PARTS BEFORE INSPECTION**

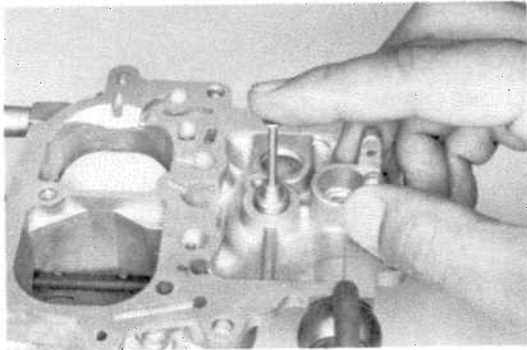
- (a) Wash and clean the cast parts with a soft brush in carburetor cleaner.
- (b) Clean off the carbon around the throttle valve.
- (c) Wash the other parts thoroughly in carburetor cleaner.
- (d) Blow all dirt and other foreign matter from the jets, fuel passages, and restrictions in the body.



INSPECTION OF CARBURETOR

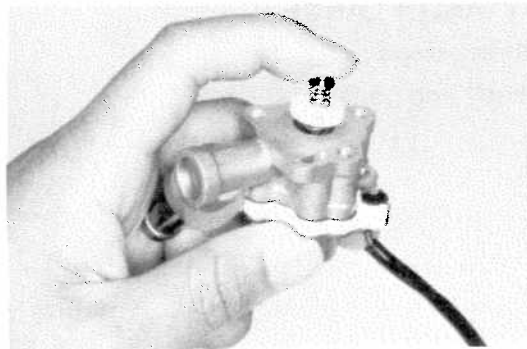
1. INSPECT FLOAT AND NEEDLE VALVE

- (a) Inspect the pivot pin (1) for scratches or excessive wear.
- (b) Inspect the float (2) for broken lips and wear in the pivot pin holes.
- (c) Inspect the needle valve (3) and valve seat (4) for wear or damage.
- (d) Inspect the strainer (5) for rust or breaks.



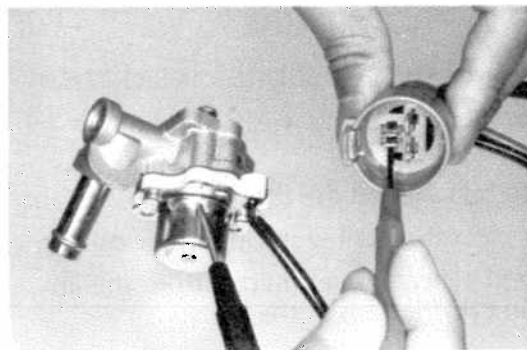
2. INSPECT POWER PISTON

- (a) Inspect the power piston for wear or damage.
- (b) Inspect the spring for breaks or deformation.
- (c) Inspect the power piston bore for wear or damage.



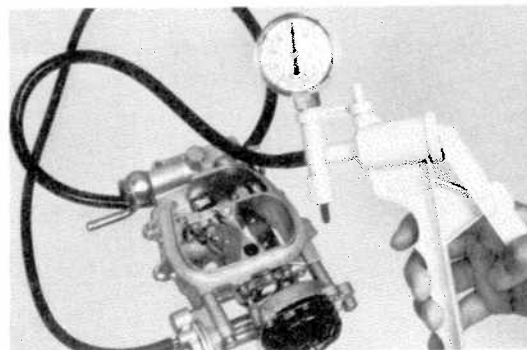
3. INSPECT OUTER VENT CONTROL VALVE (Except Canada 4 x 4)

- (a) Check the valve and valve seats for damage.
- (b) Check that the valve rod moves smoothly.



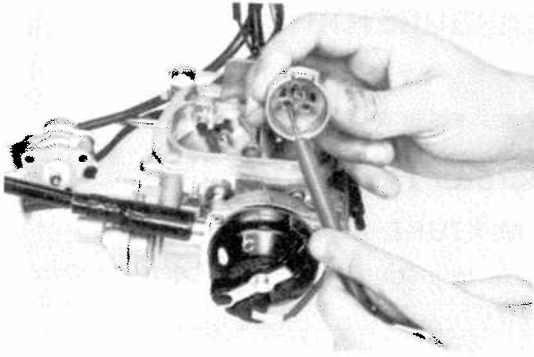
- (c) Using an ohmmeter, measure the resistance between the terminal and solenoid body.

Resistance: 63 — 73 Ω at 20° C (68° F)



4. INSPECT CHOKE BREAKER DIAPHRAGM

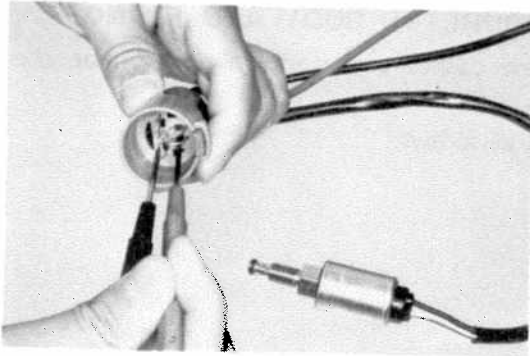
- (a) Apply vacuum to the diaphragm.
- (b) Check that the vacuum does not drop immediately.
- (c) Check that the choke valve opens slightly when vacuum is applied.



5. INSPECT CHOKE HEATER

Using an ohmmeter, measure the resistance, between the terminal and heater housing.

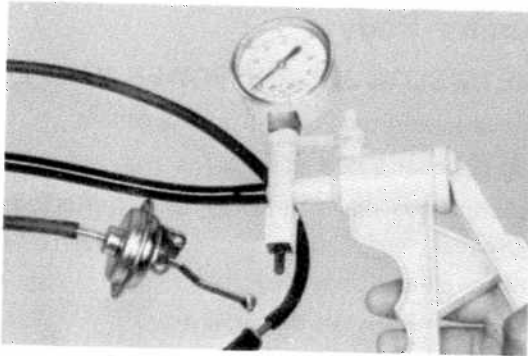
Resistance: 19 – 23 Ω at 20°C (68°F)



6. INSPECT PRIMARY FUEL CUT SOLENOID

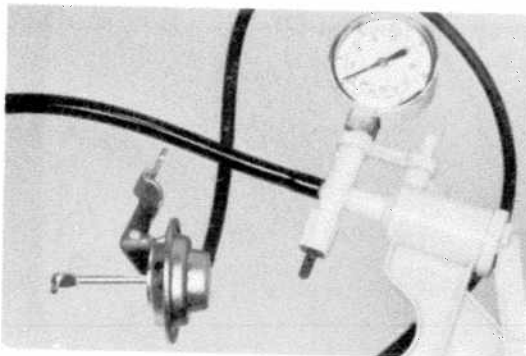
- (a) Inspect the O-ring for damage.
- (b) Connect the two terminals and battery terminals, as illustrated.
- (c) You should feel a "click" from the solenoid valve when the battery power is connected and disconnected.

If the solenoid valve is not operating properly, replace it.



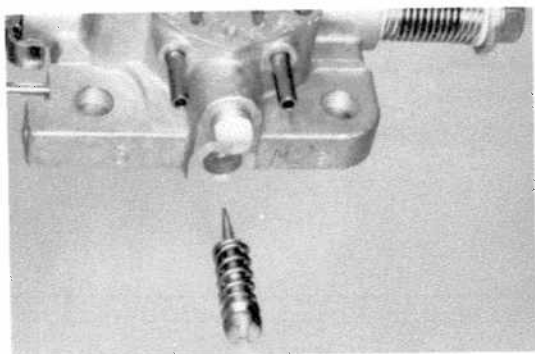
7. INSPECT CHOKE OPENER DIAPHRAGM

- (a) Apply vacuum to the diaphragm.
- (b) Check that the vacuum does not drop immediately.
- (c) Check that the link moves when vacuum is applied.



8. INSPECT IDLE-UP DIAPHRAGM

- (a) Apply vacuum to the diaphragm.
- (b) Check that the vacuum does not drop immediately.
- (c) Check that the link moves when vacuum is applied.



ASSEMBLY OF CARBURETOR

(See page 3-19)

NOTE: Use new gaskets and O-rings throughout.

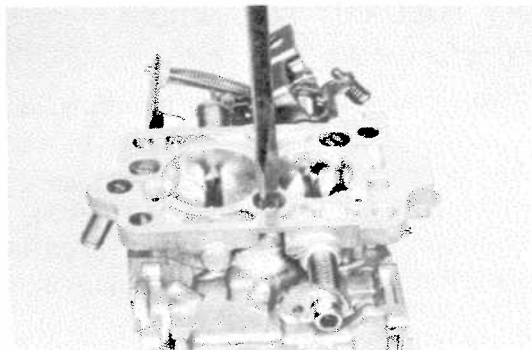
Assembly of Carburetor Flange

1. INSTALL IDLE MIXTURE ADJUSTING SCREW

If the idle mixture adjusting screw has been removed, install it temporarily.

2. ASSEMBLE CARBURETOR BODY AND FLANGE

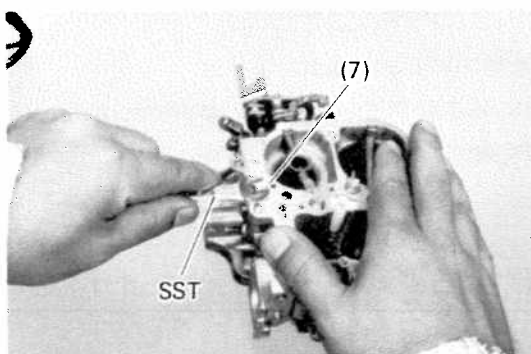
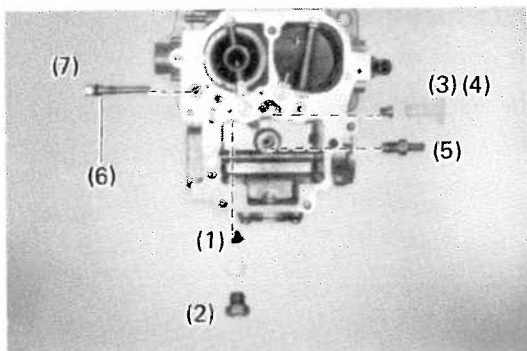
- (a) Place the new gasket and body in position on the flange.
- (b) Install the three screws.



Assembly of Carburetor Body

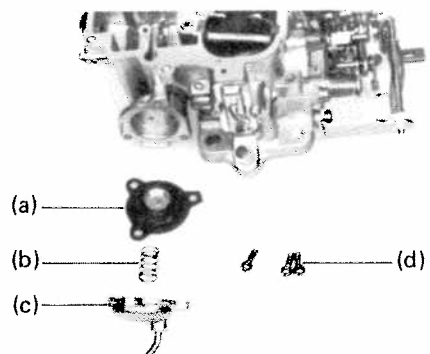
1. INSTALL MAIN JETS, SLOW JET AND POWER VALVE

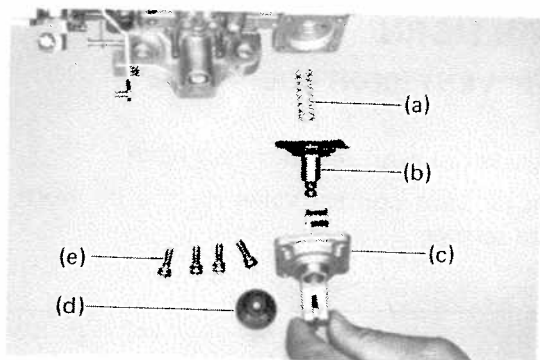
- (a) Install the primary main jet (1) over a new gasket.
 - (b) Install the plug (2) over a new gasket.
 - (c) Install the secondary main jet (3) and metering needle guide (4).
 - (d) Install the power valve with jet (5).
 - (e) Assemble a new O-ring (6) on the slow jet.
 - (f) Using SST, install the slow jet (7).
- SST 09922-00010



2. INSTALL AAP IN ORDER, AS SHOWN:

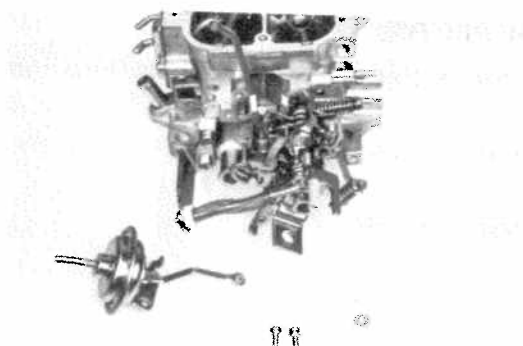
- (a) Diaphragm (with outer gasket)
- (b) Spring
- (c) Cover
- (d) Screws





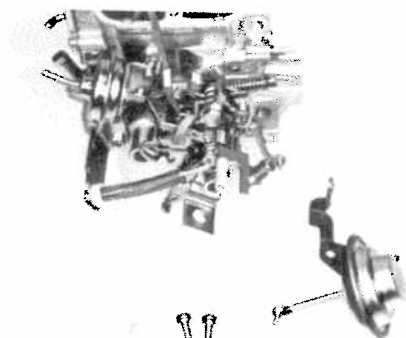
3. INSTALL ACCELERATION PUMP IN ORDER, AS SHOWN:

- (a) Spring
- (b) Diaphragm (with outer gasket)
- (c) Cover
- (d) Boot
- (e) Screws



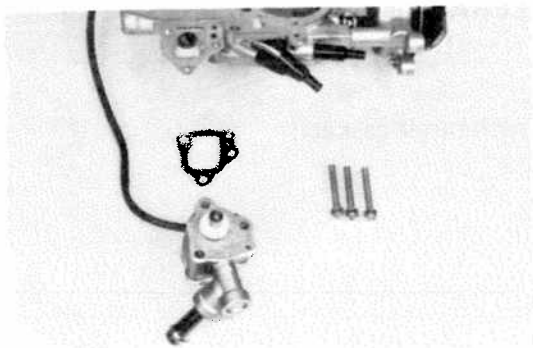
4. INSTALL CHOKE OPENER

Install the choke opener, and connect the link.



5. INSTALL IDLE-UP DIAPHRAGM

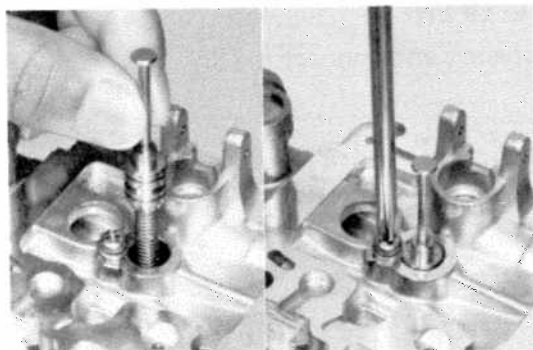
Install the idle-up diaphragm, and connect the link.



ASSEMBLY OF AIR HORN

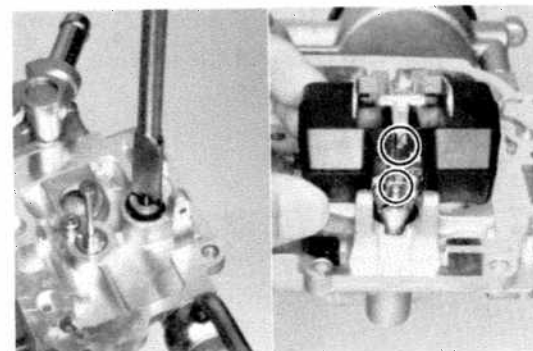
1. INSTALL OUTER VENT CONTROL VALVE (Except Canada 4 x 4)

- Place a new gasket in position on the air horn.
- Install the outer vent control valve on the air horn with the three screws.



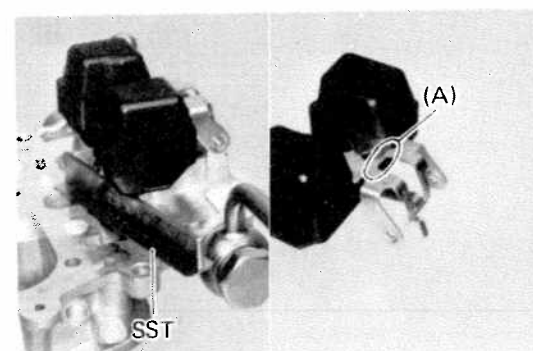
2. INSTALL POWER PISTON

- Place the power piston spring and piston into the bore.
- While pushing the piston, rotate the retainer over the piston.
- Tighten the retainer screw.



3. INSTALL FLOAT AND NEEDLE VALVE

- Install the valve seat over a new gasket into the fuel inlet.
- Install the needle valve onto the valve seat.
- Insert the lip of the float under the wire of the needle valve.
- Install the float and secure it with the pivot pin.



4. ADJUST FLOAT LEVEL

- Allow the float to hang down by its own weight. Using SST, check the clearance between the float top and air horn.

SST 09240-00014

NOTE: This measurement should be made without a gasket on the air horn.

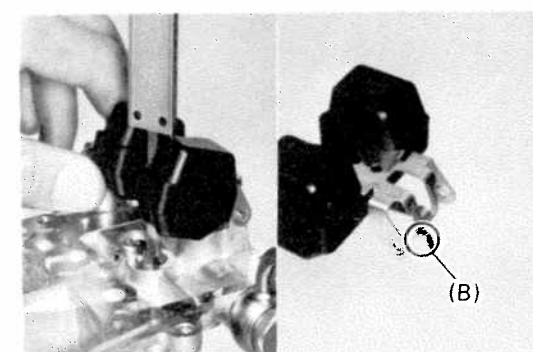
Float level (raised position): 9.8 mm (0.386 in.)

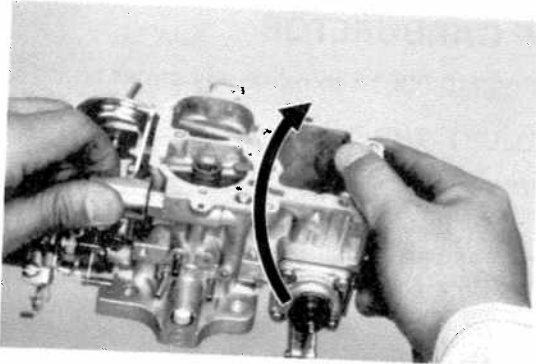
- Adjust by bending (A) of the float.

- Lift up the float and, using vernier calipers, check the distance between the air horn and the float bottom.

Float level (lowered position): 48 mm (1.89 in.)

- Adjust by bending portion (B) of the float.

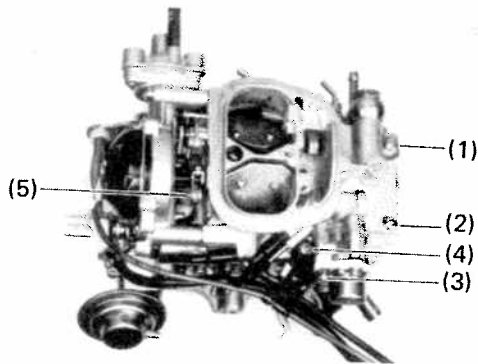
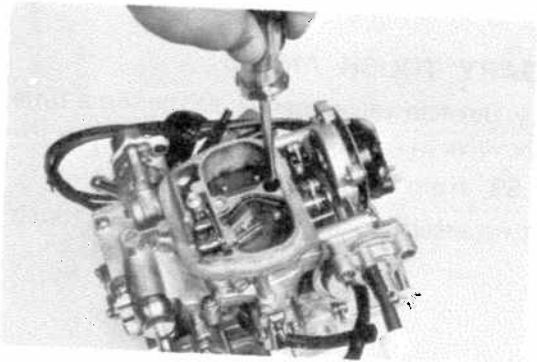




5. ASSEMBLE AIR HORN AND BODY

- (a) Assemble a new O-ring on the solenoid valve into the carburetor body by rotating the carburetor body clockwise.

- (b) Put a new gasket on the body.
- (c) Carefully assemble the air horn and body.

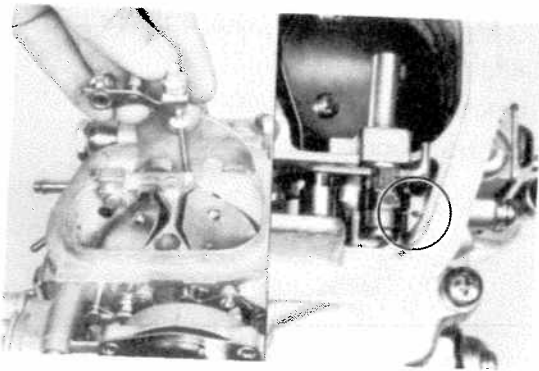


6. INSTALL FIVE SCREWS WITH OTHER PARTS, AS FOLLOWS:

- (a) Install the fuel inlet bracket (1).
- (b) Install the number plate (2).
- (c) Install the VCV clamp (3) and wire clamp (4).
- (d) Connect the fast idle link (5) and air valve connecting rod.

7. INSTALL METERING NEEDLE

- (a) Install the metering needle with a collar.
- (b) Hook the spring end into the hole.
- (c) Tighten the screw with washer.



ADJUSTMENT OF CARBURETOR

NOTE: Use SST 09240-00014 to make adjustment.

1. CHECK AND ADJUST THROTTLE VALVE OPENING

Check the full opening angle of the primary and secondary throttle valves.

Adjust by bending the respective first throttle arm levers for the primary (1) and secondary (2).

Standard angle:

Primary — 90° from horizontal plane

Secondary — 90° from horizontal plane

2. CHECK SECONDARY TOUCH ANGLE

Check the primary throttle valve opening at the same time the second throttle valve just starts to open.

Standard angle: 59° from horizontal plane

NOTE: It is not necessary to adjust the secondary touch angle.

3. CHECK AND ADJUST FAST IDLE SETTING

- (a) Set the throttle shaft lever to the first step of the fast idle cam as shown.

- (b) With the choke valve fully closed, check the primary throttle valve angle.

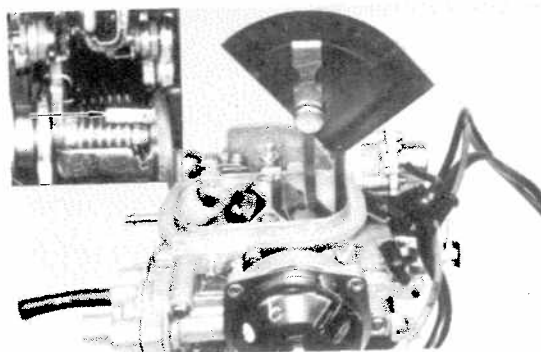
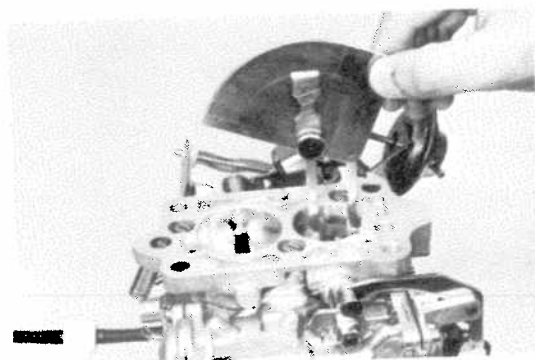
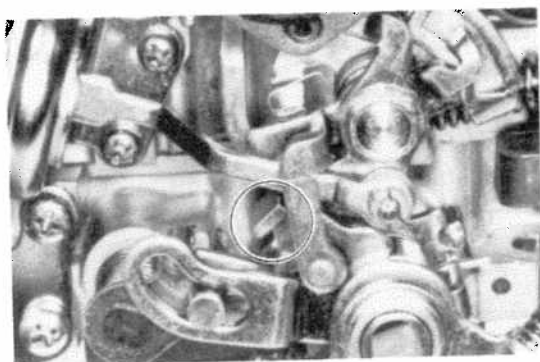
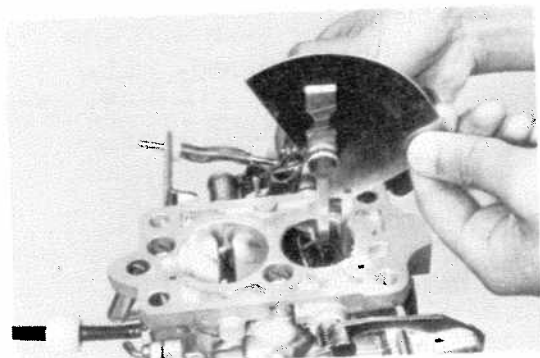
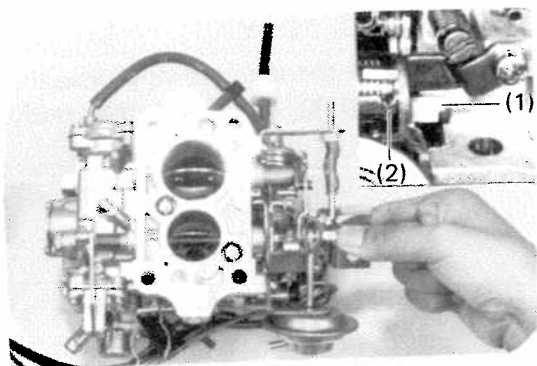
Adjust by turning the fast idle adjusting screw.

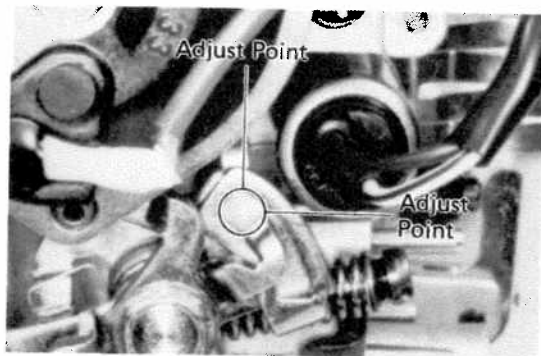
Standard angle: 22° from horizontal plane

4. CHECK AND ADJUST UNLOADER

With the primary throttle valve fully opened, check the choke valve angle. Adjust by bending the primary throttle arm.

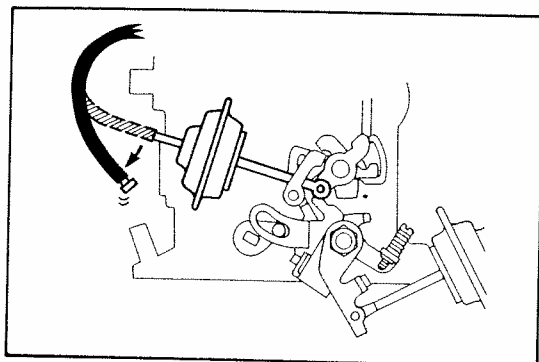
Standard angle: 50° from horizontal plane



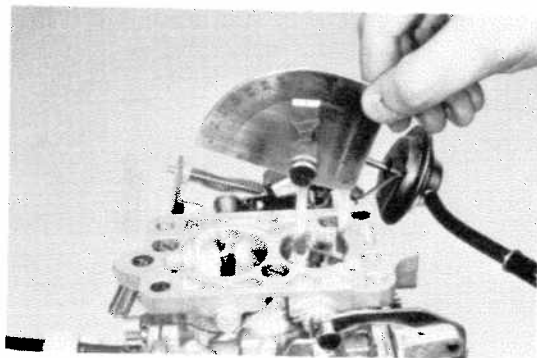


5. CHECK AND ADJUST CHOKE OPENER

- (a) Apply vacuum to the choke opener diaphragm.
- (b) Check that the fast idle cam is released to the fourth step. Adjust by bending choke opener lever A.



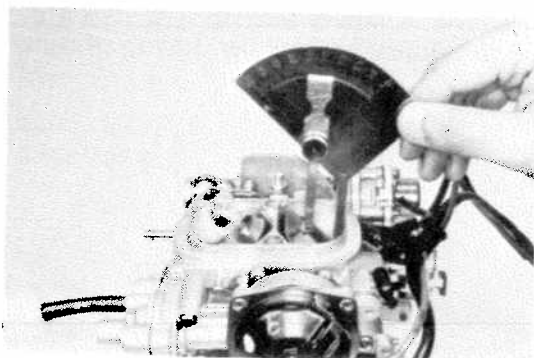
- (c) Disconnect the vacuum gauge.
- (d) Close the choke valve and set the fast idle lever to the first step.
- (e) Check that there is clearance between the choke opener lever and fast idle cam.



6. CHECK AND ADJUST IDLE-UP

- (a) Apply vacuum to the idle-up diaphragm.
- (b) Check the throttle valve opening angle. Adjust by turning the adjusting screw.

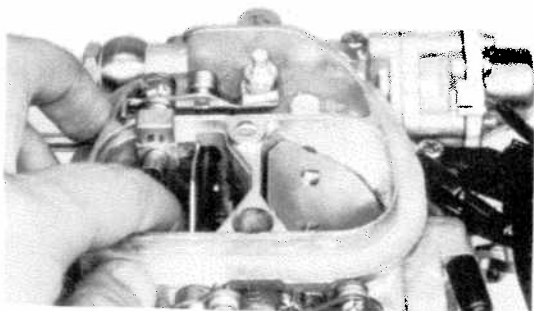
Standard angle: 16.5° from horizontal plane



7. CHECK CHOKE BREAKER

- (a) Apply vacuum to the choke breaker diaphragm.
- (b) Close the choke valve by hand.
- (c) Check the choke valve opening angle.

Standard angle: 42° from horizontal plane

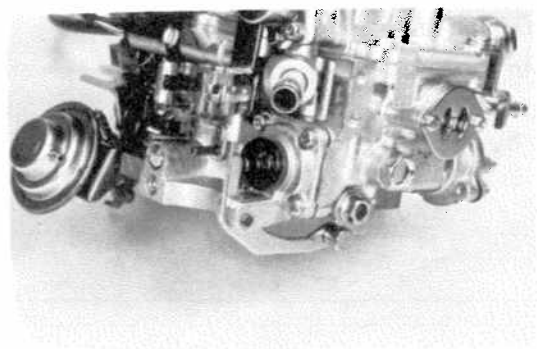


8. CHECK AIR VALVE AND METERING NEEDLE

- (a) Check that the air valve and metering needle move smoothly together.
- (b) While the first throttle valve angle is idle position, check the air valve opening angle.

Air valve opening angle: more than 45°

- (c) While the first throttle valve is fully open angle, check that there is clearance between the connecting rod and stopper.

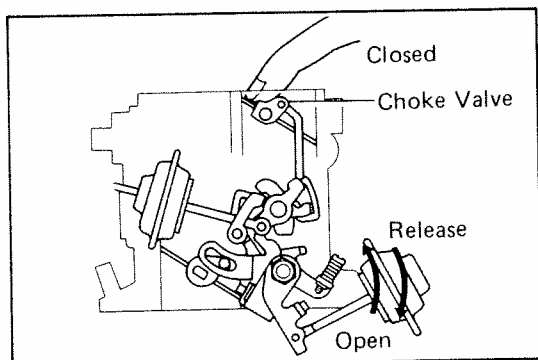


9. CHECK ACCELERATION PUMP

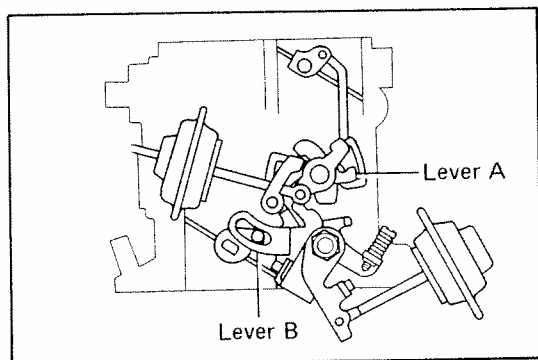
Rotate the throttle shaft and check that the pump lever and diaphragm rod move smoothly.

10. INSPECT AND ADJUST SECONDARY THROTTLE VALVE LOCK SYSTEM

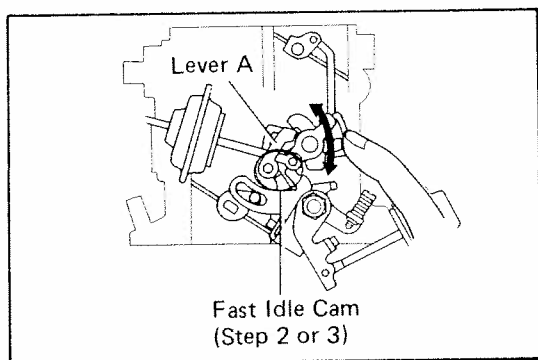
- (a) While holding the throttle slightly open, push the choke valve closed, and hold it closed as you release the throttle valve.



- (b) In condition (a), check that lever A is holding lever B locked as shown.

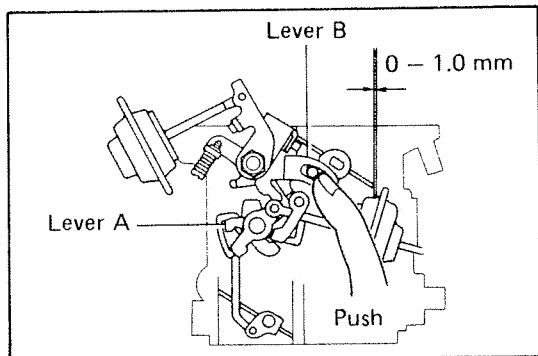


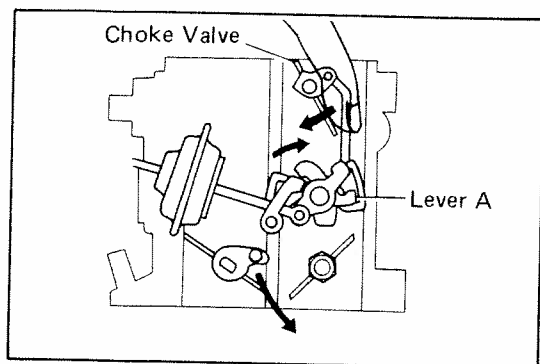
- (c) Check that the lever A moves smoothly at step 2 or 3 of fast idle cam. Adjust by bending the top of lever A.



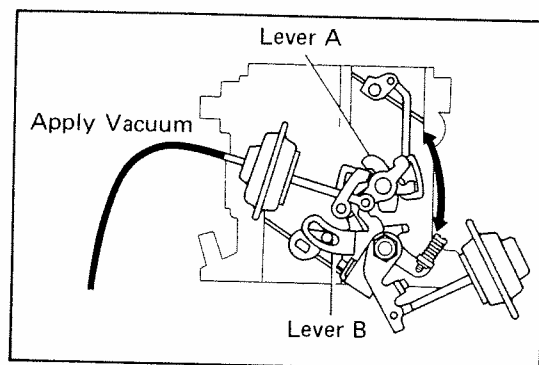
- (d) In condition (a), rotate lever B to where it makes contact with lever A. In this position, measure the clearance between the secondary valve and bore. Adjust by bending the top of lever A.

Standard clearance: 0 – 0.5 mm
(0 – 0.020 in.)

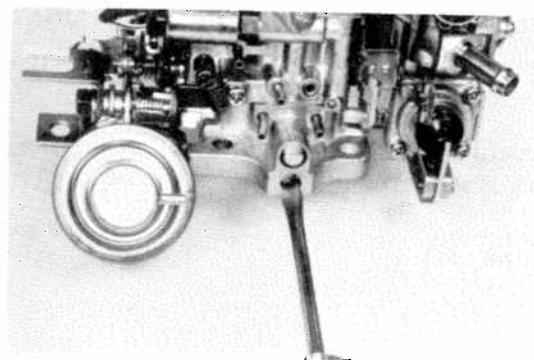




- (e) With the choke valve opened (above 52°), check that lever A unlocks when the throttle valve is opened.



- (f) Repeat step (a).
 (g) Apply vacuum to the choke opener and check that lever A withdraws and that lever B unlocks.



11. PRESET IDLE MIXTURE ADJUSTING SCREW

If the idle mixture adjusting screw plug has been removed, fully screw in the idle mixture screw and then unscrew it to the following amount.

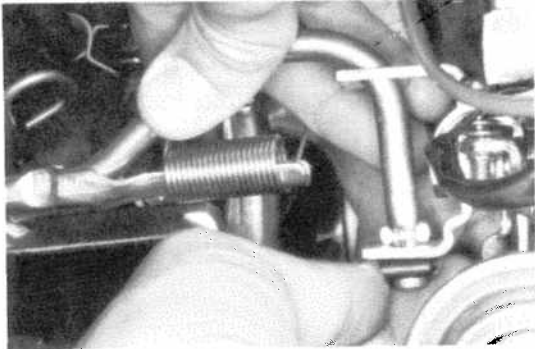
Standard: Return 4 turns from fully closed

CAUTION: Use care not to screw it in too tightly and damage the screw tip.

INSTALLATION OF CARBURETOR

1. INSTALL CARBURETOR

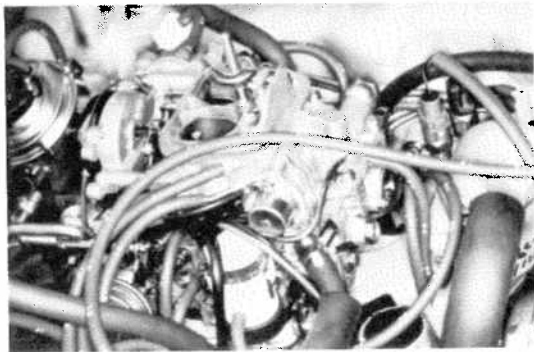
- (a) Place the insulator on the intake manifold.
- (b) Install the carburetor. Tighten the bolts and nuts securely.



