

CARBURETTOR (1500 Sport Model)

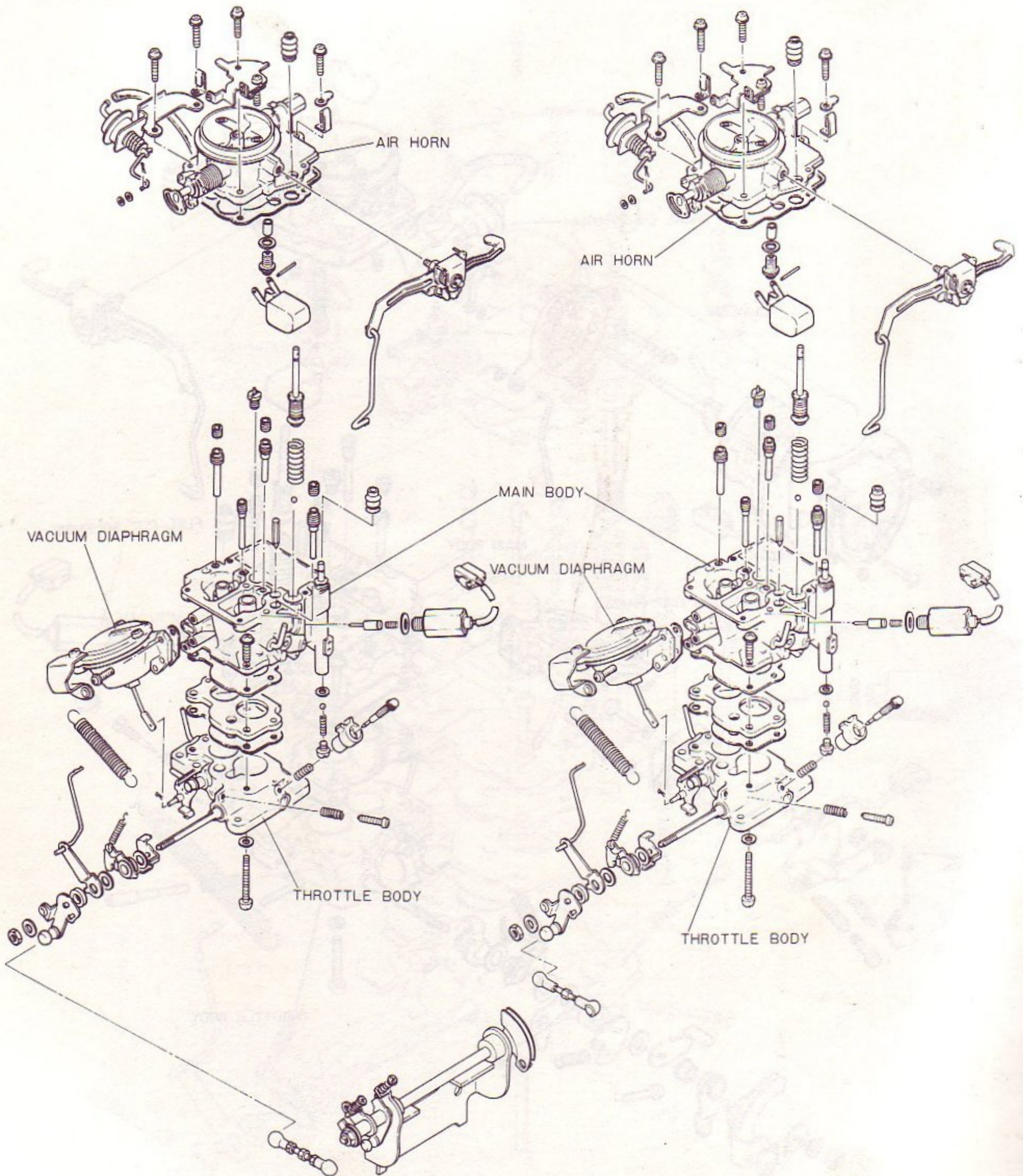


Fig. 82 — Carburettor (1500 Sport Model)

SERVICE AND REPAIR OPERATIONS

CARBURETTOR

To Remove

1. Remove and disconnect the following parts.

- (1) Air cleaner
- (2) Vacuum tubes and hoses, fuel supply hose.
- (3) All wiring connectors as applicable.
- (4) Accelerator cable, and choke cable, if applicable.
- (5) Carburettor mounting nuts.

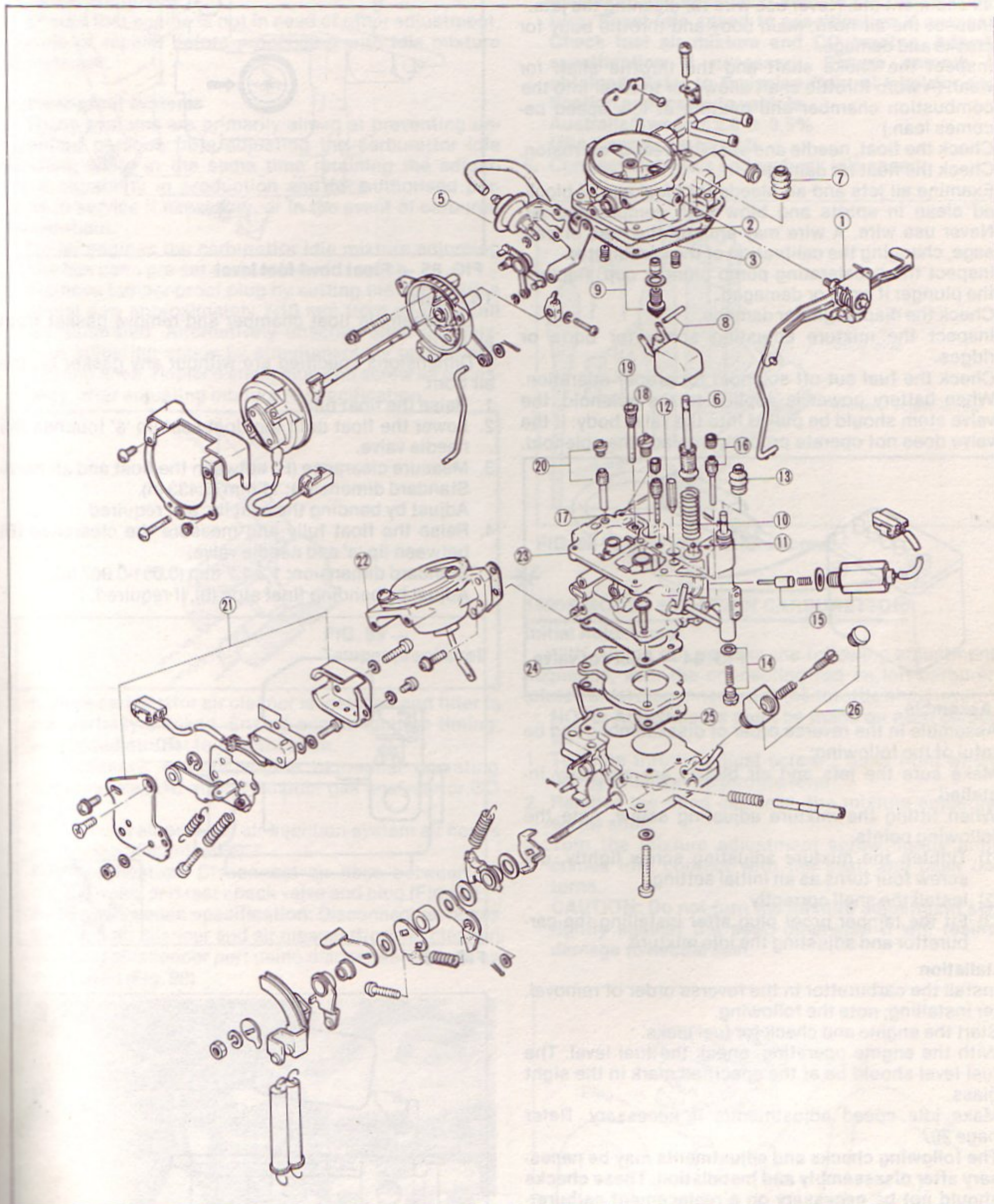


FIG. 83 — Carburettor (disassembly sequence)

- | | | | |
|---------------------|----------------------------------|----------------------------------|------------------------------|
| 1. Lever and rod | 7. Boot | 13. Boot | 19. Secondary main air bleed |
| 2. Air horn | 8. Float | 14. Secondary cut system | 20. Secondary slow jet |
| 3. Gasket | 9. Needle valve | 15. Slow fuel cut solenoid valve | 21. Idle switch |
| 4. Automatic choke | 10. Spring | 16. Primary slow jet | 22. Diaphragm |
| 5. Vacuum diaphragm | 11. Accel. pump inlet ball | 17. Primary main air bleed | 23. Main body |
| 6. Accel. pump | 12. Accel. pump discharge weight | 18. Power jet | 24. Insulator |
| | | | 25. Gasket |

Inspection and Checks

NOTE: Before checking, wash all parts in spirits, blow the fuel passages with compressed air, and remove all sediment etc. Never use wire for cleaning the jets.

- Inspect the air horn, main body and throttle body for cracks and damage.
- Inspect the choke shaft and the throttle shaft for wear. (A worn throttle shaft allows air to enter into the combustion chamber and mixture at low speed becomes lean.)
- Check the float, needle and seat for wear or corrosion.
- Check the float for damage.
- Examine all jets and air bleeds for blockage. If blocked clean in spirits and blow with compressed air. Never use wire. A wire may enlarge the hole or passage, changing the calibration of the carburettor.
- Inspect the accelerating pump plunger cup. Replace the plunger if worn or damaged.
- Check the diaphragm for damage.
- Inspect the mixture adjusting screw for burrs or ridges.
- Check the fuel cut off solenoid for proper operation. When battery power is applied to the solenoid, the valve stem should be pulled into the valve body. If the valve does not operate properly, replace the solenoid.

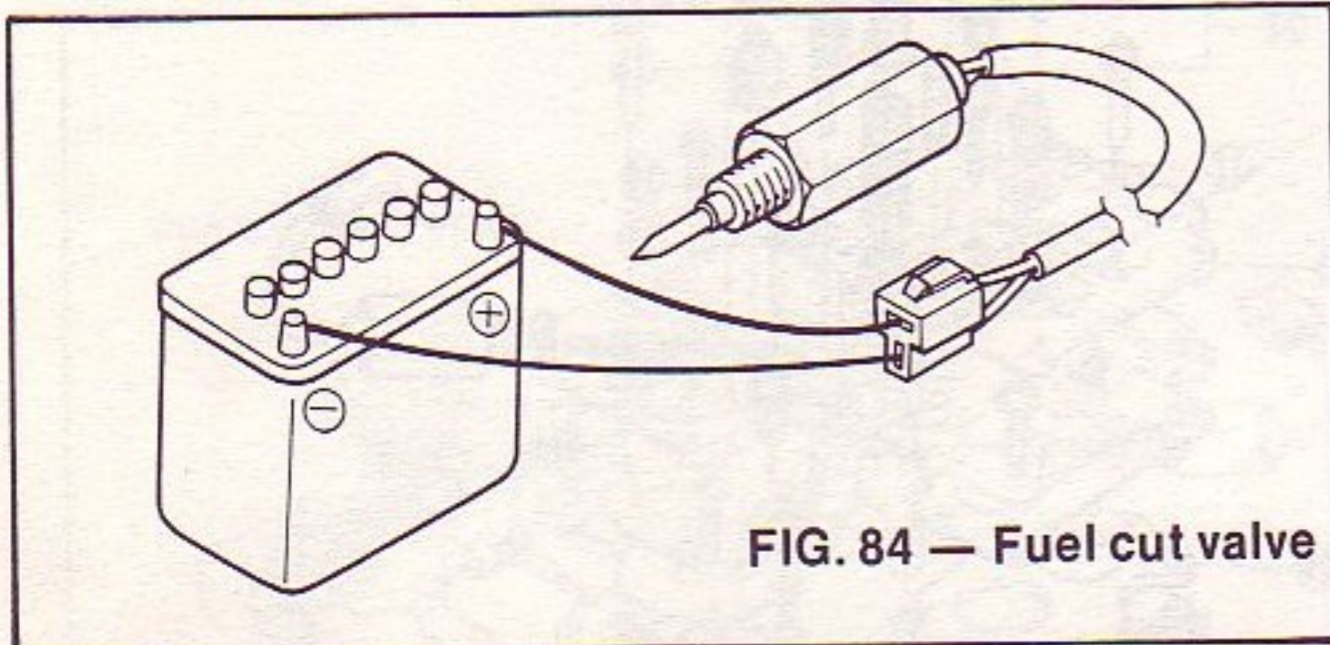


FIG. 84 — Fuel cut valve

To Assemble

Assemble in the reverse order of disassembly, and be careful of the following:

- Make sure the jets and air bleeds are correctly installed.
- When fitting the mixture adjusting screw, note the following points.
 - (1) Tighten the mixture adjusting screw lightly, unscrew four turns as an initial setting.
 - (2) Install the shell correctly.
 - (3) Fit the tamper proof plug **after** installing the carburettor and adjusting the idle mixture.

