HITACHI DCR 360 2-BARREL

Datsun 510

DESCRIPTION

Carburetor is a 2-barrel, downdraft type equipped with automatic choke which is heated by an electrically operated bimetal heating coil. A piston type accelerator pump is incorporated into the primary barrel and a high speed enricher system in secondary barrel to improve engine performance during high speed driving. The primary barrel also includes a power valve to supply additional fuel under heavy load driving conditions. Other equipment includes a diaphragm which opens secondary at high speed and full throttle operation; slow economizer for stable low speed performance; anti-dieseling solenoid; dash pot (Auto. Trans.) or fast idle breaker (Man. Trans.) and altitude compensator (Calif.).

CARBURETOR IDENTIFICATION

Application	Carburetor No. Man. Trans.	Auto. Trans.
Datsun 510		
Federal	DCR360-54	DCR360-56
With A/C	DCR360-55	.....
Calif.	DCR360-51	DCR360-53
With A/C	DCR360-52	.....

ADJUSTMENTS

HOT (SLOW) IDLE RPM

See appropriate Tune-Up article in TUNE-UP section.

IDLE MIXTURE

See appropriate Tune-Up article in TUNE-UP section.

COLD (FAST) IDLE RPM

See appropriate Tune-Up article in TUNE-UP section.

FLOAT LEVEL

NOTE – *Fuel bowl is equipped with a sight glass. Line on sight glass indicates proper fuel level. If adjustment must be made to correct improper level, use following procedure.*

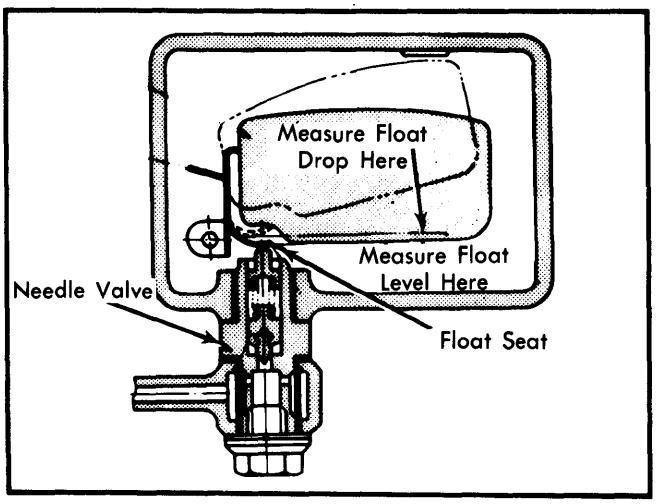

Fig. 1 Float Level and Float Drop Measurement Points

With sight glass removed and carburetor body inverted measure distance from top of float to top of float bowl. Adjust clearance to .283" (7.2 mm) by bending float seat. *See Fig. 1.*

FLOAT DROP

With float bowl removed, hold float upright and measure clearance between needle valve and float seat. Adjust clearance to .051-.067" (1.3-1.7 mm) by bending float stopper. *See Fig. 1.*

VACUUM BREAK

NOTE – *Vacuum break adjustment must be done when ambient temperature is 77°F (25°C).*

Close choke and hold closed with rubber band stretched between choke control lever and stationary part of carburetor. Grip stem of vacuum break diaphragm and pull straight out (stem extended). Adjust gap between choke valve and air horn wall to .103-.127" (2.62-3.22 mm) on Federal or .123-.147" (3.12-3.72 mm) on California, by bending vacuum break rod at existing bend. *See Fig. 2.*

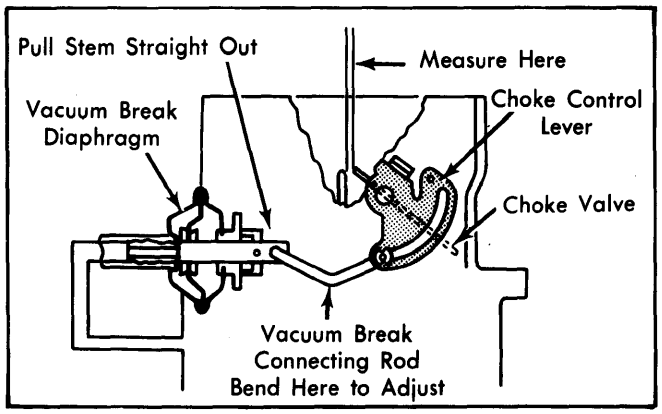

Fig. 2 Vacuum Break Adjustment for Datsun 510

CHOKE UNLOADER

Fully close choke and hold in position with a rubber band. Fully open throttle valve. Adjust clearance between choke valve and air horn wall to .081-.112" (2.05-2.85 mm) by bending unloader tang. *See Fig. 3.*