2. CONNECT ACCELERATOR LINKAGE

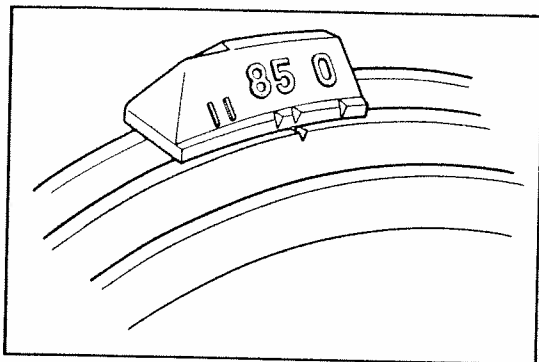
Connect the linkage and install the clip.

3. CONNECT THROTTLE CABLE FOR AUTOMATIC TRANSMISSION (See page 10-132)



4. CONNECT FOLLOWING HOSES TO CARBURETOR:

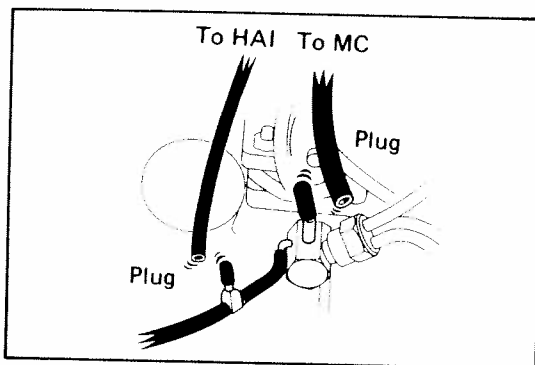
- (a) Fuel inlet hose
- (b) PCV hose
- (c) Emission control hoses (see system layout in the emission control section or the layout printed under the hood)
- (d) Wiring connector



ADJUSTMENT OF CARBURETOR (ON-VEHICLE)

1. INITIAL CONDITIONS OF CARBURETOR ADJUSTMENT

- (a) All accessories switched off
- (b) Ignition timing set correctly
- (c) Transmission in N range



2. START ENGINE

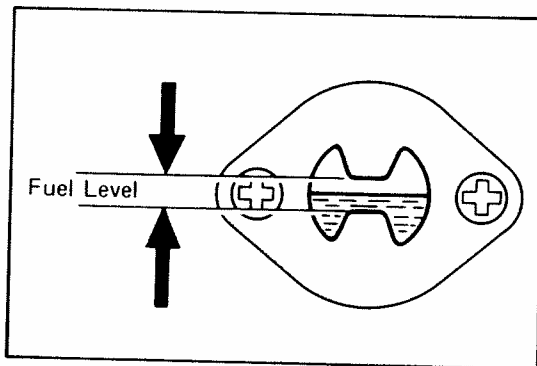
Start engine and warm it up to normal operating temperature.

NOTE: Plug the hose connections for HAI and MC systems to prevent rough idling.

3. CHECK FLOAT LEVEL

Fuel level should be about even with the correct level in the sight glass.

4. CHECK THAT CHOKE VALVE OPENS FULLY

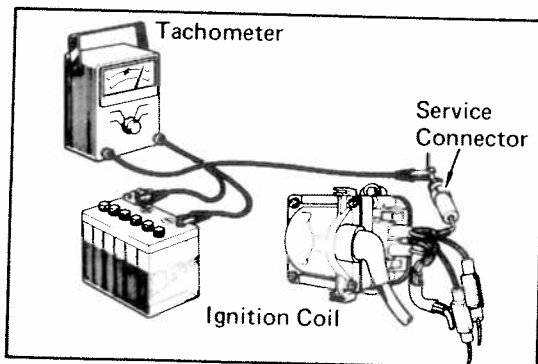


5. CONNECT TACHOMETER

Connect the tachometer test probe to the ignition coil negative terminal.

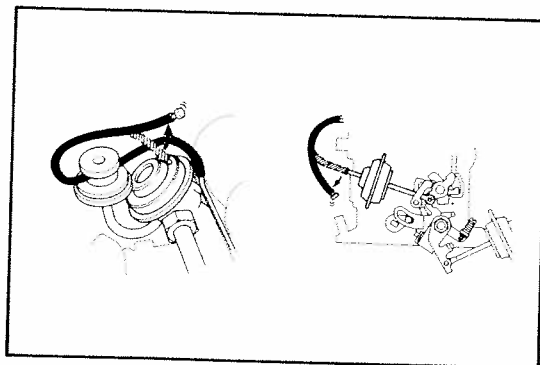
CAUTION:

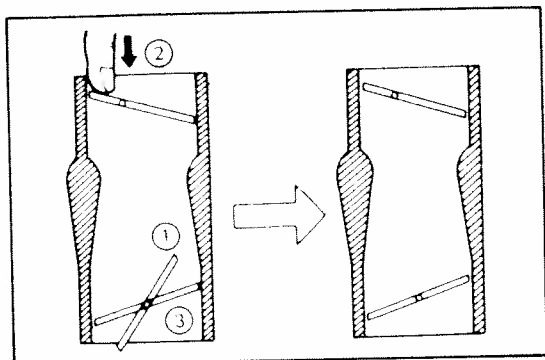
- 1. NEVER allow the ignition coil terminals to touch ground as it could result in damage to the igniter and/or ignition coil.
- 2. As some tachometers are not compatible with this ignition system, it is recommended that you consult with the manufacturer.



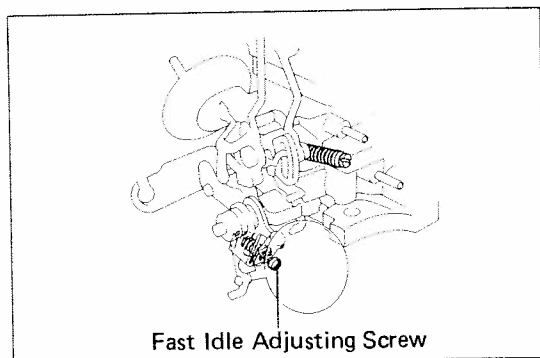
6. ADJUST FAST IDLE SPEED

- (a) Disconnect the vacuum hose from the choke opener diaphragm and EGR valve, and plug the hose end.





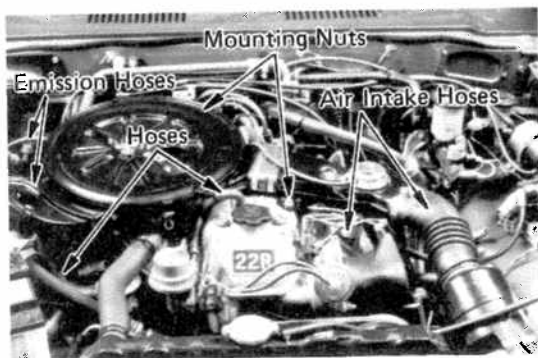
- (b) Set the fast idle cam.
While holding the throttle valve slightly open, push the choke valve closed and hold it closed as you release the throttle valve.
- (c) Start the engine, but do NOT touch the accelerator pedal.



- (d) Adjust the fast idle speed by turning the fast idle adjusting screw.

Fast idle speed: 2,600 rpm

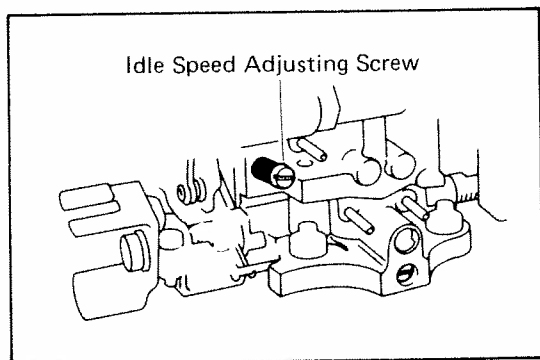
- (e) Reconnect the vacuum hoses to the proper locations.



7. STOP ENGINE

8. INSTALL AIR CLEANER

- (a) Place the air cleaner in position and install the two mounting nuts and butterfly nut.
- (b) Connect the air intake hoses.
- (c) Connect the emission control hoses.



9. ADJUST IDLE SPEED

Adjust the idle speed by turning the idle speed adjusting screw.

Idle speed: 700 rpm M/T
750 rpm A/T

10. IF NECESSARY, ADJUST IDLE MIXTURE (See page 3-37)

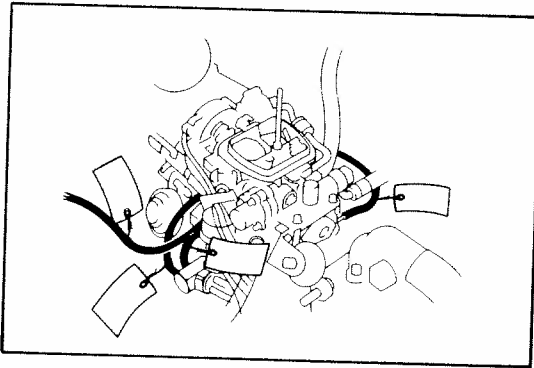
11. REMOVE TACHOMETER

Idle Mixture

ADJUSTMENT OF IDLE MIXTURE (Except Canada 4×4)

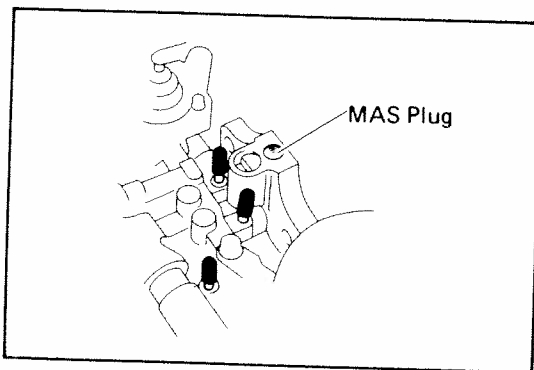
NOTE:

- To conform with regulations, the idle mixture adjusting screw is adjusted and plugged with a steel plug by the manufacturer. Normally, this steel plug should not be removed.
- When troubleshooting rough idle, check all other possible causes before attempting to adjust the idle mixture (see TROUBLESHOOTING on page FU-2). Only if no other factors are found to be at fault, should the idle mixture be adjusted and, when doing so, remove the plug and follow the procedure described below.



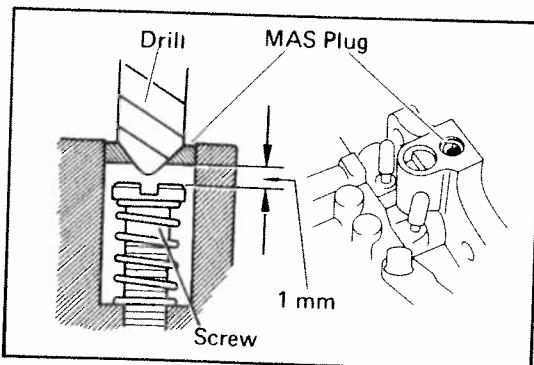
1. REMOVE CARBURETOR

- Before disconnecting the vacuum hoses, use tags to identify how they should be reconnected.
- Remove the carburetor from the engine.
- After removing the carburetor, cover the intake manifold with a clean rag.



2. REMOVE MIXTURE ADJUSTING SCREW PLUG (MAS PLUG)

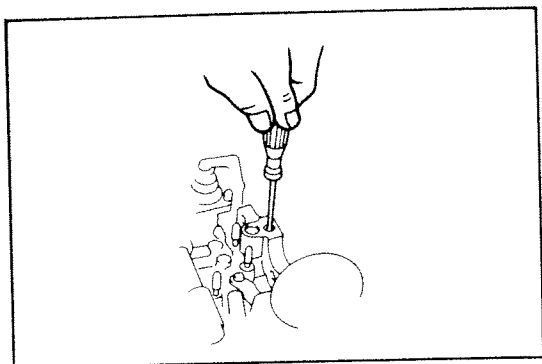
- Plug each carburetor vacuum port to prevent entry of steel particles when drilling.
- Mark the center of the plug with a punch.



- Drill a 6.5 mm ϕ (0.256 in. ϕ) hole in the center of the plug.

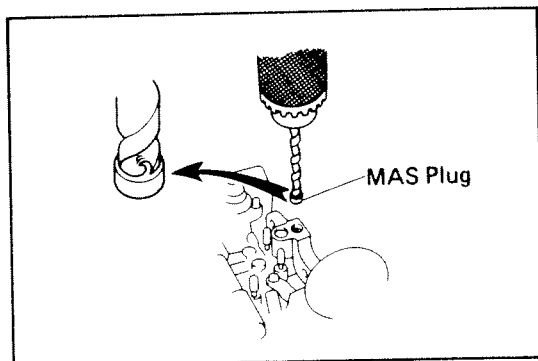
NOTE:

- As there is only 1 mm (0.04 in.) clearance between the plug and screw, drill carefully and slowly to avoid drilling onto the screw.
- The drill may force the plug off at this time.

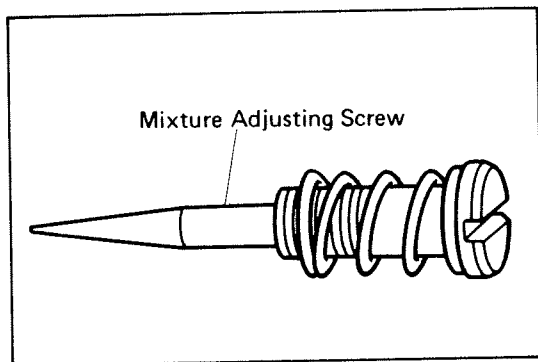


- (d) Through the hole in the plug, fully screw in the mixture adjusting screw with a screwdriver.

NOTE: Be careful not to damage the screw tip by tightening the screw too tight.



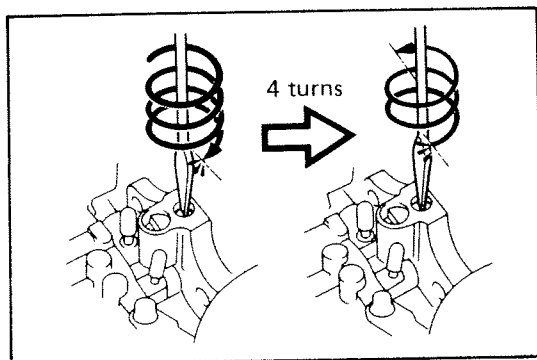
- (e) Use a 7.5 mm ϕ (0.295 in. ϕ) drill to force the plug off.



3. INSPECT MIXTURE ADJUSTING SCREW

- (a) Blow off any steel particles with compressed air.
(b) Remove the screw and inspect it.

If the drill has gnawed into the screw top or if the tapered position is damaged, replace the screw.



4. REINSTALL MIXTURE ADJUSTING SCREW

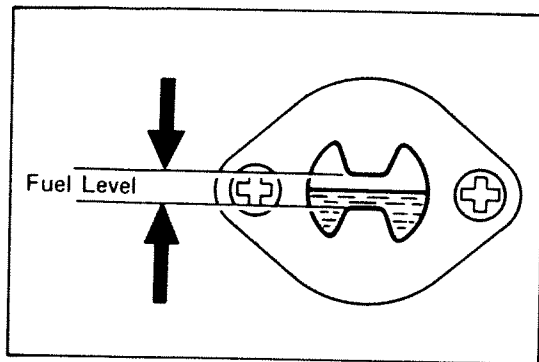
Fully screw in the idle mixture adjusting screw and then unscrew it about 4 turns.

NOTE: Be careful not to damage the screw tip by tightening the screw too tight.

5. REINSTALL CARBURETOR

- (a) Reinstall the carburetor on the engine.
(b) Reconnect the vacuum hoses to the proper locations. Refer to the information label on the vacuum hose.

6. REINSTALL AIR CLEANER



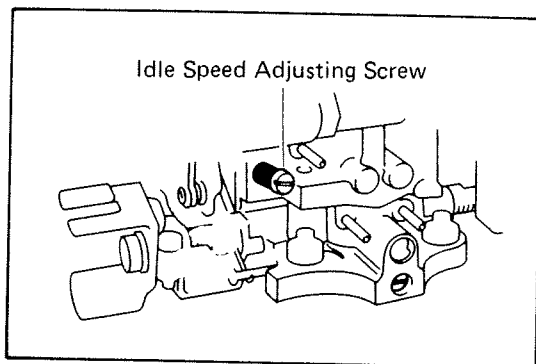
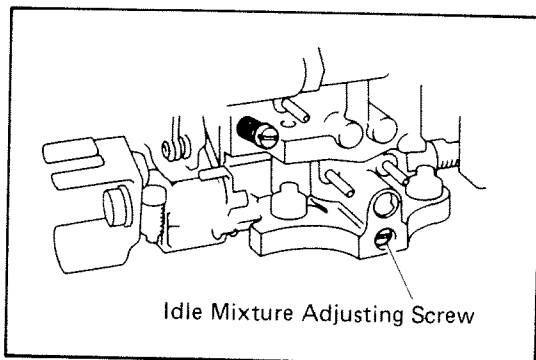
7. ADJUST IDLE SPEED AND IDLE MIXTURE (Except Canada 4 x 4)

(a) Initial conditions:

- Air cleaner installed
- Normal operating coolant temperature
- Choke fully open
- All accessories switched off
- All vacuum lines connected
- Ignition timing set correctly
- Transmission in N range
- Fuel level should be about even with the correct level in the sight glass.

(b) Start the engine.

(c) Set to the maximum speed by turning the IDLE MIXTURE ADJUSTING SCREW.



(d) Set to the idle mixture speed by turning the IDLE SPEED ADJUSTING SCREW.

Idle mixture speed:

740 rpm M/T

790 rpm A/T

(e) Before moving to the next step, continue adjustments (d) and (e) until the maximum speed will not rise any further no matter how much the IDLE MIXTURE ADJUSTING SCREW is adjusted.

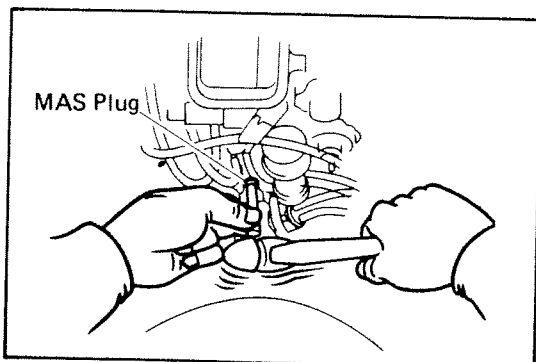
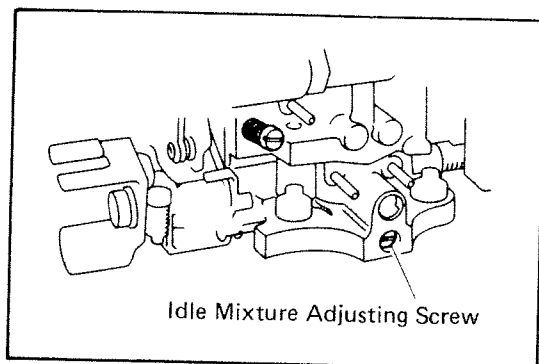
(f) Set to the idle speed by screwing in the IDLE MIXTURE ADJUSTING SCREW.

Idle speed:

700 rpm M/T

750 rpm A/T

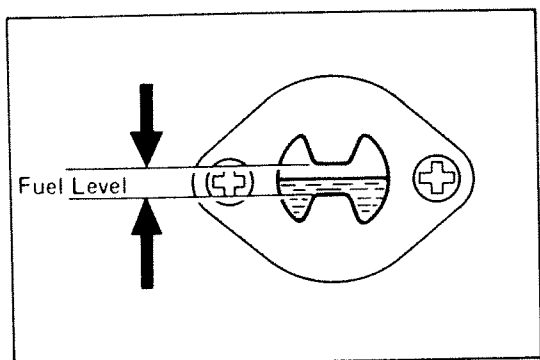
NOTE: This is the Lean Drop Method for setting idle speed and mixture.



8. PLUG IDLE MIXTURE ADJUSTING SCREW (Except Canada 4 x 4)

- (a) Remove the air cleaner.
- (b) Tap in new plug until it is even with carburetor surface.
- (c) Reinstall the air cleaner.

9. CHECK AND ADJUST FAST IDLE SPEED (Except Canada 4 x 4) (See step 6 on page 3-35)

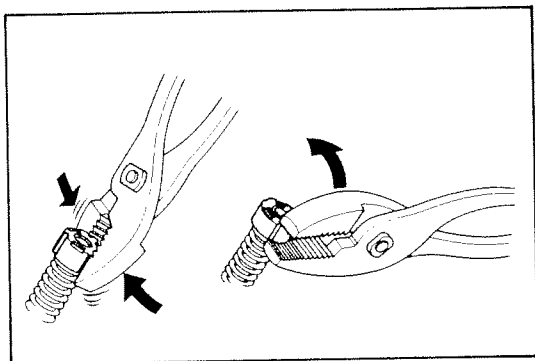


10. ADJUST IDLE SPEED AND IDLE MIXTURE (Canada 4 x 4)

(a) Initial conditions:

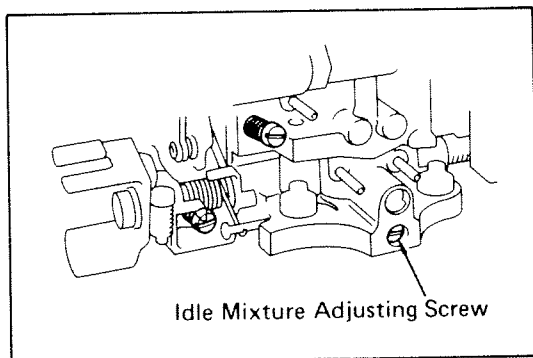
- Air cleaner installed
- Normal operating coolant temperature
- Choke fully open
- All accessories switched off
- All vacuum lines connected
- Ignition timing set correctly
- Transmission in N range
- Fuel level should be about even with the correct level in the sight glass.

(b) Break the idle limiter cap on the idle speed adjusting screw if installed.



(c) Start the engine.

(d) Set to the maximum speed by turning the IDLE MIXTURE ADJUSTING SCREW.



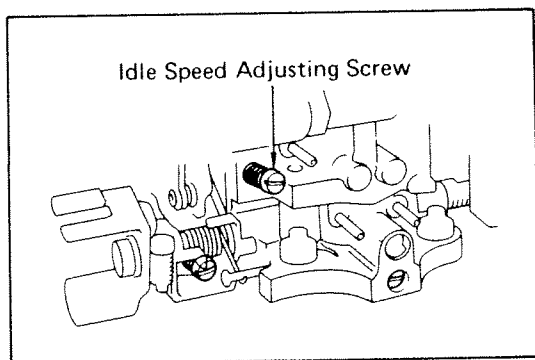
(e) Set to the idle mixture speed by turning the IDLE SPEED ADJUSTING SCREW.

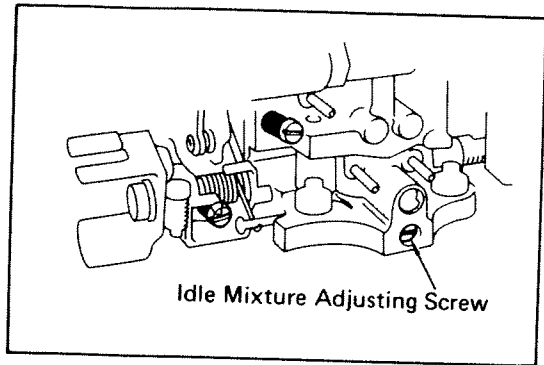
Idle mixture speed:

740 rpm M/T

790 rpm A/T

(f) Before moving to the next step, continue adjustments (d) and (e) until the maximum speed will not rise any further no matter how much the IDLE MIXTURE ADJUSTING SCREW is adjusted.





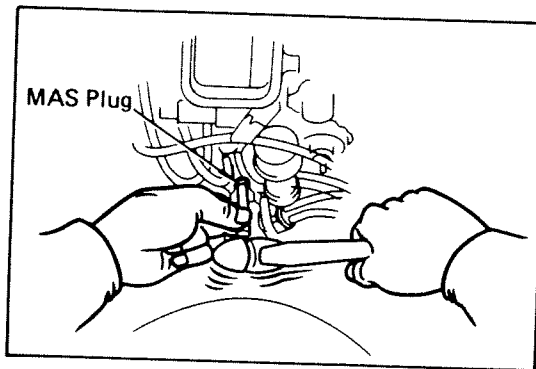
- (g) Set to the idle speed by screwing in the IDLE MIXTURE ADJUSTING SCREW.

Idle speed:

700 rpm M/T

750 rpm A/T

This is the Lean Drop Method for setting idle speed and mixture.



11. PLUG IDLE MIXTURE ADJUSTING SCREW (Canada 4 x 4)

- (a) Remove the air cleaner.
- (b) Tap in new plug until it is even with carburetor surface.
- (c) Reinstall the air cleaner.

EMISSION CONTROL SYSTEMS

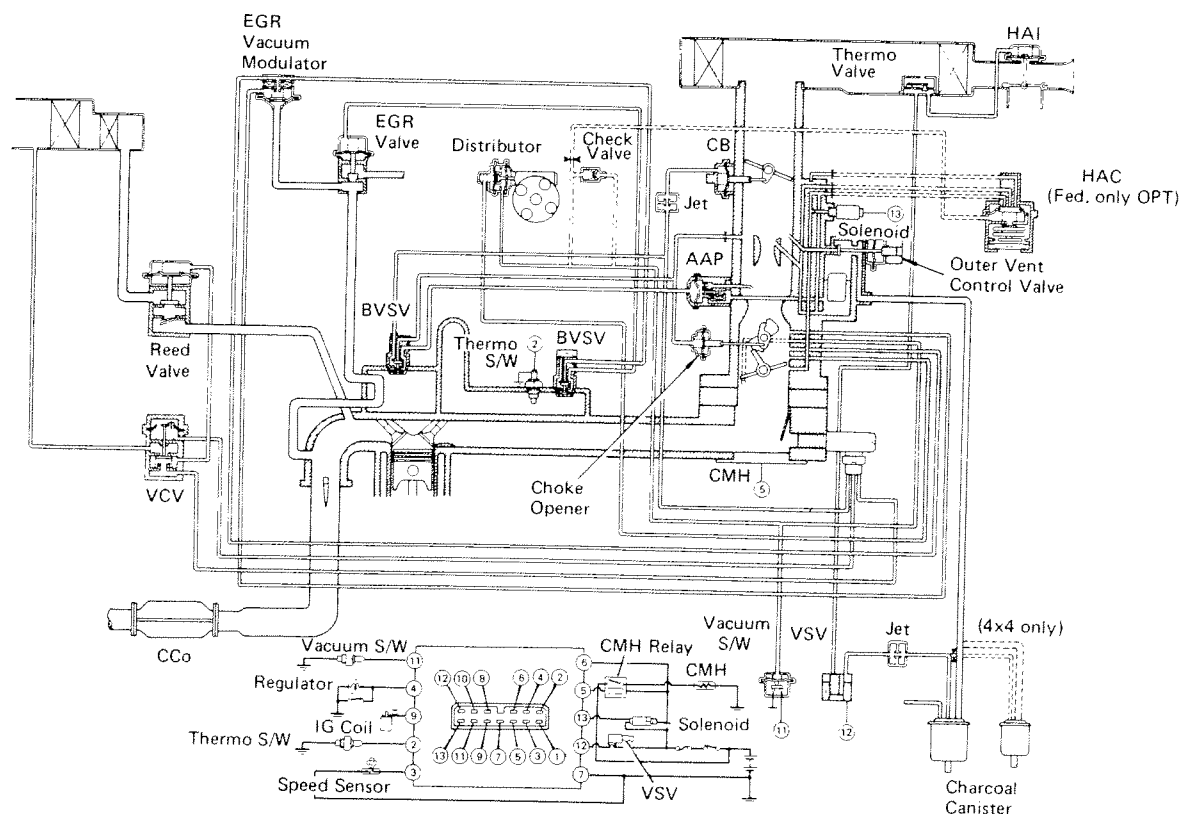
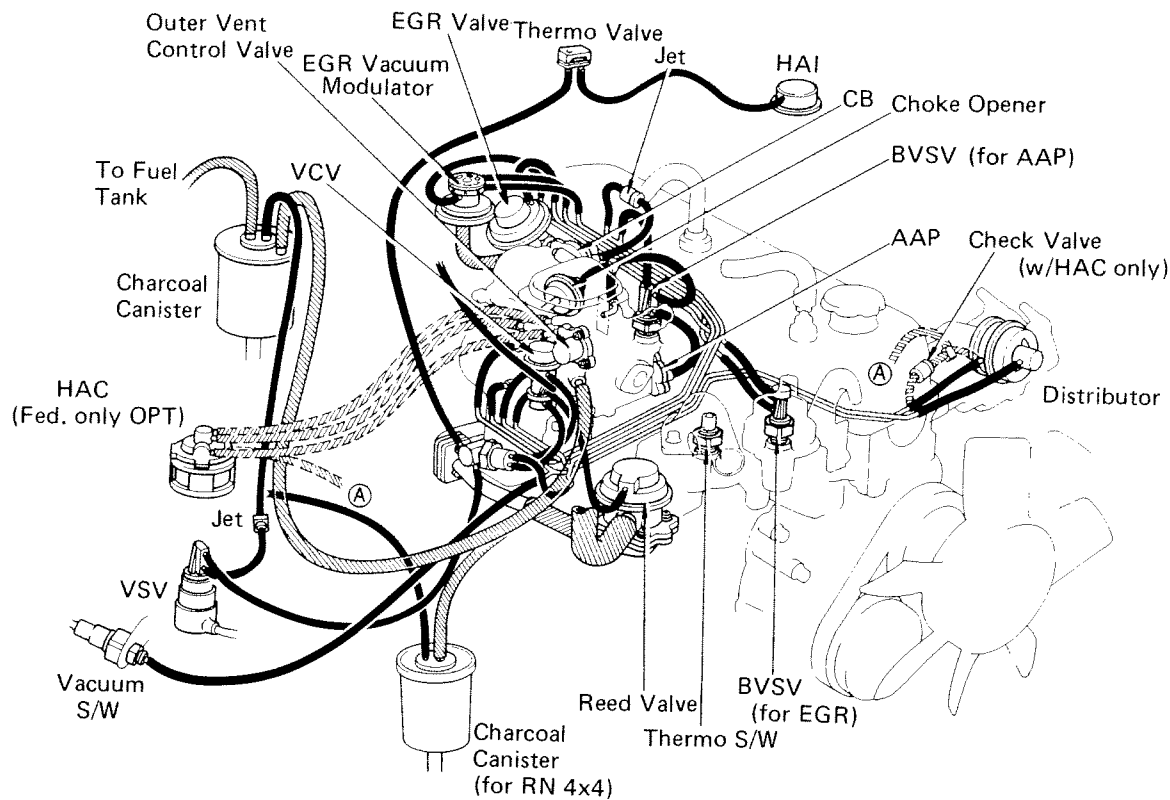
System Purpose

System	Abbre- viation	Purpose	Federal (Ex. C&C)	California (Ex. C&C)	Canada		RN C&C
					RN 4x2 (Ex. C&C)	RN 4x4	
Positive crankcase ventilation	PCV	Reduces blow-by gas (HC)	•	•	•	•	•
Fuel evaporative emission control	EVAP	Reduces evaporative HC	• ^{*1}	• ^{*1}	•	•	• ^{*1}
Mixture control	MC	Reduces HC & CO	—	• ^{*2}	—	—	•
Spark control	SC	Reduces NOx & HC	—	•	—	—	•
Exhaust gas recirculation	EGR	Reduces NOx	•	•	•	—	•
Air injection with feedback	AI	Maintains air-fuel ratio to TWC and reduces HC, CO & NOx in TWC	—	•	—	—	•
Air suction	AS	Reduces HC & CO	•	—	•	—	—
Three-way catalyst	TWC	Reduces HC, CO & NOx	—	•	—	—	•
Oxidation catalyst	OC	Reduces HC & CO	•	—	•	—	—
High altitude compensation	HAC	Insures air-fuel mixture at high altitude	• (OPT)	—	—	—	•
Auxiliary system:							
Automatic hot air intake	HAI	Improves driveability — cold	•	•	•	•	•
Automatic choke	—	Improves driveability — cold	•	•	•	•	•
Choke breaker	CB	Improves driveability — cold	•	•	•	•	•
Choke opener	—	Improves driveability — hot	•	•	•	•	•
Auxiliary acceleration pump	AAP	Improves driveability — cold	•	•	•	•	•
Deceleration fuel cut	—	Prevents overheating OC or TWC, and after burning	•	•	•	—	•
Idle advance	—	Improves fuel economy at idle	•	•	•	•	•
Cold mixture heater	CMH	Improves driveability — cold	•	•	•	•	•

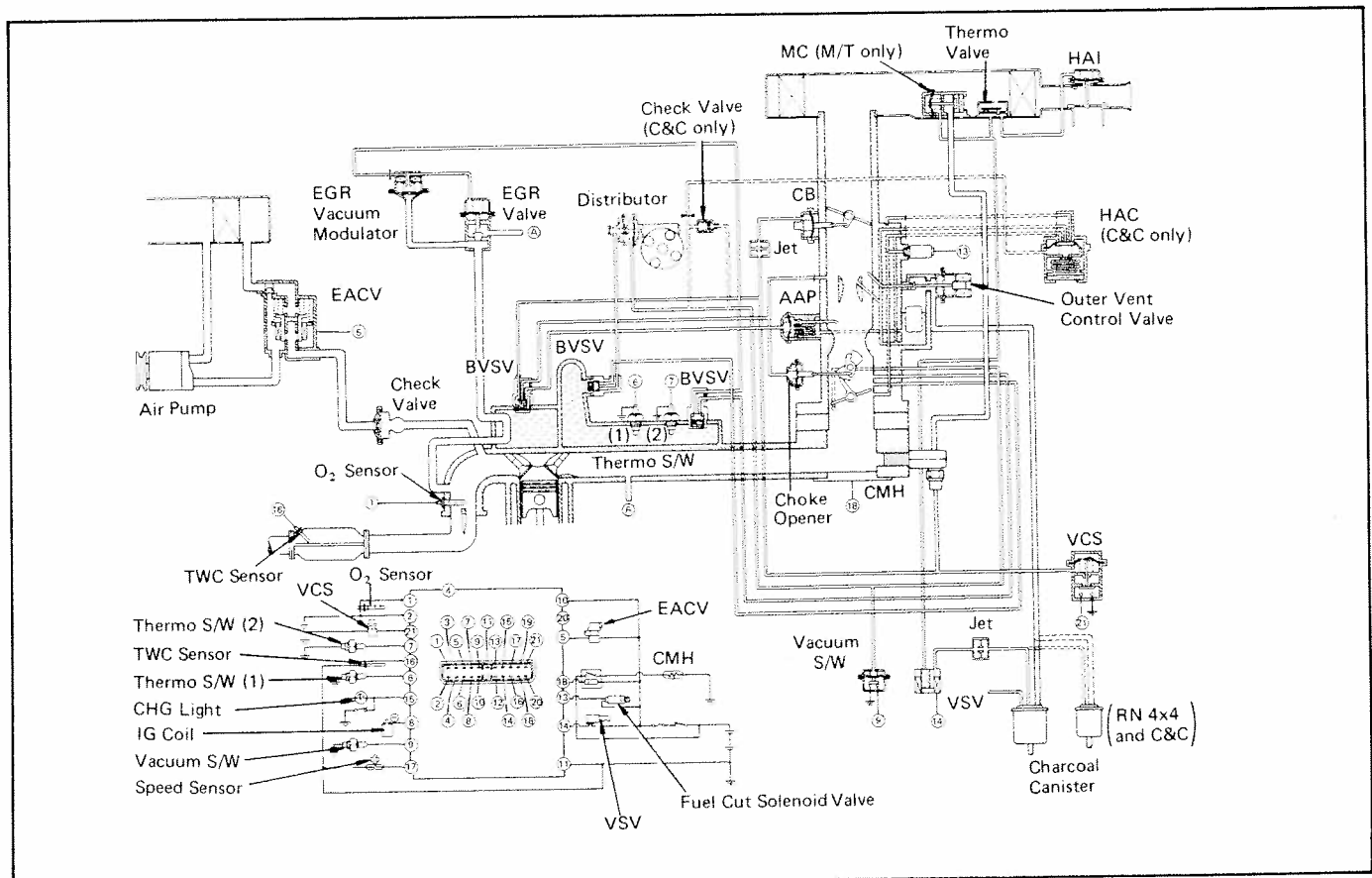
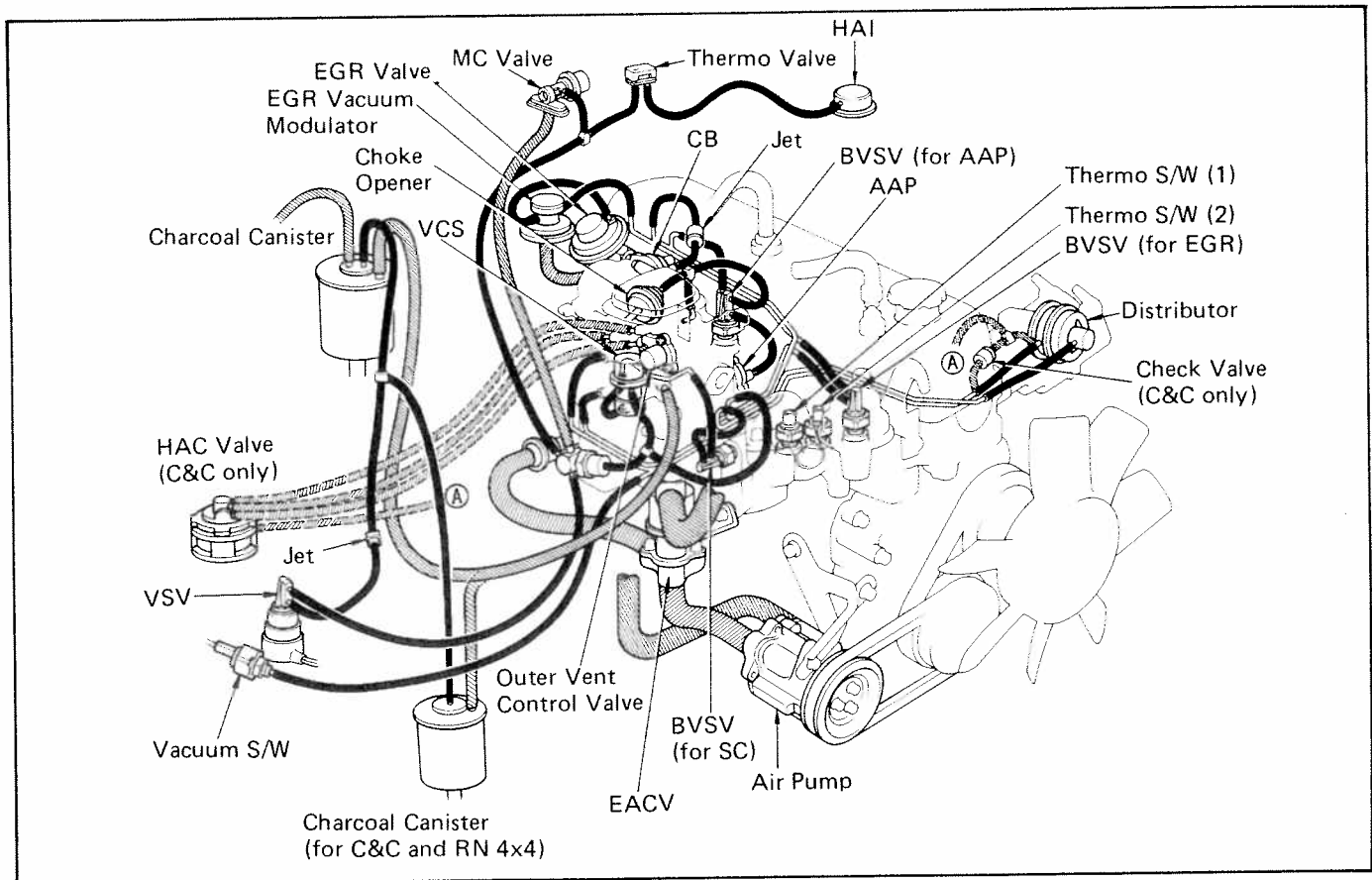
REMARKS: ^{*1} Equipped with two canisters (4x4 only)

^{*2} M/T vehicles only

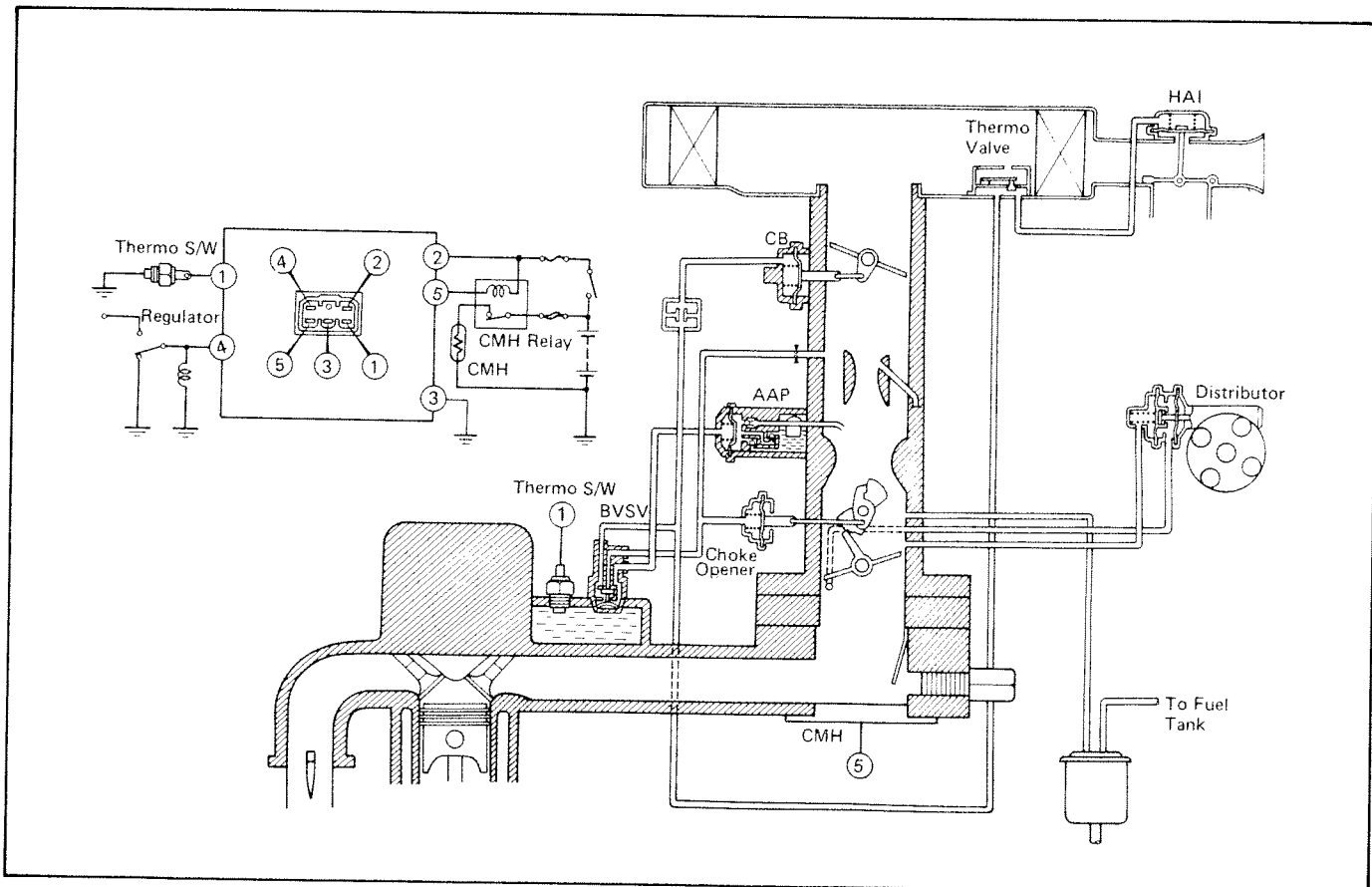
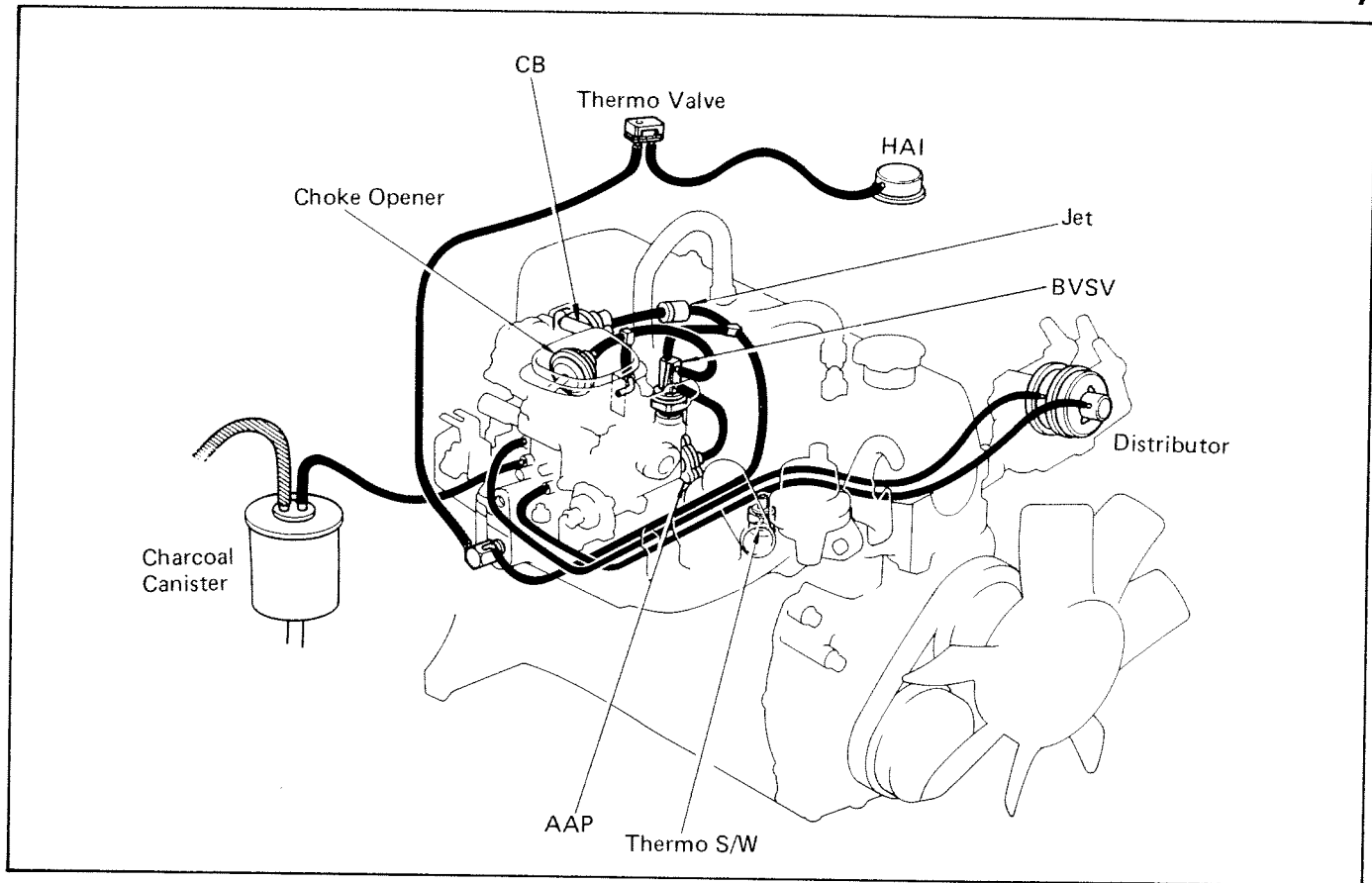
Component Layout and Schematic Drawing (Fed. RN and Canada RN 4×2 (Except C&C))



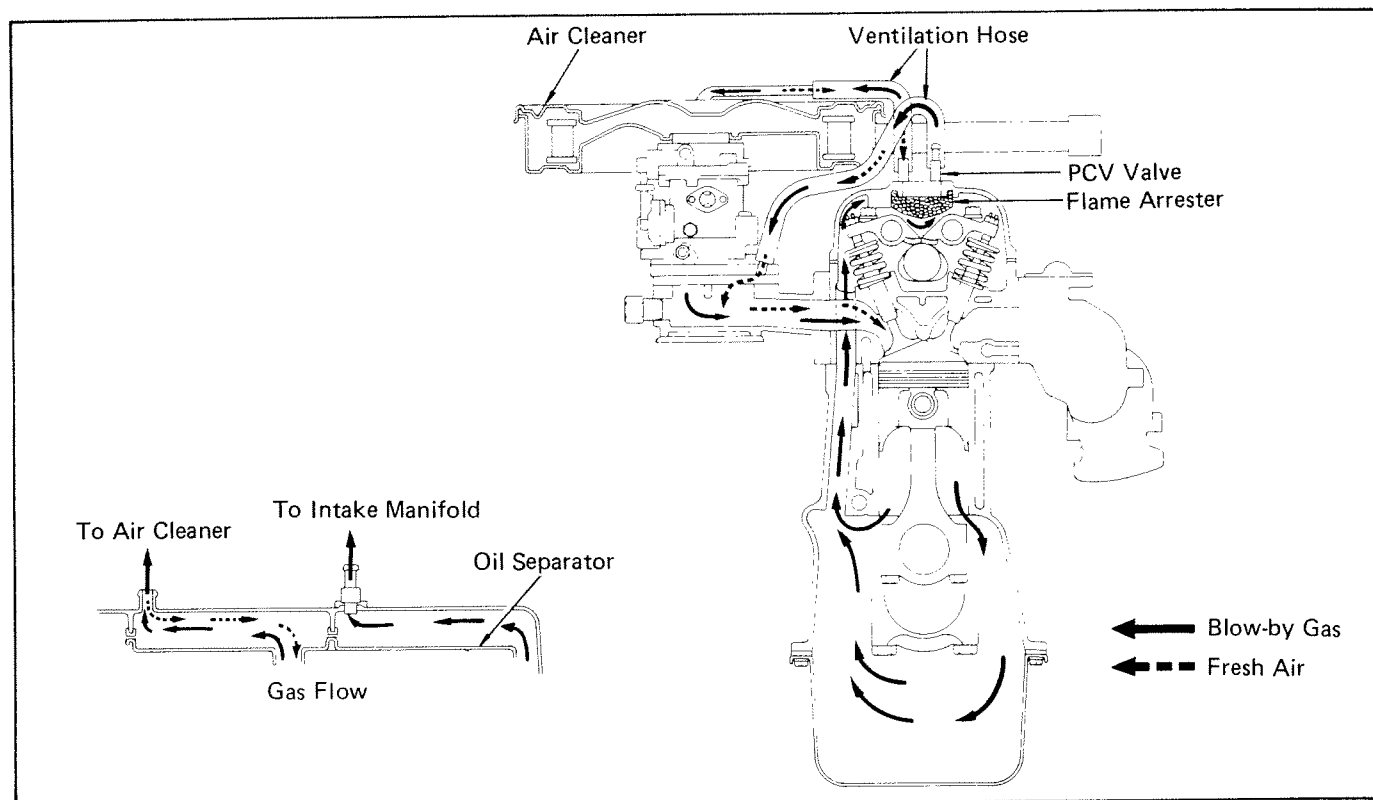
Component Layout and Schematic Drawing (Calif. RN and RN C&C)



Component Layout and Schematic Drawing (Canada RN 4×4)

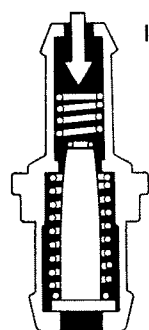


Positive Crankcase Ventilation (PCV) System



To reduce HC emissions, crankcase blow-by gas (HC) is routed through the PCV valve to the intake manifold for combustion in the cylinders.

Engine not Running or if Backfiring

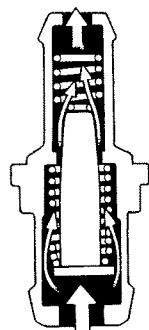


Intake Manifold Side

○PCV VALVE IS CLOSED.

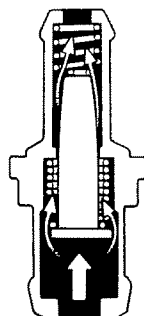
Cylinder Head Side

Normal Operation



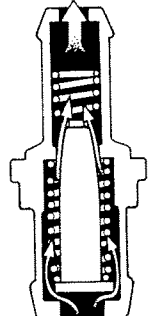
○PCV VALVE IS OPEN.
○VACUUM PASSAGE IS LARGE.

Idling or Decelerating

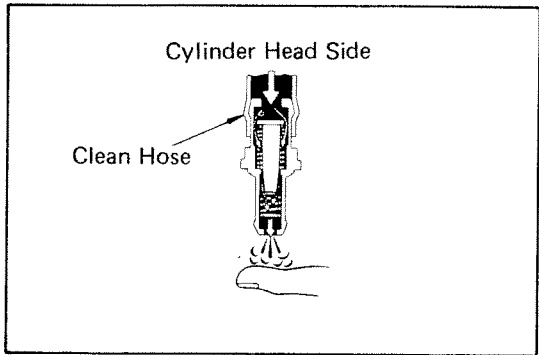


○PCV VALVE IS OPEN.
○VACUUM PASSAGE IS SMALL.

Acceleration or High Load



○PCV VALVE IS FULLY OPEN.

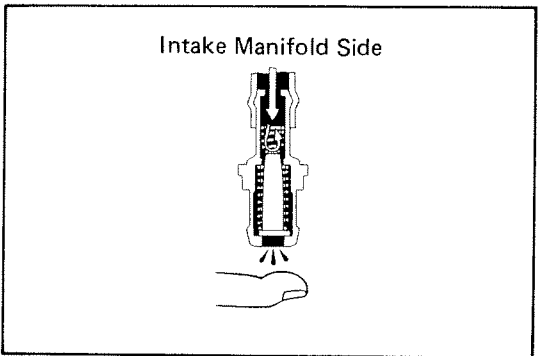


INSPECTION OF PCV VALVE

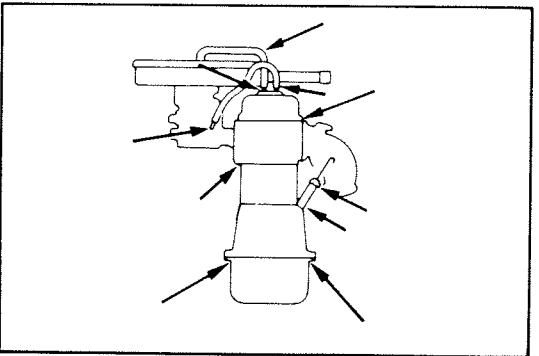
1. REMOVE PCV VALVE
2. ATTACH A CLEAN HOSE TO PCV VALVE
3. BLOW FROM CYLINDER HEAD SIDE

Check that air passes through easily.

CAUTION: Do not suck air through the valve. Petroleum substances inside the valve are harmful.



4. BLOW FROM INTAKE MANIFOLD SIDE
Check that air passes through with difficulty.
If the PCV valve fails either of the checks, replace it.
5. REINSTALL PCV VALVE

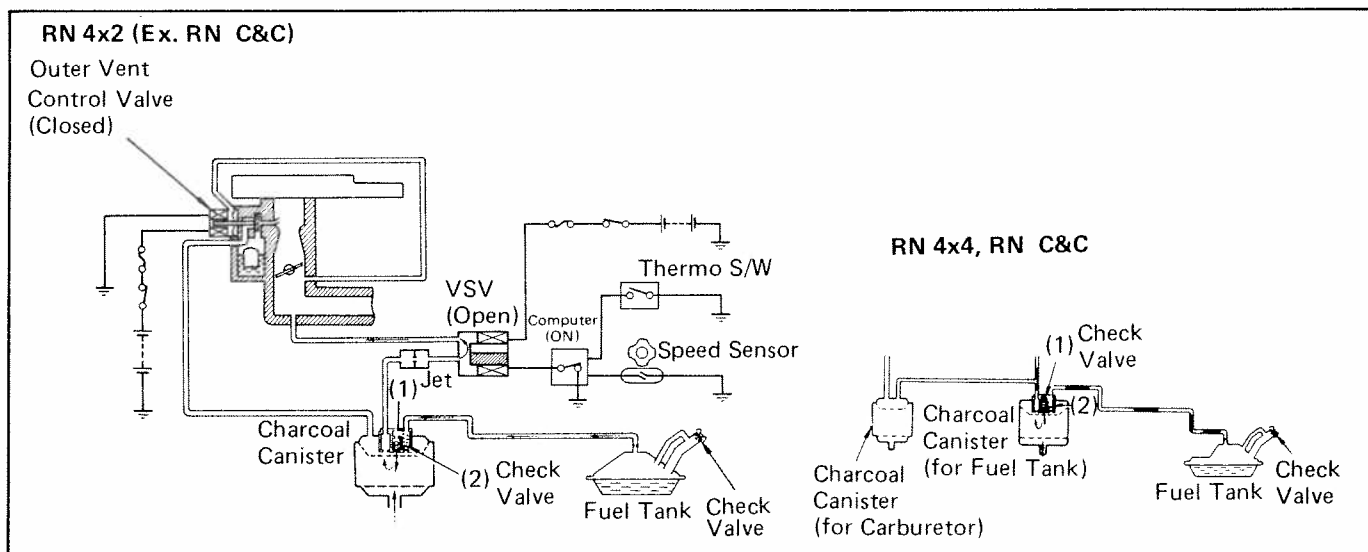
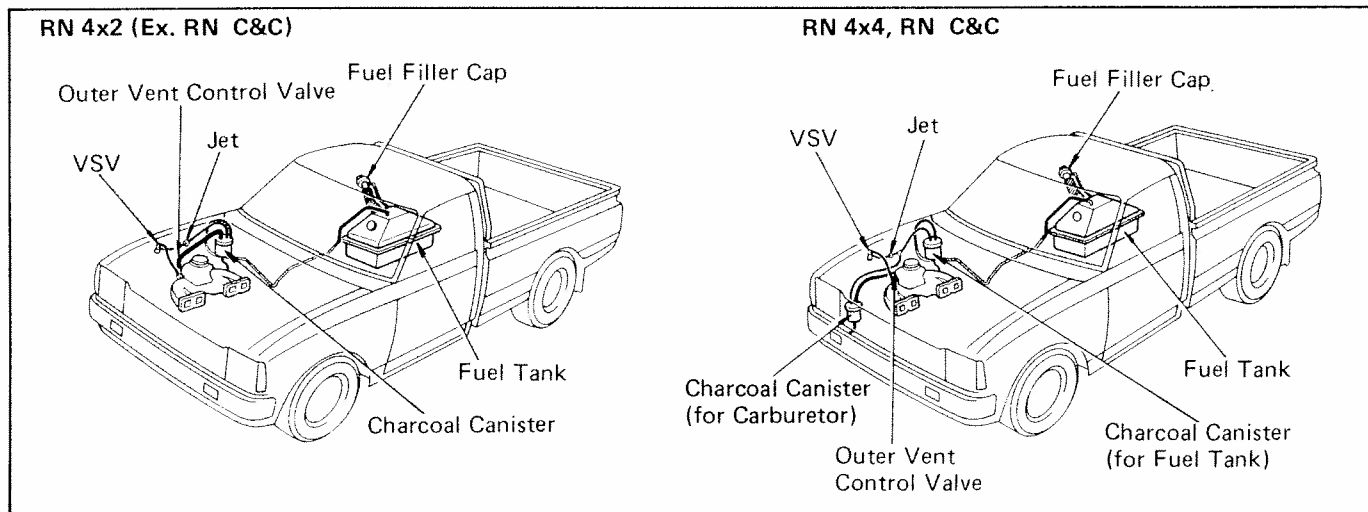


INSPECTION OF PCV HOSES AND CONNECTIONS

VISUALLY INSPECT HOSES, CONNECTIONS AND GASKETS

Check for cracks, leaks or damage.

Fuel Evaporative Emission Control (EVAP) System (Except Canada 4×4)

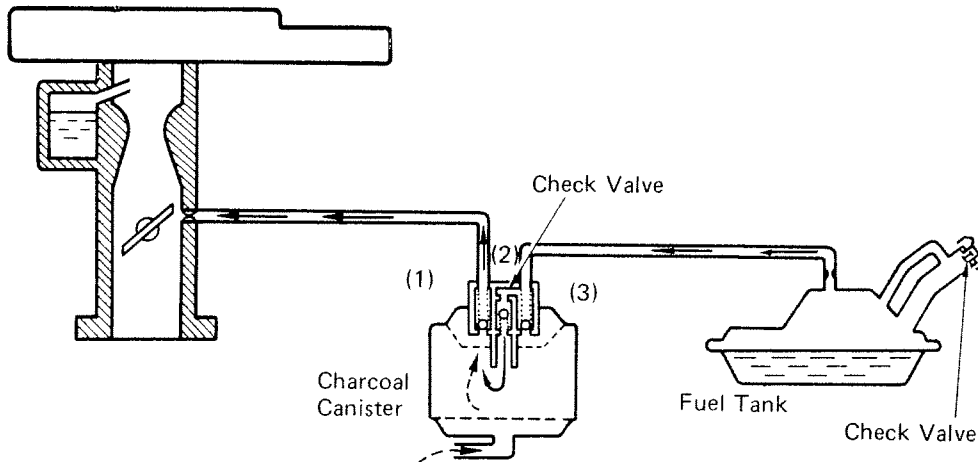
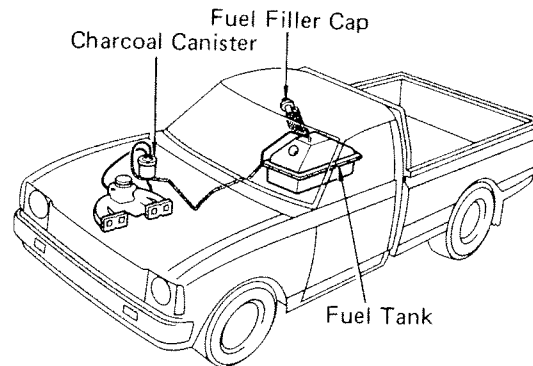


To reduce HC emissions, evaporated fuel from the fuel tank and float chamber is routed through the charcoal canister to the intake manifold for combustion in the cylinders.

IG S/W	Engine	*Outer Vent Control Valve	Coolant Temp.	Thermo S/W(1)	Vehicle Speed	Computer	VSV	Check Valve		Check Valve in Cap	Evaporated Fuel (HC)
								(1)	(2)		
OFF	Not running	OPEN	—	—	—	—	—	—	—	—	HC from tank and float chamber is absorbed into the canister.
ON	Running	CLOSED	Below 43°C (109°F)	ON	—	OFF	CLOSED	—	—	—	HC from tank is absorbed into the canister.
			Above 55° C (131° F)	OFF	Below 7 mph (11 km/h)	OFF	CLOSED	—	—	—	
					Above 16 mph (26 km/h)	ON	OPEN	—	—	—	HC from canister is led into the intake manifold.
High pressure in tank		—	—	—	—	—	—	OPEN	CLOSED	CLOSED	HC from tank is absorbed into the canister.
High vacuum in tank		—	—	—	—	—	—	CLOSED	OPEN	OPEN	(Air is led into the tank.

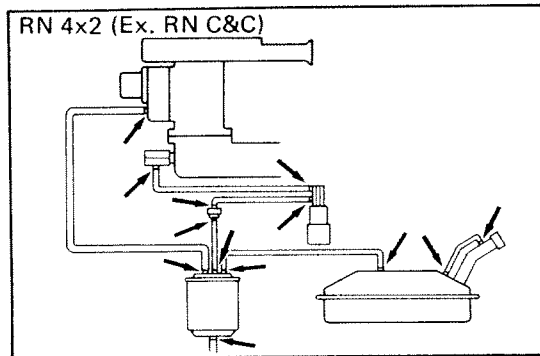
Remarks: *The outer vent control valve is pulled by intake manifold vacuum and held by the solenoid. The solenoid itself cannot pull the valve.

Fuel Evaporative Emission Control (EVAP) System (Canada 4×4)



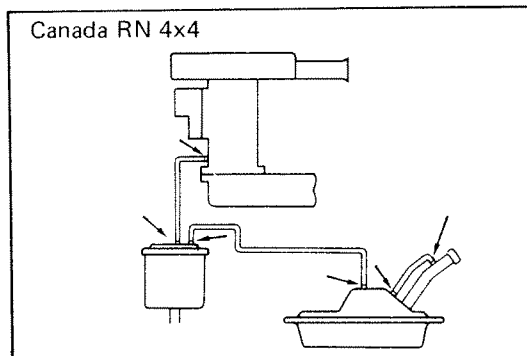
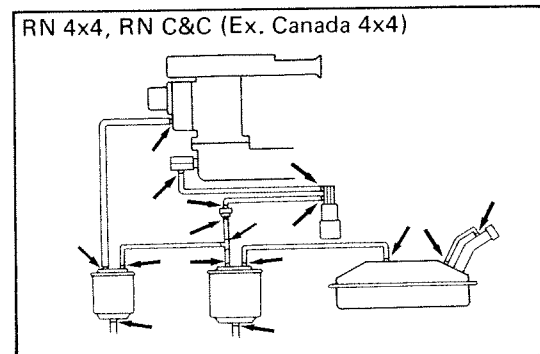
To reduce HC emission, evaporated fuel from the fuel tank is routed through the charcoal canister to the carburetor for combustion in the cylinders.

Condition	Check Valve (1)	Check Valve (2)	Check Valve (3)	Check Valve in Cap	Evaporated Fuel (HC)
Parking, idling & low speed	CLOSED	—	—	—	HC from tank is absorbed in the canister.
Medium & high speed	OPEN	—	—	—	HC from canister is led into carburetor.
High pressure in tank	—	OPEN	CLOSED	CLOSED	HC from tank is absorbed in the canister.
High vacuum in tank	—	CLOSED	OPEN	OPEN	(Air is led into the tank.)



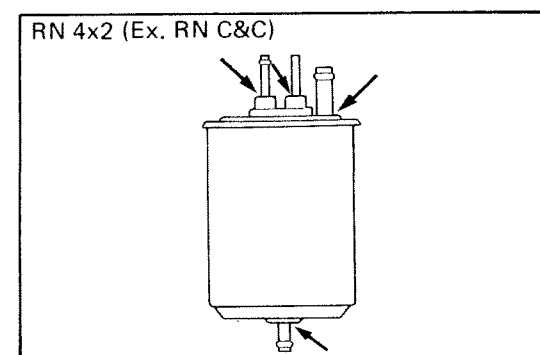
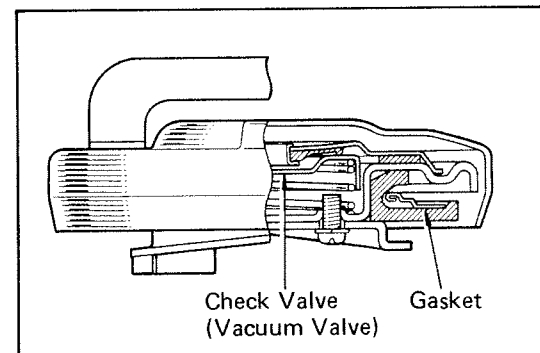
INSPECTION OF FUEL VAPOR LINES, FUEL TANK AND TANK CAP

1. **VISUALLY INSPECT LINES AND CONNECTIONS**
Look for loose connections, sharp bends or damage.
2. **VISUALLY INSPECT FUEL TANK**
Look for deformation, cracks or fuel leakage.



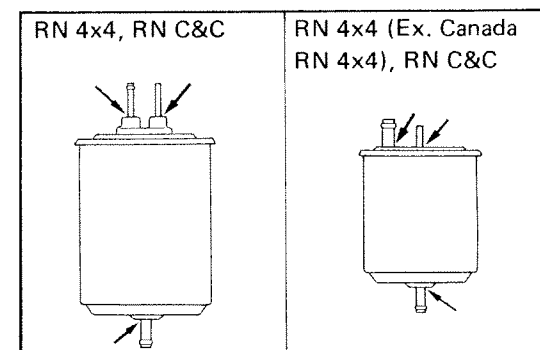
3. **VISUALLY INSPECT FUEL TANK CAP**
 - (a) Remove the four screws and retainer.
 - (b) Look for a damaged or deformed gasket.
 - (c) Reinstall the retainer.

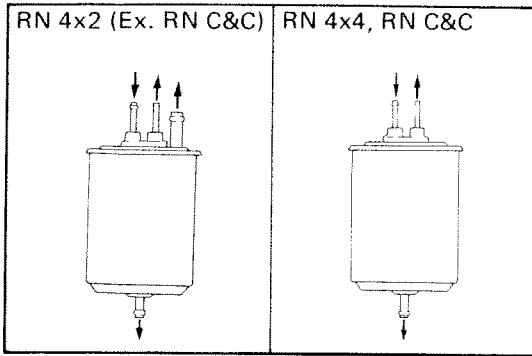
If a problem is found, repair or replace the cap.



INSPECTION OF CHARCOAL CANISTER (S)

1. **REMOVE CHARCOAL CANISTER(S)**
2. **VISUALLY INSPECT CHARCOAL CANISTER(S)**
Look for cracks or damage.





3. CHECK FOR CLOGGED FILTER AND STUCK CHECK VALVE

- Using low pressure compressed air, blow into the tank pipe and check that the air flows without resistance from the other pipes.
- Blow into the purge pipe and check that the air flows without resistance from the other pipes.

If a problem is found, replace the charcoal canister.

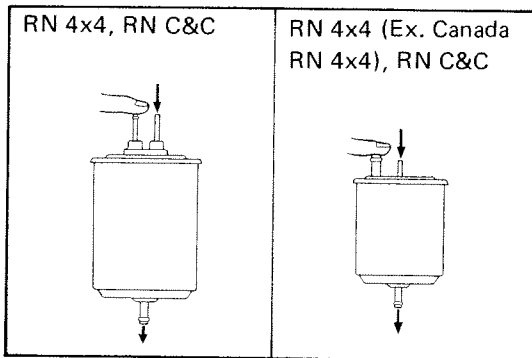
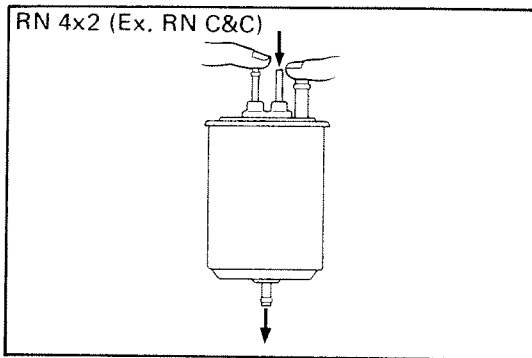
4. CLEAN FILTER IN CANISTER(S)

Clean the filter by blowing 3 kg/cm² (43 psi) air into the purge pipe, while holding the other upper canister pipes closed.

NOTE:

- Do not attempt to wash the canister.
- No activated carbon should come out.

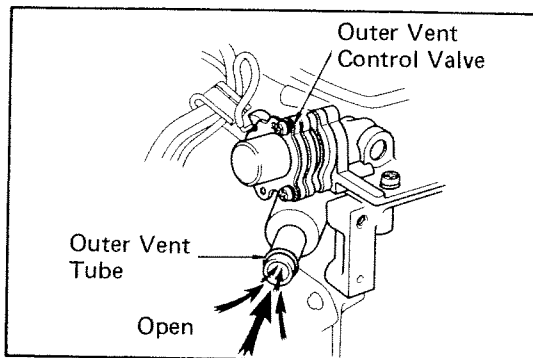
5. REINSTALL CHARCOAL CANISTER(S)



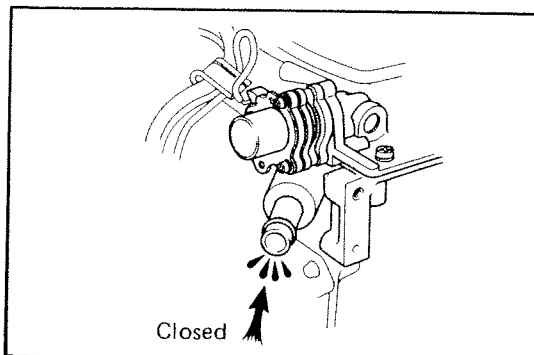
INSPECTION OF OUTER VENT CONTROL VALVE

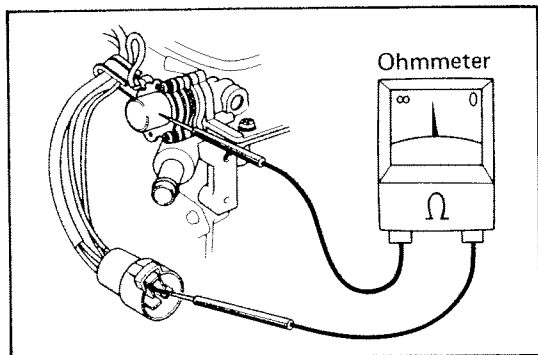
1. CHECK OUTER VENT CONTROL VALVE OPERATION

- Disconnect the outer vent hose from the carburetor.
- Blow air into the outer vent pipe and check that the outer vent control valve is open.



- Start the engine.
- With the engine idling, blow air into the outer vent pipe and check that the outer vent control valve is closed.





2. CHECK SOLENOID

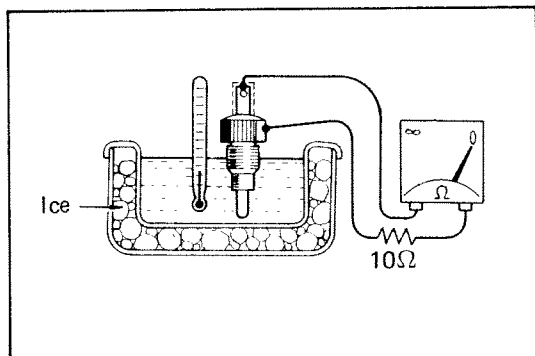
- (a) Unplug the wiring connector.
- (b) Using an ohmmeter, measure the resistance between the positive (+) terminal and the solenoid body.

Specified resistance: $63 - 73\Omega$ at 20°C (68°F)

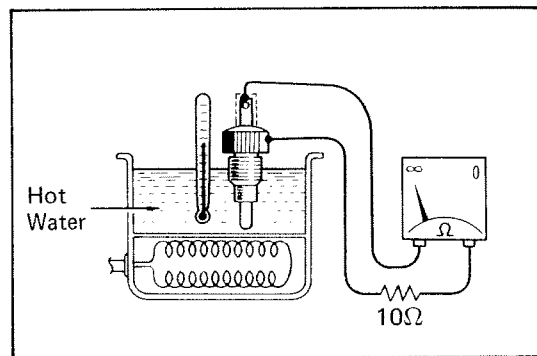
INSPECTION OF THERMO SWITCH (1)

CHECK THERMO SWITCH BY USING OHMMETER

- (a) Drain the coolant from the radiator into a suitable container.
- (b) Remove the thermo switch from the intake manifold.
- (c) Cool the thermo switch to below 43°C (109°F).
- (d) Using an ohmmeter, check that there is continuity.



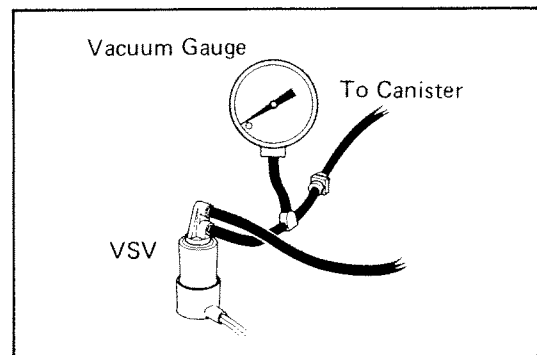
- (e) Heat the switch to above 55°C (131°F) with hot water.
- (f) Check that there is no continuity.
- (g) Apply liquid sealer to the threads of the switch and reinstall.
- (h) Fill the radiator with coolant.



INSPECTION OF SPEED SENSOR TO VSV

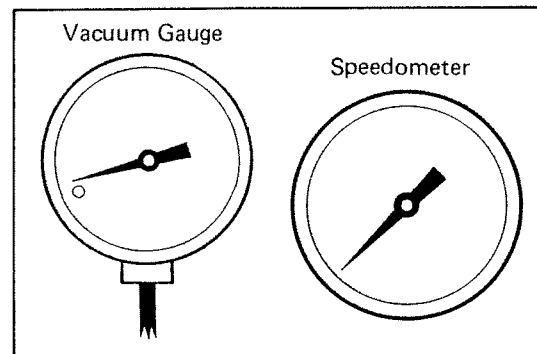
1. CONNECT VACUUM GAUGE

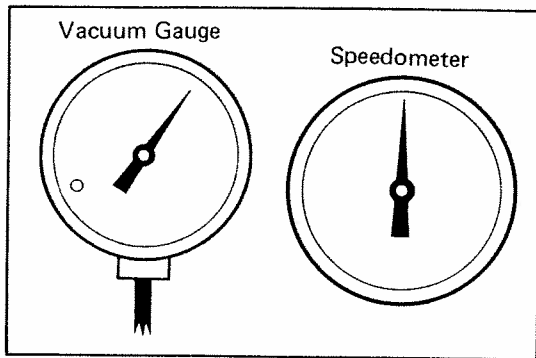
- (a) Using a 3-way connector, connect the vacuum gauge to the hose between the VSV and canister.
- (b) Set the gauge at the driver's seat.



2. PERFORM ROAD TEST, OBSERVING SPEEDOMETER AND VACUUM GAUGE

- (a) Warm up the engine.
- (b) Check that the vacuum gauge indicates zero at low speed driving (below 7 mph or 11 km/h).

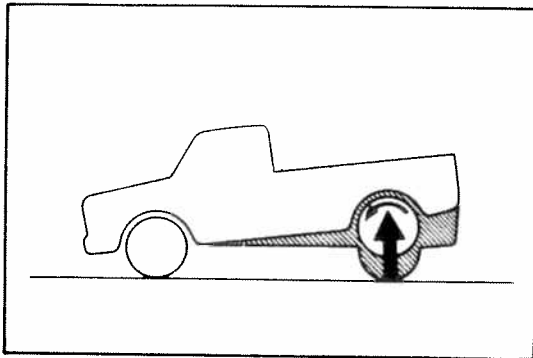




- (c) Check that the vacuum gauge indicates intake manifold vacuum at middle and high speed driving (above 16 mph or 26 km/h).

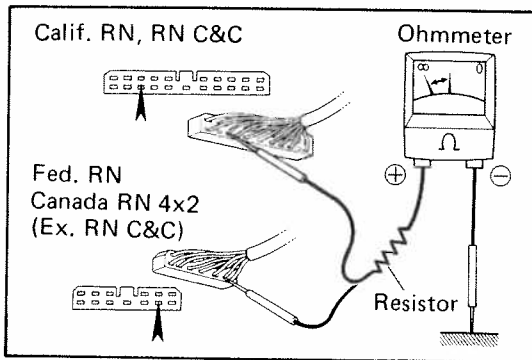
If a problem is found, inspect speed sensor and VSV.

3. REMOVE VACUUM GAUGE AND RECONNECT HOSE



INSPECTION OF SPEED SENSOR

1. JACK UP ONE REAR WHEEL TO CLEAR GROUND
2. RELEASE PARKING BRAKE
3. SET SHIFT LEVER INTO NEUTRAL
4. UNPLUG WIRING CONNECTOR FROM COMPUTER
Computer location: Left Cowl Side
5. CHECK ON-OFF CYCLES OF SPEED SENSOR



- (a) Place the positive (+) terminal of the ohmmeter on the wiring connector terminal and the negative (—) terminal on ground.

- (b) Turn the rear wheel slowly.

- (c) Check that the ohmmeter needle deflects consistently.

CAUTION: The ohmmeter probe should be inserted from the rear side of the connector.

If the ohmmeter needle does not deflect, check that the speed sensor terminals at the back side of the speedometer are properly connected. If the connection is OK, replace the speedometer assembly.

6. RECONNECT WIRING CONNECTOR TO COMPUTER

INSPECTION OF VSV

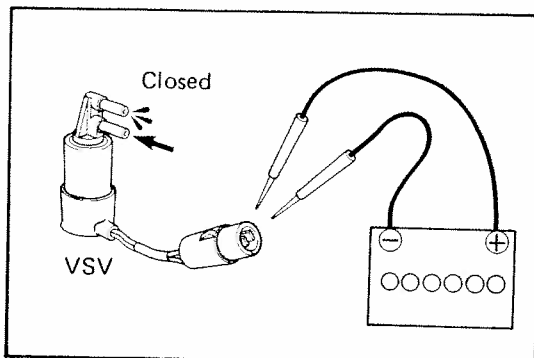
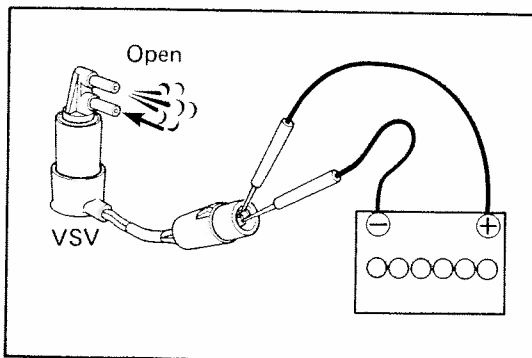
1. CHECK VACUUM CIRCUIT CONTINUITY IN VSV BY BLOWING AIR INTO PIPE

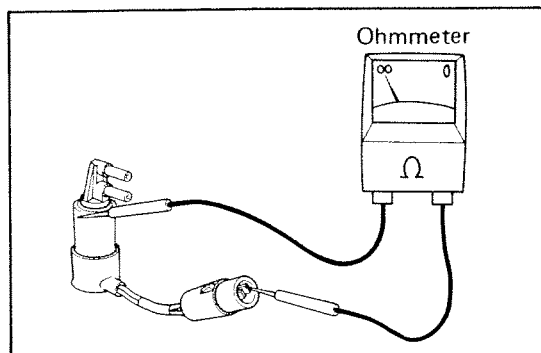
- (a) Connect the VSV terminals to the battery terminal as shown.

- (b) Blow into a pipe, and check that the VSV is open.

- (c) Disconnect the battery positive (+) terminal.

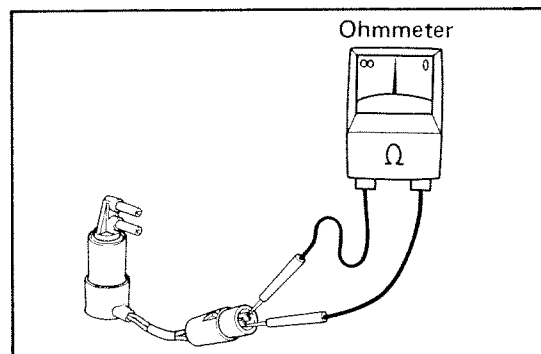
- (d) Blow into a pipe and check that the VSV is closed.





2. CHECK FOR SHORT CIRCUIT

Using an ohmmeter, check that there is no continuity between the positive (+) terminal and the VSV body. If a short circuit is found, repair or replace the VSV.



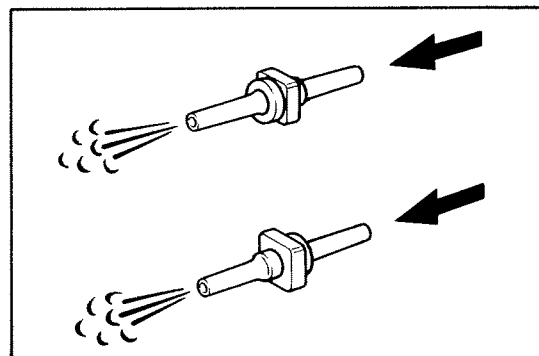
3. CHECK FOR OPEN CIRCUIT

Using an ohmmeter, measure the resistance between the positive (+) terminal and the other terminals as shown.

Specified resistance:

51 – 57 Ω at 20°C (68°F)

If the resistance is not within specification, replace the VSV.

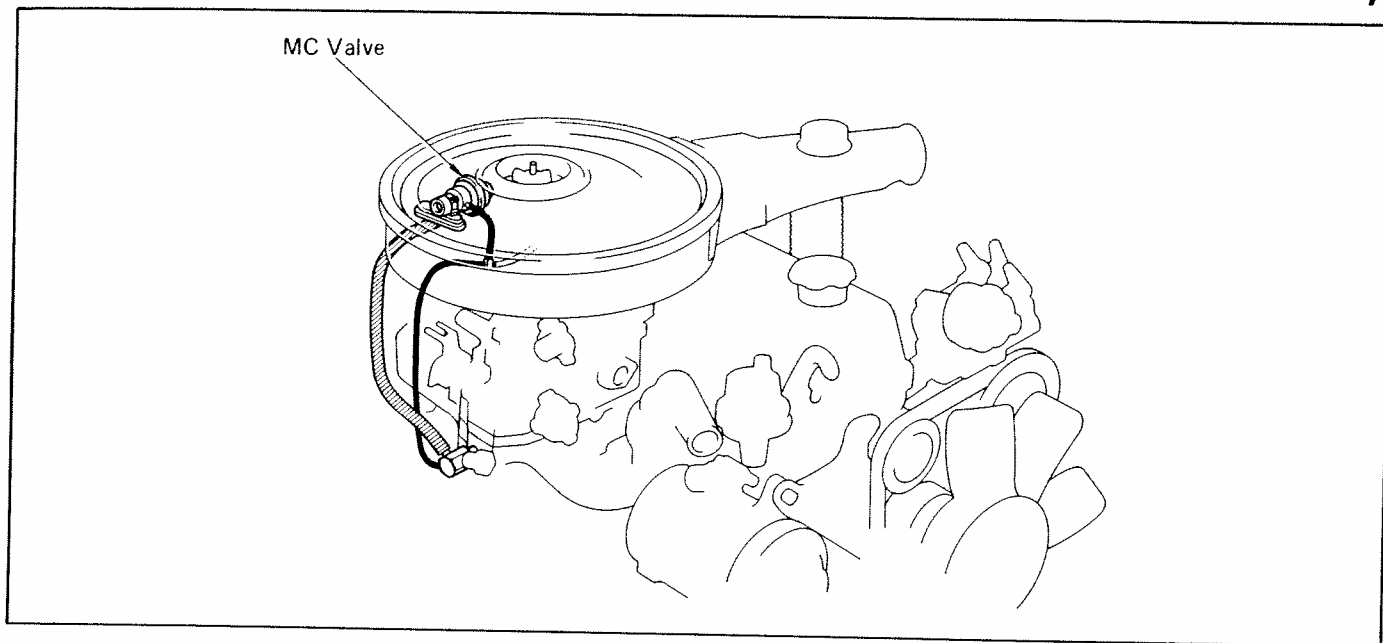


INSPECTION OF JET

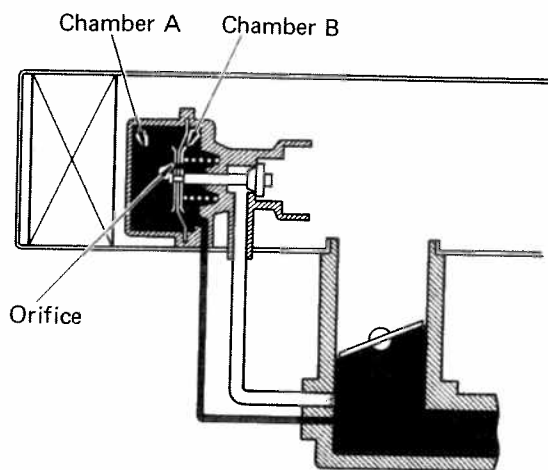
CHECK JET BY BLOWING AIR FROM EACH SIDE

Check for stoppage.

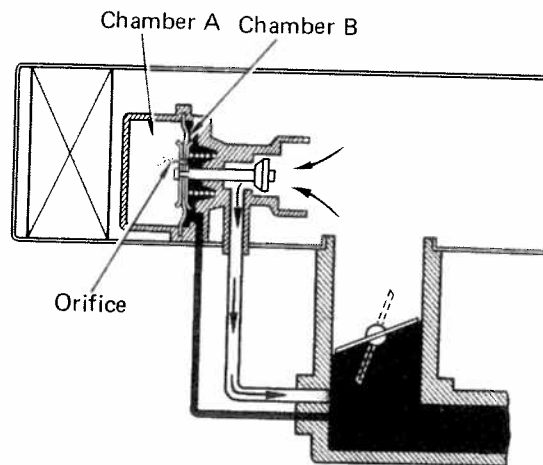
Mixture Control (MC) System (Calif. RN with M/T and RN C&C)



CONSTANT RPM

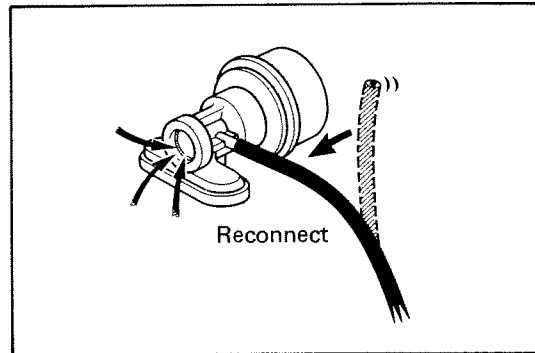
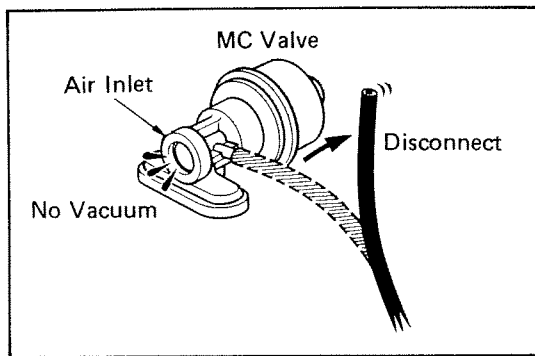


SUDDEN DECELERATION, STEP (1)



To reduce HC and CO emissions, this system allows air to enter the intake manifold on sudden deceleration.

Condition		Vacuum in Chambers A and B	MC Valve	Fresh Air
Constant RPM		Same vacuum	CLOSED	No air flow
Sudden deceleration	Step (1)	High vacuum acts on chamber B	OPEN	Air is routed through MC valve to intake manifold.
	Step (2)	After a few seconds, vacuum in both chambers equalizes through the orifice.	CLOSED	No air flow



INSPECTION OF MC SYSTEM

1. REMOVE AIR CLEANER COVER AND AIR FILTER
2. START ENGINE
3. CHECK MC VALVE

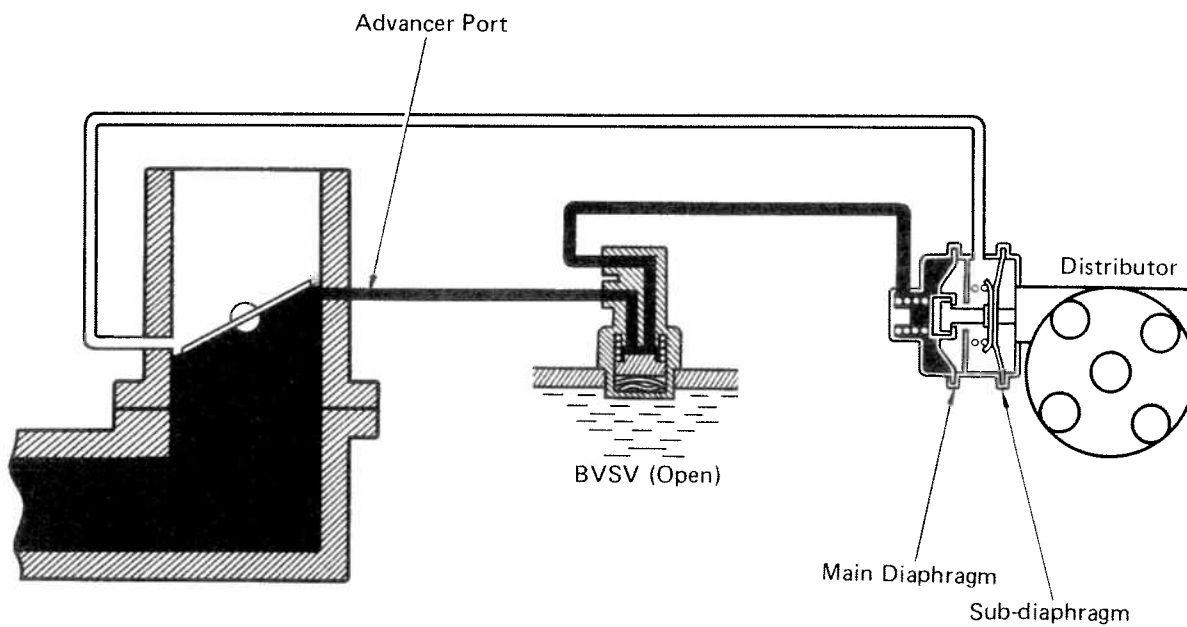
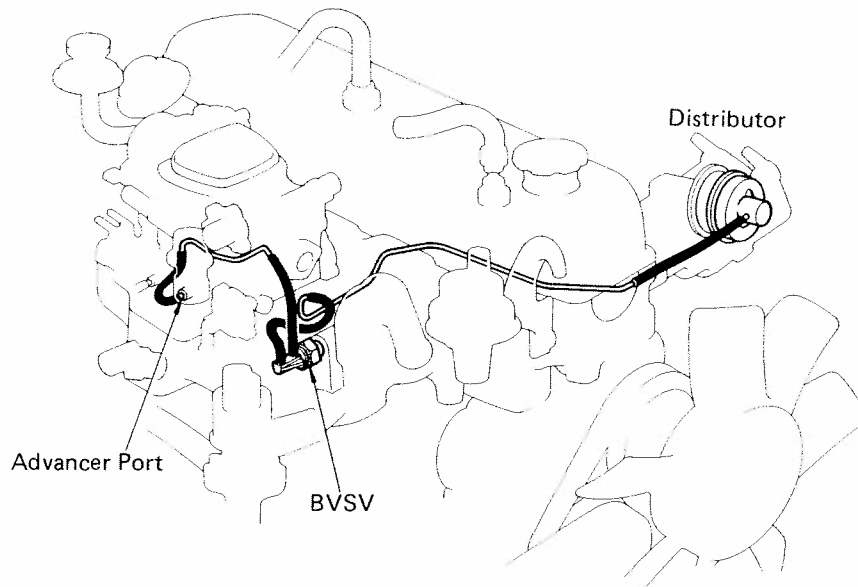
- (a) Disconnect the vacuum hose from the MC valve.
- (b) Place your fingers over the air inlet of the MC valve.
- (c) Check that vacuum is not felt.

- (d) Reconnect the vacuum hose and check that vacuum is felt momentarily.

NOTE: At this time, the engine will idle rough or die, but this is normal.

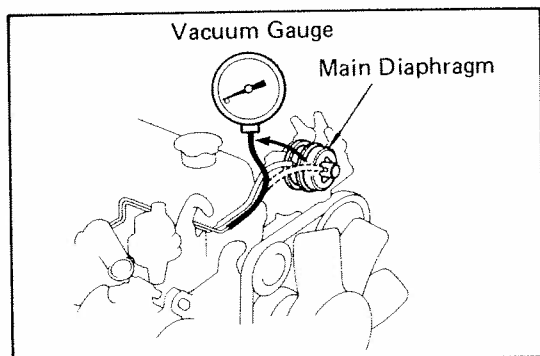
4. REINSTALL AIR FILTER AND CLEANER COVER

Spark Control (SC) System (Calif. RN and RN C&C)



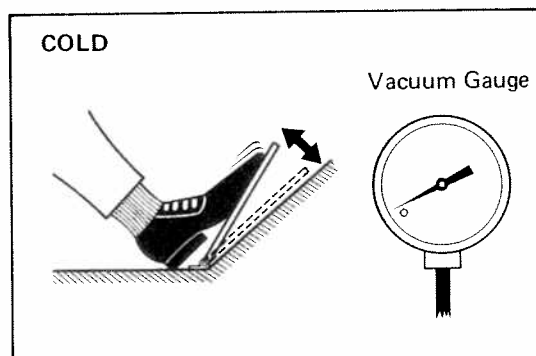
To hasten warming up of the TWC, this system cuts the operation of the distributor main vacuum advance only when the engine is cold.

Coolant Temp.	BVSV	Main Vacuum Advance
COLD Below 30°C (86°F)	CLOSED	NO OPERATION
HOT Above 44°C (111°F)	OPEN	OPERATES NORMALLY



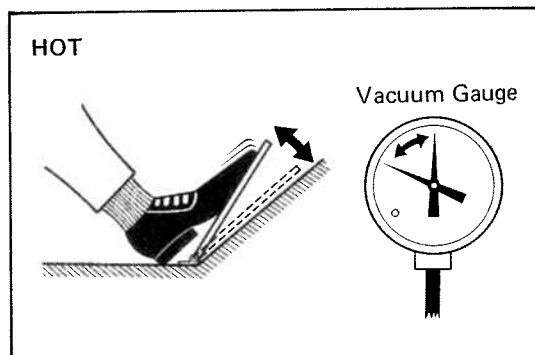
INSPECTION OF SC SYSTEM

1. CONNECT VACUUM GAUGE TO DISTRIBUTOR MAIN DIAPHRAGM HOSE



2. CHECK BVSV WITH COLD ENGINE

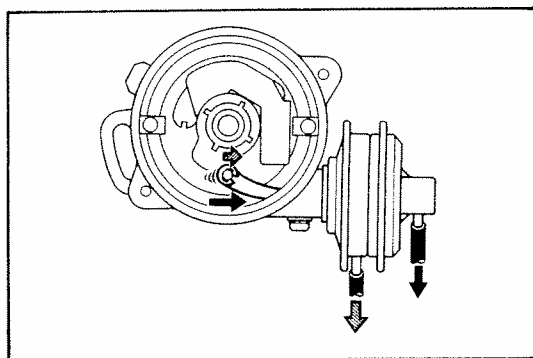
- (a) The coolant temperature should be below 30°C (86°F).
- (b) Start the engine.
- (c) Check that the vacuum gauge indicates zero regardless of whether the throttle valve is open or closed.



3. LET ENGINE WARM-UP TO NORMAL OPERATING TEMPERATURE

Check that the vacuum changes quickly when the throttle valve is opened and closed.

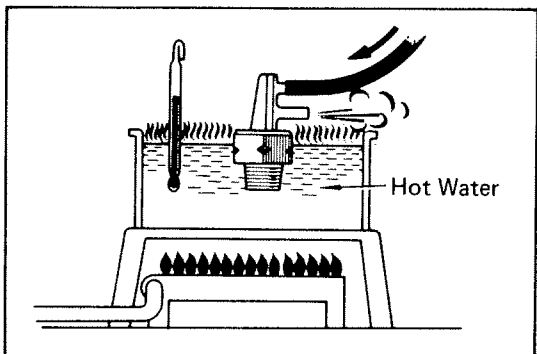
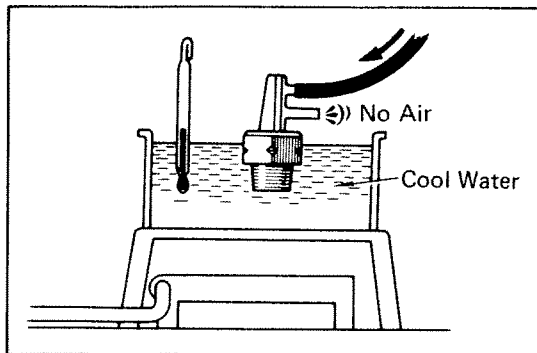
4. DISCONNECT VACUUM GAUGE AND RECONNECT HOSE TO DISTRIBUTOR



5. CHECK OPERATION OF DISTRIBUTOR VACUUM ADVANCER

- (a) Remove the distributor cap and rotor.
- (b) Apply vacuum to the diaphragms, and check that the vacuum advancer moves in accordance with the vacuum.
- (c) Reinstall the rotor and distributor cap.

IF NO PROBLEM IS FOUND WITH THIS INSPECTION, THE SYSTEM IS OKAY; OTHERWISE INSPECT EACH PART

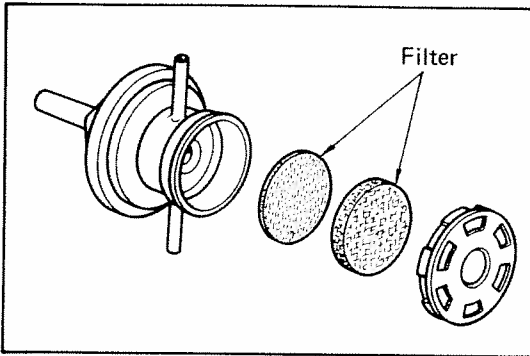


INSPECTION OF BVSV

CHECK BVSV BY BLOWING AIR INTO PIPE

- (a) Drain the coolant from the radiator into a suitable container.
- (b) Remove the BVSV.
- (c) Cool the BVSV to below 30°C (86°F) with cold water.
- (d) Blow air into a pipe and check that the BVSV is closed.
- (e) Heat the BVSV to above 44°C (111°F) with hot water.
- (f) Blow air into a pipe and check that the BVSV is open.
- (g) Apply liquid sealer to the threads of the BVSV and reinstall.
- (h) Fill the radiator with coolant.

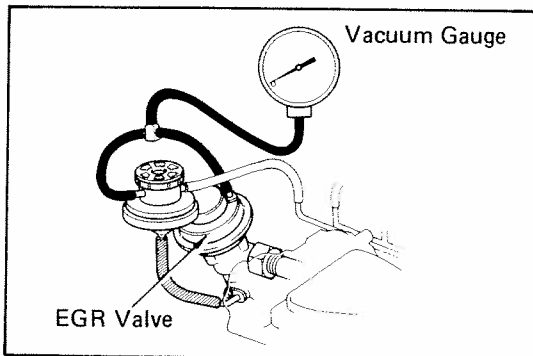
If a problem is found, replace the BVSV.



INSPECTION OF EGR SYSTEM

1. CHECK AND CLEAN FILTER IN EGR VACUUM MODULATOR

- (a) Check the filter for contamination or damage.
- (b) Using compressed air, clean the filter.

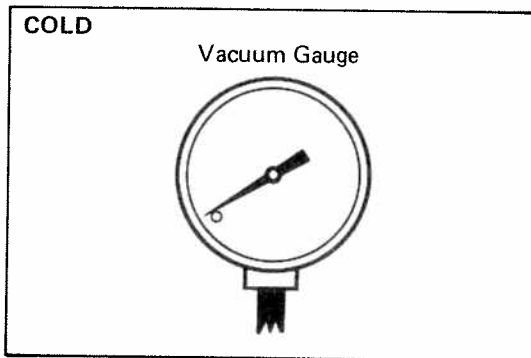


2. PREPARATION

Using a 3-way connector, connect a vacuum gauge to the hose between the EGR valve and EGR vacuum modulator.

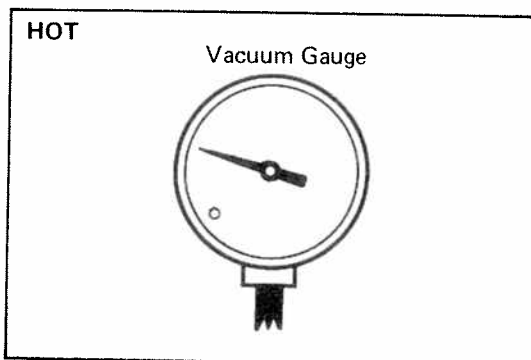
3. CHECK SEATING OF EGR VALVE

Start the engine and check that the engine starts and runs at idle.



4. CHECK BVSV WITH COLD ENGINE

- (a) The coolant temperature should be below 30°C (86°F).
- (b) Check that the vacuum gauge indicates zero at 3,000 rpm.



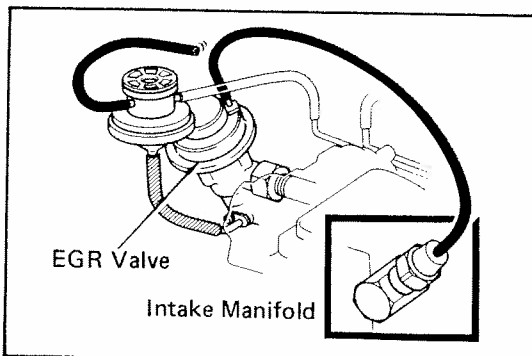
5. CHECK BVSV AND EGR VACUUM MODULATOR WITH HOT ENGINE

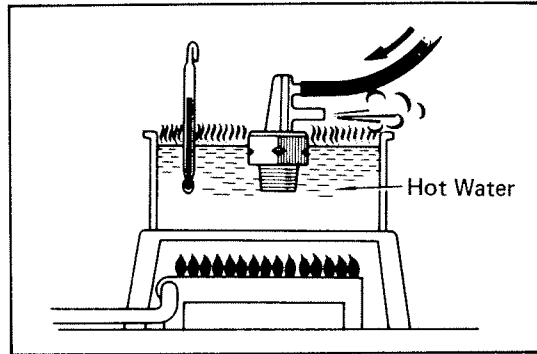
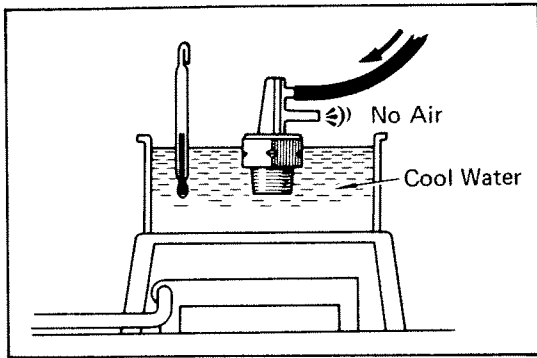
- (a) Warm up the engine.
- (b) Check that the vacuum gauge indicates low vacuum at 3,000 rpm.
- (c) Disconnect the vacuum gauge and reconnect the vacuum hose to the proper location.

6. CHECK EGR VALVE

- (a) Apply vacuum directly to the EGR valve with the engine idling.
- (b) Check that the engine runs rough or dies.
- (c) Reconnect the vacuum hoses to the proper locations.

IF NO PROBLEM IS FOUND WITH THIS INSPECTION, THE SYSTEM IS OKAY; OTHERWISE INSPECT EACH PART





INSPECTION OF BVSV

CHECK BVSV BY BLOWING AIR INTO PIPE

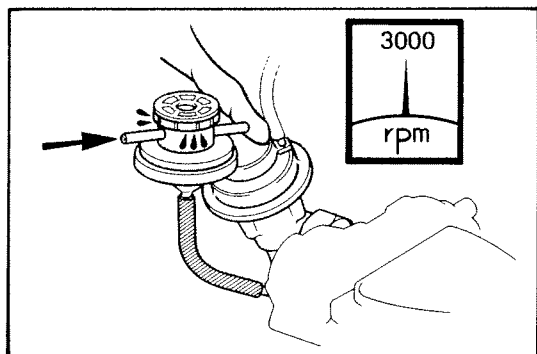
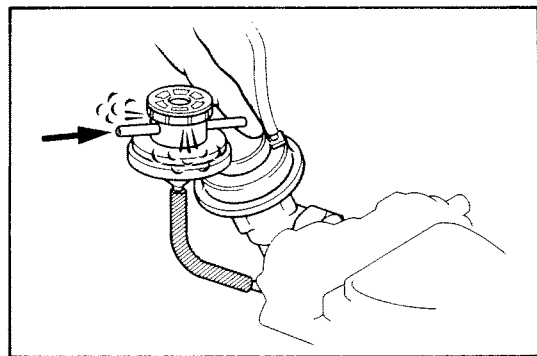
- (a) Drain the coolant from the radiator into a suitable container.
 - (b) Remove the BVSV.
 - (c) Cool the BVSV to below 30°C (86°F) with cool water.
 - (d) Blow air into a pipe and check that the BVSV is closed.
 - (e) Heat the BVSV to above 44°C (111°F) with hot water.
 - (f) Blow air into a pipe and check that the BVSV is open.
 - (g) Apply liquid sealer to the threads of the BVSV and reinstall.
 - (h) Fill the radiator with coolant.
- If a problem is found, replace the BVSV.

INSPECTION OF EGR VALVE

1. REMOVE EGR VALVE

Check the valve for sticking and heavy carbon deposits. If a problem is found, replace it.

2. INSTALL EGR VALVE WITH A NEW GASKET

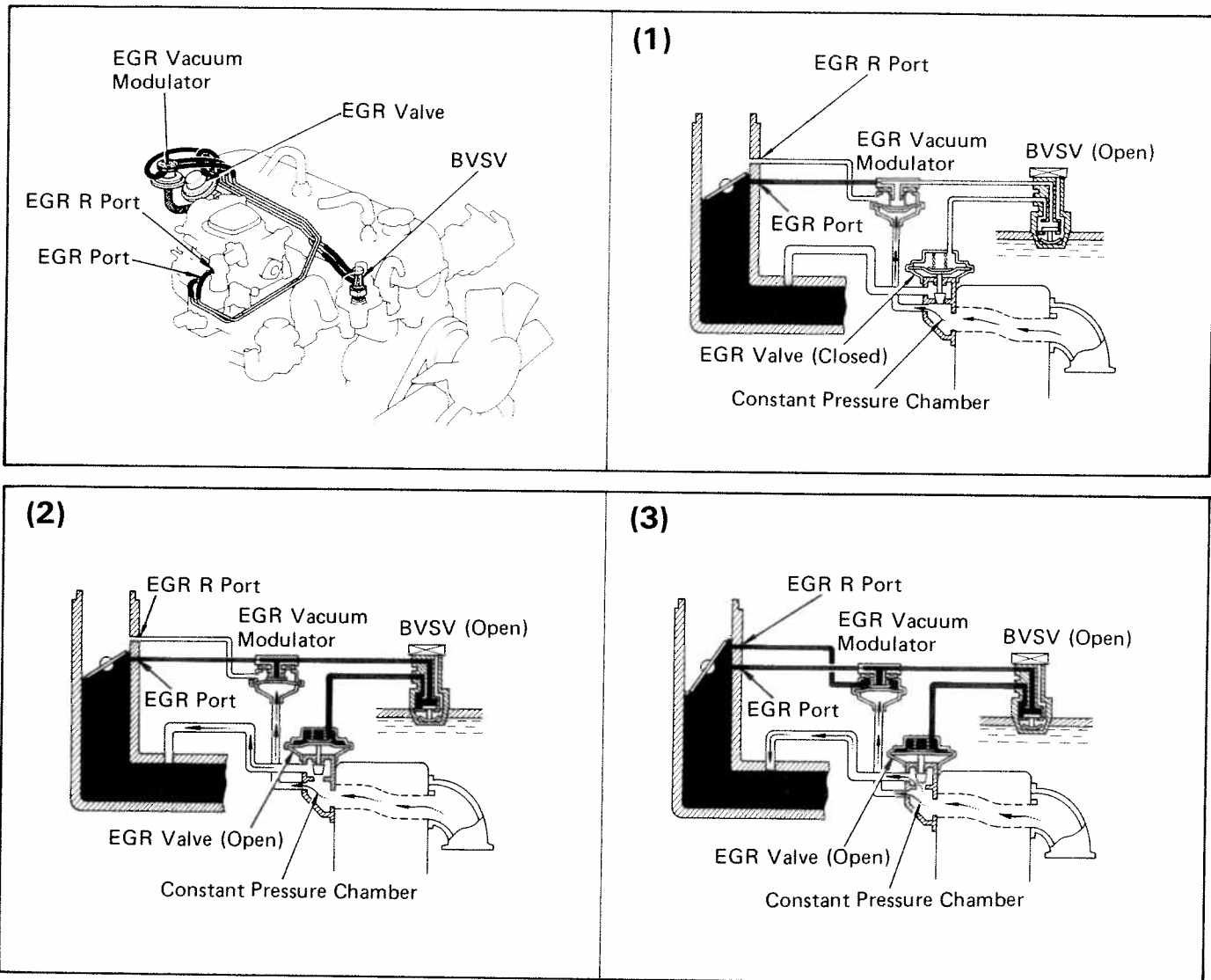


INSPECTION OF EGR VACUUM MODULATOR

CHECK EGR VACUUM MODULATOR OPERATION

- (a) Disconnect two vacuum hoses from the EGR vacuum modulator.
- (b) Plug the pipe with your finger.
- (c) Blow air into another pipe and check that the air passes through to the air filter side freely.
- (d) Start the engine and maintain engine speed at 3,000 rpm.
- (e) Repeat the above test and check that there is a strong resistance to air flow.
- (f) Reconnect the vacuum hoses to the proper locations.

Exhaust Gas Recirculation (EGR) System (Fed. RN and Canada RN 4×2 (except RN C&C))

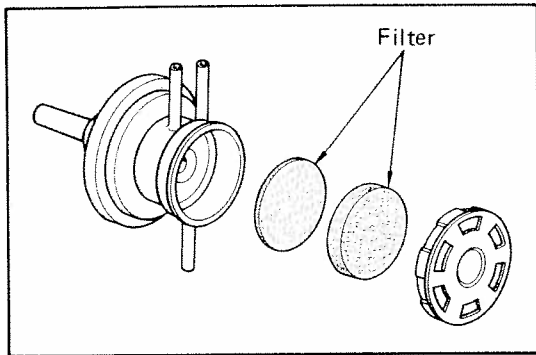


To reduce NO_x emission, part of the exhaust gases are recirculated through the EGR valve to the intake manifold to lower the maximum combustion temperature.

Coolant Temp.	BVSV	Throttle Valve Opening Angle	Pressure in the EGR Valve Pressure Chamber		EGR Vacuum Modulator	EGR Valve	Exhaust Gas
Below 30°C (86°F)	CLOSED	—	—		—	CLOSED	Not recirculated
Above 44°C (111°F)	OPEN	Positioned below EGR port	—		—	CLOSED	Not recirculated
		Positioned between EGR port & EGR R port	(1) LOW	*Pressure constantly alternating between low and high	OPENS passage to atmosphere	CLOSED	Not recirculated
			(2) HIGH		CLOSES passage to atmosphere	OPEN	Recirculated
		Positioned above EGR R port	(3) HIGH	**	CLOSES passage to atmosphere	OPEN	Recirculated (increase)

Remarks: *Pressure increase → Modulator closes → EGR valve opens → Pressure drops
 ↑
 EGR valve closes ← Modulator opens ←

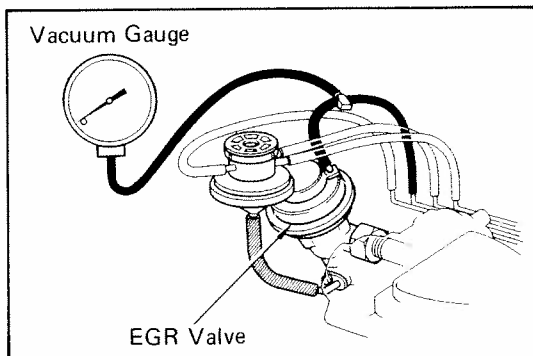
**When the throttle valve is positioned above the EGR R port, the EGR vacuum modulator will close the atmosphere passage and open the EGR valve to increase the EGR gas, even if the exhaust pressure is insufficiently low.



INSPECTION OF EGR SYSTEM

1. CHECK AND CLEAN FILTER IN EGR VACUUM MODULATOR

- (a) Check the filter for contamination or damage.
- (b) Using compressed air, clean the filter.

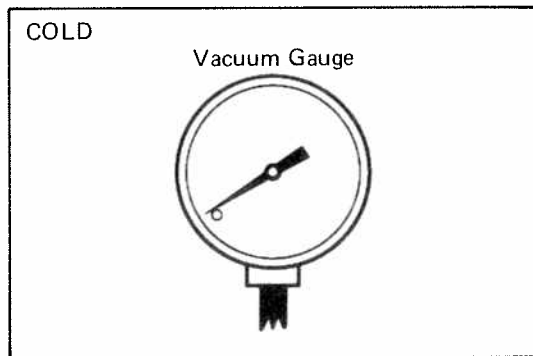


2. PREPARATION

Using a 3-way connector, connect a vacuum gauge to the hose between the EGR valve and vacuum pipe.

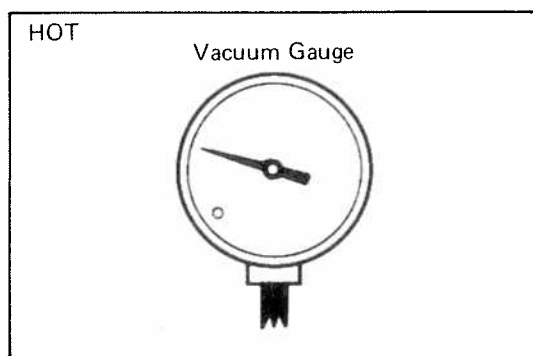
3. CHECK SEATING OF EGR VALVE

Start the engine and check that the engine starts and runs at idle.



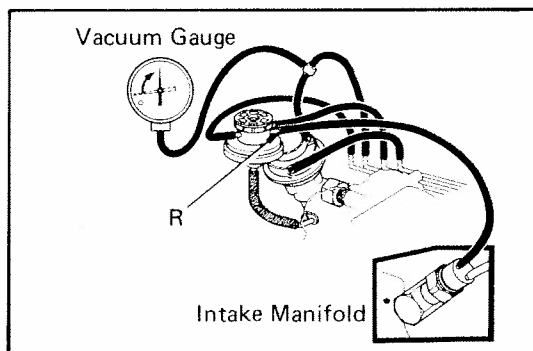
4. CHECK BVSV WITH COLD ENGINE

- (a) The coolant temperature should be below 30°C (86°F).
- (b) Check that the vacuum gauge indicates zero at 3,000 rpm.



5. CHECK BVSV, VSV AND EGR VACUUM MODULATOR WITH HOT ENGINE

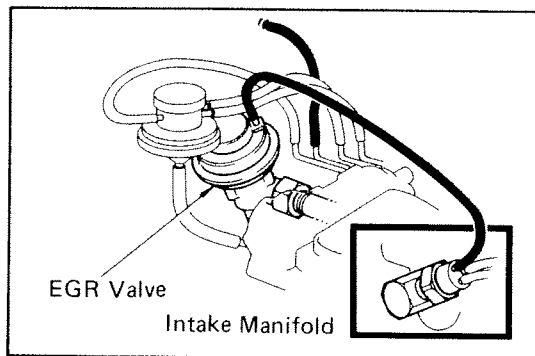
- (a) Warm up the engine.
- (b) Check that the vacuum gauge indicates low vacuum at 3,000 rpm.



- (c) Disconnect the vacuum hose from port R of the EGR vacuum modulator and connect port R directly to the intake manifold with another hose.
- (d) Check that the vacuum gauge indicates high vacuum at 3,000 rpm.

NOTE: As a large amount of EGR gas enters, the engine will misfire slightly at this time.

- (e) Disconnect the vacuum gauge and reconnect the vacuum hoses to the proper locations.



6. CHECK EGR VALVE

- Apply vacuum directly to the EGR valve with the engine idling.
- Check that the engine runs rough or dies.
- Reconnect the vacuum hoses to the proper locations.

IF NO PROBLEM IS FOUND WITH THIS INSPECTION, THE SYSTEM IS OKAY; OTHERWISE INSPECT EACH PART

INSPECTION OF BVS

(See page 3-62)

INSPECTION OF EGR VALVE

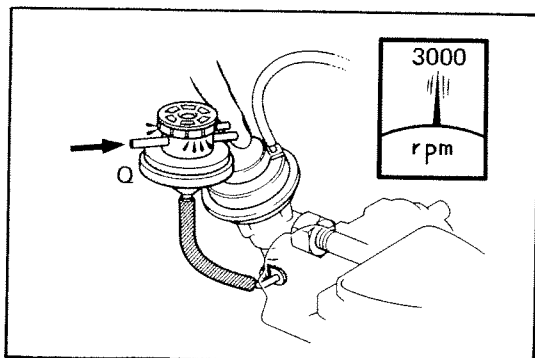
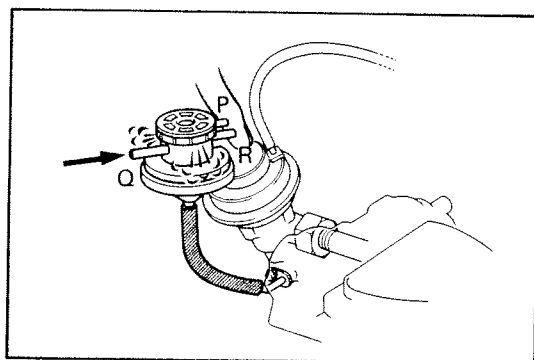
1. REMOVE EGR VALVE

Check the valve for sticking and heavy carbon deposits. If a problem is found, replace it.

2. INSTALL EGR VALVE WITH A NEW GASKET

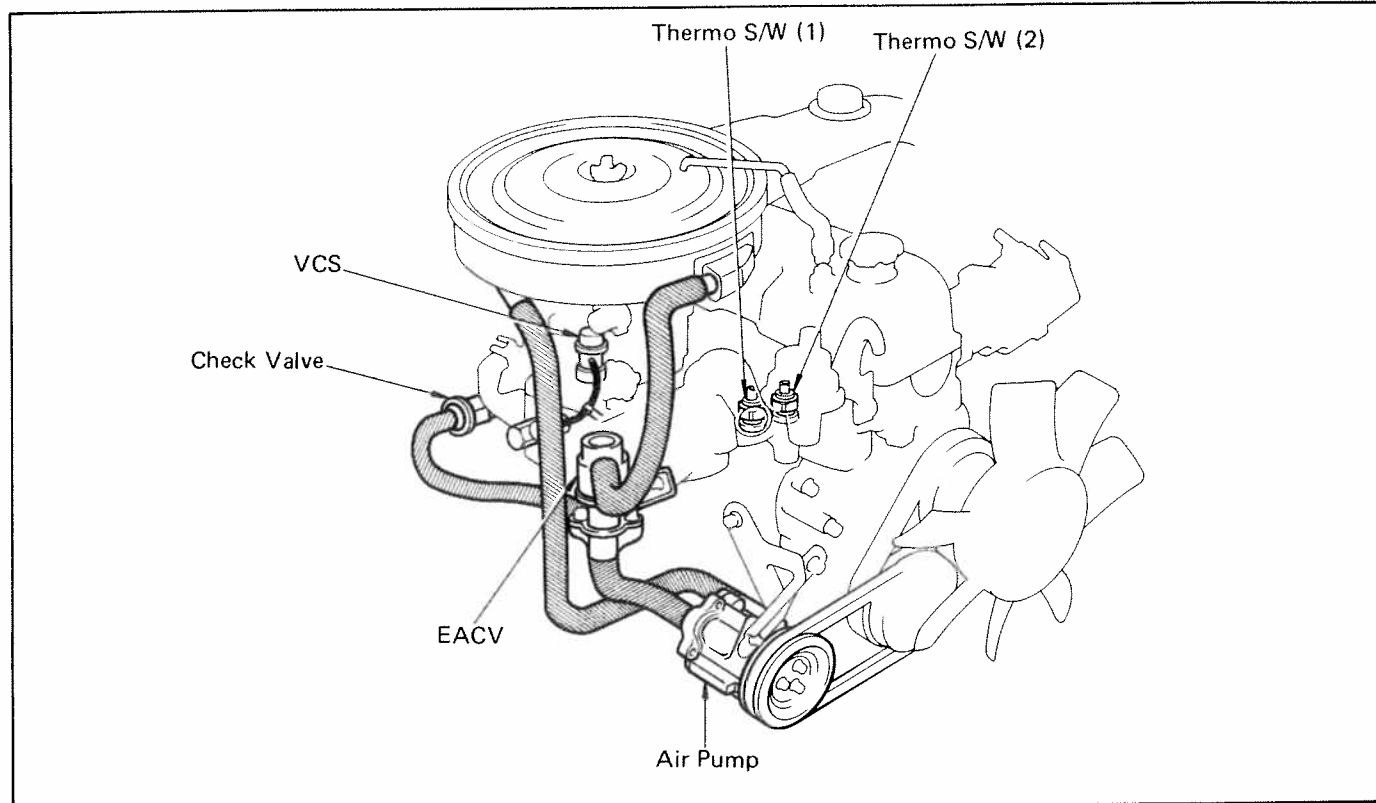
INSPECTION OF EGR VACUUM MODULATOR

CHECK EGR VACUUM MODULATOR OPERATION

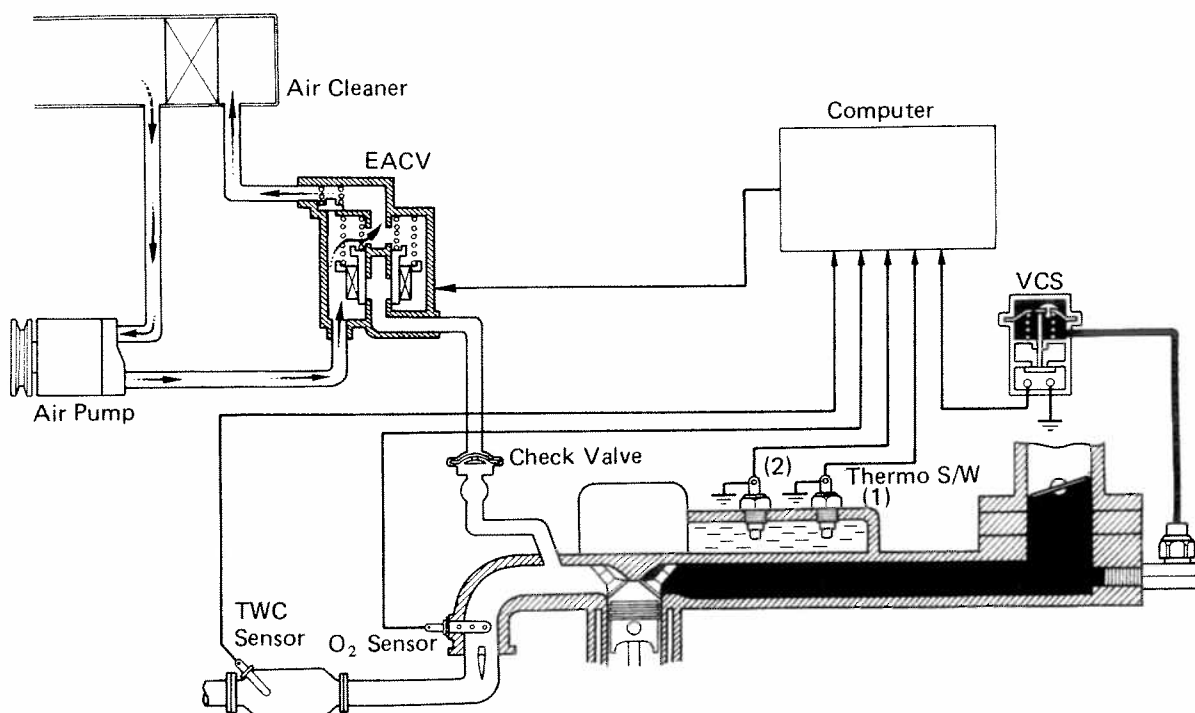


- Disconnect the vacuum hoses from port P, Q and R of the EGR vacuum modulator.
- Plug port P and R with your finger.
- Blow air into port Q. Check that the air passes through to the air filter side freely.
- Start the engine and maintain the engine speed at 3,000 rpm.
- Repeat the above test. Check that there is a strong resistance to air flow.
- Reconnect the vacuum hoses to the proper locations.

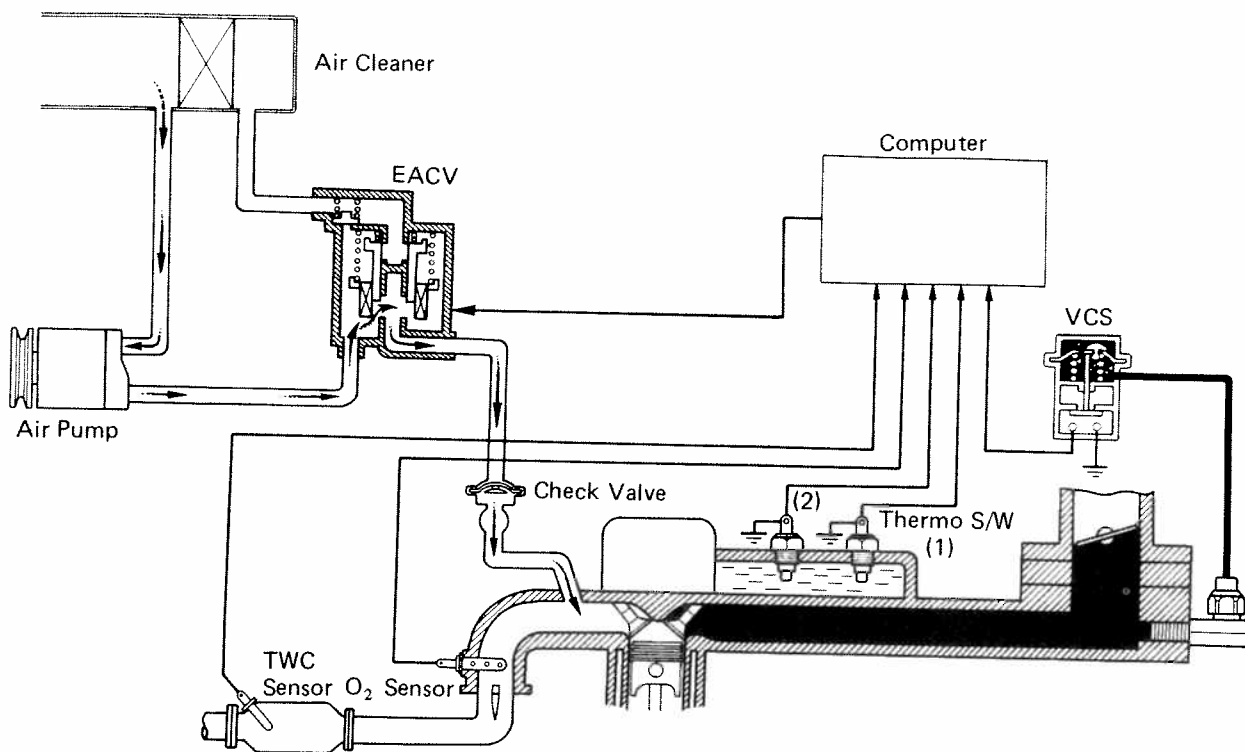
Air Injection (AI) with Feedback System (Calif. RN and RN C&C)



FEEDBACK AI (OFF)



FEEDBACK AI (ON)



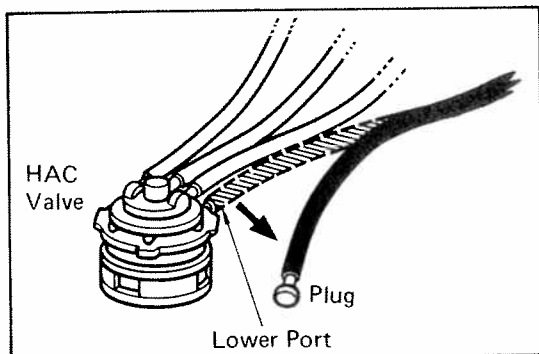
To oxidize and reduce HC, CO and NO_x emissions efficiently in the TWC, this system maintains the air-fuel ratio of the inlet gas for the TWC at stoichiometric by switching the compressed air from the air pump to either the exhaust ports or the air cleaner in response to the oxygen (O₂) concentration in the exhaust manifold.

TWC Temp.	VCS	Coolant Temp.	Thermo S/W		Air-fuel Ratio for TWC	*O ₂ Sensor Signal	EACV	AI	
			(1)	(2)					
Above 785°C (1,445°F)	—	—	—	—	—	—	CLOSED	OFF	
Below 600°C (1,110°F)	CLOSED (Sudden deceleration)	—	—	—	—	—	CLOSED	OFF	
	OPEN (Except above condition)	Below 6°C (43°F) & Above 110°C (230°F)	—	ON	—	—	CLOSED	OFF	
		Between 18 – 43°C (64 – 109°F)	ON	OFF	—	—	Always OPEN	Always ON	
		Between 55 – 98°C (131 – 208°F)	OFF	OFF	RICH	RICH	OPEN	ON	** Feedback AI
					LEAN	LEAN	CLOSED	OFF	

Remarks: *Signal of air-fuel ratio of the inlet gas for TWC.

**By means of O₂ sensor, detects oxygen concentration in exhaust manifold after combustion. If air-fuel ratio is rich for TWC, turns AI ON. If lean, turns AI OFF.

Air-fuel ratio RICH → Air injection ON → Air-fuel ratio LEAN → Air injection OFF

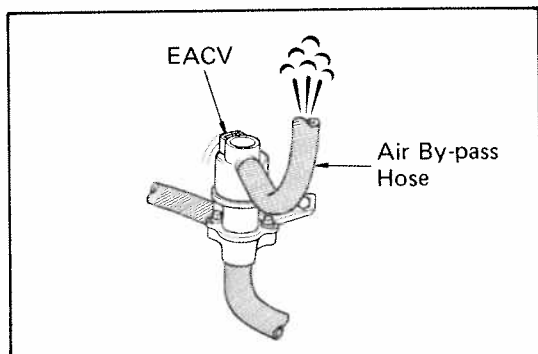


INSPECTION OF AI SYSTEM

1. VISUALLY CHECK HOSES AND TUBES FOR CRACKS, KINKS, DAMAGE OR LOOSE CONNECTIONS

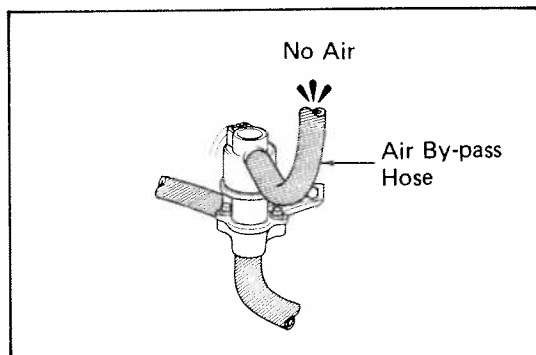
2. PREPARATION

- Disconnect the air by-pass hose from the air cleaner.
- (For vehicles with HAC system)
Disconnect the vacuum hose from lower port of the HAC valve, and plug the hose end.



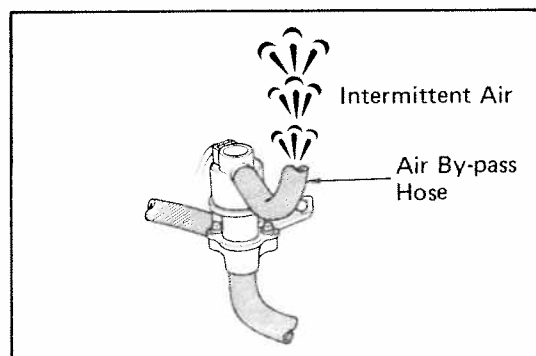
3. CHECK EACV WITH COLD ENGINE

- The coolant temperature should be below 6°C (43°F).
- Start the engine and check that air is discharged from the air by-pass hose.



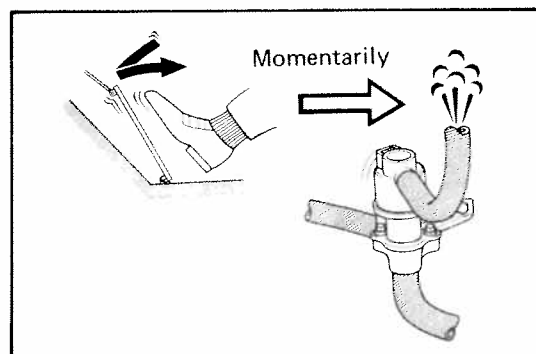
4. CHECK EACV WITH WARM ENGINE (INCLUDING THERMO SWITCH (1) AND (2) TO EACV)

- Warm up the engine to between 18°C (64°F) and 43°C (109°F).
- With the engine idling, check that air is not discharged from the air by-pass hose.



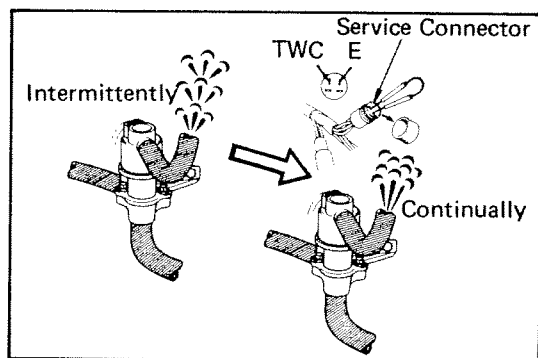
5. CHECK EACV (INCLUDING OXYGEN SENSOR TO EACV)

- Warm up the engine to normal operating temperature.
- Maintain engine speed at 2,000 rpm.
- Check that air is discharged intermittently from the air by-pass hose.



6. CHECK VCS

Race the engine and quickly close the throttle valve. Check that air is discharged momentarily from the air by-pass hose.



7. CHECK TWC THERMO SENSOR TO EACV

- With the engine idling, connect a wire to the TWC terminal and terminal E of the service connector.

Service connector location:

Corner of the left dash panel

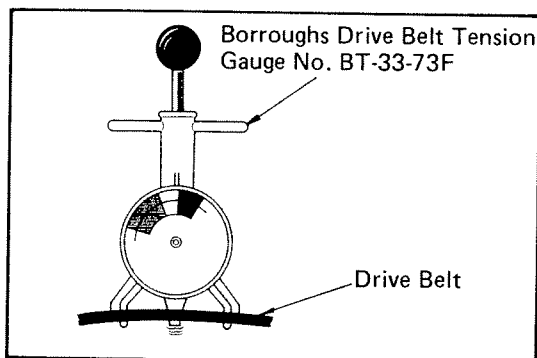
- Check that the intermittent air from the air by-pass hose changes to a continuous discharge.
- Disconnect the wire from the service connector.

IF NO PROBLEM IS FOUND WITH THIS INSPECTION, THE SYSTEM IS OKAY; OTHERWISE INSPECT EACH PART

INSPECTION OF AIR PUMP DRIVE BELT

1. VISUALLY CHECK DRIVE BELT FOR CRACKS, OILINESS OR WETNESS

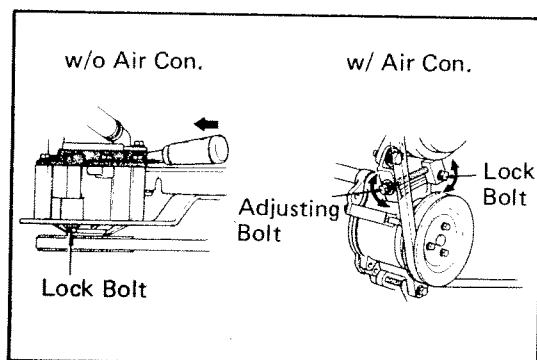
The belt should not touch the bottom of the pulley groove.



2. CHECK AND ADJUST DRIVE BELT TENSION

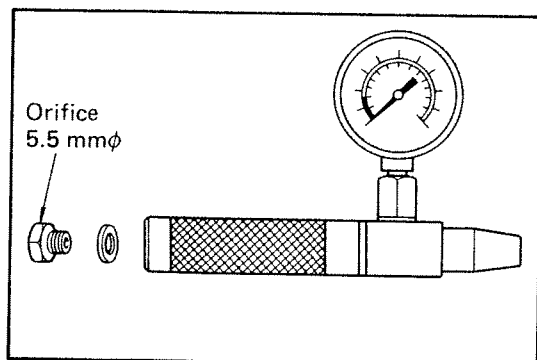
- Check the drive belt tension with Borroughs Drive Belt Tension Gauge No. BT-33-73F.

Belt tension: New belt 125 ± 25 lb
Used belt 80 ± 20 lb



- To adjust, loosen the adjusting lever bolt and pivot bolt, shift the air pump toward the direction of belt tension, and retighten the bolts.

CAUTION: Do not attempt to shift the air pump by prying on the die cast part with a lever. Pry on the rear cover when making the adjustment.



INSPECTION OF AIR PUMP

1. CHECK AIR PUMP FOR ABNORMAL NOISE

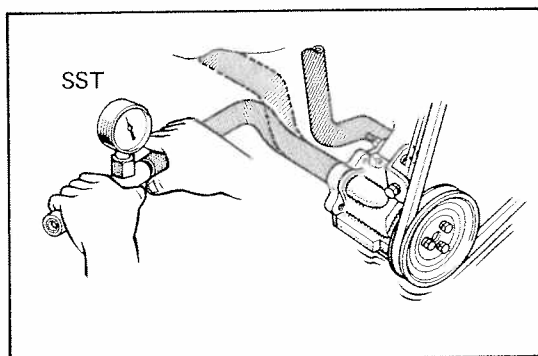
2. CHECK AIR PUMP DISCHARGE PRESSURE

- Connect the air pump tester (SST) to the hose at the air pump outlet.

SST 09258-14010

- Select and use a specified orifice (5.5 mm dia. or 0.217 in. dia) on the SST.

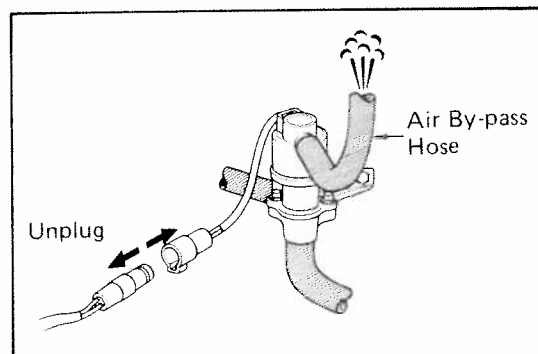
- Set the engine speed at 1,800 rpm.



(d) The gauge of the SST should indicate in the green zone.

If the SST indicates in the red zone, replace the pump assembly.

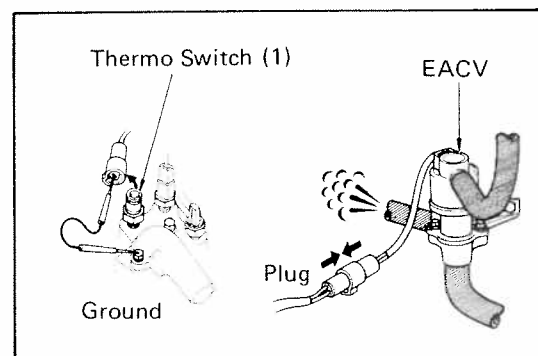
(e) Reconnect the hose to the proper location.



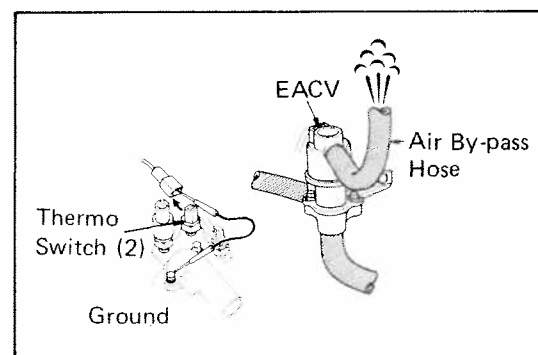
INSPECTION OF EACV

1. CHECK EACV

- Disconnect the air hose from the check valve, and air by-pass hose from the air cleaner.
- Unplug the wiring connector.
- With the engine idling, check that compressed air comes out of the air by-pass hose.



- Plug the wiring connector.
- Disconnect the connector from the thermo switch (1), and ground it.
- Check that compressed air comes out of the air hose to the check valve at idle.
- Reconnect the thermo switch connector.



- Disconnect the connector from the thermo switch (2), and ground it.
- Check that the compressed air comes out of the air by-pass hose.
- Reconnect the connector.

2. CHECK OPENING PRESSURE OF RELIEF VALVE

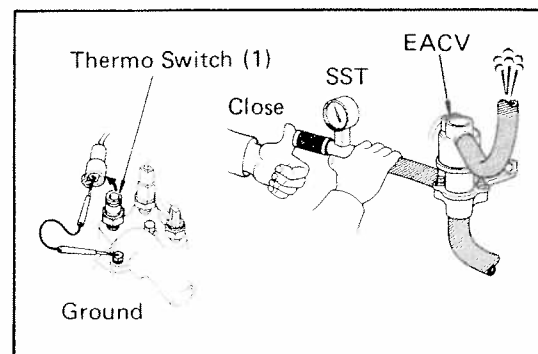
- Disconnect the connector from thermo switch (1), and ground it.
- Connect the air pump tester (SST) to the air hose to check valve.

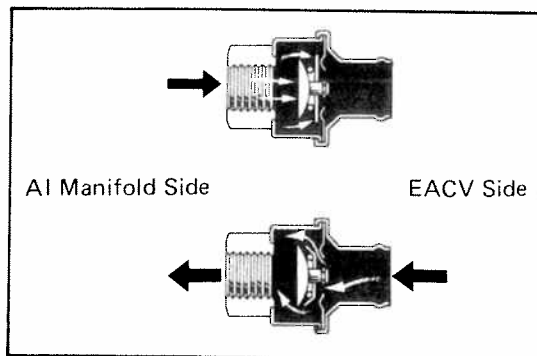
SST 09258-14010

- Close the orifice on the SST with your finger.
- Increase the engine speed gradually and measure the relief valve opening pressure.

Opening pressure: 0.30 – 0.40 kg/cm² (4.3 – 5.7 psi)

- Remove the SST and reconnect the air hoses and connector to the proper locations.



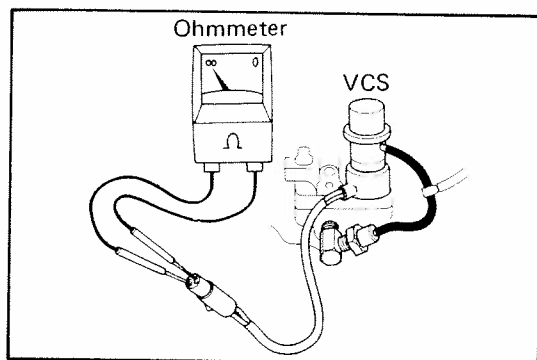


INSPECTION OF CHECK VALVE

CHECK VALVE BY BLOWING AIR FROM EACH SIDE

- Check that air does not flow from manifold side to EACV side.
- Check that air flows from the EACV side to the manifold side.

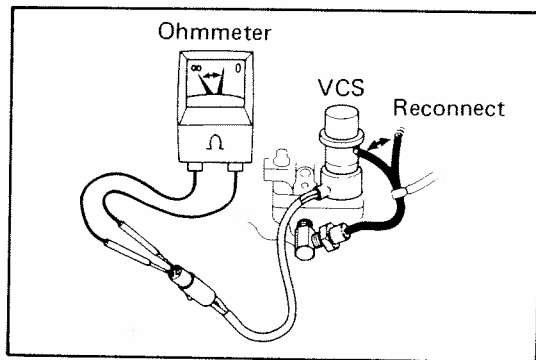
If a problem is found, replace the valve.



INSPECTION OF VCS

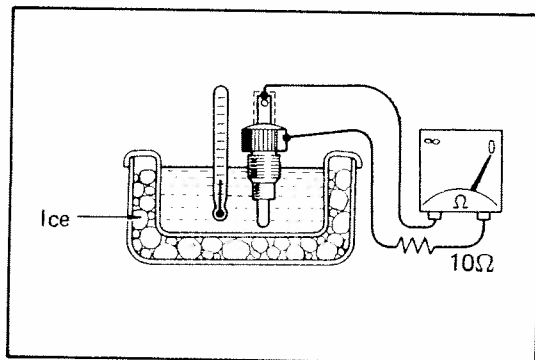
CHECK VCS OPERATION BY USING OHMMETER

- Unplug the wiring connector.
- Using an ohmmeter, check that there is no continuity at idle.



- Disconnect the vacuum hose, and then reconnect it.
- Check that there is continuity momentarily.
- Plug in the wiring connector.

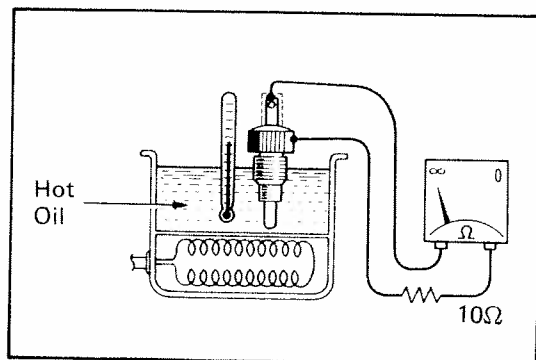
If a problem is found, replace the VCS.



INSPECTION OF THERMO SWITCH (2)

CHECK THERMO SWITCH BY USING OHMMETER

- Drain the coolant from the radiator into a suitable container.
- Remove the thermo switch from the intake manifold.
- Cool the thermo switch to below 6°C (43°F).
- Using an ohmmeter, check that there is continuity.



- Heat the switch to 18 – 98°C (64 – 208°F) with hot oil.
- Check that there is no continuity.
- Heat the switch to above 110°C (230°F).
- Check that there is continuity.
- Apply liquid sealer to the threads of the switch and reinstall.
- Fill the radiator with coolant.

INSPECTION OF THERMO SWITCH (1)

(See page 3-52)

INSPECTION OF TWC THERMO SENSOR

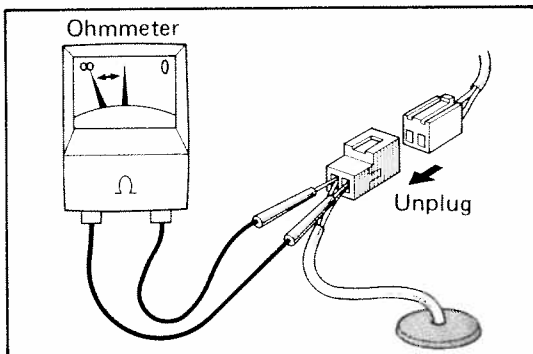
1. MEASURE RESISTANCE

- Unplug the wiring connector for the thermo sensor under the driver's seat.
- Using an ohmmeter, measure the resistance between both terminals at idling.

Resistance: 2 – 200 k Ω

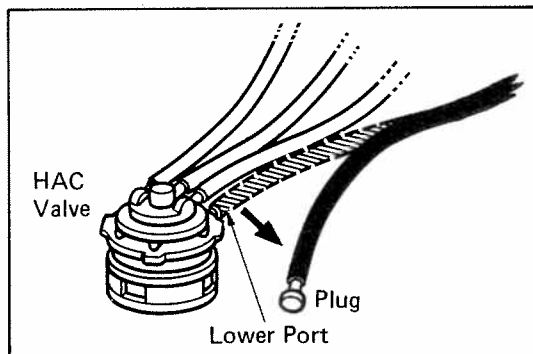
CAUTION: The ohmmeter probe should be inserted from the rear side of the connector.

- Plug in the wiring connector.



2. CHECK SENSOR WIRING

- Look for damage.
- Check for loose connections.



INSPECTION OF OXYGEN SENSOR

1. PREPARATION (FOR VEHICLE WITH HAC SYSTEM)

Disconnect the vacuum hose between the HAC valve and check valve at the check valve side, and plug the check valve.

2. CHECK OXYGEN SENSOR

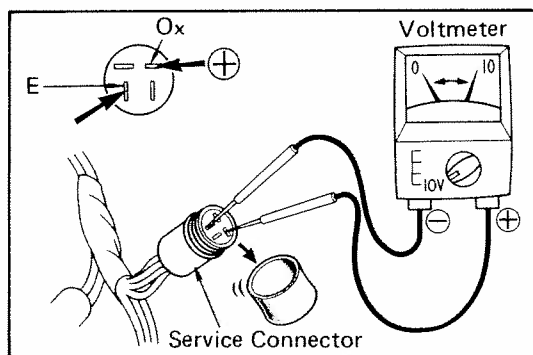
- Warm up the engine to normal operating temperature.
- Connect the voltmeter to the service connector.

Service connector location:

Corner of the left dash panel

Connect the positive (+) testing probe to terminal Ox and the negative (–) testing probe to terminal E.

- Race the engine at 2,500 rpm for about 90 seconds.
- Maintain the engine speed at 2,500 rpm.
- Check that the needle of the voltmeter fluctuates 8 times or more in 10 seconds with 0 – 7 volts.



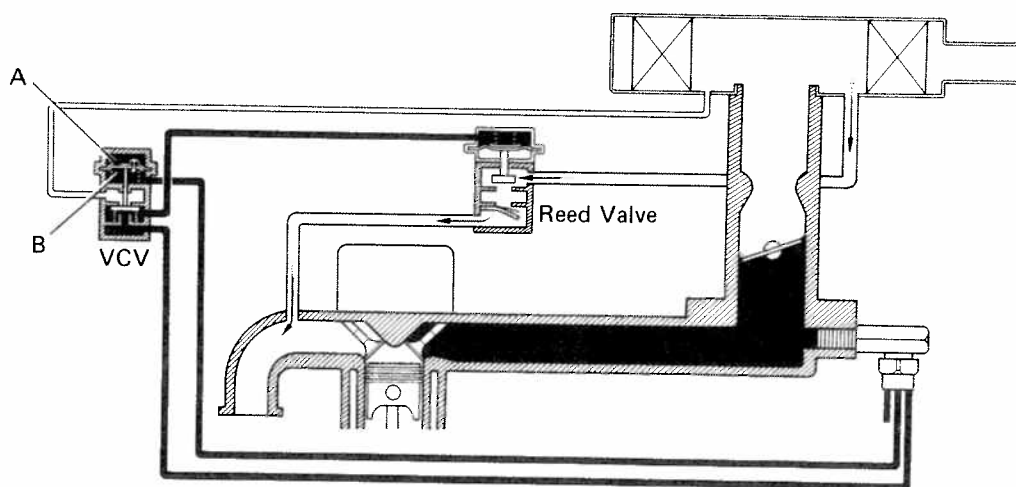
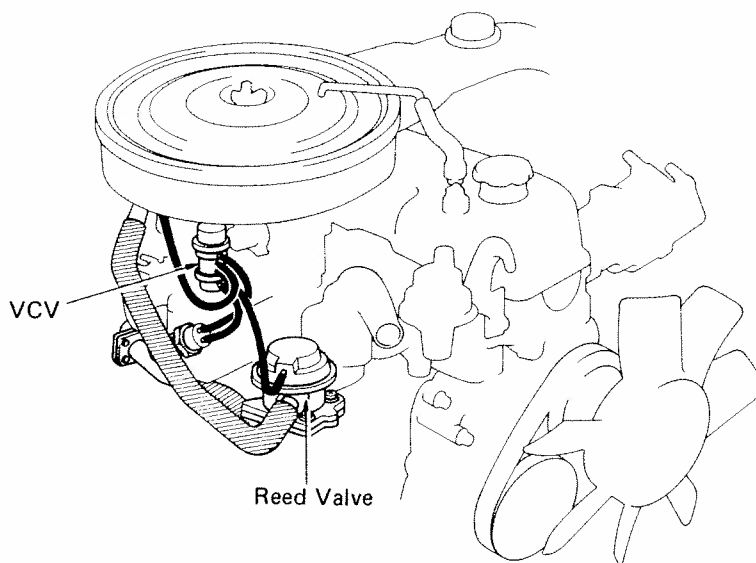
3. RECONNECT VACUUM HOSE TO PROPER LOCATION (FOR VEHICLE WITH HAC SYSTEM)

NOTE:

- If this test is positive, oxygen sensor is OK.
- If not, inspect the other parts, hose connections and wiring of AI system. (See from page 3-66)

If no problem found, replace oxygen sensor.

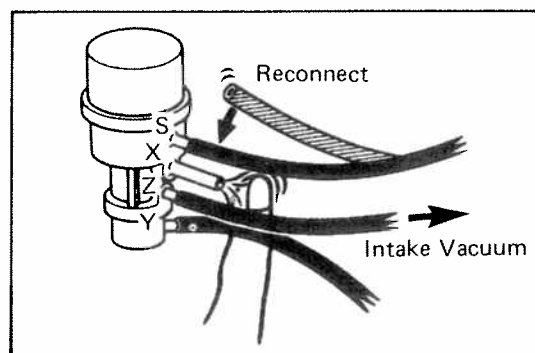
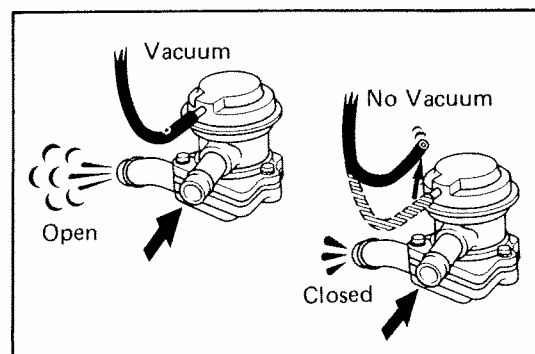
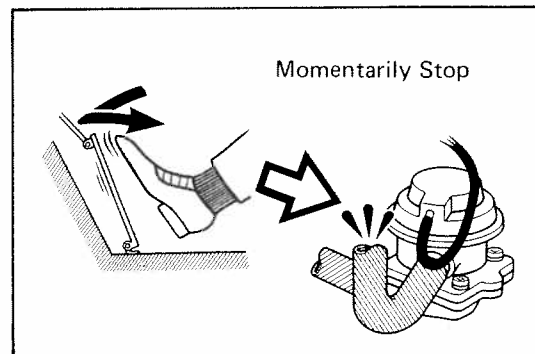
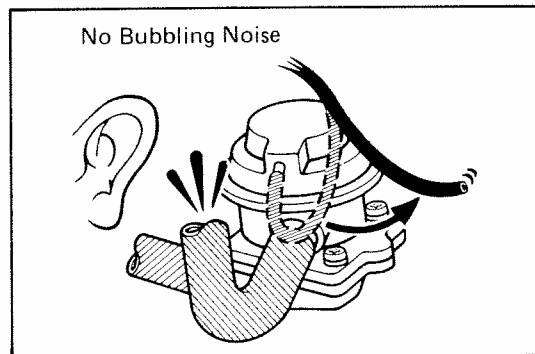
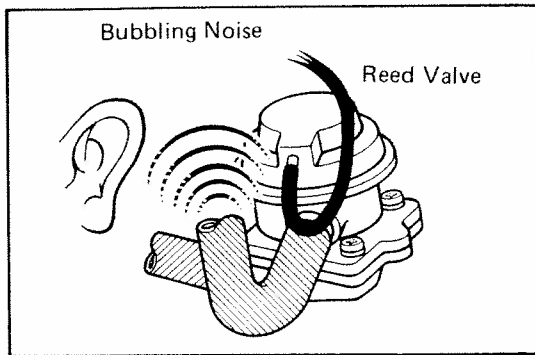
Air Suction (AS) System (Fed. RN and Canada RN 4×2 (except RN C&C))



To reduce HC and CO emissions, this system draws in air into exhaust ports to accelerate oxidation, using vacuum generated by the exhaust pulsation in the exhaust manifold.

Condition	Intake Manifold Vacuum	Vacuum in VCV Chamber A and B	Reed Valve	AS
Normal driving	—	Same	OPEN	ON
Full load driving	Low vacuum	Same	CLOSED	OFF
Sudden Deceleration	High vacuum	*High vacuum acts on chamber B	CLOSED	Momentarily OFF

Remarks: *After a few seconds, vacuum in both chambers of the VCV equalize through the orifice.



INSPECTION OF AS SYSTEM

1. VISUALLY CHECK HOSES AND TUBES FOR CRACKS, KINKS, DAMAGE OR LOOSE CONNECTIONS
2. DISCONNECT AIR SUCTION HOSE FROM AIR CLEANER
3. CHECK REED VALVE
 - (a) Check that a bubbling noise is heard from the AS hose at idle.
 - (b) Disconnect the vacuum hose from the reed valve.
 - (c) Check that a bubbling noise is not heard from the AS hose at idle.
 - (d) Reconnect vacuum hose.

4. CHECK VCV

Race the engine and quickly close the throttle valve. Check that a bubbling noise stops momentarily.

IF NO PROBLEM IS FOUND WITH THIS INSPECTION, THE SYSTEM IS OKAY; OTHERWISE INSPECT EACH PART

INSPECTION OF REED VALVE

CHECK REED VALVE BY BLOWING AIR INTO PIPE

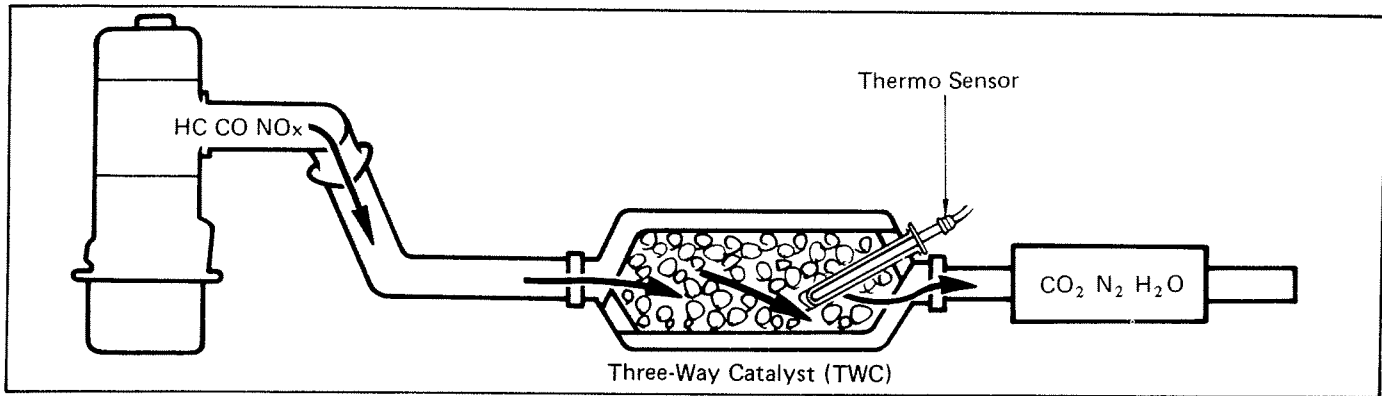
- (a) Apply vacuum to the reed valve diaphragm.
- (b) Blow air into a pipe and check that the reed valve is open.
- (c) Release the vacuum and check that the reed valve is closed.

INSPECTION OF VCV

CHECK VCV OPERATION

- (a) Disconnect the vacuum hose from port Z of the VCV.
- (b) Connect port Z directly to the intake manifold with another hose, and disconnect the vacuum hose from port S and X of the VCV.
- (c) With the engine idling, place your finger over port X and check that vacuum is not felt.
- (d) Check that vacuum is felt momentarily as the vacuum hose is reconnected to port S.

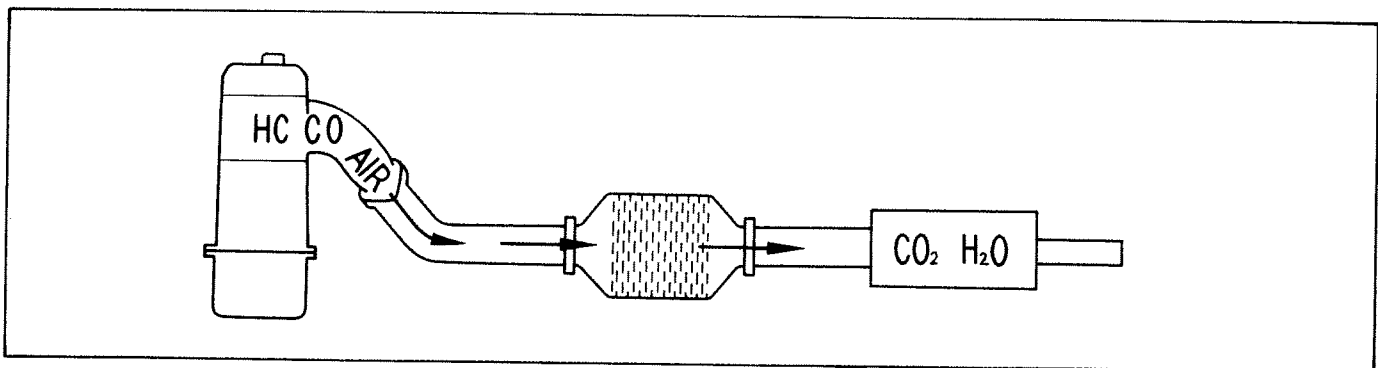
Three-Way Catalyst (TWC) System (Calif. RN and RN C&C)



- To reduce HC, CO and NO_x emissions, they are oxidized and converted to dinitrogen (N₂), carbon dioxide (CO₂) and water (H₂O) by the catalyst.
- If the catalyst is overheated (above 785°C or 1,445°F), the thermo sensor in the catalytic converter turns the AI system OFF.

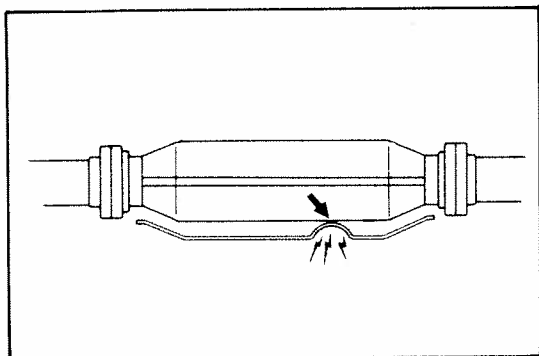
Exhaust Port		Converter		Exhaust Gas
Unburnt HC, CO and NO _x (Proper temperature)	→	Oxidation and reduction (Temperature is increased.)	→	CO ₂ H ₂ O N ₂

Oxidation Catalyst (OC) System (Fed. RN and Canada RN 4×2 (except RN C&C))



To reduce HC and CO emissions, HC and CO are oxidized and converted to water (H₂O) and carbon dioxide (CO₂) by the catalyst.

Exhaust Port		Converter		Exhaust Gas
Unburnt HC, CO and AIR (Proper temperature)	→	Oxidation (Temperature is increased.)	→	CO ₂ H ₂ O



INSPECTION OF EXHAUST PIPE ASSEMBLY

1. CHECK CONNECTIONS FOR LOOSENESS OR DAMAGE
2. CHECK CLAMPS FOR WEAKNESS, CRACKS OR DAMAGE

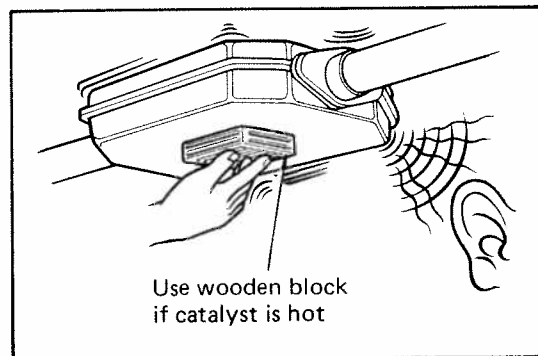
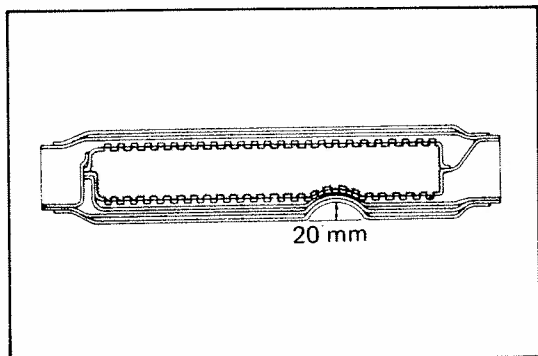
INSPECTION OF CATALYTIC CONVERTER (Fed. RN and Canada RN 4×2 (except RN C&C))

CHECK FOR DENTS OR DAMAGE

If any part of protector is damaged or dented to the extent that it contacts the catalyst, repair or replace it.

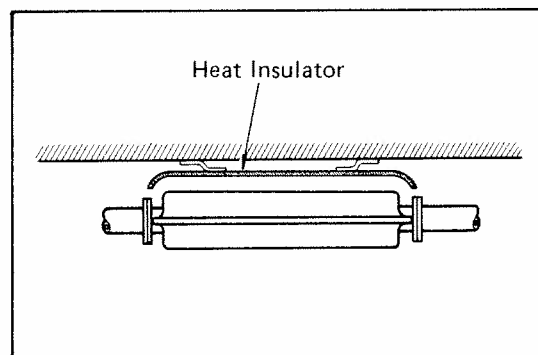
(Calif. RN and RN C&C)

1. CHECK OUTER SURFACE FOR DENTS OR DAMAGE
Dent limit: 20 mm (0.79 in.)



2. SHAKE CATALYTIC CONVERTER, AND CHECK FOR EXCESSIVE RATTLING

If there is an excessive rattling noise, replace the converter.



INSPECTION OF HEAT INSULATOR

1. CHECK HEAT INSULATOR FOR DAMAGE
2. CHECK FOR ADEQUATE CLEARANCE BETWEEN CATALYTIC CONVERTER AND HEAT INSULATOR

INSPECTION OF THERMO SENSOR

1. MEASURE RESISTANCE

- (a) Unplug the wiring connector.
- (b) Using an ohmmeter, measure the resistance between both terminals at idling.

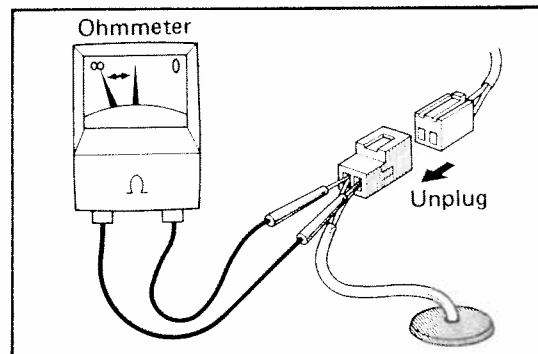
Resistance: 2 – 200 kΩ

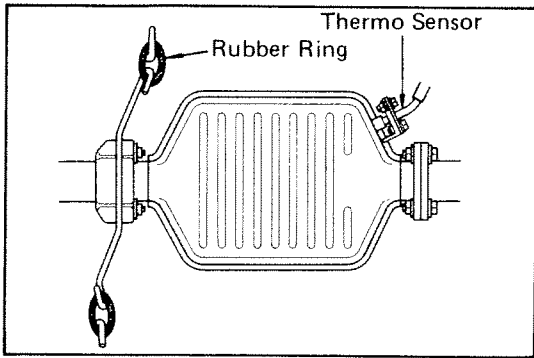
CAUTION: The ohmmeter probe should be inserted from the rear side of the connector.

- (c) Plug in the wiring connector.

2. CHECK SENSOR WIRING

- (a) Look for damage.
- (b) Check that connections are tight.





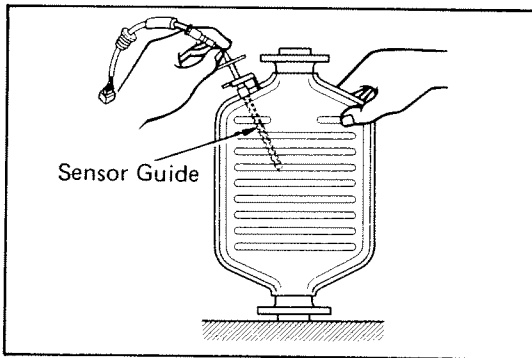
REPLACEMENT OF CATALYTIC CONVERTER

1. REMOVE CATALYTIC CONVERTER WITH THERMO SENSOR

- Unplug the thermo sensor wiring connector inside the vehicle (Under the driver's seat).
- Remove the wiring grommet from the floor and pull the connector from the interior.
- Jack up the vehicle.
- Check that the converter is cool.
- Remove the bolts at the front and rear of the converter.
- Remove the rubber rings.
- Remove the converter and gaskets.

2. REMOVE THERMO SENSOR

- Hold the converter with the thermo sensor positioned upward.
- Remove the thermo sensor and gasket from the converter.



3. INSTALL THERMO SENSOR

- Place a new gasket on the thermo sensor.

NOTE: Service replacement converters are fitted with a plastic thermo sensor guide. Insert the sensor into this guide.

- Push the sensor into the converter and tighten two bolts.

Torque: 80 kg-cm (60 in.-lb)

4. INSTALL CATALYTIC CONVERTER WITH THERMO SENSOR

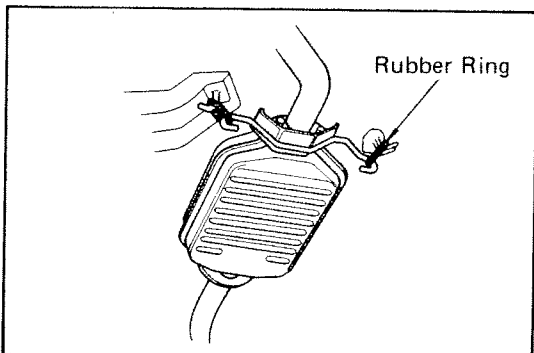
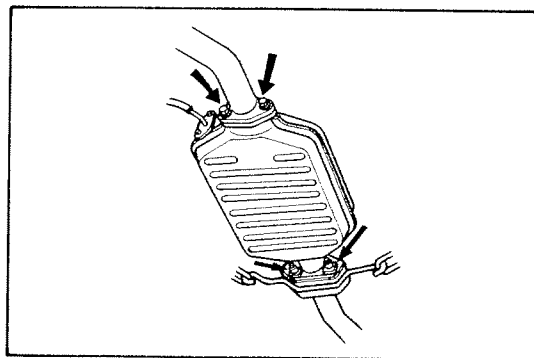
- Place new gaskets on the converter front and rear pipes, and connect the converter to the exhaust pipes.
- Tighten the bolts.

Torque: 440 kg-cm (32 ft-lb)

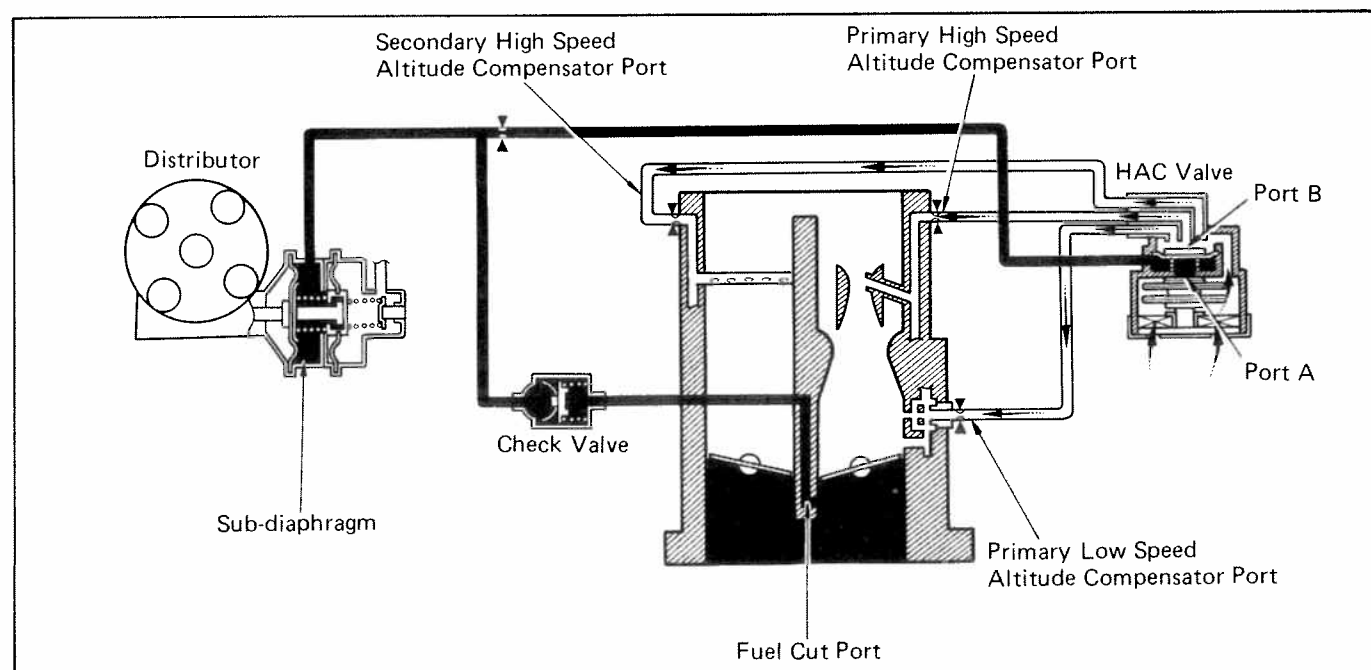
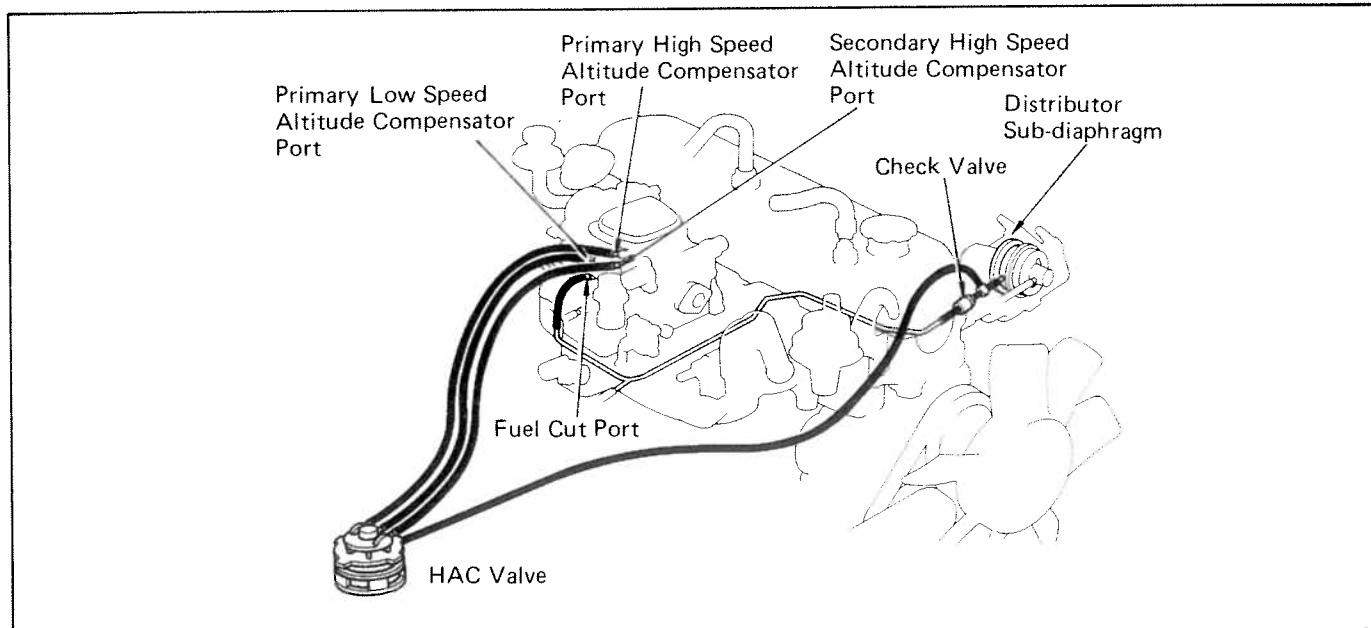
- Secure the converter to the body with the rubber rings.

- Plug in the thermo sensor connector, and install the floor grommet.

NOTE: After installing, check the sensor wire to see that it is not excessively bent and that it is not interfering with other parts.

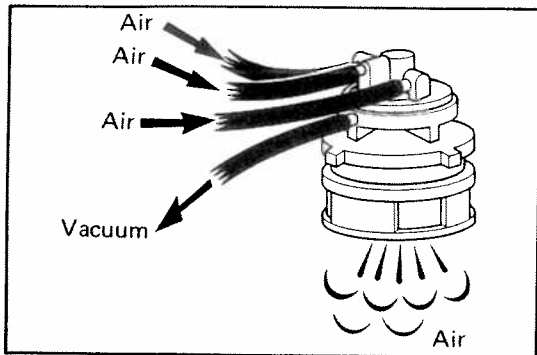


High Altitude Compensation (HAC) System (RN C&C, and Fed. (OPT))



As altitude increases, the air-fuel mixture becomes richer. This system insures proper air-fuel mixture by supplying additional air to the primary low and high speed circuits and secondary high speed circuit of the carburetor, and advances the ignition timing to improve driveability at high altitude (above 1,198 m (3,930 ft)).

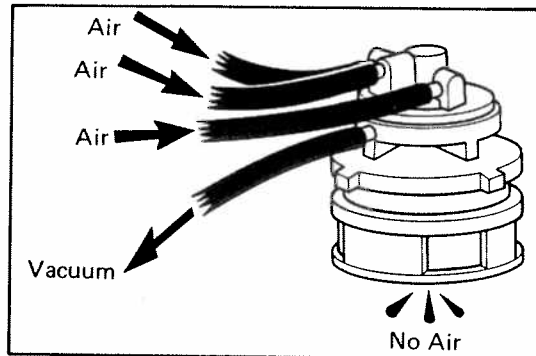
Altitude	Bellows in HAC Valve	Port A in HAC Valve	Distributor Sub-diaphragm	Port B in HAC Valve	Air from HAC Valve	Vacuum Ignition Timing
HIGH Above 1,198 m (3,930 ft)	EXPANDED	CLOSED	PULLED (Always)	OPEN	Led into primary low and high speed circuits and secondary high speed circuit	ADVANCED (+7°) (Always)
LOW Below 783 m (2,570 ft)	CONTRACTED	OPEN	NOT PULLED (PULLED only during idling)	CLOSED	STOPPED	INITIAL TIMING (ADVANCED (+7°)) (only during idling)



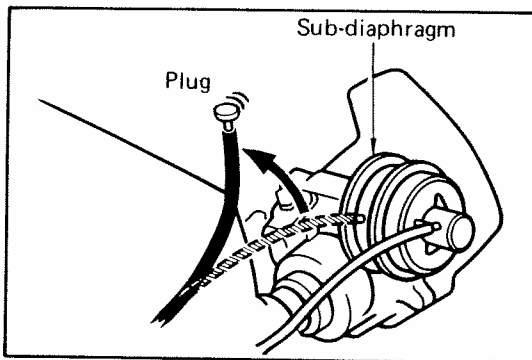
INSPECTION OF HAC SYSTEM

PRECHECK:

Before checking the HAC system, determine the position of the HAC valve. This can be done by blowing into any one of the three ports on top of the HAC valve with the engine idling. If the passage is open, the valve is in the HIGH ALTITUDE position.



If it is closed, the valve is in the LOW ALTITUDE position. (See page 3-80.)



A. AT HIGH ALTITUDE

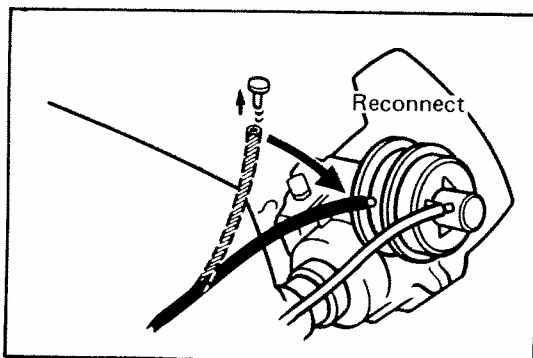
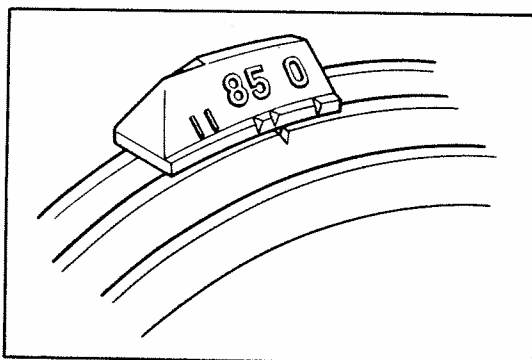
1. CHECK IGNITION TIMING AT IDLE

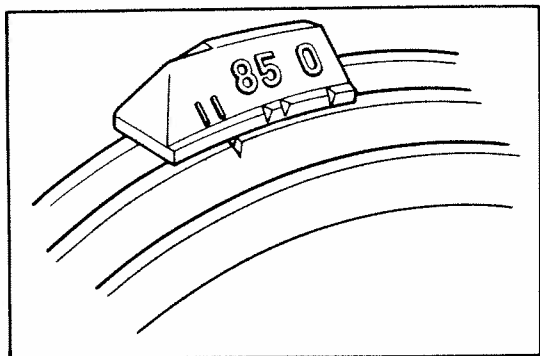
- (a) Warm up the engine.
- (b) Disconnect the hose from the distributor sub-diaphragm, and plug the hose end.

- (c) Check the ignition timing.

Ignition timing: 5° BTDC

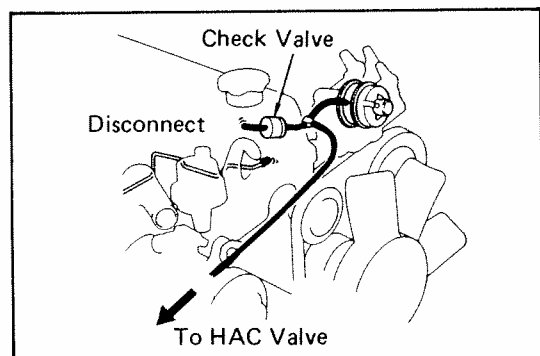
- (d) Reconnect the hose to the sub-diaphragm.





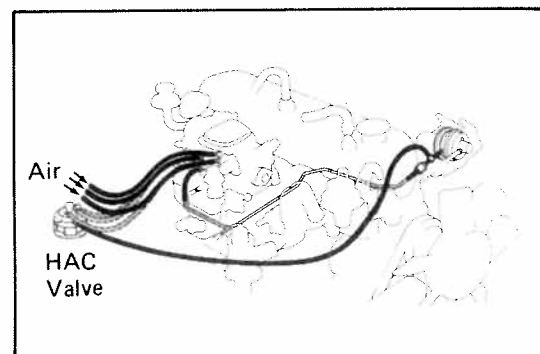
(e) Check that the ignition timing advances.

Ignition timing: About 12° BTDC



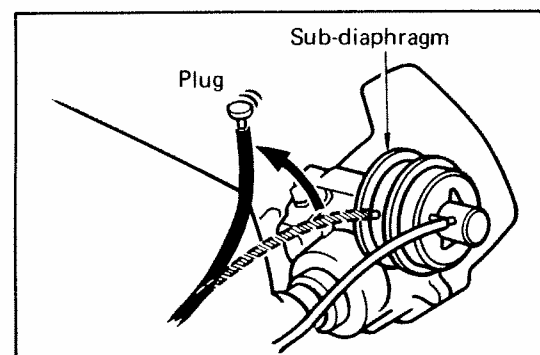
2. CHECK THE CHECK VALVE

- Disconnect the vacuum hose between the check valve and vacuum pipe at the vacuum pipe side, and plug the pipe end.
- Check that the ignition timing remains stationary for more than one minute.
- Stop the engine and reconnect the hose to the vacuum pipe.



3. CHECK CARBURETOR

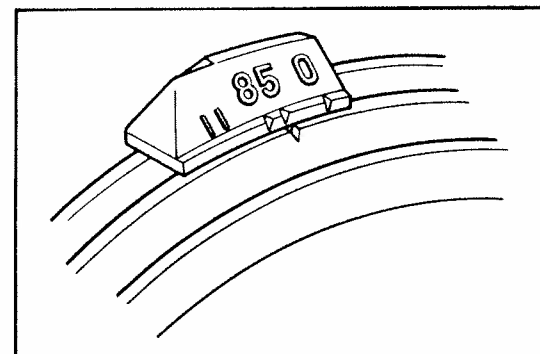
- Disconnect three hoses from the pipes on top of the HAC valve.
- Blow air into each hose and check that air flows into the carburetor.
- Reconnect the hoses to the proper locations.



B. AT LOW ALTITUDE

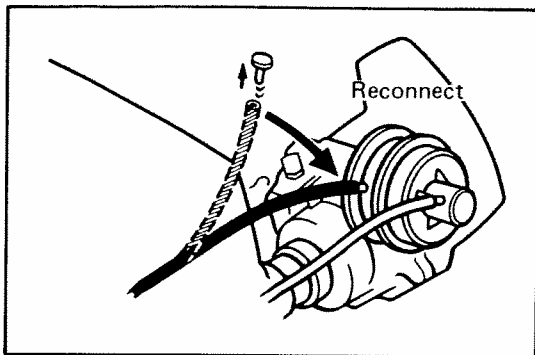
1. CHECK IGNITION TIMING AT IDLE

- Warm up the engine.
- Disconnect the hose from the distributor sub-diaphragm, and plug the hose end.

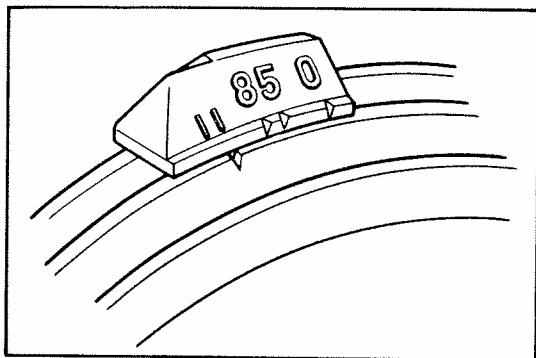


(c) Check the ignition timing.

Ignition timing: 5° BTDC



(d) Reconnect the hose to the sub-diaphragm.

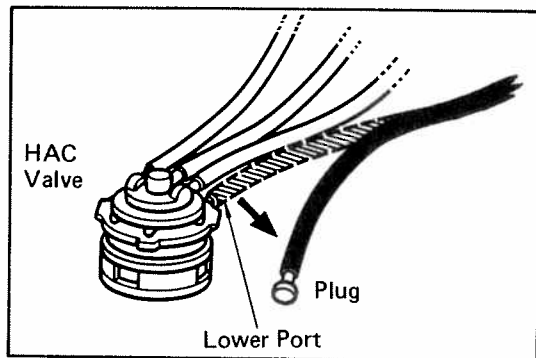


(e) Check that the ignition timing advances.

Ignition timing: About 12° BTDC

2. CHECK THE CHECK VALVE

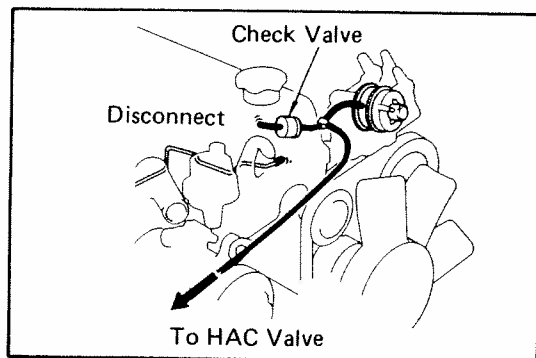
(a) Disconnect the vacuum hose from lower port of the HAC valve, and plug the hose end.



(b) Disconnect the vacuum hose between the check valve and vacuum pipe at the pipe side, and plug the pipe end.

(c) Check that the ignition timing remains stationary for more than one minute.

(d) Stop the engine and reconnect the hose to the vacuum pipe and HAC valve.

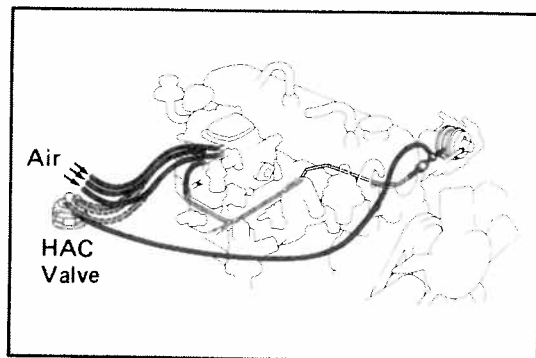


3. CHECK CARBURETOR

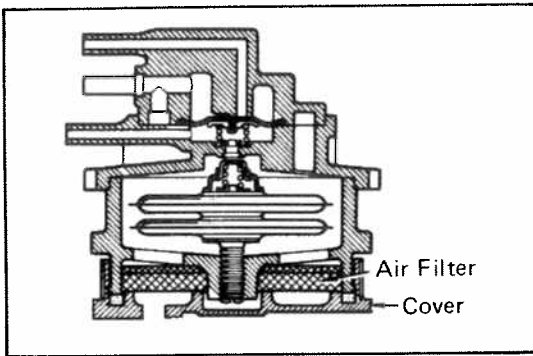
(a) Disconnect three hoses from the pipes on top of the HAC valve.

(b) Blow air into each hose and check that air flows into the carburetor.

(c) Reconnect the hoses to the proper locations.

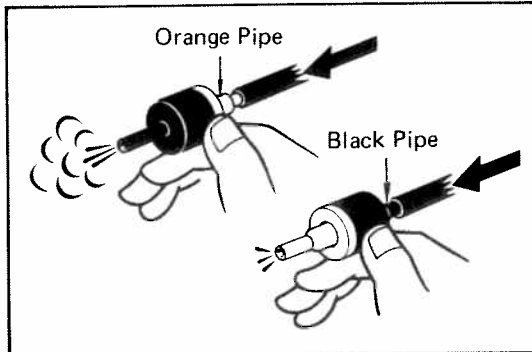


IF NO PROBLEM IS FOUND WITH THIS INSPECTION, THE SYSTEM IS OKAY; OTHERWISE INSPECT EACH PART



INSPECTION OF HAC VALVE

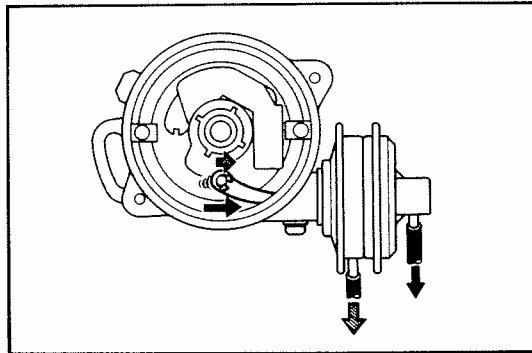
VISUALLY CHECK AND CLEAN AIR FILTER IN HAC VALVE



INSPECTION OF CHECK VALVE

CHECK VALVE BY BLOWING AIR INTO EACH PIPE

- (a) Check that air flows from the orange pipe to the black pipe.
- (b) Check that air does not flow from the black pipe to the orange pipe.



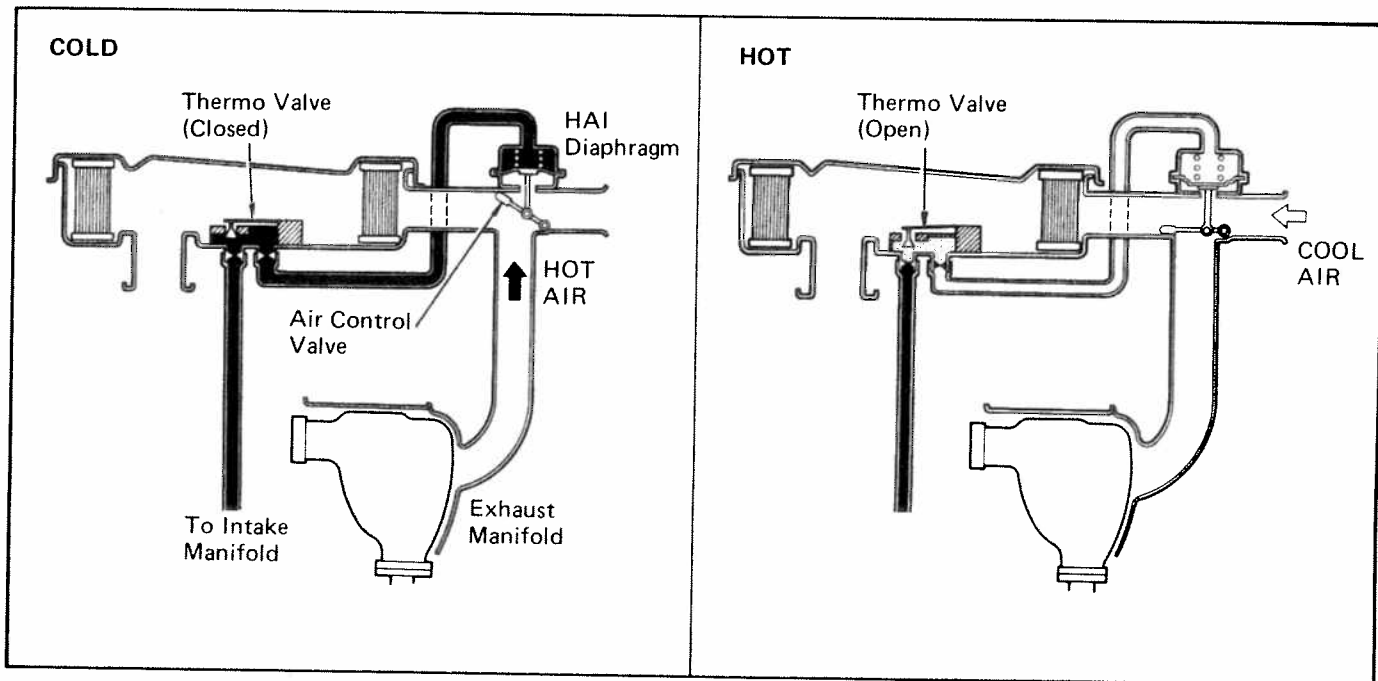
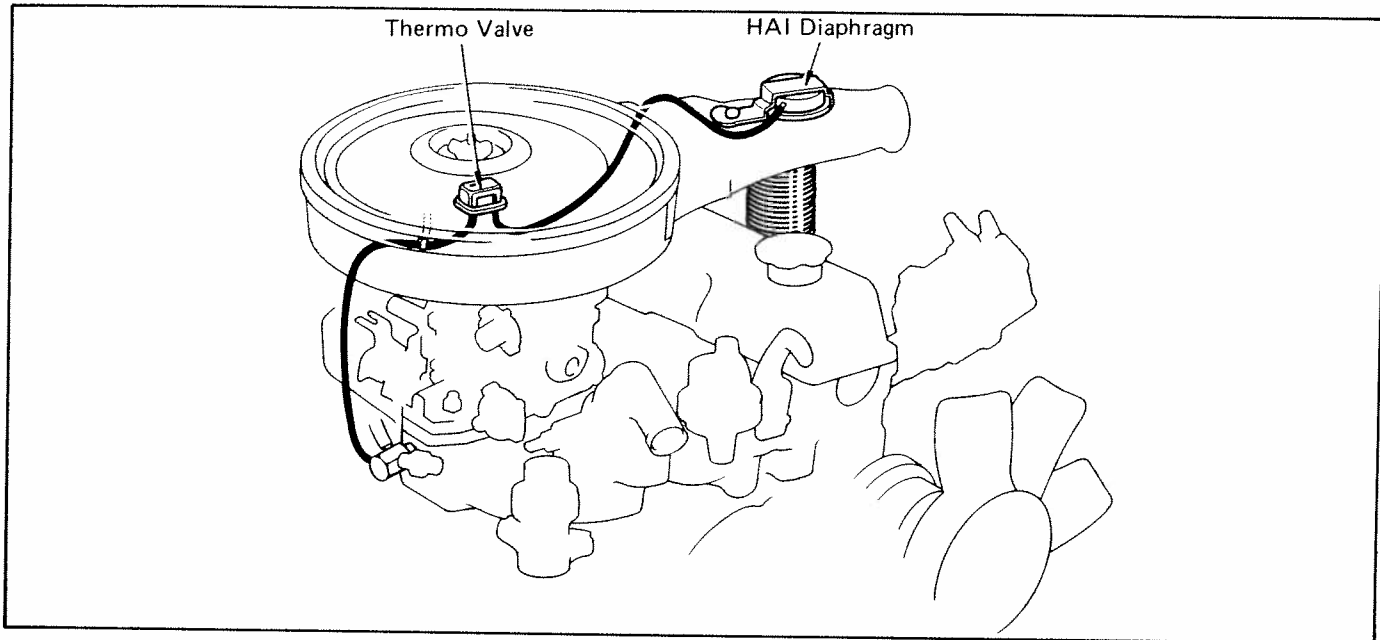
INSPECTION OF DISTRIBUTOR VACUUM ADVANCER

CHECK OPERATION OF VACUUM ADVANCER

- (a) Remove the distributor cap and rotor.
- (b) Apply vacuum to the diaphragm, and check that the vacuum advancer moves in accordance with the vacuum.
- (c) Reinstall the rotor and distributor cap.

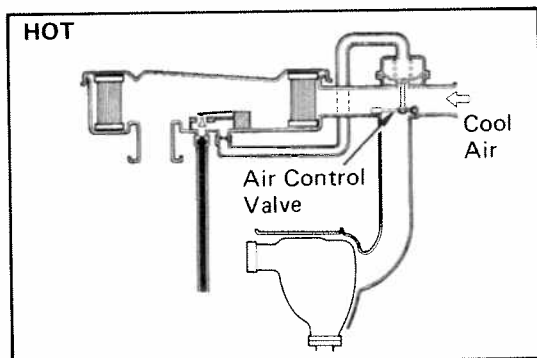
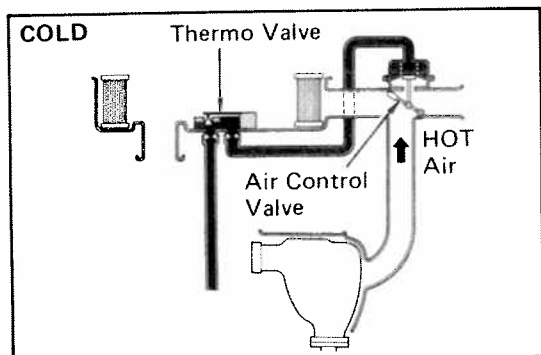
Auxiliary Systems

1. Automatic Hot Air Intake (HAI) System



This system leads a hot air supply to the carburetor in cold weather to improve driveability and to prevent the carburetor from icing in extremely cold weather.

Temperature in Air Cleaner	Thermo Valve	Air Control Valve	Intake Air
Cool Below 30°C (86°F)	CLOSED	Hot air passage OPEN	HOT
Hot Above 45°C (113°F)	OPEN	Cool air passage OPEN	COOL



INSPECTION OF HAI SYSTEM

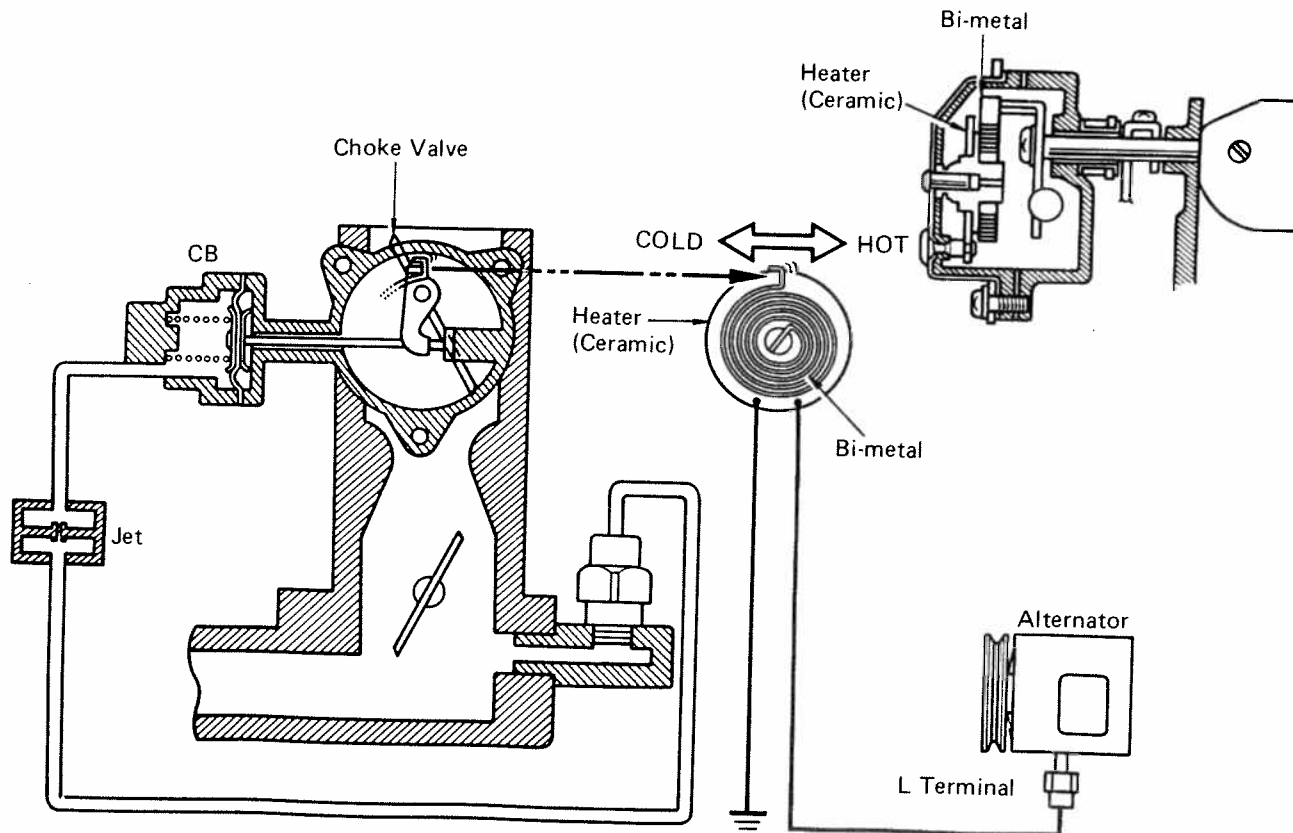
1. CHECK AIR CONTROL VALVE OPERATION

- (a) Remove the air cleaner cover.
- (b) Cool the thermo valve by blowing compressed air on it.
- (c) Check that the air control valve closes the cool air passage at idle.
- (d) Reinstall the air cleaner cover and warm up the engine.
- (e) Check that the air control valve opens the cool air passage at idle.

2. CHECK HOSES AND CONNECTIONS

Visually check the hoses and connections for cracks, leaks or damage.

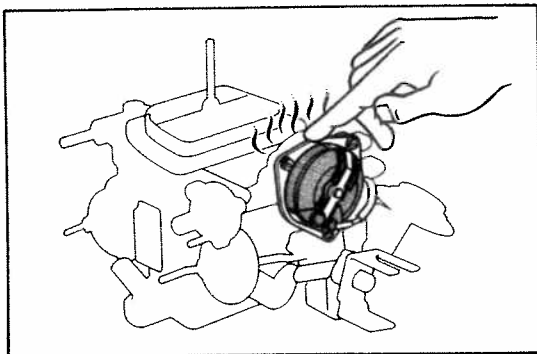
2. Automatic Choke System



This system temporarily supplies a rich mixture to the engine by closing the choke valve when the engine is cold.

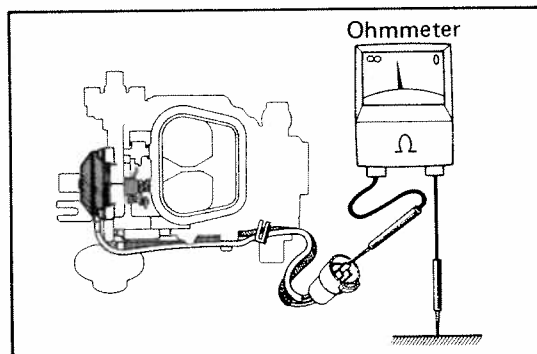
IG S/W	Engine	Current from L Terminal to Heater	Bi-metal	Choke Valve
OFF	Not running	Not flowing	Expanded	CLOSED
ON	Not running	*Not flowing	Expanded	CLOSED
	Running	Flowing	Heated up and contracted	OPEN

Remarks: *On alternators with an IC regulator, slight voltage will occur when the ignition switch is turned ON, but not sufficient current to warm up the heater.



INSPECTION OF AUTOMATIC CHOKE SYSTEM

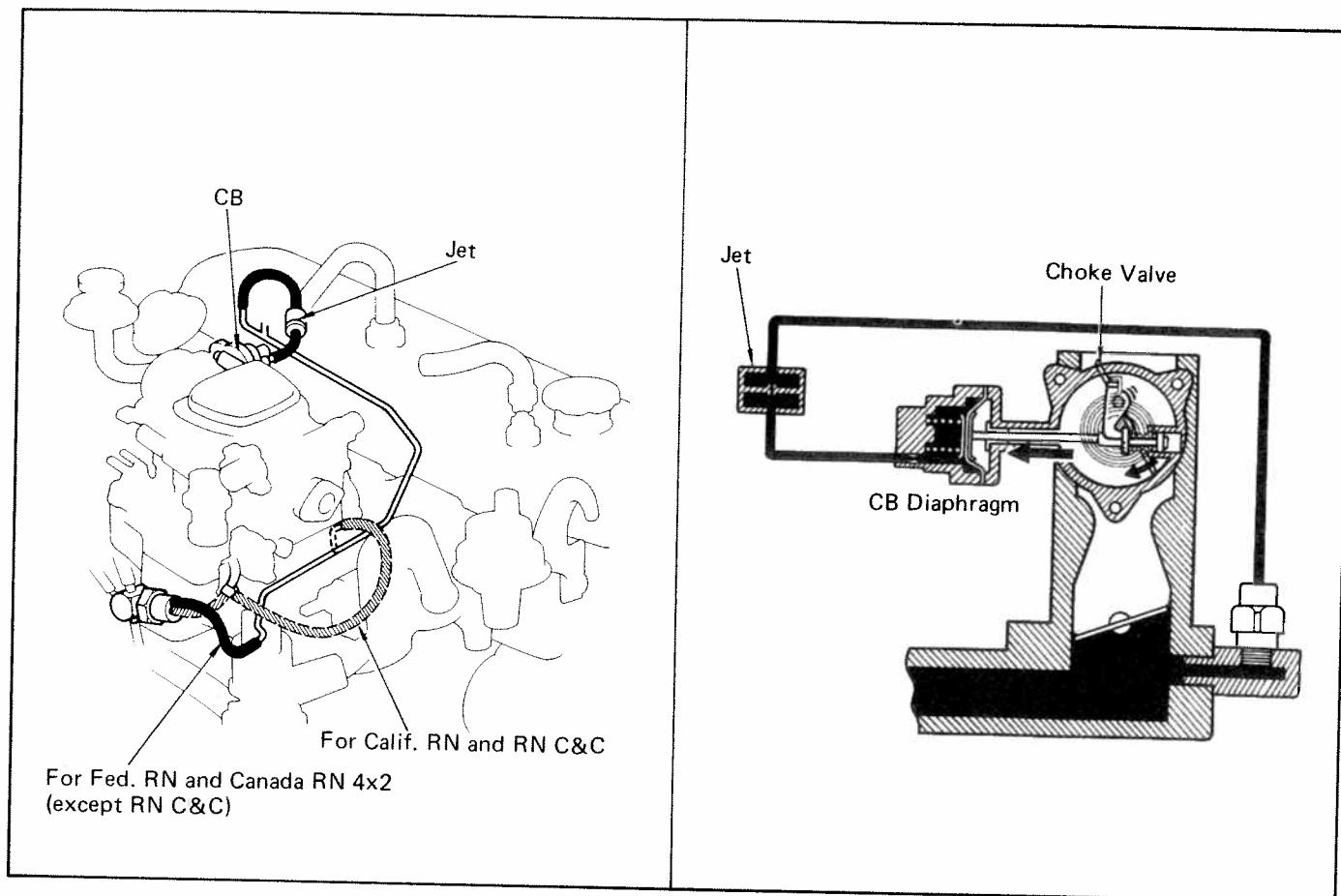
1. START ENGINE
2. SHORTLY AFTER, CHECK THAT CHOKE VALVE BEGINS TO OPEN AND CHOKE HOUSING IS HEATED



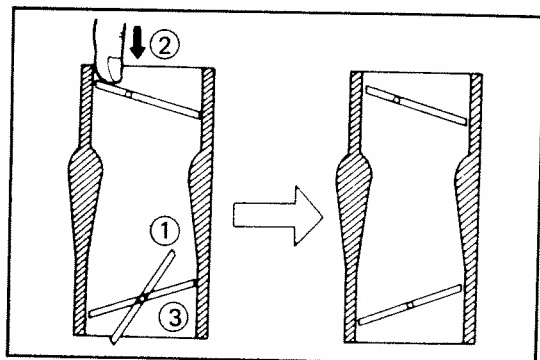
INSPECTION OF HEATER (Ceramic)

1. UNPLUG WIRING CONNECTOR
 2. MEASURE RESISTANCE WITH OHMMETER
- Resistance: $19 - 23\Omega$ at 20°C (68°F)

3. Choke Breaker (CB) System



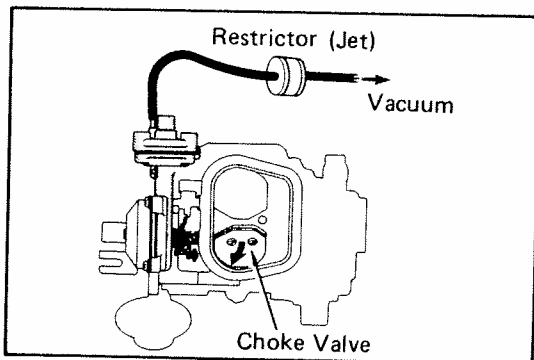
This system slightly opens the choke valve to prevent a too rich mixture after firing when the choke is closed.



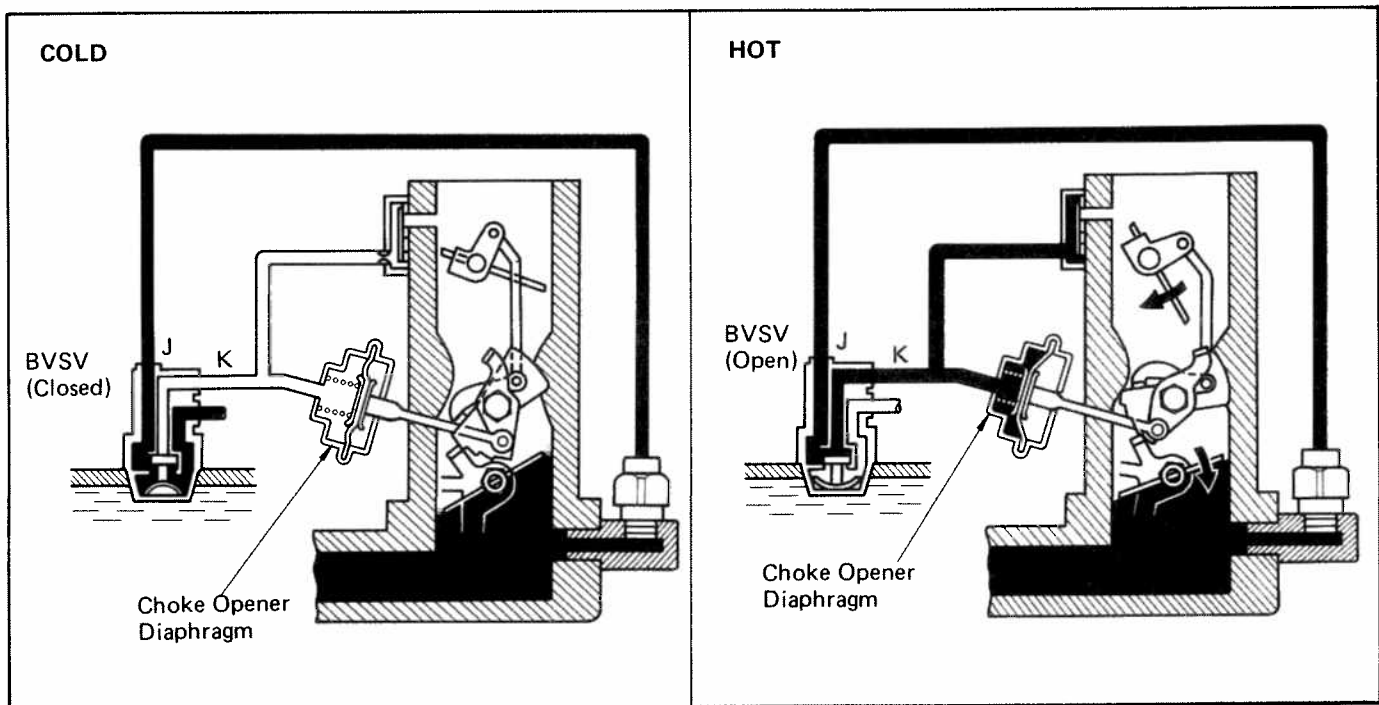
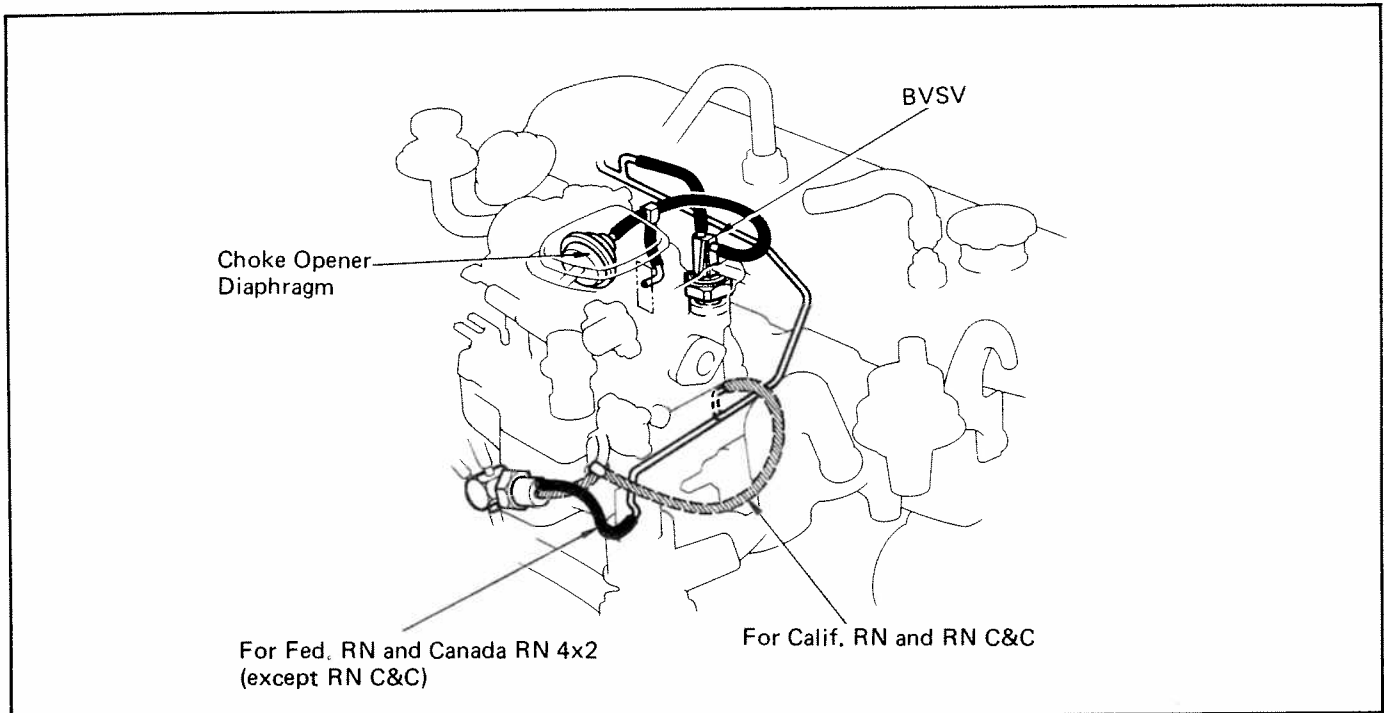
INSPECTION OF CB SYSTEM

CHECK CHOKE LINKAGE AND DIAPHRAGM WITH COLD ENGINE

- While holding the throttle slightly open, push the choke valve closed, and hold it closed as you release the throttle valve.
- Disconnect the vacuum hose between the jet and vacuum pipe at the jet side.
- Apply vacuum to the jet and check that the choke valve slightly opens.



4. Choke Opener System



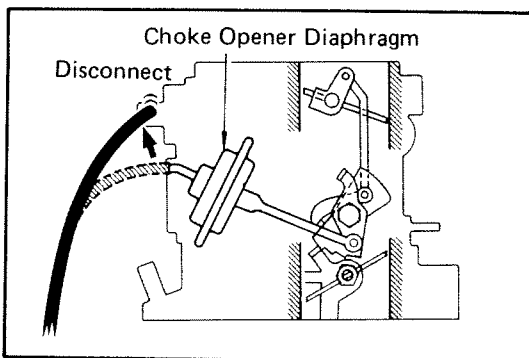
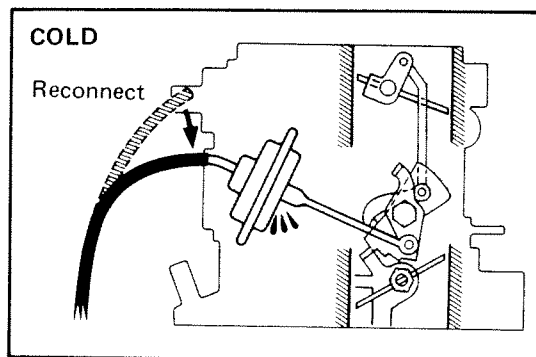
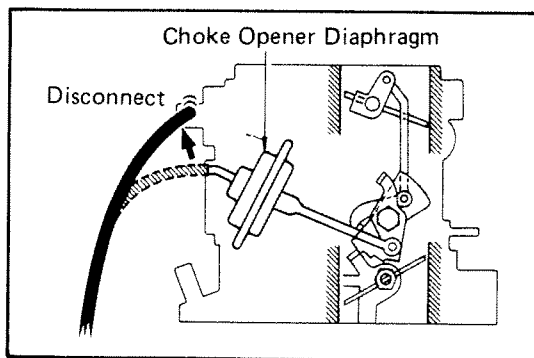
After warm-up, this system forcibly holds the choke valve open to prevent an over-rich mixture and release the fast idle cam to the 4th step to lower the engine rpm.

Coolant Temp.	BVSV	Diaphragm	Choke Valve	Fast Idle Cam	Engine RPM
Below 60°C (140°F)	CLOSED (J-K)	Released by spring tension	Closed by automatic choke	Set at 1st or 2nd step	HIGH
Above 75°C (167°F)	OPEN (J-K)	Pulled by manifold vacuum	OPEN	Released to 4th step	LOW

INSPECTION OF CHOKE OPENER SYSTEM

1. CHECK BVSV WITH COLD ENGINE

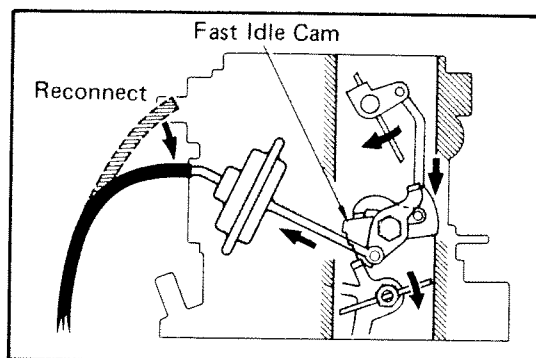
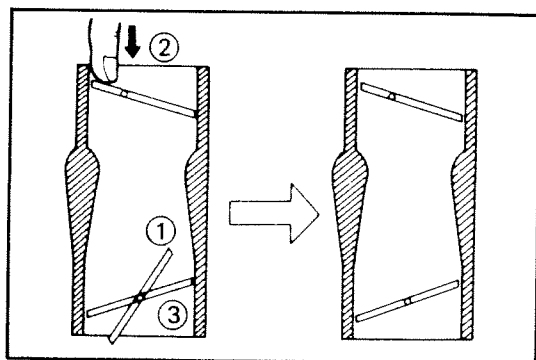
- The coolant temperature should be below 60°C (140°F).
- Disconnect the vacuum hose from the choke opener diaphragm.
- Step down on the accelerator pedal and release it. Then start the engine.
- Reconnect the vacuum hose and check that the choke linkage does not move.



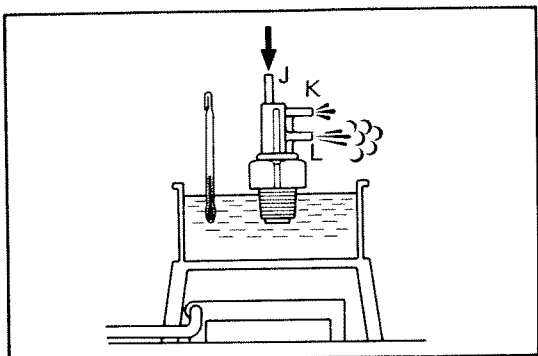
2. CHECK BVSV, DIAPHRAGM AND LINKAGE WITH WARM ENGINE

- Warm up the engine to normal operating temperature.
- Disconnect the vacuum hose from the choke opener diaphragm.
- Set the fast idle cam.

While holding the throttle slightly open, push the choke valve closed, and hold it closed as you release the throttle valve.
- Start the engine, but do not touch the accelerator pedal.



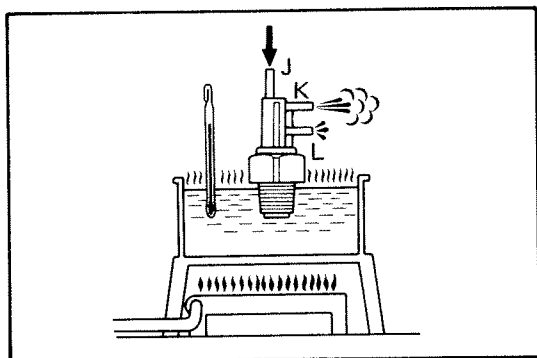
IF NO PROBLEM IS FOUND WITH THIS INSPECTION, THE SYSTEM IS OKAY; OTHERWISE INSPECT EACH PART



INSPECTION OF BVSV

CHECK BVSV BY BLOWING AIR INTO PIPE

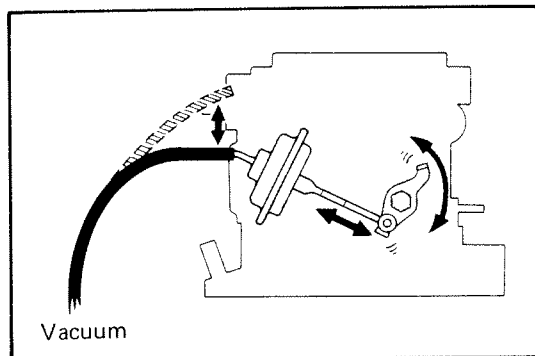
- (a) Drain the coolant from the radiator into a suitable container.
 - (b) Remove the BVSV from the intake manifold.
 - (c) Cool the BVSV to below 60°C (140°F).
 - (d) Check that air flows from pipe J to pipe L.
 - (e) Heat the BVSV to above 75°C (167°F).
 - (f) Check that air flows from pipe J to pipe K.
 - (g) Apply liquid sealer to the threads of the BVSV and reinstall.
 - (h) Fill the radiator with coolant.
- If a problem is found, replace the BVSV.



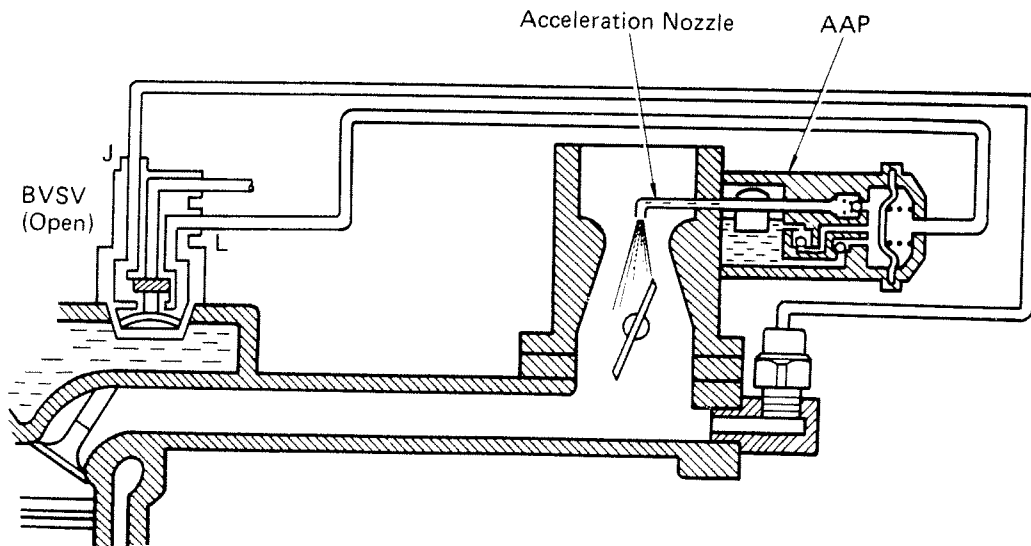
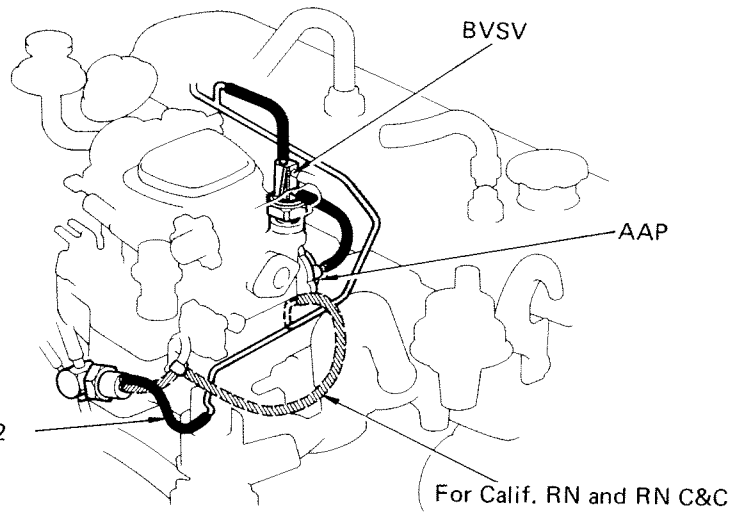
INSPECTION OF DIAPHRAGM

CHECK THAT CHOKE LINKAGE MOVES IN ACCORDANCE WITH APPLIED VACUUM

If a problem is found, replace the diaphragm.

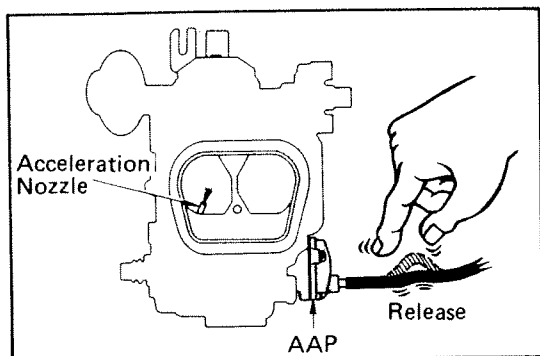


5. Auxiliary Acceleration Pump (AAP) System



The carburetor air-fuel mixture is very lean. When accelerating with a cold engine, the main acceleration pump capacity is insufficient to provide good acceleration. The AAP system compensates for this by forcing more fuel into the acceleration nozzle to obtain better cold engine performance.

Coolant Temp.	BVSV	Engine	Intake Vacuum	Diaphragm in AAP	Fuel
Below 60°C (140°F)	OPEN (J-L)	Constant RPM	HIGH	Pulled by vacuum	Drawn into AAP chamber
		Acceleration	LOW	Returned by spring tension	Forced into acceleration nozzle
Above 75°C (167°F)	CLOSED (J-L)	—	—	No operation	—



INSPECTION OF AAP SYSTEM

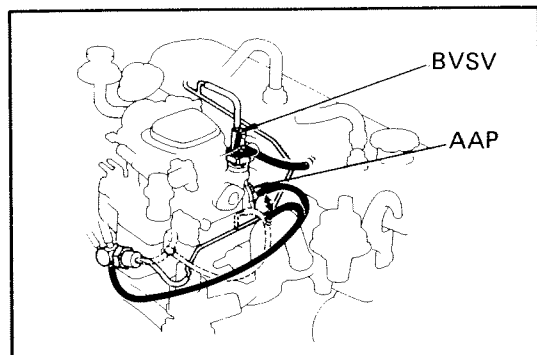
1. CHECK SYSTEM WITH COLD ENGINE

- Check that the coolant temperature is below 60°C (140°F).
- Remove the air cleaner.
- Start the engine.
- Pinch the AAP hose, and stop the engine.
- Release the hose.
- Check that gasoline spurts out from the acceleration nozzle.

2. REPEAT (c), (d) AND (e) ABOVE AFTER WARM-UP

- Check that gasoline does not spurt out from the acceleration nozzle.
- Reinstall the air cleaner.

IF NO PROBLEM IS FOUND WITH THIS INSPECTION, THE SYSTEM IS OKAY, OTHERWISE INSPECT EACH PART



INSPECTION OF AAP DIAPHRAGM

CHECK DIAPHRAGM OPERATION AT IDLE

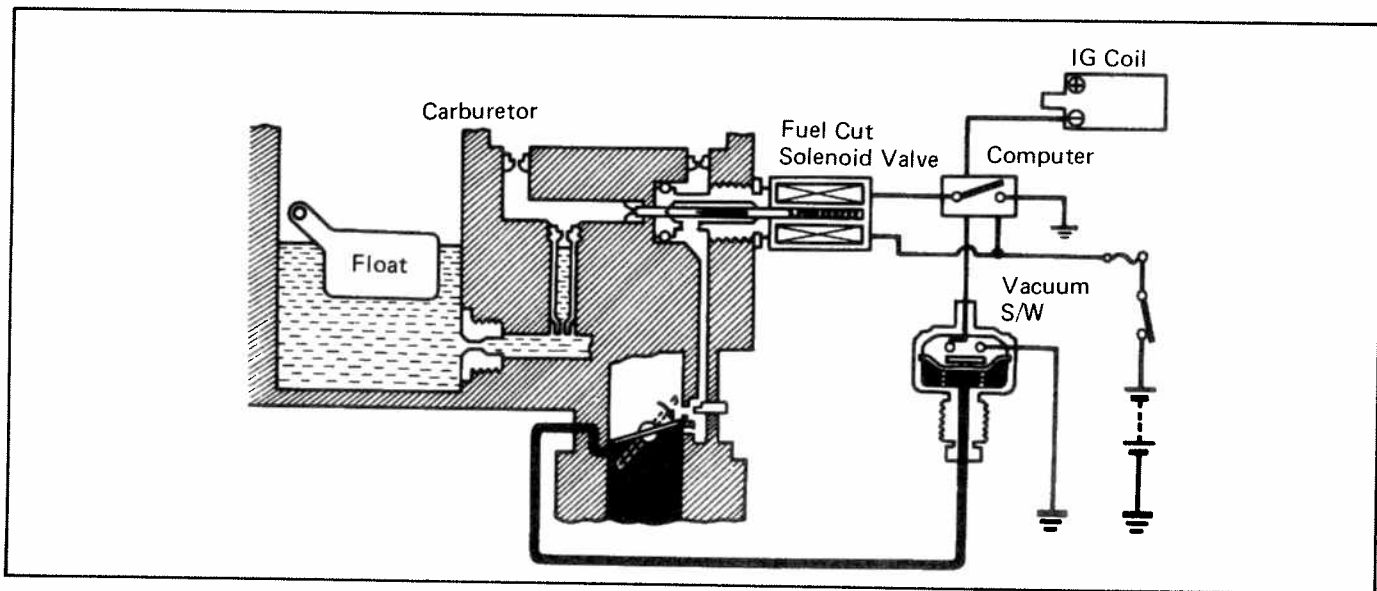
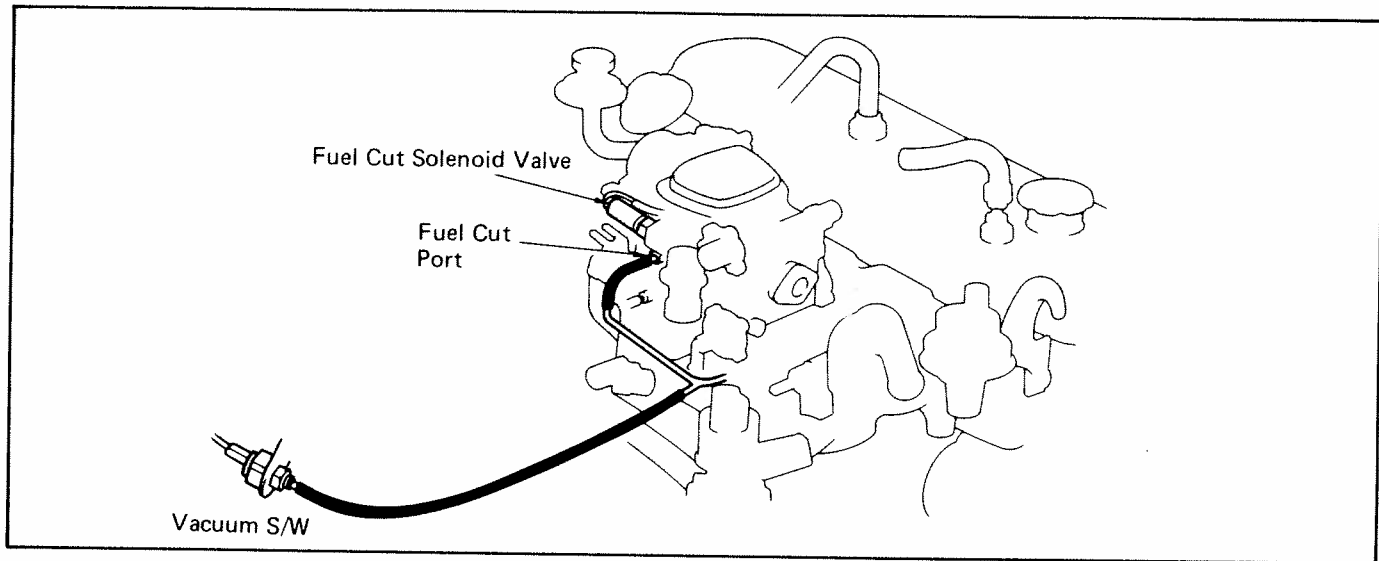
- Start the engine.
- Disconnect the vacuum hose from the AAP.
- Apply and release vacuum to the diaphragm at idle.
- Check that the engine rpm changes by releasing vacuum.
- Reconnect the AAP hose.

If a problem is found, replace the diaphragm.

INSPECTION OF BVS

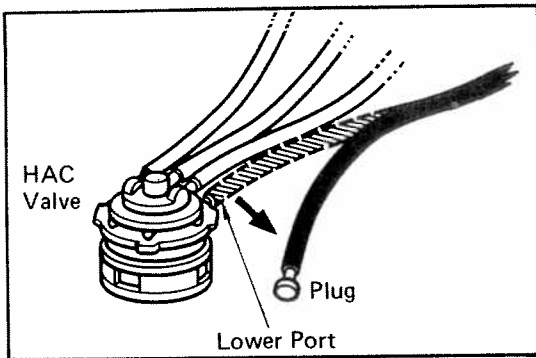
(See page 3-90)

6. Deceleration Fuel Cut System (Except Canada RN 4×4)



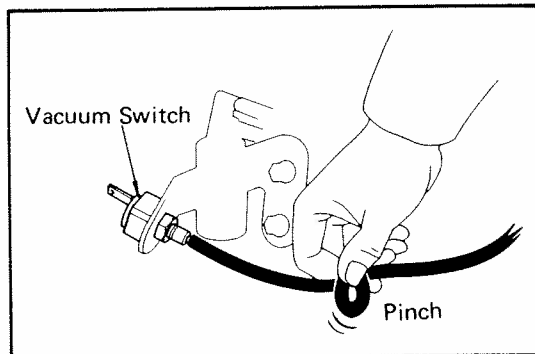
This system cuts off part of the fuel in the slow circuit of the carburetor to prevent overheating and afterburning in the exhaust system.

Engine RPM	Vacuum in the Vacuum S/W	Vacuum S/W	Computer	Fuel Cut Solenoid Valve	Slow Circuit in Carburetor
Below 1,810 rpm	Low vacuum below 360 mmHg (14.18 in.Hg)	ON	ON	ON	OPEN
	High vacuum above 425 mmHg (16.73 in.Hg)	OFF	ON	ON	OPEN
Above 2,200 rpm	Low vacuum below 360 mmHg (14.18 in.Hg)	ON	ON	ON	OPEN
	High vacuum above 425 mmHg (16.73 in.Hg)	OFF	OFF	OFF	CLOSED

**PREPARATION:**

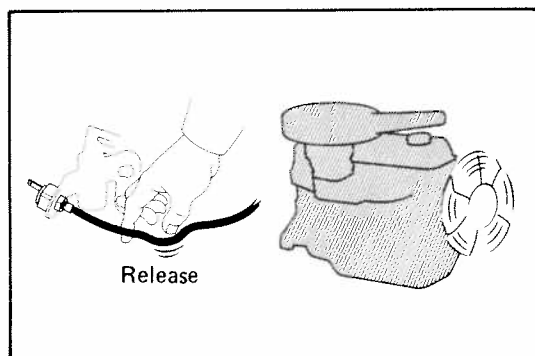
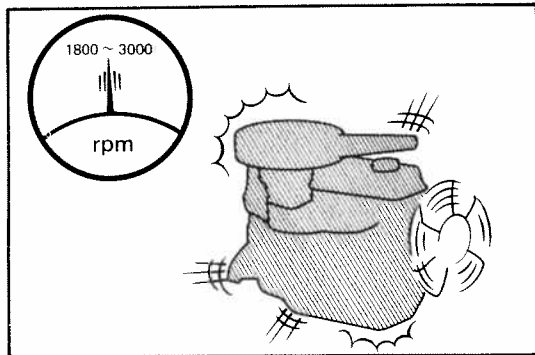
(For vehicles with HAC system)

Disconnect the vacuum hose from the lower port of the HAC valve, and plug the hose end.

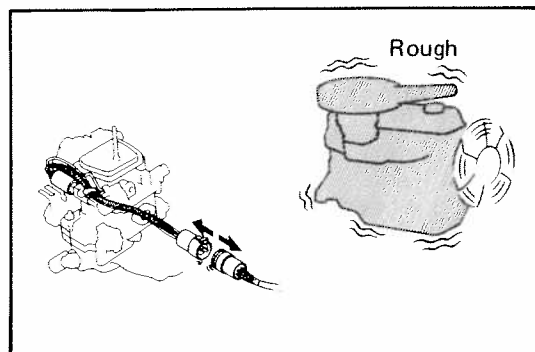
**INSPECTION OF DECELERATION FUEL CUT SYSTEM****CHECK SYSTEM OPERATION**

- (a) Connect a tachometer to the engine.
- (b) Start the engine.
- (c) Check that the engine runs normally.
- (d) Pinch off the vacuum hose to the vacuum switch.
- (e) Gradually increase engine speed to 3,000 rpm. Check that the engine misfires slightly between 1,800 and 3,000 rpm.

CAUTION: Perform this inspection quickly to avoid overheating the catalytic converter.



- (f) Release the pinched hose. Again gradually increase the engine speed to 3,000 rpm and check that the engine operation returns to normal.

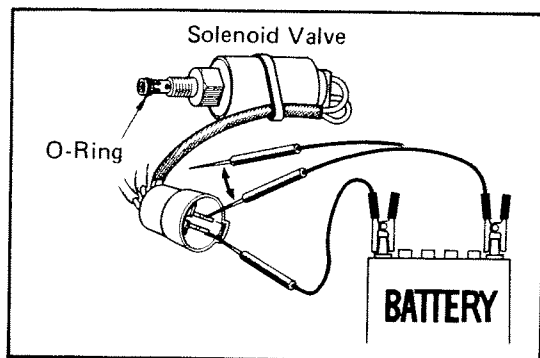


- (g) With the engine idling, unplug the wiring connector to the solenoid valve. Check that the engine idles rough or dies.

CAUTION: Perform this inspection quickly to avoid overheating the catalyst.

- (h) Stop the engine, and reconnect the wiring. Remove the tachometer.

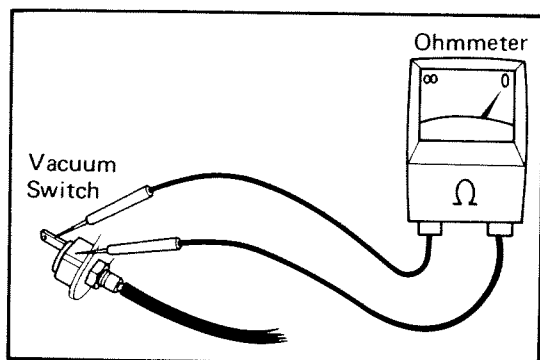
IF NO PROBLEM IS FOUND WITH THIS INSPECTION, THE SYSTEM IS OKAY, OTHERWISE INSPECT EACH PART



INSPECTION OF FUEL CUT SOLENOID VALVE

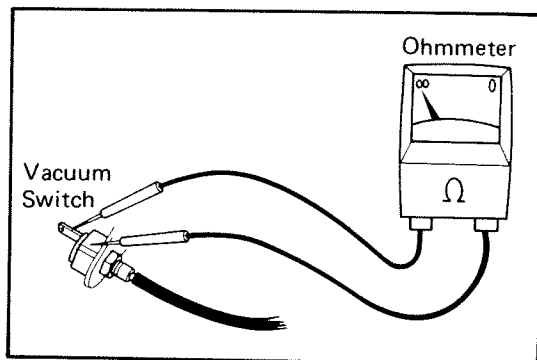
- Remove the solenoid valve.
- Connect the two terminals and the battery terminals as shown.
- Check that you can feel a "click" from the solenoid valve when the battery is connected and disconnected.
- Check the O-ring for damage.
- Reinstall the valve and reconnect the wiring connector.

If a problem is found, replace the solenoid valve or O-ring.



INSPECTION OF VACUUM SWITCH

- Using an ohmmeter, check for continuity between the switch terminal and switch body.

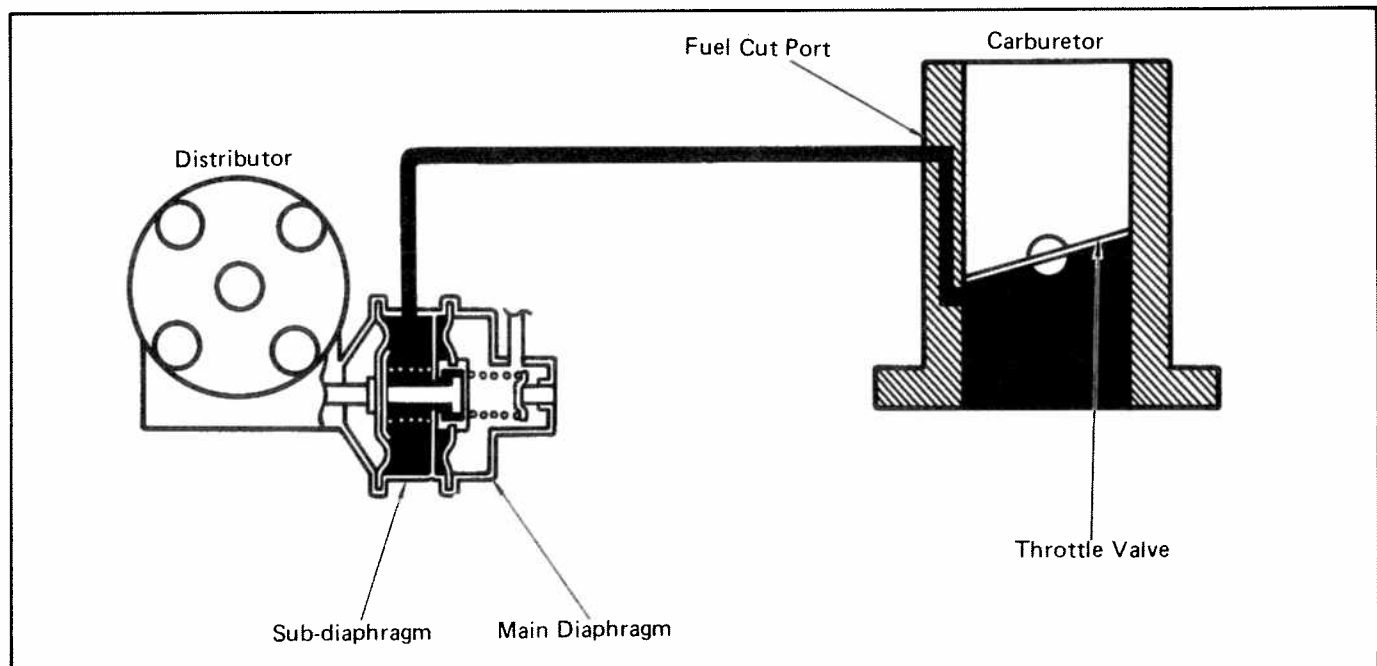
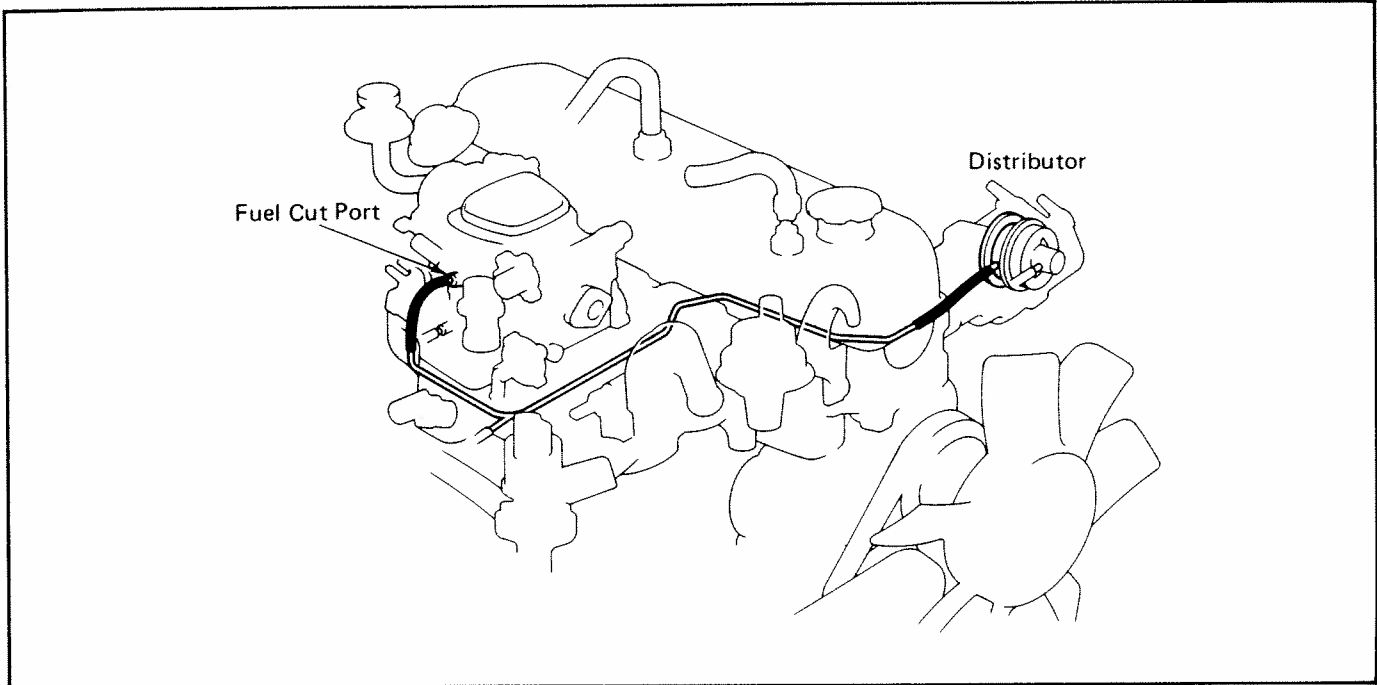


- Start the engine.
- Using an ohmmeter, check that there is no continuity between the switch terminal and the body.

If a problem is found, replace the vacuum switch.

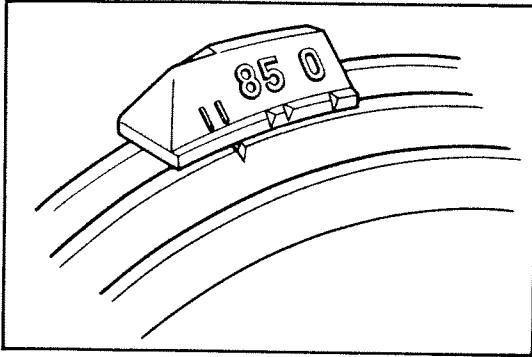
7. Idle Advance System (Without HAC System)

With HAC system: Refer to page 3-78 of HAC system.



To improve fuel economy at idle, this system advances the ignition timing only while the engine is idling.

Condition	Distributor Sub-diaphragm	Sub-vacuum Advance
Idling	Pulled by fuel cut port vacuum	ADVANCED (+7°)
Cruising	Not pulled	NOT ADVANCED

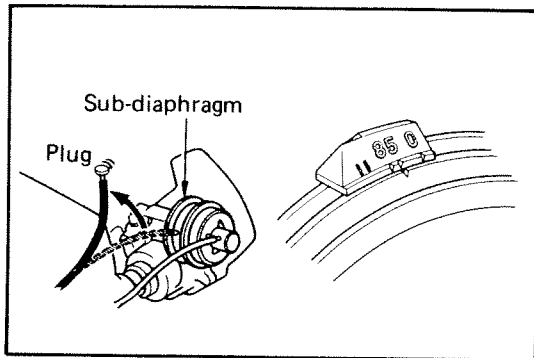


INSPECTION OF SYSTEM

CHECK SYSTEM OPERATION

- (a) Warm up the engine to normal operating temperature.
- (b) Check the ignition timing at idle.

Ignition timing: 12° BTDC

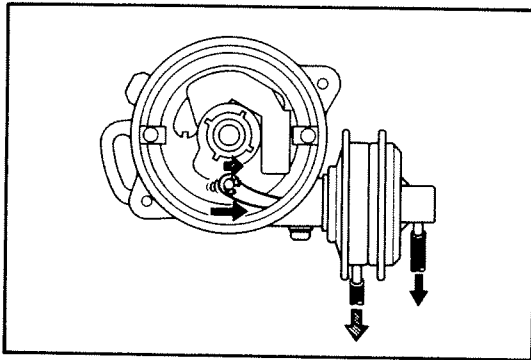


- (c) Disconnect the vacuum hose from the distributor sub-diaphragm and plug the hose end.
- (d) Check the ignition timing at idle.

Ignition timing: 5° BTDC

- (e) Reconnect the vacuum hose and remove the timing light.

IF NO PROBLEM IS FOUND WITH THIS INSPECTION, THE SYSTEM IS OKAY; OTHERWISE INSPECT EACH PART



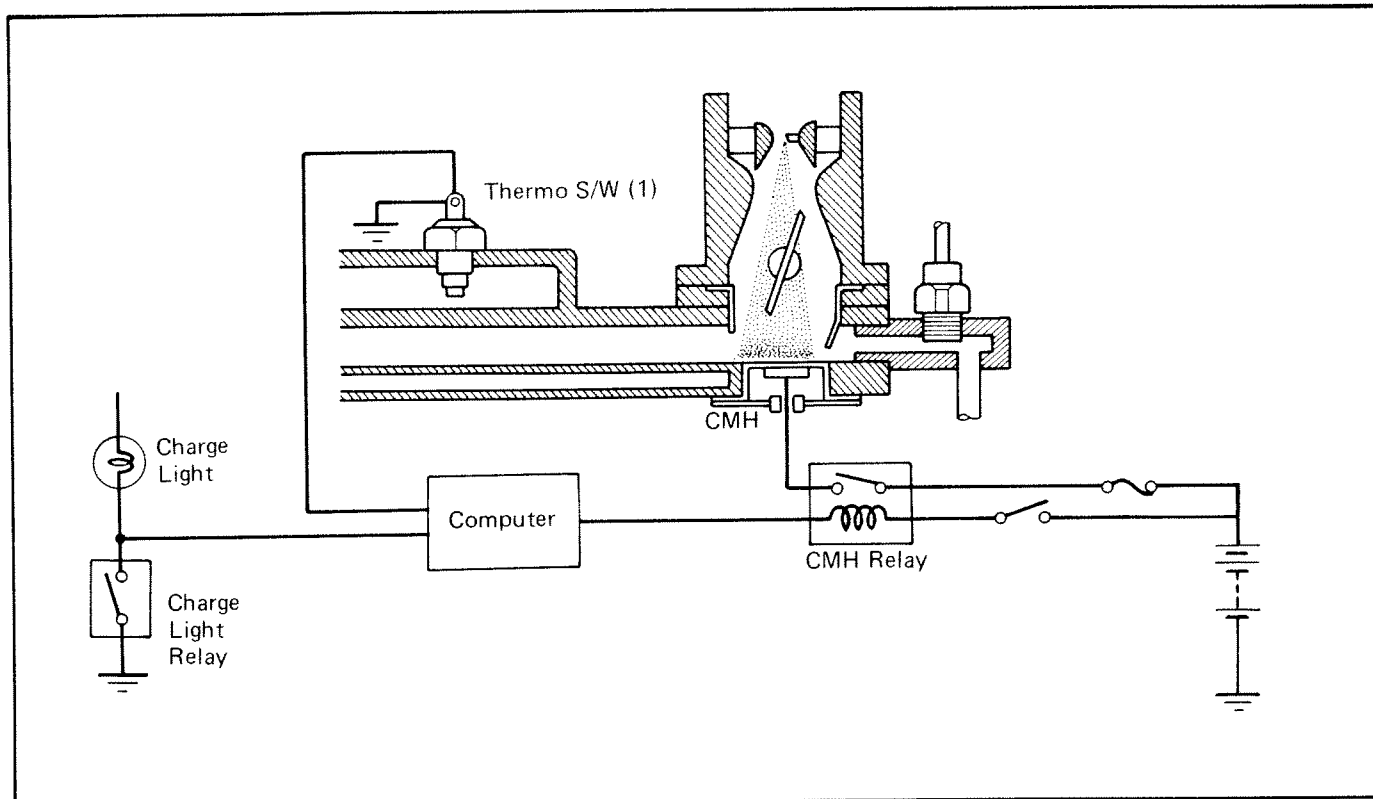
INSPECTION OF DISTRIBUTOR VACUUM ADVANCER

CHECK OPERATION OF VACUUM ADVANCER BY APPLYING VACUUM

- (a) Remove the distributor cap and rotor.
- (b) Check that the vacuum advancer moves in accordance with the vacuum.
- (c) Reinstall the rotor and distributor cap.

If a problem is found, repair or replace the distributor vacuum advancer.

8. Cold Mixture Heater (CMH) System



To reduce cold engine emission and improve drivability, the intake manifold riser is heated during cold engine operation to accelerate vaporization of the liquid fuel.

IG S/W	Engine	Coolant Temp.	Thermo S/W (1)	Computer	CMH Relay	CMH
OFF	Not running	—	—	—	OFF	OFF
ON	Not running	—	—	OFF	OFF	OFF
	Running	Below 43°C (109°F)	ON	ON	ON	ON (Heated)
		Above 55°C (131°F)	OFF	OFF	OFF	OFF

INSPECTION OF CMH SYSTEM

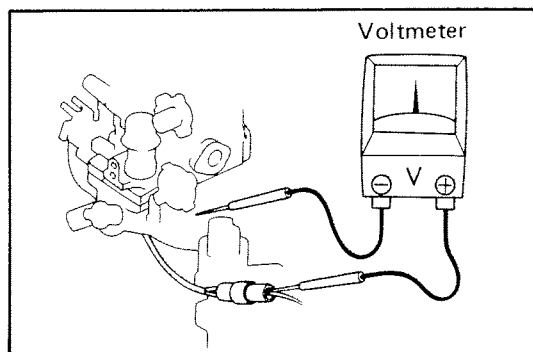
1. START ENGINE

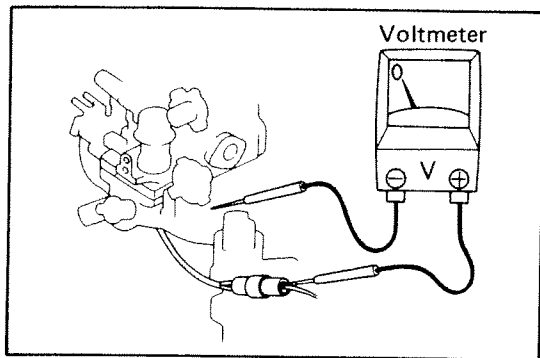
2. CHECK CMH WITH COLD ENGINE

(a) The coolant temperature should be below 43°C (109°F).

(b) Using a voltmeter check that there is voltage between the positive (+) terminal and intake manifold.

CAUTION: The voltmeter probe should be inserted from the rear side of the connector.





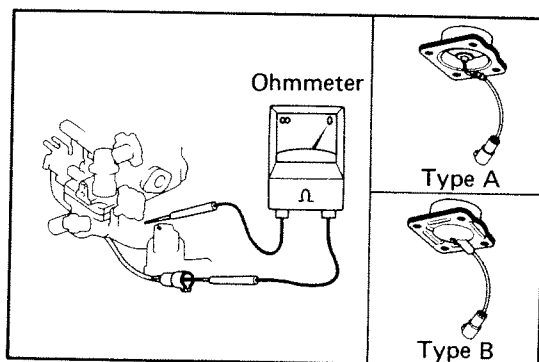
3. CHECK CMH WITH WARM ENGINE

- (a) Warm up the engine to above 55°C (131°F).
- (b) Check that there is no voltage.

IF NO PROBLEM IS FOUND WITH THIS INSPECTION, THE SYSTEM IS OKAY; OTHERWISE INSPECT EACH PART

INSPECTION OF THERMO SWITCH (1)

(See page 3-52)



INSPECTION OF CMH

MEASURE RESISTANCE

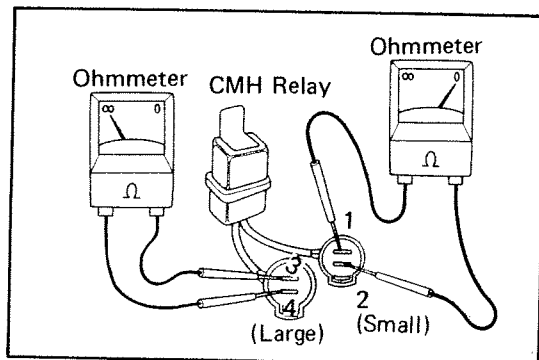
- (a) Unplug the wiring connector.
- (b) Using an ohmmeter, measure the resistance between the positive (+) terminal and intake manifold.

Resistance at 20°C (68°F):

Type A (ND) 0.35 – 1.0 Ω

Type B (TDK) 0.5 – 2.0 Ω

- (c) Plug in the wiring connector.



INSPECTION OF CMH RELAY

1. INSPECT RELAY CONTINUITY

Check that there is continuity between terminals 1 and 2.
Check that there is no continuity between terminals 3 and 4.

Relay location: Right fender apron

2. INSPECT RELAY OPERATION

Check the continuity between terminals 3 and 4 with battery voltage applied between terminals 1 and 2.