Installation

Install the carburettor in the reverse order of removal. After installing, note the following.

- Start the engine and check for fuel leaks.
- With the engine operating, check the fuel level. The fuel level should be at the specified mark in the sight glass.
- Make idle speed adjustment/s if necessary. Refer page 29.

The following checks and adjustments may be necessary after disassembly and installation. These checks should not be necessary on a replacement carburettor.

CARBURETTOR SERVICE AND REPAIR OPERATIONS

Float Level

The fuel level should remain within the inner diameter of the circle inscribed on the sight glass during engine operation, and at rest on level surface.

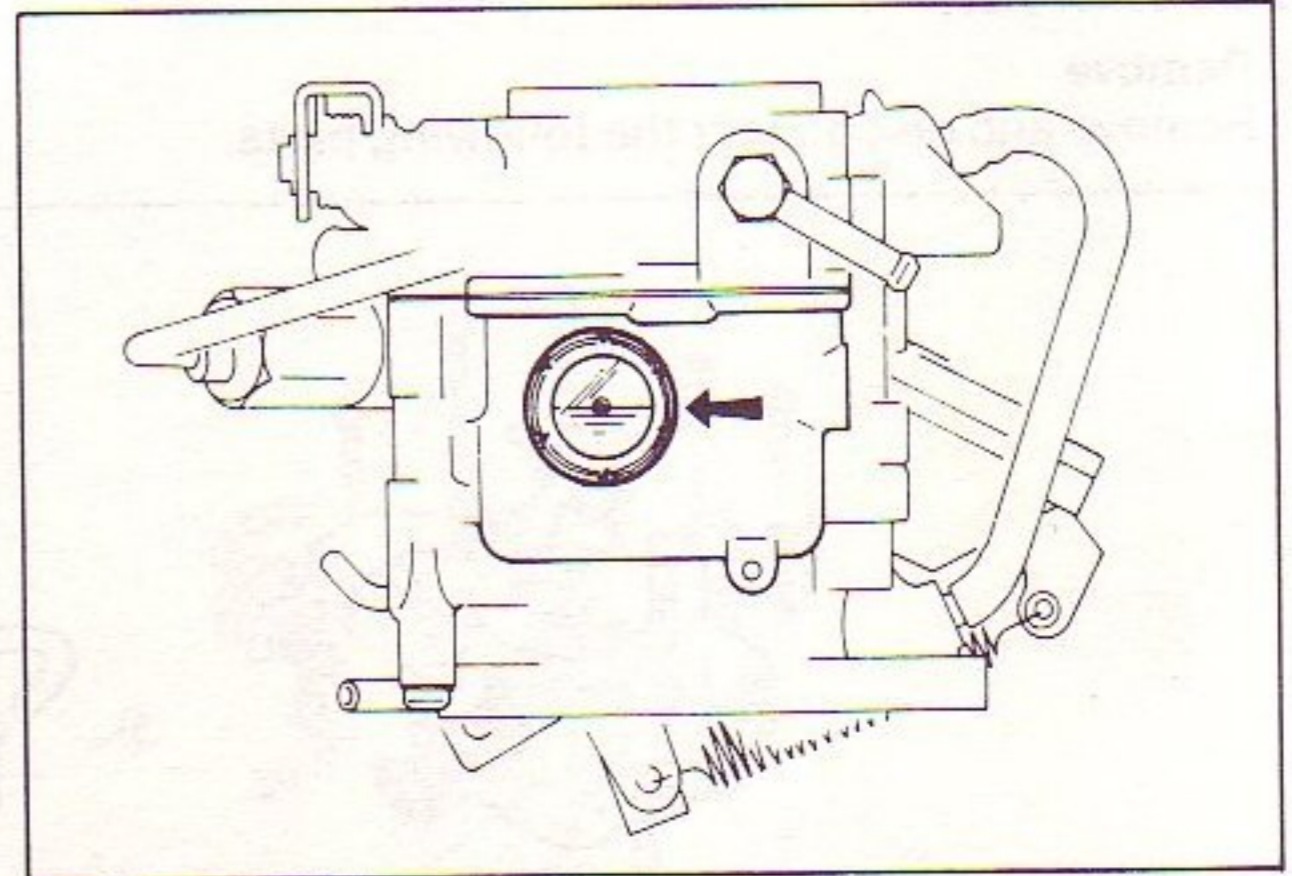


FIG. 85 — Float bowl fuel level

To Adjust

Disassemble float chamber and remove gasket from air horn.

Dimensions specified are without any gasket on the air horn.

1. Raise the float fully.
2. Lower the float until the float seat lip 'a' touches the needle valve.
3. Measure clearance (H) between the float and air horn. Standard dimension: 11 mm (0.433 in). Adjust by bending the seat lip 'a' if required.
4. Raise the float fully and measure the clearance (B) between lip 'a' and needle valve. Standard dimension: 1.3-1.7 mm (0.051-0.067 in). Adjust by bending float stop (b), if required.

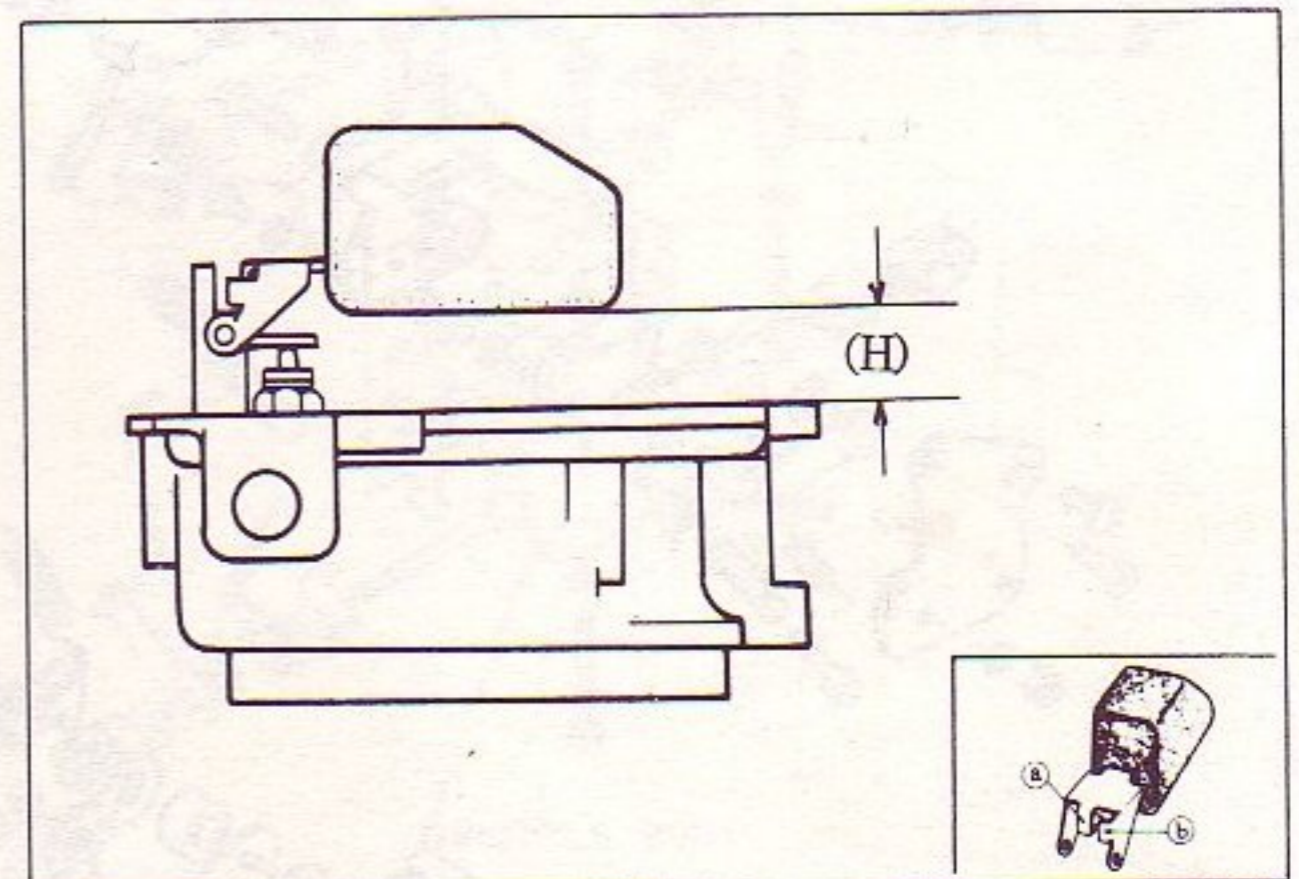


FIG. 86

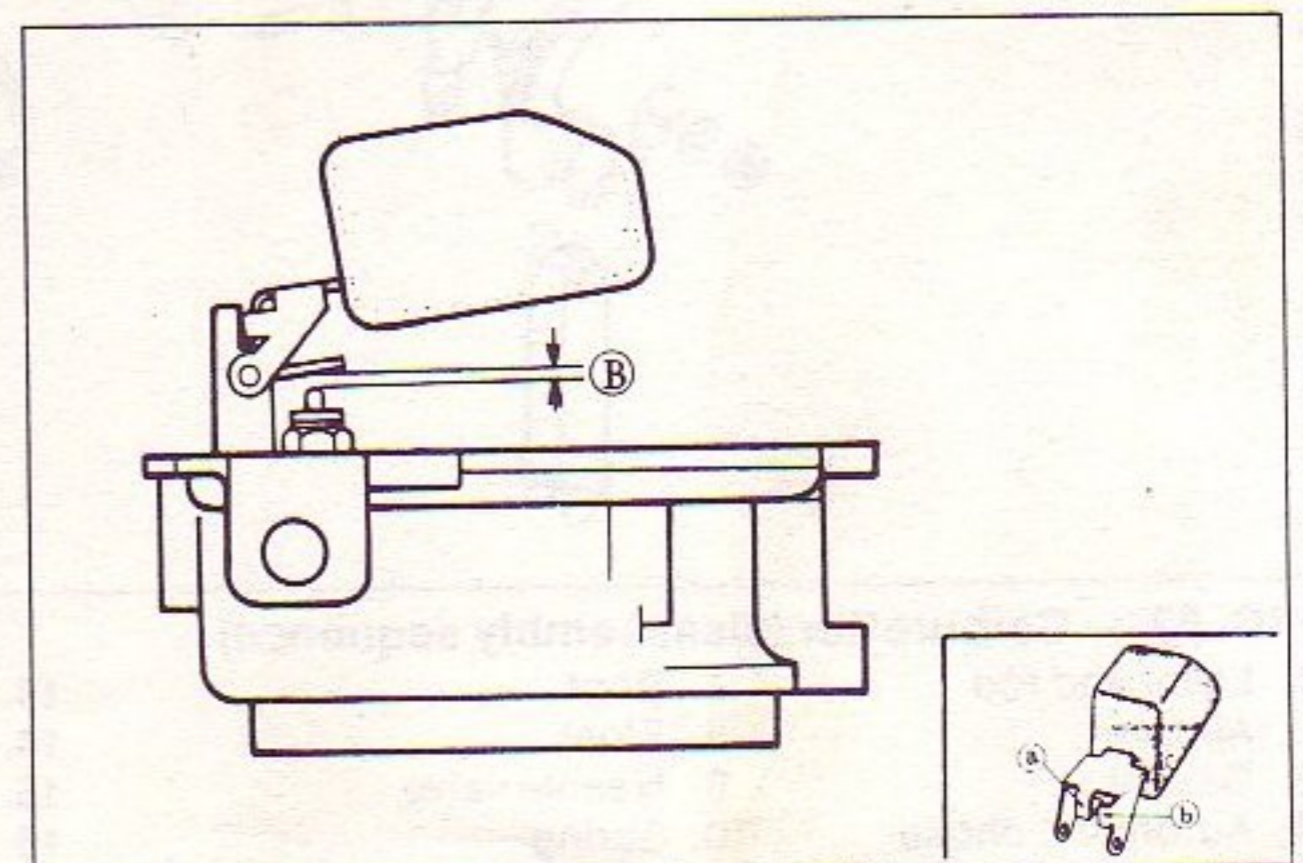


FIG. 87 — Float valve adjustment

Idle Mixture

Carburetors are precisely calibrated and sealed during manufacture, and therefore should not normally require adjustment.

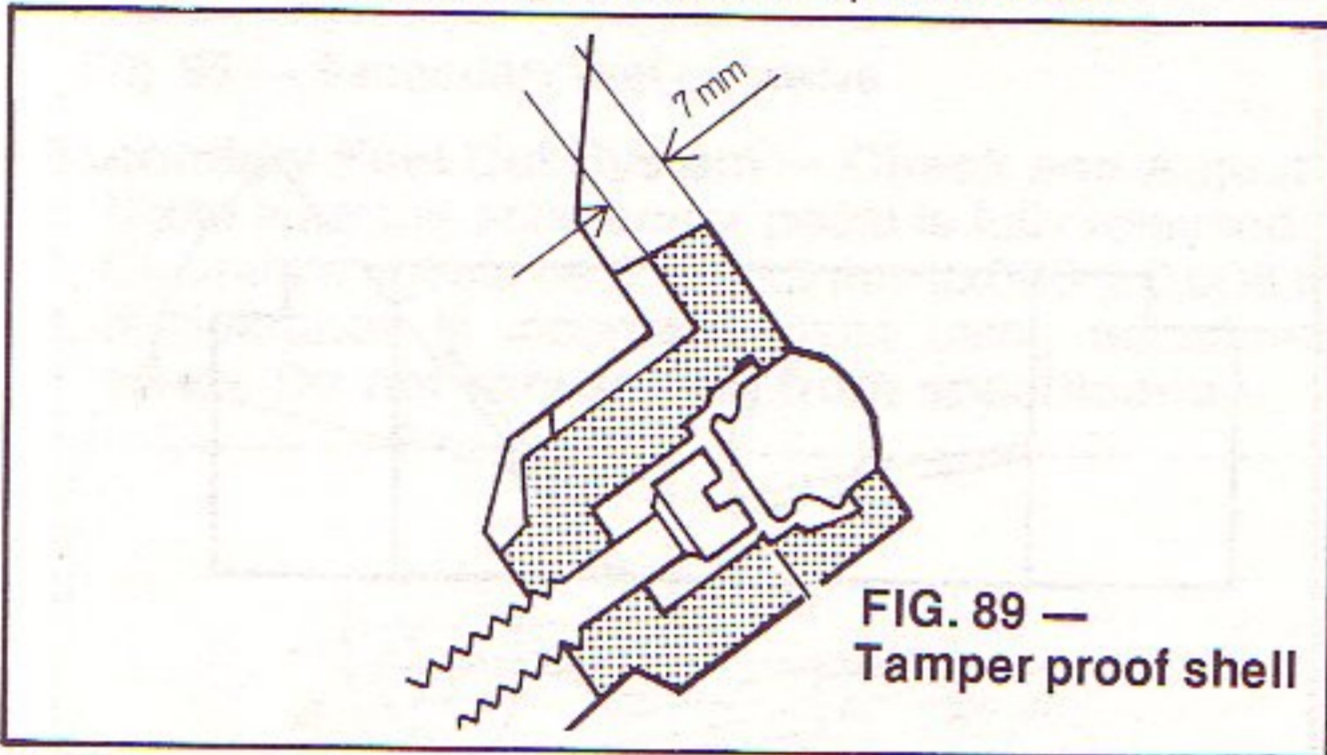
Ensure that engine is not in need of other adjustment, service or repairs before proceeding with idle mixture adjustment.

Tamper-proof systems

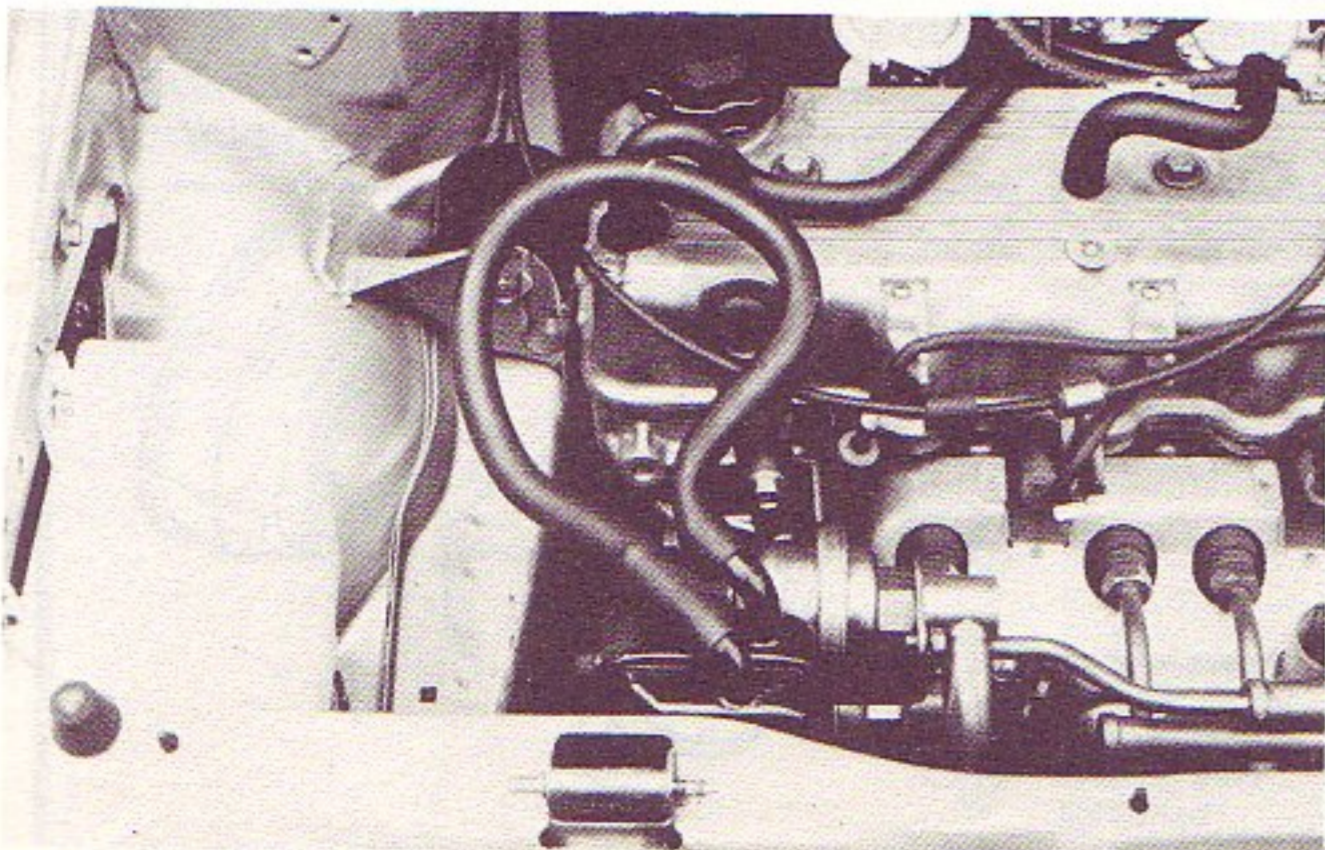
These systems are primarily aimed at preventing unqualified persons from adjusting the carburettor idle mixture, while at the same time retaining the adjustment capability in production and for authorised persons in service if necessary, or in the event of carburettor overhaul.

On all engines the carburettor idle mixture adjusting screw has been pre-set and sealed with a plug.

1. Remove tamper-proof plug by cutting the shell with a metal saw approximately 7-10 mm from end of shell as illustrated. Alternatively unscrew shell and mixture adjusting screw by simultaneously pulling and turning shell. Replace shell, plug and screw as necessary, after adjusting mixture to specification.



2. Ensure carburettor air cleaner is installed and filter is not partially blocked. Ensure engine ignition timing, idle speed etc. set to specification.
3. If necessary, operate engine to normal operating temperature, and attach exhaust gas analyser or CO meter.
4. Disconnect air pump or air injection system air hoses as follows (if applicable):
 - US specification:** Disconnect air hose between air control valve and rear check valve and plug (Fig. 91).
 - Australia/Sweden specification:** Disconnect air hoses between air silencer and air cleaner (from air cleaner) and plug air silencer port using disconnected hose as illustrated (Fig. 90).



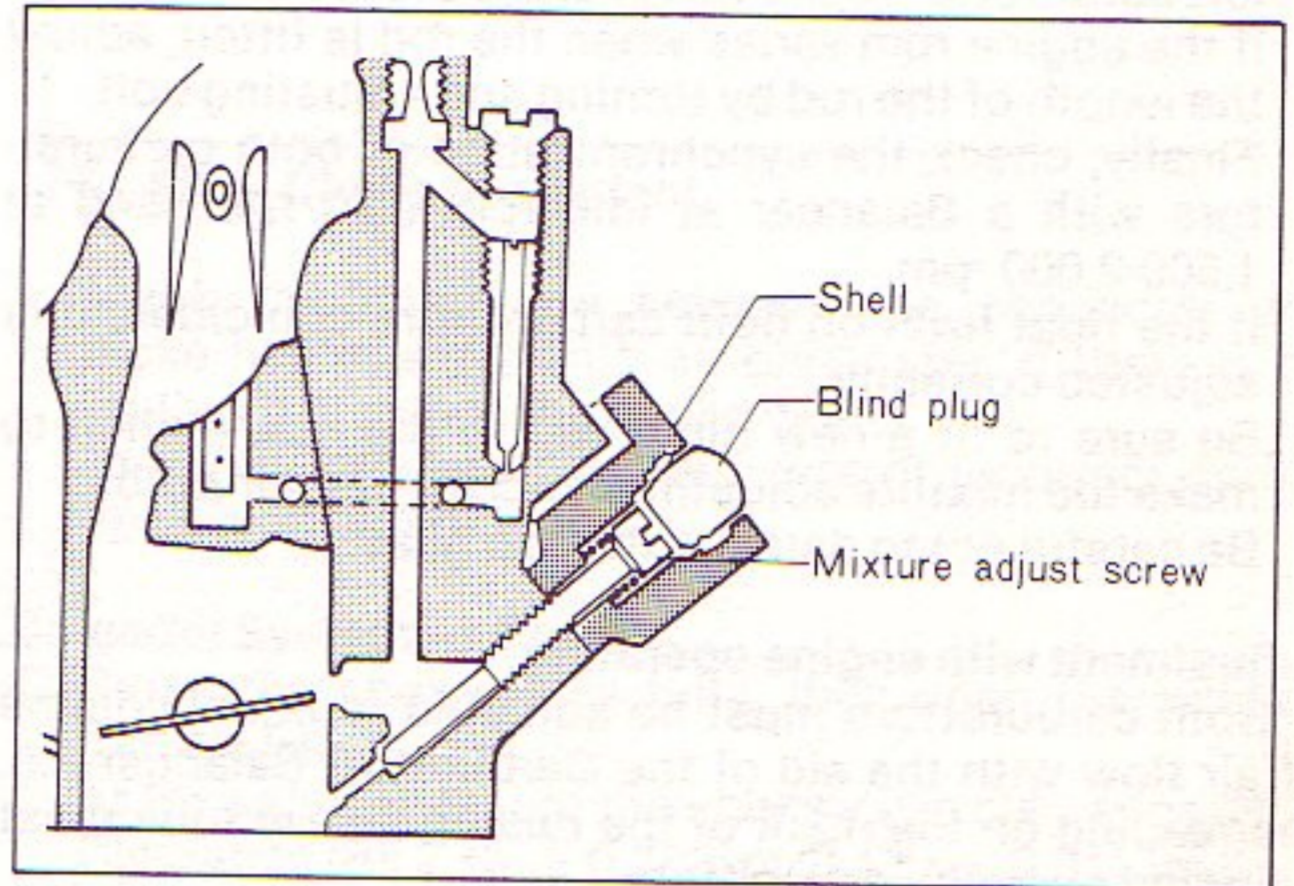
5. Adjust idle speed CO reading or fuel air mixture to specification.

NOTE: Adjust mixture by turning screw to obtain maximum idle speed and then turn anti-clockwise 1/2 turn. Reset idle speed to specification if necessary. Check fuel air mixture and CO reading. Adjust to specification if necessary. Ensure smooth idle obtained. Refer to Emission Control label for specification applicable to vehicle.

Australia/Sweden: 2.0 ± 0.5%

USA/Canada: 1.0 to 1.2%

6. Connect air hose/s and recheck idle speed.



1500S MODEL WITH TWIN CARBURETTOR

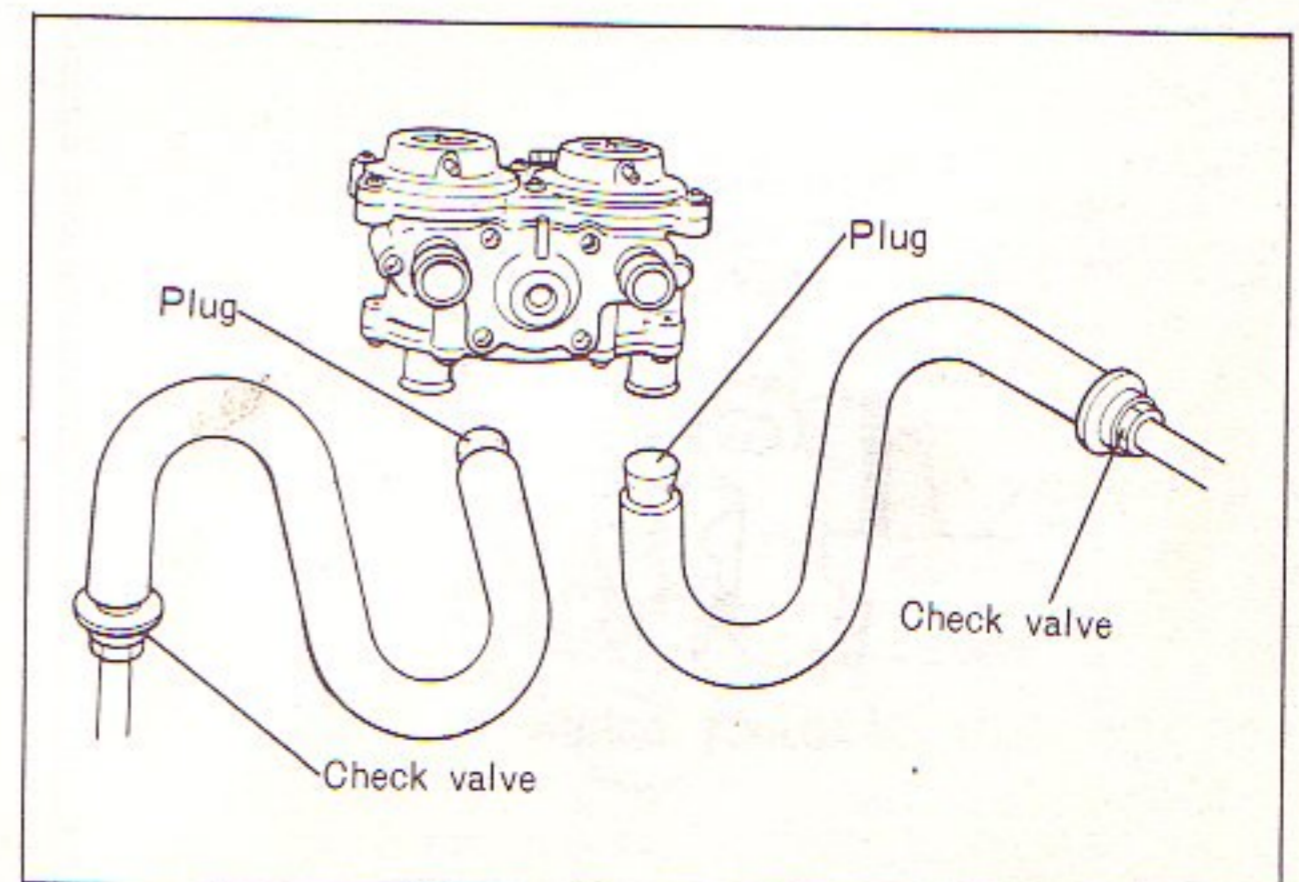
Initial Adjustment

With engine off, perform the following adjustment in sequence, with the connecting rod on left carburettor (clutch side) disconnected at the throttle shaft lever.

NOTE: Adjustments must be made on each carburettor.

1. Turn the throttle adjust screw 2 turns from where it lightly touches the throttle lever.
2. Remove the blind cap from the mixture adjustment screw shell.
3. Turn the mixture adjustment screw lightly until it comes into contact with the seat, and back out 3 turns.

CAUTION: Do not turn the mixture adjustment screw tightly against the seat, otherwise it will result in damage to needle seat.



4. Place a Balancer on the air horn of other carburettor, keeping the air flow valve as it is.
If the float varies from its former position, turn the throttle adjustment screw so that the float coincides to the center calibration.
5. Adjust the CO concentration to $2 \pm 0.5\%$ by turning the mixture adjustment screws on both carburetors.
6. Repeat steps of (2), (3), (4) and (5) until the specified CO concentration ($2\% \pm 0.5\%$) is obtained, the reading on the mark of the rising sleeve tube coincides on both carburetors, and the engine runs at 800 rpm.
7. After adjustment, connect the connecting rod of the left carburettor to the throttle shaft lever.
If the engine rpm varies when the rod is fitted, adjust the length of the rod by turning and adjusting bolt.
8. Finally, check the synchronization of both carburetors with a Balancer at idle rpm (800 rpm) and at 1,500-2,000 rpm.
If the float level on both carburetors coincides, it is adjusted correctly.
9. Be sure to fit a new blind cap to the screw shell to make the mixture adjustment screw tamper-proof.
Be careful not to damage the cap head.

Adjustment with engine operating

Both carburetors must be adjusted to equal volume of air flow with the aid of the Carburettor Balancer, i.e. the reading on the mark of the raising sleeve tube must coincide on both carburetors.

1. Start the engine.
2. Turn the throttle adjustment screws on both carburetors back to the same position and lower the engine rpm down to approx. 800 rpm.
3. Place a Balancer on the air horn of a carburettor and set the float in the rising sleeve tube to the center calibration by actuating the air flow valve.

NOTE: The center bolts on both carburetors must be removed for adjusting purposes.

CHOKE FAST IDLE — CHECK AND ADJUST

NOTE: Do not adjust if hot and cold start up is normal.

After idle adjustment is completed, check the fast idle speed as follows.

1. Fully depress the accelerator pedal.
2. Warm up the engine to normal operating temperature.
3. Stop engine and remove the air cleaner.
4. While holding the throttle valve slightly open, push

the choke valve to fully close it, and release the choke valve after releasing the throttle valve.

5. Start engine, but do not touch accelerator pedal.
6. Check to see that the engine speed increases to 3,000-4,000 rpm.
If the engine speed is not within the specification, turn the fast idle adjusting screw.

SECONDARY THROTTLE VALVE—CHECK AND ADJUST

1. The secondary throttle valve starts to open when the primary throttle valve opens (46 degrees) and completely opens at the same time that the primary throttle valve fully opens.
2. Check the clearance between the primary throttle valve and the wall of the throttle bore when the secondary throttle valve starts to open.
3. If the clearance is not within specification, bend the connecting rod until the proper clearance is obtained. Standard clearance: 6.0 mm (0.236 in).
If secondary throttle valve is not operating correctly, check for binding or sticking linkages and throttle plates, or damaged vacuum diaphragm.

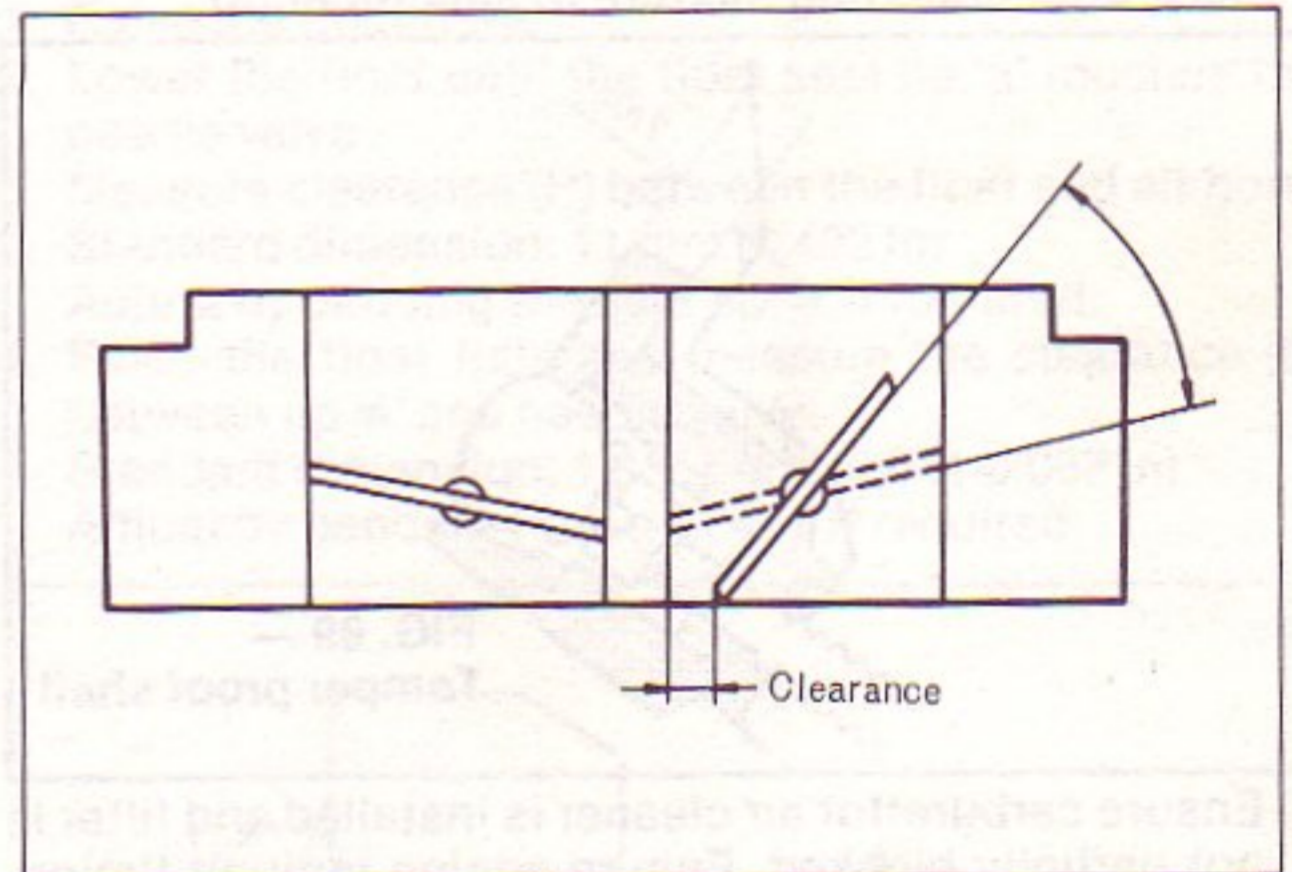


FIG. 93 — Secondary throttle valve clearance

ACCELERATOR PUMP

Accelerator Pump Operation — Check

Remove air cleaner, depress throttle quickly and watch for fuel spray from the discharge nozzle. If no fuel evident check for worn check ball and weight valve or damaged accelerator pump. (Check for wear on the sliding surface and damaged or dried out leather causing fuel leaks.)

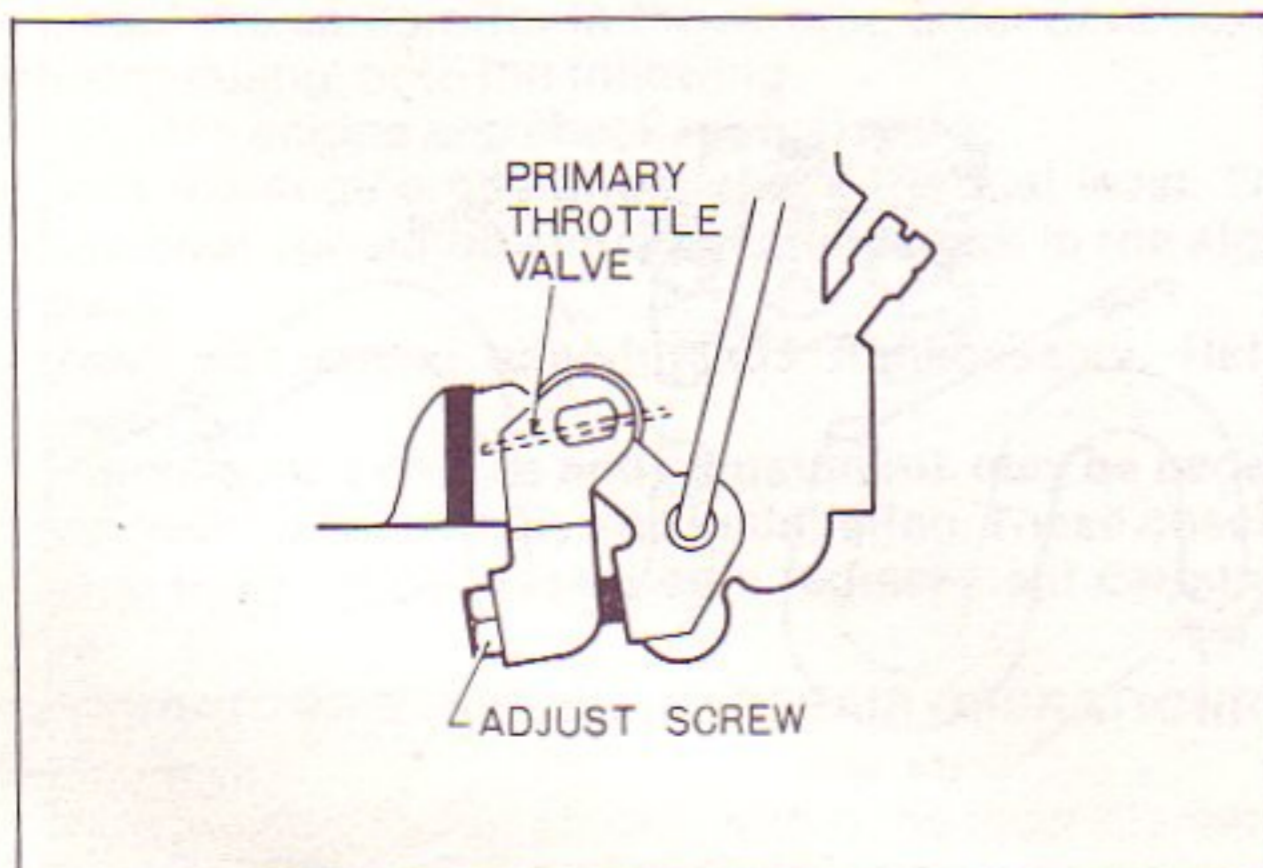


FIG. 92 — Choke fast idle

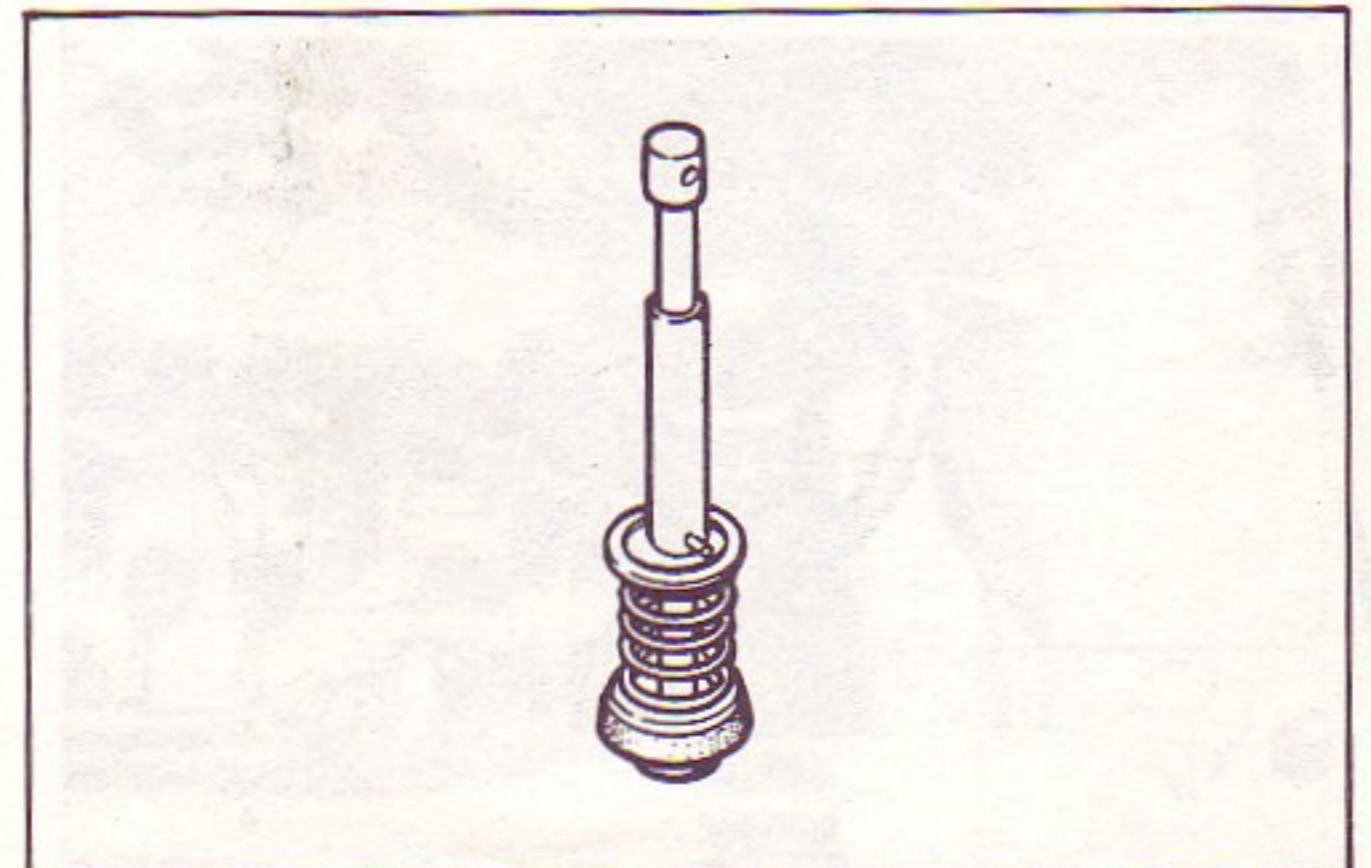


FIG. 94

SECONDARY FUEL CUT SYSTEM

The secondary fuel cut system cuts the secondary fuel passage (between the float and secondary main jet) during acceleration. This system also improves idling stability during panic stops and prevents the catalytic converter temperature (where fitted) from rising excessively.

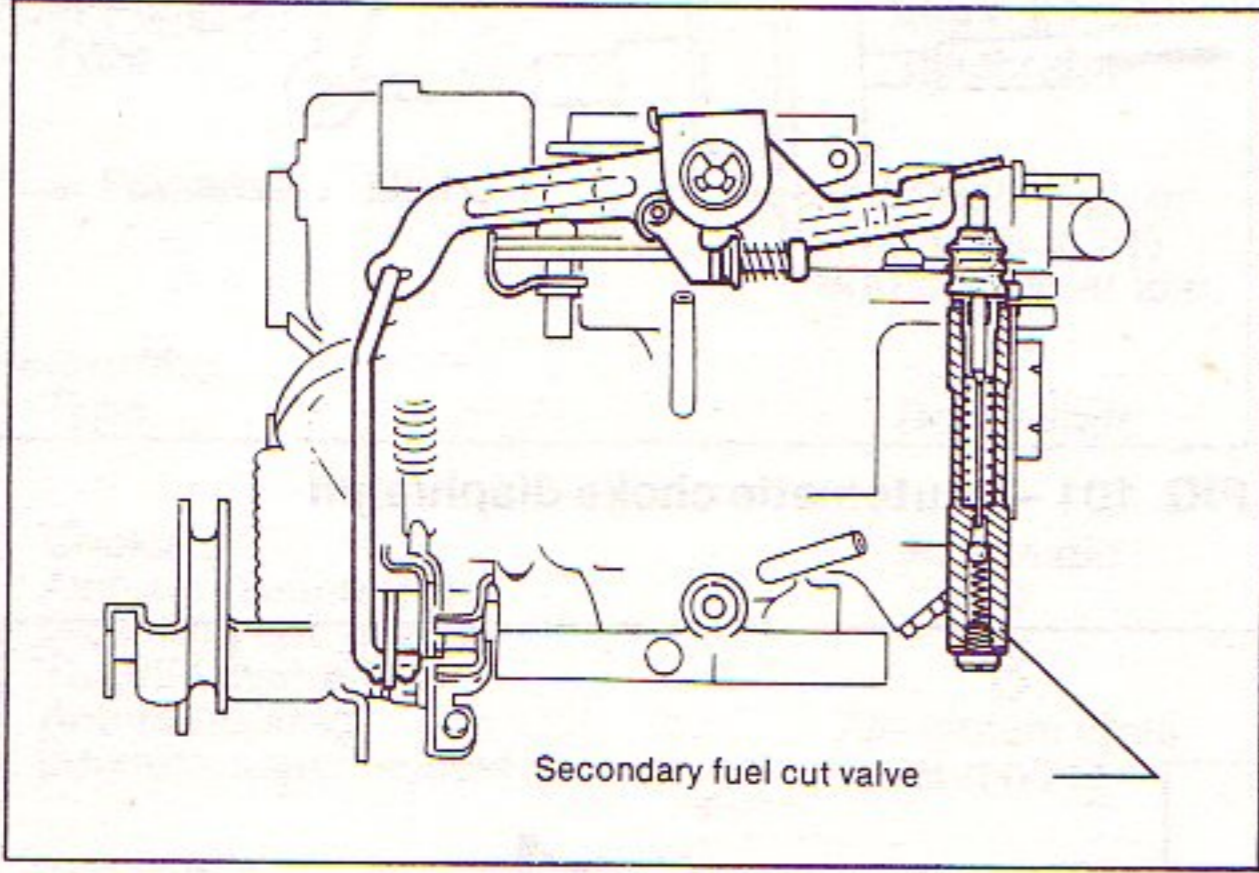


Fig. 95 — Secondary fuel cut valve

Secondary Fuel Cut System — Check and Adjust

1. Make sure the accelerator pedal is fully released.
2. Clearance should be 2.1 ± 0.2 mm (0.083 ± 0.008 in).
3. If clearance is incorrect adjust using adjustment screw. **Do not vary setting from specification.**

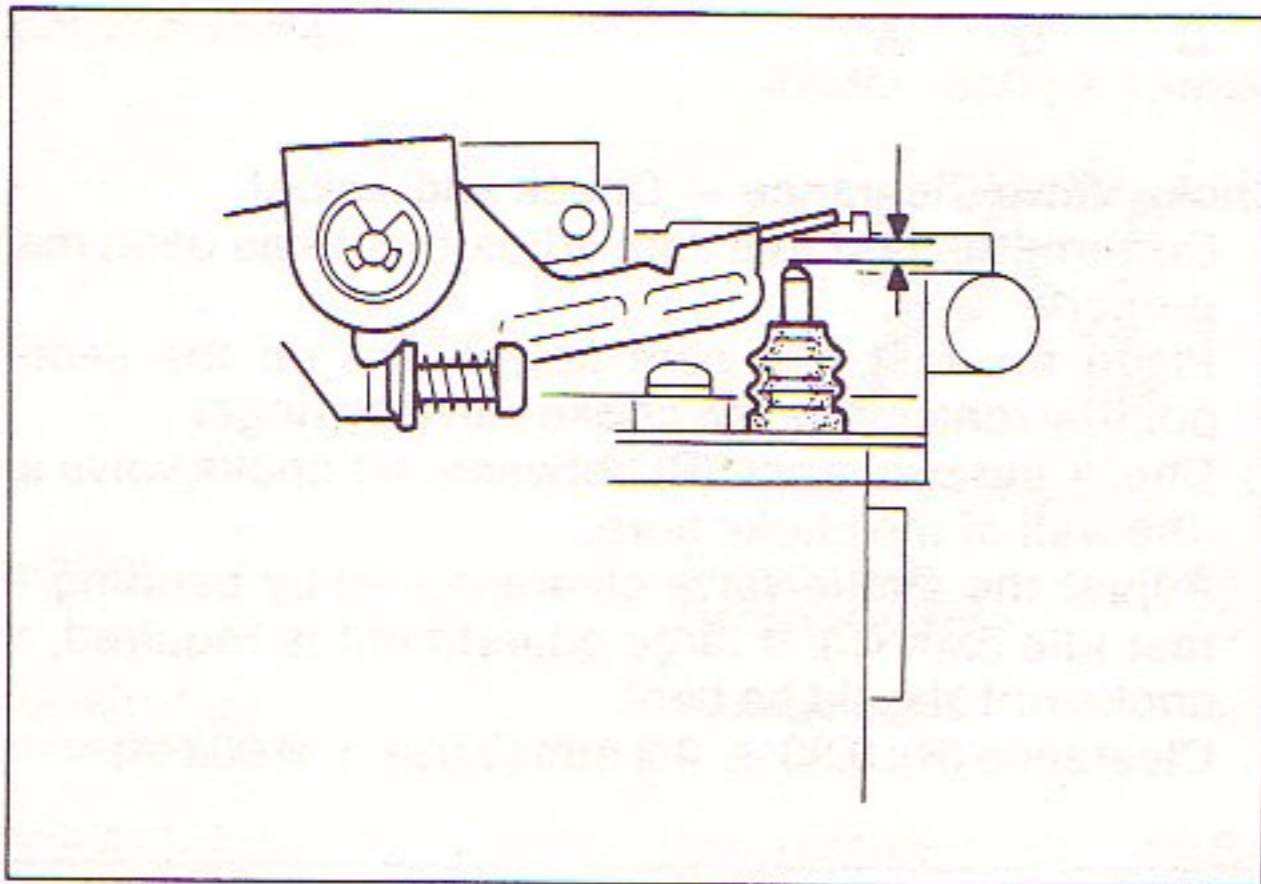


FIG. 96 — Valve adjustment

CHOKE SYSTEM (Manual and Automatic Choke)

To Remove Auto Choke

- Make a groove in the special screws retaining the choke bimetal housing and remove the screws with a screwdriver. Remove the housing.

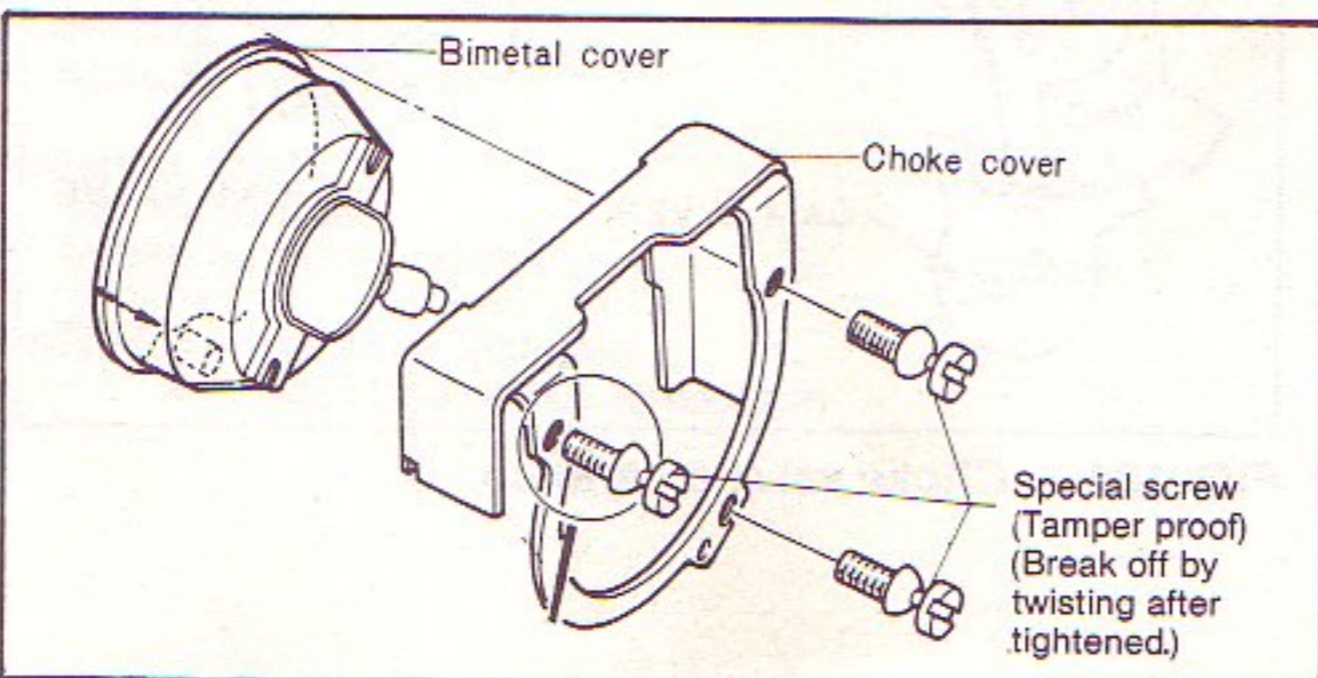


Fig. 97 — Choke housing removal

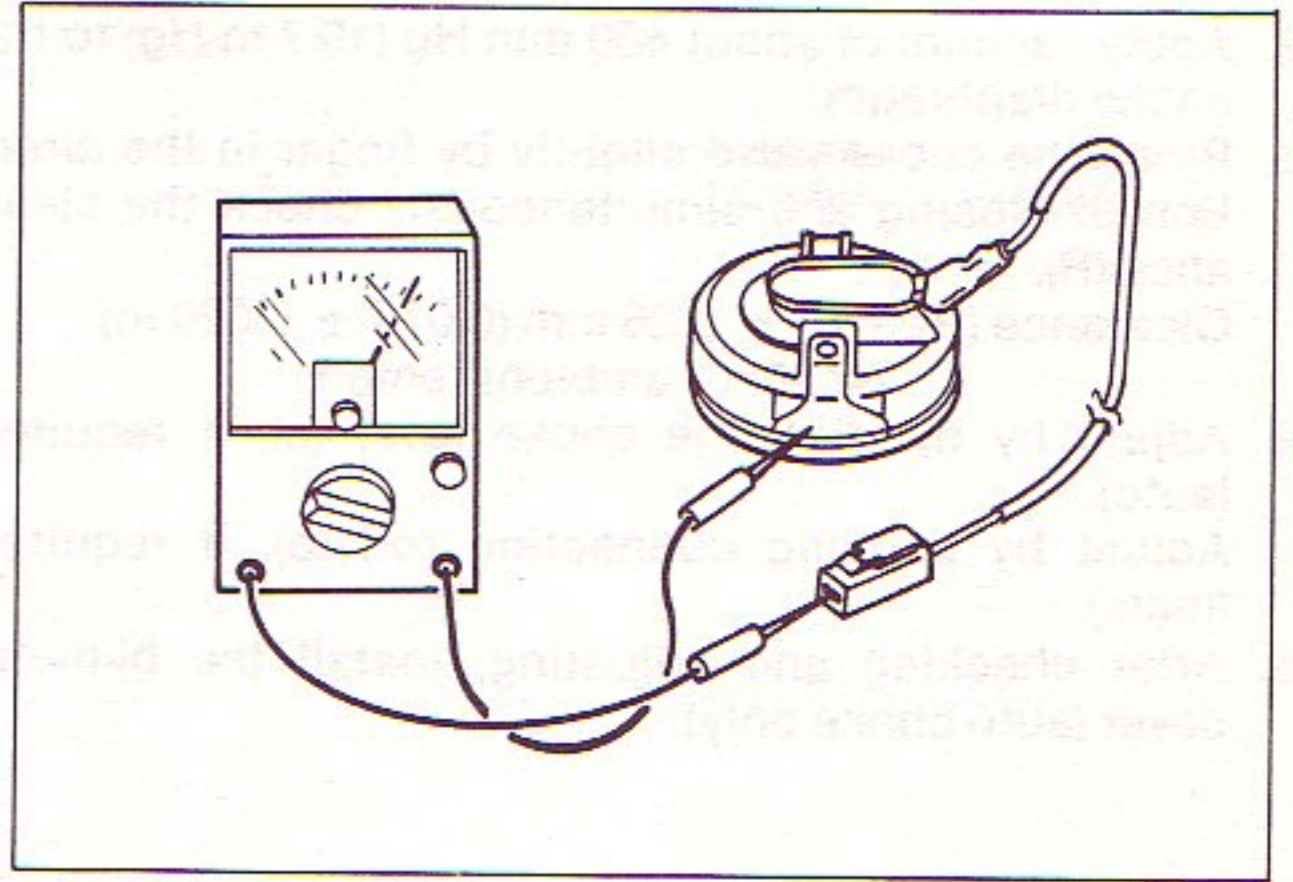


Fig. 98 — Choke heater test

- Check the continuity between the connector and choke heater earth with an ohmmeter. If there is no continuity, replace the choke heater.
- Check for cracked bimetal cover or incorrect spring tension on bimetal.

Unloader System — Check

1. Close the choke valve fully, then open the primary throttle valve.
2. At the same, measure the choke valve clearance (R).
Clearance (R): 2.13 ± 0.27 mm (0.130 ± 0.011 in).

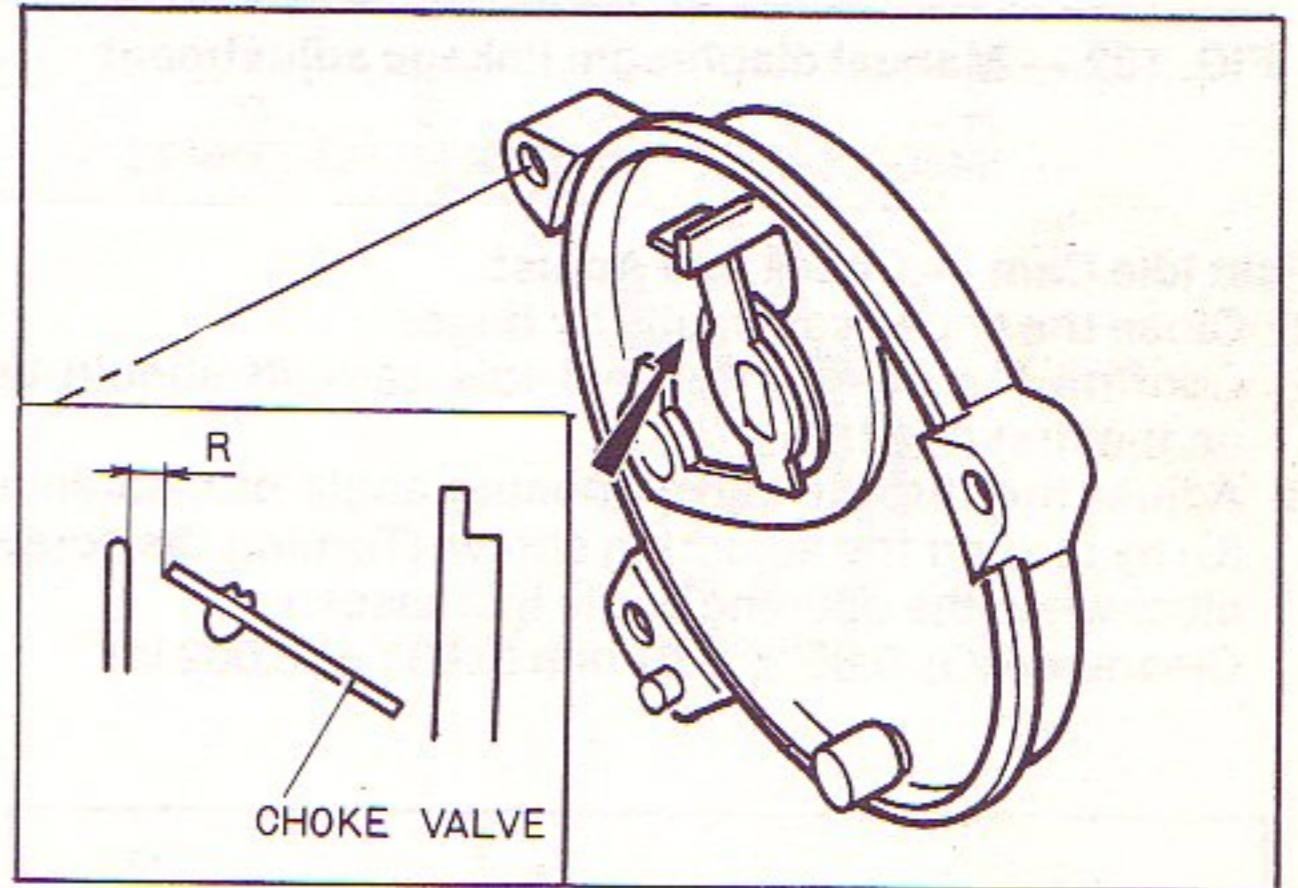


FIG. 99 — Choke valve clearance

Choke Diaphragm — Check and Adjust

1. Confirm the position of fast idle cam. (It should be on the 1st position.)

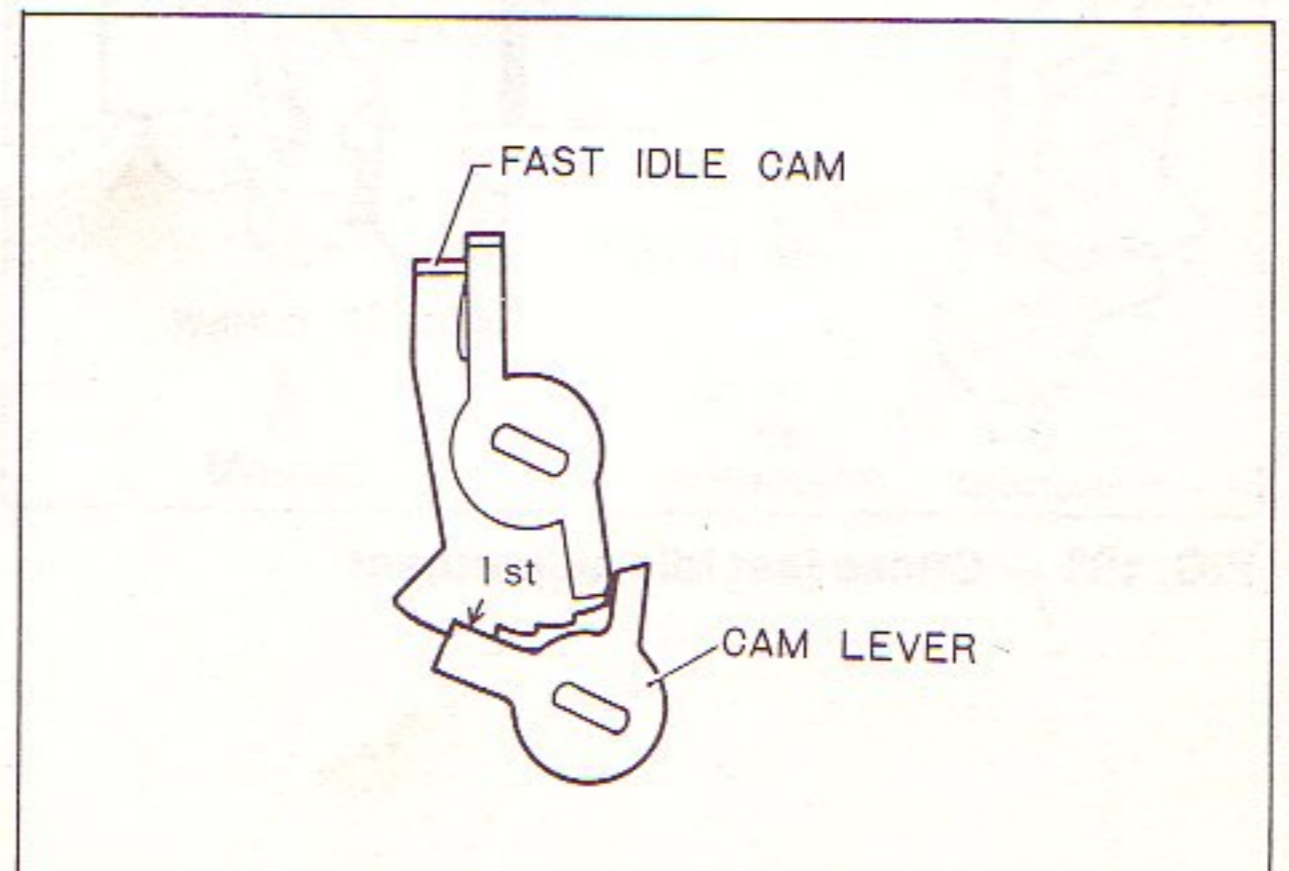


FIG. 100 — Fast idle cam position

2. Apply vacuum of about 400 mm Hg (15.7 in Hg) to the choke diaphragm.
3. Press the choke valve slightly by finger in the direction of closing and simultaneously check the clearance (R).
Clearance (R): 1.78 ± 0.25 mm (0.076 ± 0.020 in)
(at 20°C: ambient temp.)
4. Adjust by bending the choke lever (a), if required (auto).
Adjust by bending connecting rod (b), if required (man.).
5. After checking and adjusting, install the bi-metal cover (auto choke only).

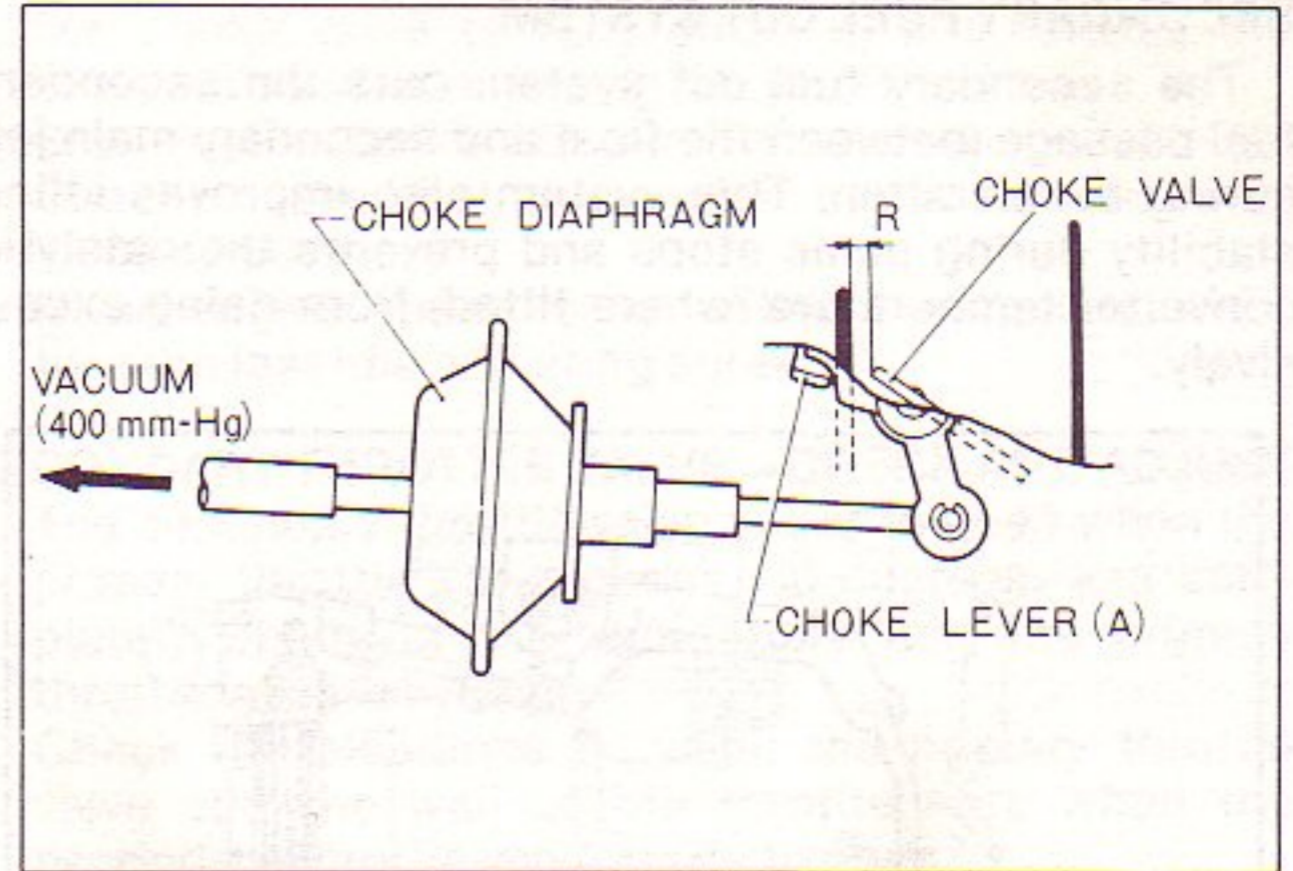


FIG. 101 — Automatic choke diaphragm

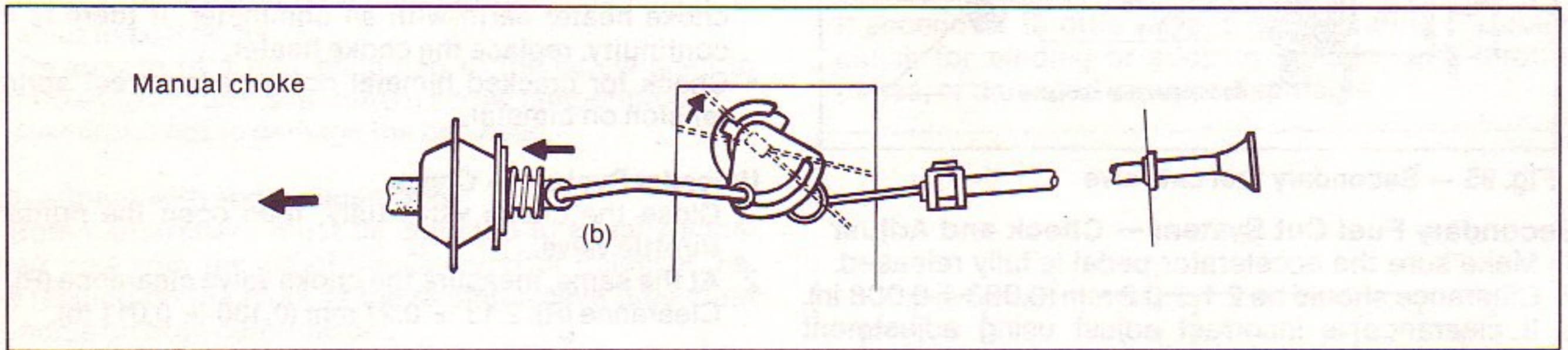


FIG. 102 — Manual diaphragm linkage adjustment

Fast Idle Cam — Check and Adjust

1. Close the choke valve fully by finger.
2. Confirm the position of fast idle cam. (It should be on the first position.)
3. Adjust the throttle valve opening angle or clearance (G) by turning the adjusting screw. (Turning the screw clockwise, the opening angle increases.)
Clearance (G): 0.85 ± 0.07 mm (0.033 ± 0.002 in).

Choke Valve Clearance — Check and Adjust

1. Confirm the fast idle cam adjustment has been made properly.
2. Place the fast idle cam select arm on the second position and close the choke valve by finger.
3. Check the clearance (R) between the choke valve and the wall of the choke bore.
4. Adjust the choke valve clearance (R) by bending the fast idle cam (C). If large adjustment is required, the choke rod should be bent.
Clearance (R): 0.99 ± 0.2 mm (0.039 ± 0.008 in).

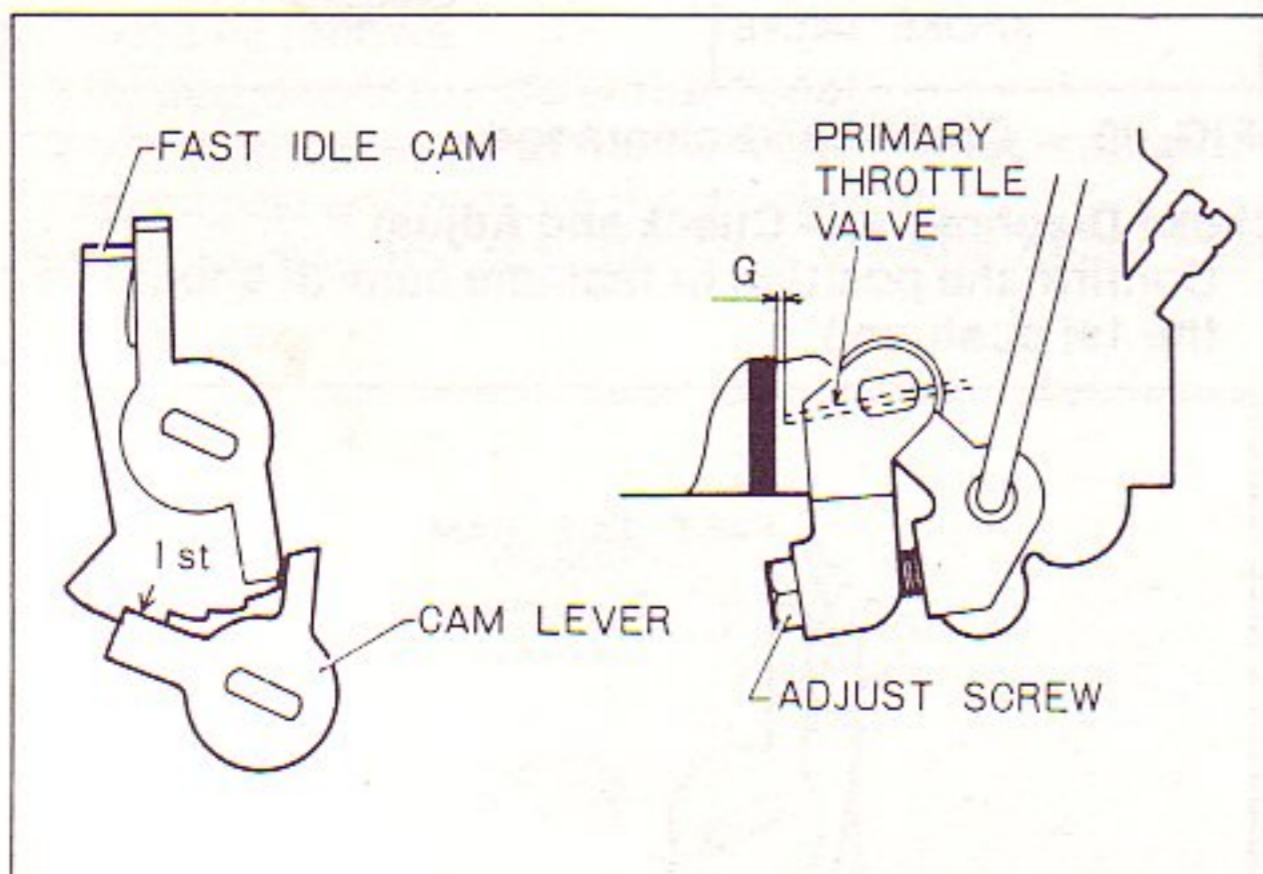


FIG. 103 — Choke fast idle adjustment

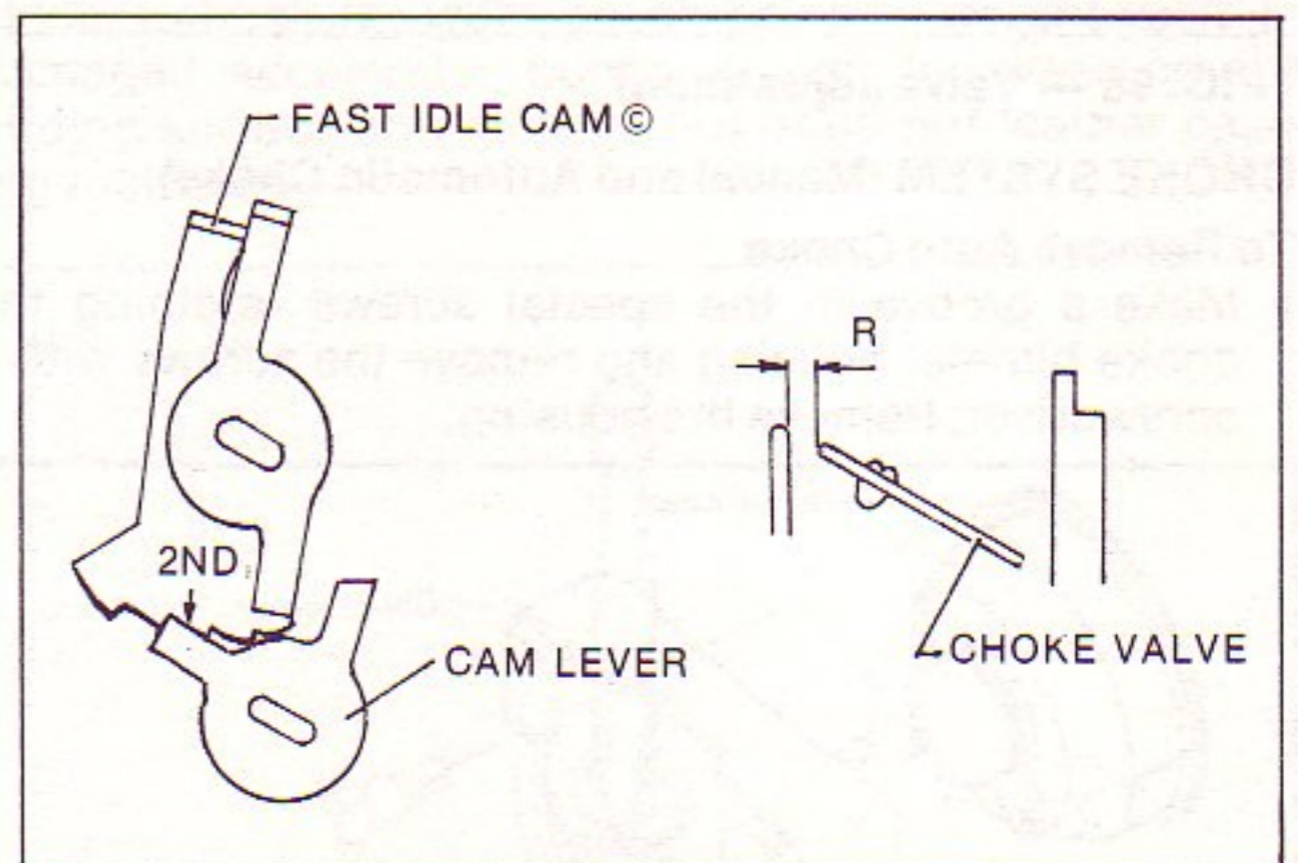




FIG. 104 — Choke valve clearance

TECHNICAL DATA

	U.S.A. Canada	ECE	Australia Sweden	General
Fuel Tank Capacity	42 litres (11.1 US gal; 9.2 Imp. gal)			
Fuel Pump Type	Mechanical diaphragm			
Fuel Pressure	0.2-00.27 kg/cm ² (2.8-3.8 lb/in ²) 800 cc/min at idle			
Carburettor Type	Down draft	(1500 S: Twin carburettor) Manual		
Choke	Automatic			
Altitude compensator	O	O	O	O
Slow fuel cut valve	O	X	X	X
Throttle switch	O	X	X	X
Anti-tampering (Mixture adjust screw)	Aluminium shell and blind	Plastic shell and blind	X	X
Idle speed	850 rpm	850 ± 50		
Manual transmission (in neutral)				
Automatic transmission (in "D" range)	750 rpm	750 ± 50		
Throat diameter	Primary side : 26 mm Secondary side : 30 mm			
Venturi diameter	A B C 21MM - 8MM X 13MM	D E F G H 27MM - 13MM X 16MM - 7MM X 10MM		
				
Main jet	Primary side : 1.06 mm Secondary side : 1.55 mm			
Idle (slow) jet	Primary side : 0.48 mm			
Secondary side : 1.3 mm				
Main air bleed	Primary side : 0.8 mm Secondary side : 1.0 mm			
Slow (idle) air bleed	Primary side No. 1 = 1.5mm No. 2 = 1.2 mm Secondary side : 1.5 mm			
Air Cleaner				
Canister pipe	X	X	O	X
Idle compensator	O	X	X	X
Air pipe	One pipe	X	Two pipes	X
Air pipe for high altitude compensator	O	X	X	X
Fresh air duct				
Ventilation pipe	O	X	X	X
Intake air temp. control	Automatic	Manual	Automatic	Manual

NOTE: O — denotes installed
X — not fitted or not applicable