NOTE – *It is important to check that throttle valve opens fully when carburetor is mounted on vehicle. If throttle fails to open, unloader becomes inoperative.*

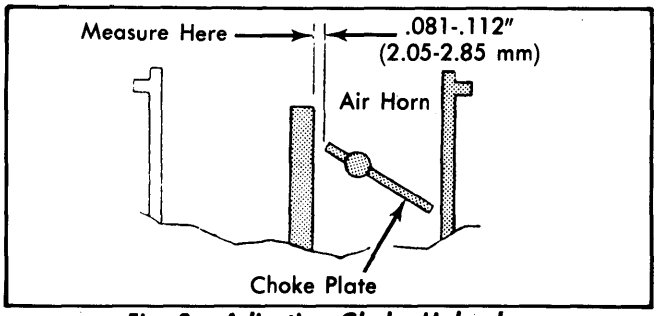

Fig. 3 Adjusting Choke Unloader

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SECONDARY THROTTLE INITIAL OPENING

1) When primary throttle valve opens 50°, primary throttle lever tang contacts secondary throttle lock-out. Any further opening of throttle valve will force secondary throttle lock-out lever to actuate secondary throttle lever and secondary throttle valve will begin to open. Check and adjust as follows:

2) Open primary throttle valve until it is observed that secondary is just beginning to open. Hold throttle in this position and measure clearance between primary throttle valve and throttle bore. Adjust clearance to .271-.310" (6.88-7.88 mm) by bending connecting link. *See Fig. 4.*

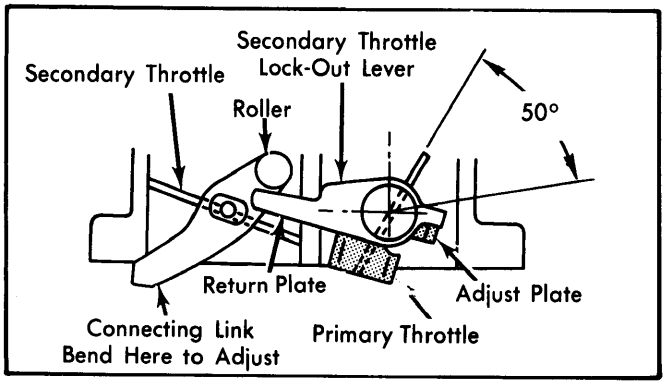

Fig. 4 Secondary Throttle Initial Opening Adjustment

FAST IDLE (BENCH ADJUSTMENT)

With fast idle speed screw on 2nd step of fast idle cam, invert carburetor and close choke valve. Set clearance between throttle valve and throttle bore to .030-.035" (.76-.90 mm) on Man. Trans. or .038-.043" (.96-1.10 mm) on Auto. Trans. by turning fast idle speed screw. *See Fig. 5.*

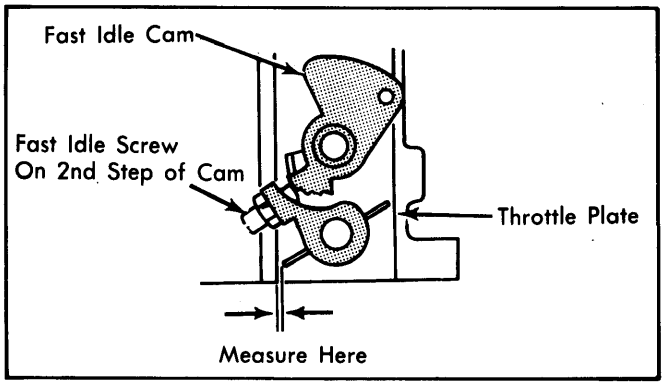

Fig. 5 Fast Idle Adjustment and Measurement Points

AUTOMATIC CHOKE

Choke Mechanism – 1) Before starting cold engine, fully depress and release accelerator. Ensure choke valve is closed and center index mark on bi-metal cover is aligned with center mark on thermostat housing. Check proper electrical connections. Start engine.

2) After warming up engine, ensure choke valve is fully open. If choke heater wiring is normal and choke valve does not fully open, replace bi-metal cover.

Choke Heater Circuit – 1) With engine off, connect ohmmeter to electrical connector under instrument panel. Continuity should exist between terminals "A" and "B". *See Fig. 6.*

2) Start engine and run at idle speed. Voltmeter should read 12 volts across terminals "A" and "B". If voltage readings are not as described, check for open circuit, faulty connector or faulty choke relay. Replace defective parts.

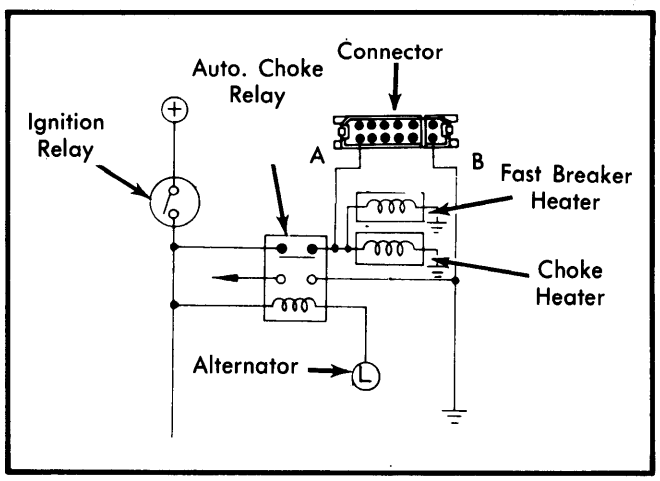

Fig. 6 Checking Choke Heater Circuit

Choke Relay – Remove choke relay from relay bracket near battery. Connect ohmmeter and check continuity between terminals. *See Fig. 7.* With no battery power applied, continuity should exist between terminals No. 2 and No. 4. Apply battery power to terminals No. 5 and No. 6. Continuity should not exist between termials No. 2 and No. 4. If relay does not perform as described, replace choke relay.

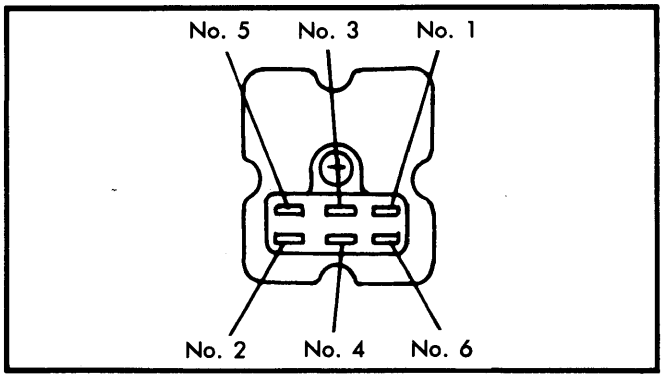

Fig. 7 Checking Automatic Choke Relay

FAST IDLE BREAKER (MAN. TRANS. WITH A/C)

Fast idle breaker is used in conjunction with the automatic choke to gradually decrease engine speed during warm-up mode without touching accelerator. *Test fast idle breaker in same manner as "Dash Pot" in this article. Replace unit as an assembly if defective.*

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DASH POT (AUTO. TRANS. WITH A/C)

Dash Pot Position – With engine at normal operating temperature and idle speed set to specifications, turn air conditioning "OFF". Turn throttle valve by hand and read engine speed when dash pot just touches stopper lever. Adjust position of dash pot until engine speed is 1400-1600 RPM, by turn adjusting screw. When properly adjusted, engine speed should drop from 2000 RPM to 1000 RPM within 3 seconds.

Dash Pot Operating Speed – With engine at normal operating temperature, air conditioning "OFF" and idle speed set to specifications. Turn air conditioning "ON" and remove air cleaner. Adjust dash pot (fast idle breaker) operating speed to 800 RPM, by turning adjusting screw. Turn adjusting screw clockwise to lower engine speed and counterclockwise to raise engine speed. See *Fig. 8*.

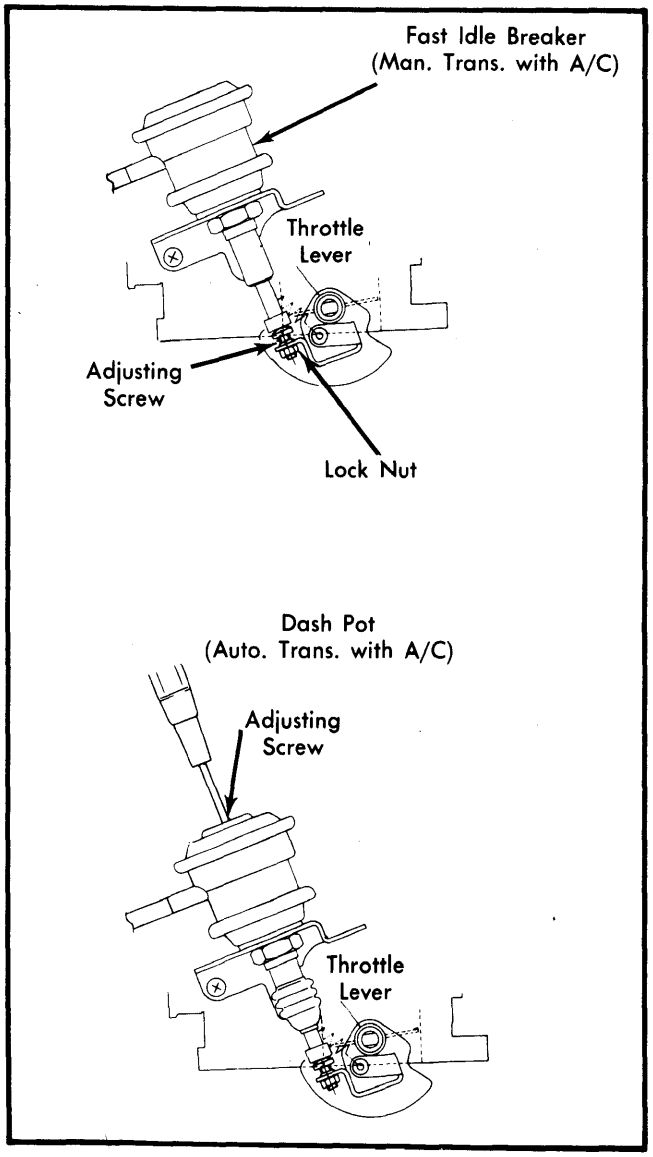

Fig. 8 Adjusting Dashpot (Fast Idle Breaker)

OVERHAUL

DISASSEMBLY

1) With carburetor removed, perform the following steps:

- Disconnect accelerator pump lever and choke connector rod.
- Remove throttle return spring.
- Remove vacuum breaker diaphragm hose.
- Remove choke bi-metal housing, wire, choke lever and cam, thermostat housing, fast idle breaker heater (if equipped) and vacuum diaphragm.

2) Remove 4 choke chamber retaining screws. Carefully lift off choke chamber, discard gasket and remove idle compensator (Calif.), choke plate, choke shaft lever, retainer and choke shaft. Perform the following steps to disassemble float chamber:

- Remove fuel inlet retainer, filter and needle valve assembly.
- Remove dash pot (fast idle breaker), if equipped.
- Remove secondary throttle diaphragm.
- Remove anti-dieseling solenoid.
- Remove by-pass air control valve.
- Remove float level gauge cover. Do not lose float collar.
- Remove float assembly.

3) Remove accelerator pump plunger retaining screws. Invert float chamber and remove plunger assembly. Then perform the following:

- Remove power valve, primary and secondary main air bleeds.
- Remove secondary slow jet plug and jet.
- Remove secondary slow air bleed.
- Remove primary and secondary main jet plugs and jets.
- Remove auxiliary accelerator pump plug and plunger assembly.
- Remove primary slow jet.

CAUTION – *DO NOT remove venturi stopper screws or small venturi.*

4) Remove fast idle cam and throttle linkage. Remove 3 throttle body retaining screws and note position of each for reassembly reference.

NOTE – *One throttle body retaining screw has a hole for fit of power valve mechanism. Note position of this screw for reassembly reference.*

5) Remove throttle adjusting screw and spring. Remove idle limiter cap (blind plug on Calif. models) and remove idle adjusting screw and spring. Remove throttle valves and shaft assemblies.

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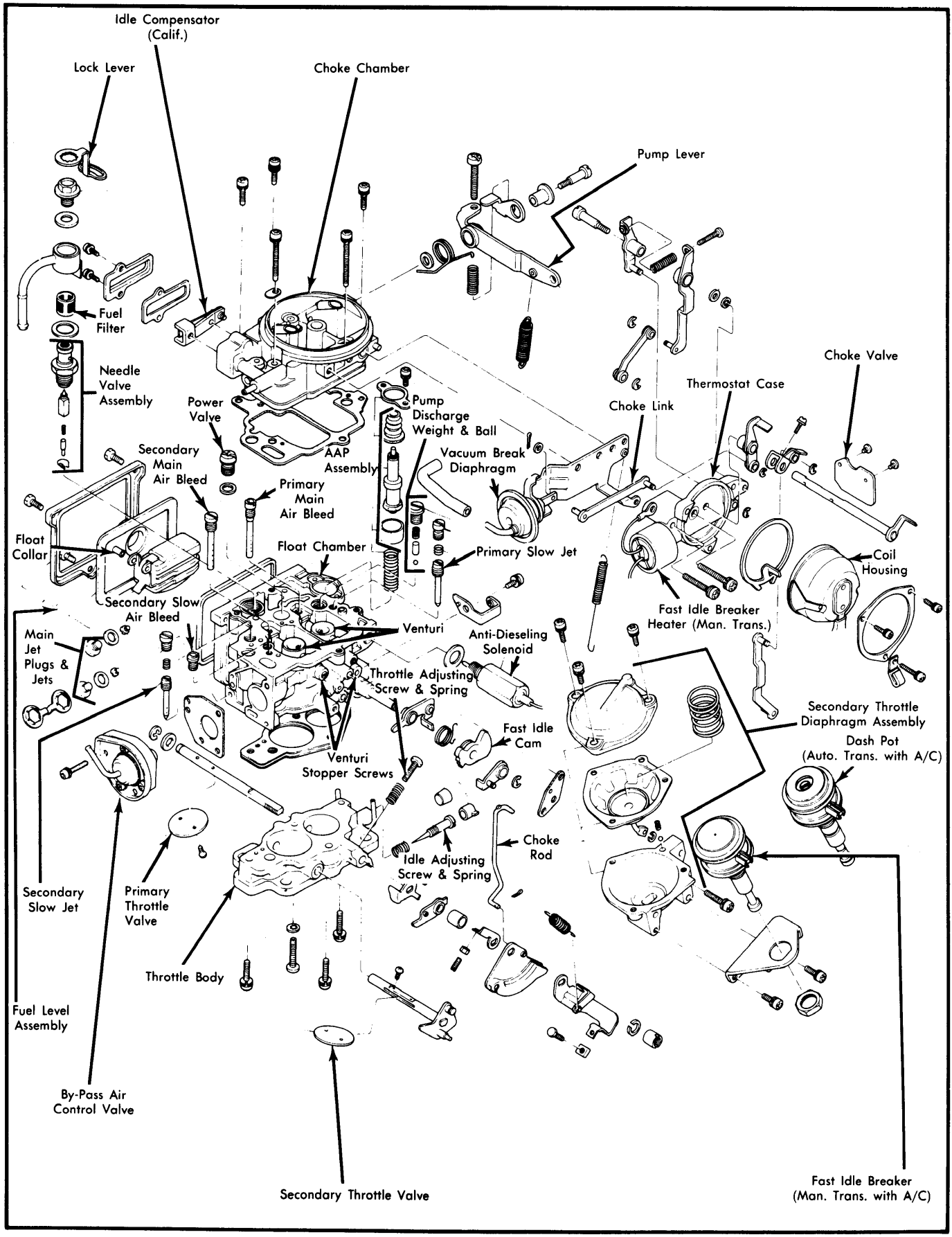

Fig. 9 Exploded View of Hitachi DCR360 2-Barrel Carburetor

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CLEANING & INSPECTION

Thoroughly clean all parts in cleaning solvent (carburetor cleaner) and blow fuel passages with compressed air. Make sure all jets and passages are clear and clean. Do not attempt to clean jets by using wire or other objects which might damage calibrated orifices. Discard all gaskets and use new gaskets during reassembly.

REASSEMBLY

Reassemble carburetor in reverse order of disassembly. