



# 1981 2F Engine

## Emission Control Repair Manual

- Introduction
- Troubleshooting
- Emission Control System
- Engine Adjustment
- Specifications

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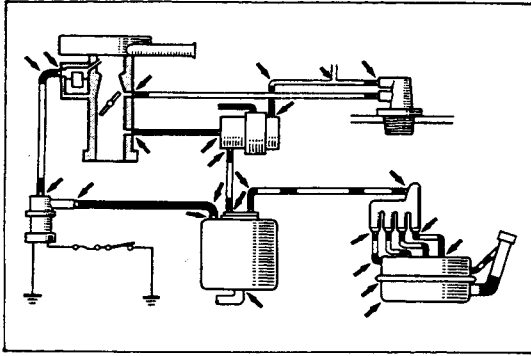
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**ROUGH IDLING (CONT'D)**

Problem	Possible cause	Remedy	Page
Rough idle or stalls (cont'd)	Incorrect valve clearance	Adjust valve clearance	4-3
	Carburetor problems <ul style="list-style-type: none"> <li>● Idle speed incorrect</li> <li>● Slow jet clogged</li> <li>● Idle mixture incorrect</li> <li>● Fuel cut solenoid valve not open</li> <li>● Fast idle speed setting incorrect (cold engine)</li> </ul>	Repair as necessary	
	Hot air intake system faulty	Check HAI system	4-6
	Engine overheats	Check cooling system	3-44
	EGR valve faulty	Check EGR valve	4-4
	Compression low	Check compression	3-13

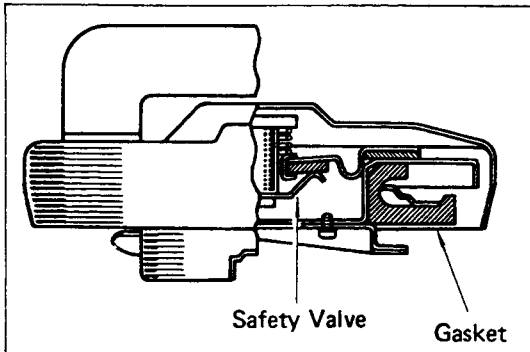
**ENGINE HESITATES/POOR ACCELERATION**

Problem	Possible cause	Remedy	Page	
Engine hesitates/ Poor acceleration	Spark plugs faulty	Inspect plugs	3-4 3-13 3-31 3-38  4-2      3-36 3-13	
	Ignition wirings faulty	Inspect wiring		
	Vacuum leaks <ul style="list-style-type: none"> <li>● PCV line</li> <li>● EGR line</li> <li>● HAC line</li> <li>● HIC line</li> <li>● Intake manifold</li> </ul>	Repair as necessary		
	Incorrect ignition timing	Reset timing		
	Air cleaner clogged	Check air cleaner		
	Fuel line clogged	Check fuel line		
	Carburetor problems <ul style="list-style-type: none"> <li>● Float level too low</li> <li>● Accelerator pump faulty</li> <li>● Power valve faulty</li> </ul>	Repair as necessary		
	Emission control system problem <ul style="list-style-type: none"> <li>● HAI system always on (hot engine)</li> <li>● EGR system always on (cold engine)</li> </ul>	Check HAI system Check EGR system		
	Engine overheats	Check cooling system		
	Compression low	Check compression		



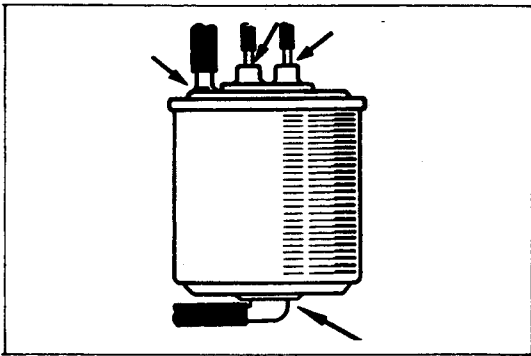
### INSPECTION OF FUEL VAPOR LINES, FUEL TANK AND TANK CAP

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.



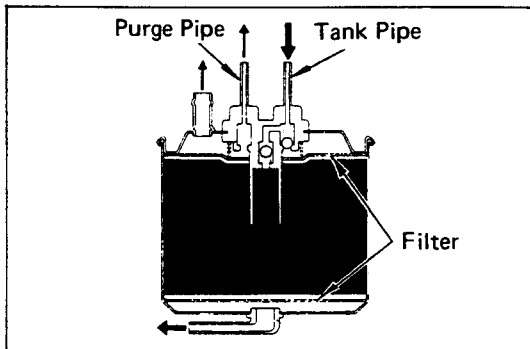
3. **VISUALLY INSPECT FUEL FILLER CAP**
  - (a) Remove four screws and protector.
  - (b) Look for damaged or deformed gasket.
  - (c) Look for stuck safety valve.
  - (d) Install the protector.

If the safety valve is stuck, repair or replace the cap.



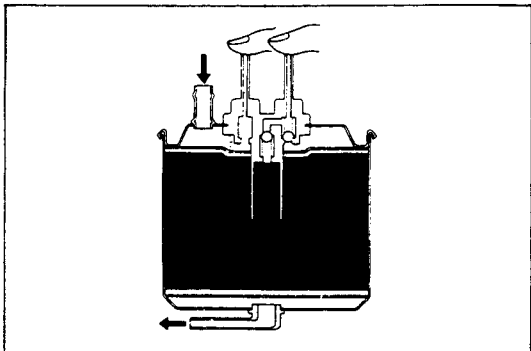
### INSPECTION OF CHARCOAL CANISTER

1. **REMOVE CHARCOAL CANISTER**
2. **VISUALLY INSPECT CHARCOAL CANISTER CASE**  
Look for cracks or damage.



3. **CHECK FOR CLOGGED FILTER AND STUCK CHECK VALVE**
  - (a) Using low pressure compressed air, blow into the tank pipe and check that the air flows without resistance from the other pipes.
  - (b) 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.



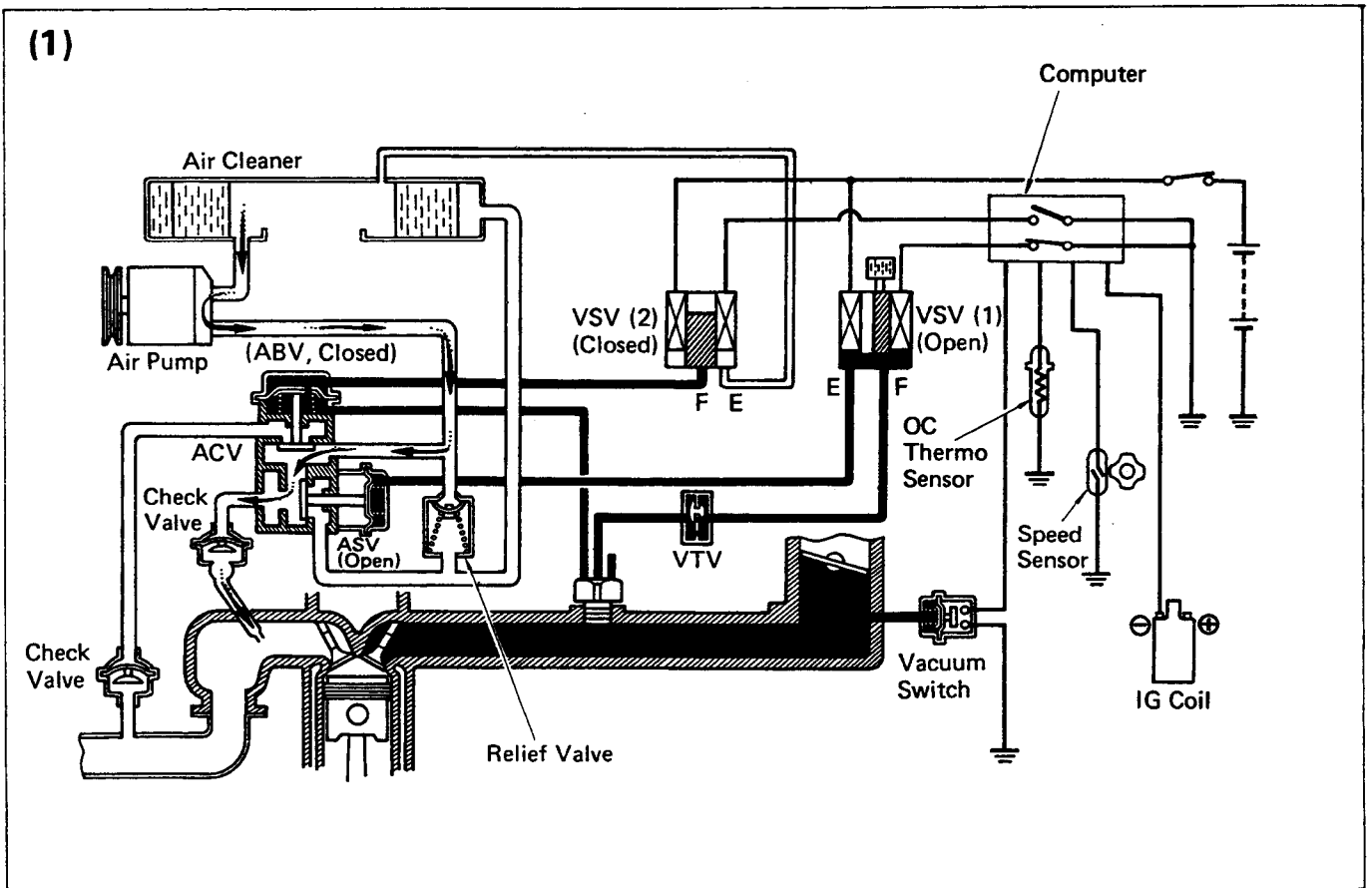
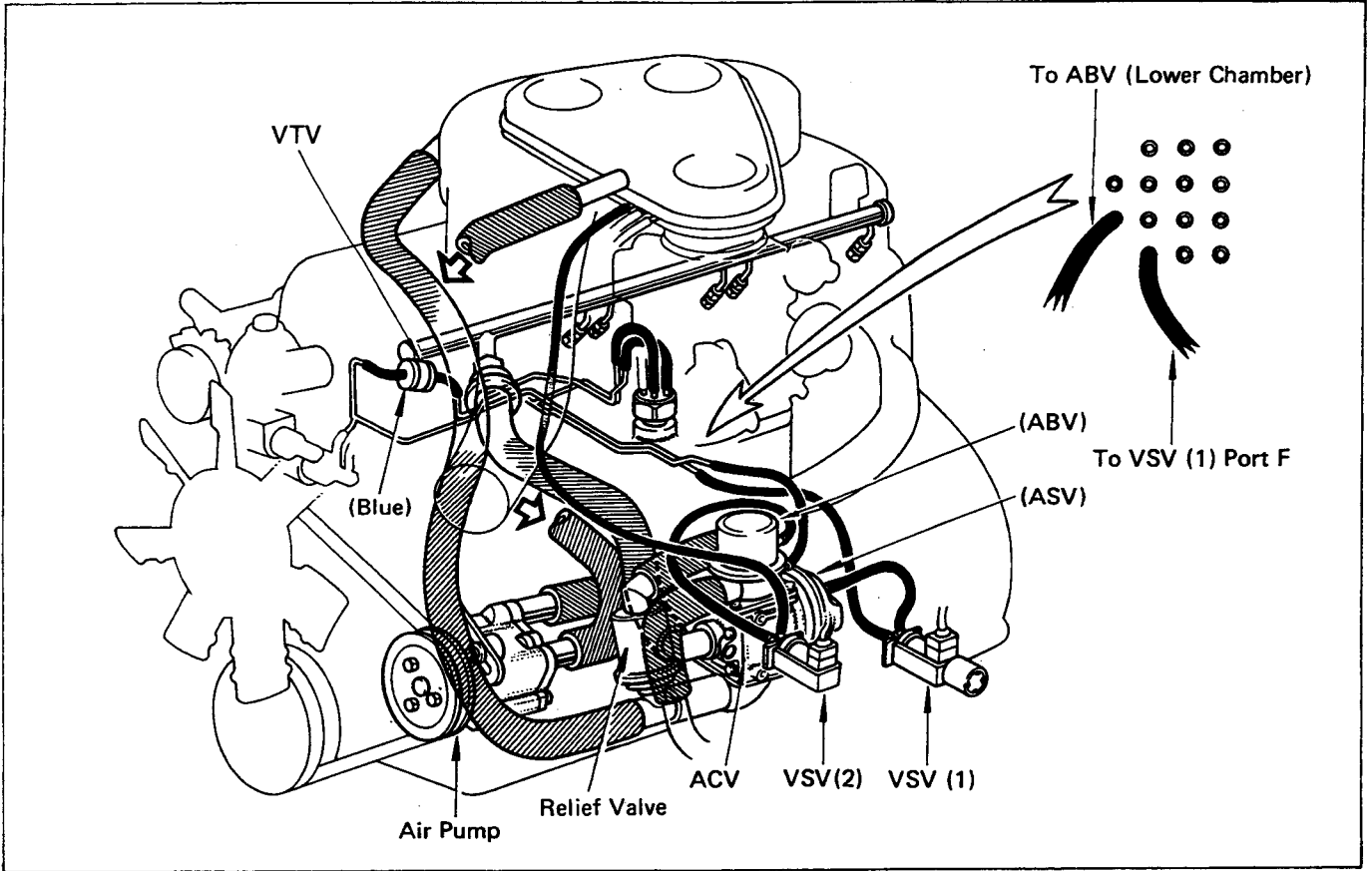
4. **CLEAN FILTER IN CANISTER**  
Clean the filter by blowing 3 kg/cm<sup>2</sup> (43 psi) air into the pipe to the outer vent control valve, while holding the other upper canister pipes closed.

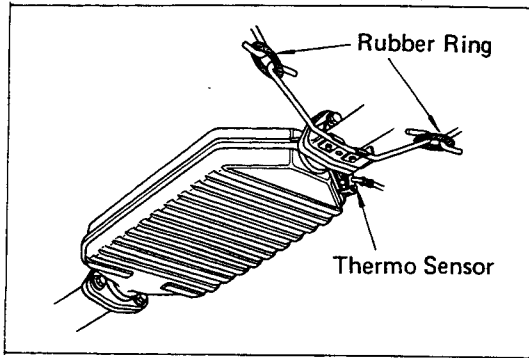
#### NOTE:

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

5. **INSTALL CHARCOAL CANISTER**

# AIR INJECTION (AI) SYSTEM



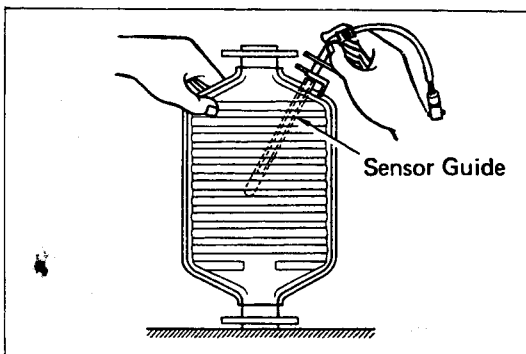


### 3. REMOVE CATALYST WITH THERMO SENSOR

- (a) Jack up the vehicle.
- (b) Check that the catalyst is cool.
- (c) Remove the bolts at the front and rear of the catalyst.
- (d) Remove the rubber rings.
- (e) Remove the catalyst and gaskets.

### 4. REMOVE THERMO SENSOR

- (a) Hold the catalyst with the thermo sensor positioned upward.
- (b) Remove the thermo sensor and gasket from the catalyst.



## INSTALLATION OF CATALYST

### 1. INSTALL THERMO SENSOR

- (a) Place a new gasket on the thermo sensor.

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

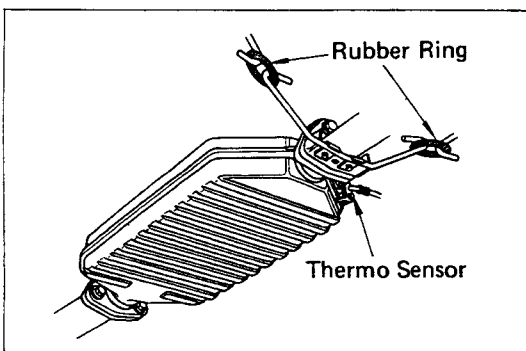
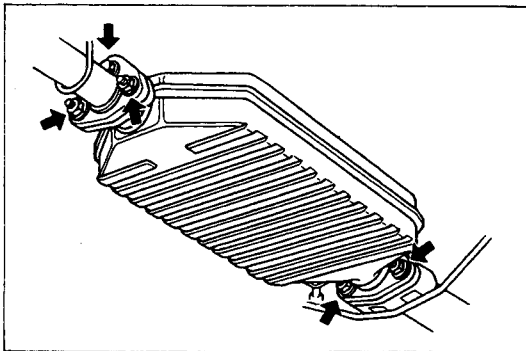
- (b) Push the sensor into the catalyst and tighten two bolts.

**Torque:** 0.6 – 0.9 kg-m (53 – 78 in.-lb)

### 2. INSTALL CATALYST WITH THERMO SENSOR

- (a) Place new gaskets on the catalyst front and rear pipes, and connect the catalyst to the exhaust pipes.
- (b) Tighten the bolts.

**Torque:** 3.5 – 4.5 kg-m (26 – 32 ft-lb)



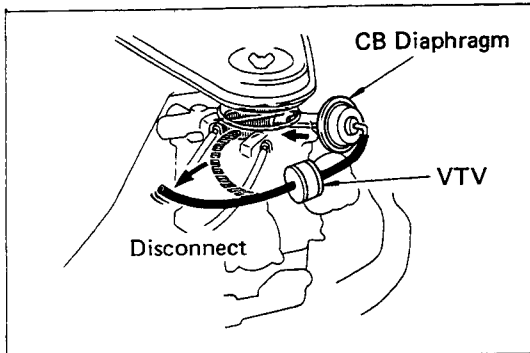
- (c) Secure the catalyst to the body with the rubber rings.
- (d) Plug in the thermo sensor connector, and install the floor grommet.

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

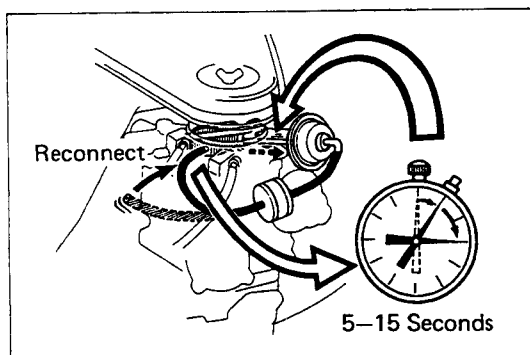
## INSPECTION OF CB SYSTEM

### CHECK VTV AND DIAPHRAGM OPERATION

- (a) Start the engine.
- (b) Disconnect the vacuum hose between the carburetor and the VTV at the carburetor side.
- (c) Check that the choke breaker linkage returns quickly by spring tension.



- (d) Reconnect the hose.
- (e) Check that the choke breaker linkage is pulled into the diaphragm within 5–15 seconds after reconnecting the hose.

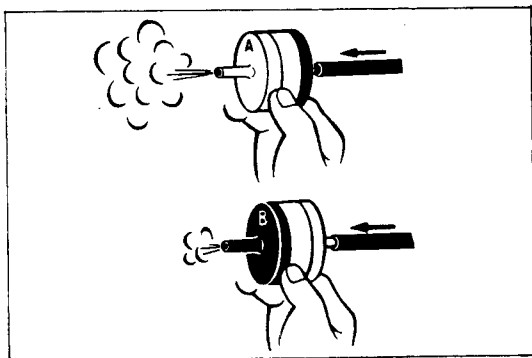


IF NO PROBLEM IS FOUND WITH THIS INSPECTION, THE SYSTEM IS OKAY; OTHERWISE INSPECT EACH PART

## INSPECTION OF VTV

### CHECK VTV BY BLOWING AIR INTO EACH SIDE

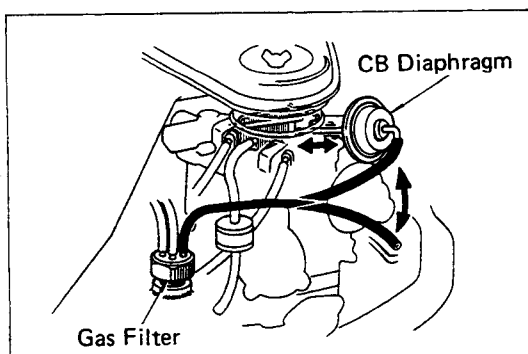
- (a) Check that air flows without resistance from B to A.
  - (b) Check that air flows with difficulty from A to B.
- If a problem is found, replace the VTV.

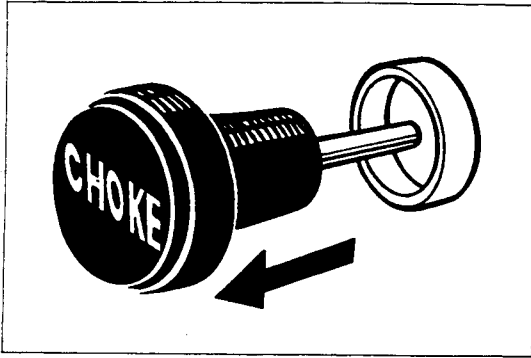


## INSPECTION OF CB DIAPHRAGM

### CHECK THAT CHOKE LINKAGE MOVES IN ACCORDANCE WITH APPLIED VACUUM

If a problem is found, replace the diaphragm.

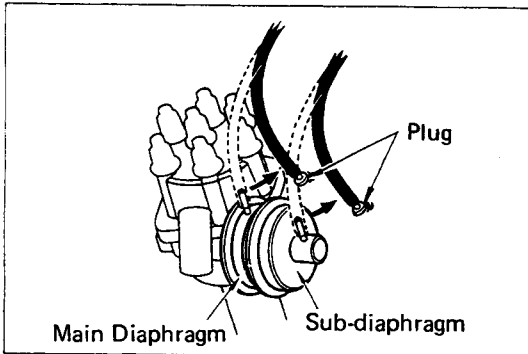




## FAST IDLE SPEED

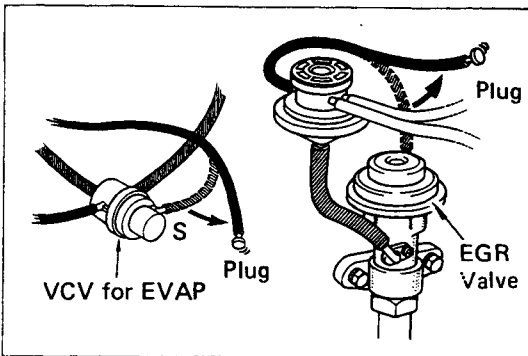
### ADJUSTMENT OF FAST IDLE SPEED

1. WARM UP AND STOP ENGINE
2. PULL OUT CHOKE KNOB FULLY



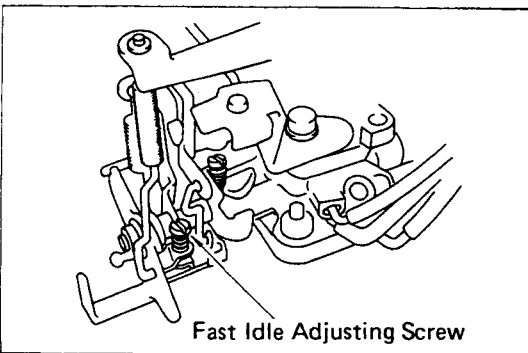
3. CUT OPERATION OF DISTRIBUTOR VACUUM ADVANCER

Disconnect the vacuum hoses from the distributor and plug the hose ends.



4. CUT OPERATION OF EGR AND EVAP SYSTEMS

Disconnect the vacuum hoses from port S of the VCV for EVAP, and EGR valve, and plug the hose ends.



5. START ENGINE
6. ADJUST FAST IDLE SPEED
  - (a) Adjust the fast idle speed by turning the fast idle adjusting screw.

**Fast idle speed: 1,800 rpm**

  - (b) When the choke button is pushed in all the way, check that the engine speed returns to normal idle speed.
7. RECONNECT HOSES TO PROPER LOCATIONS

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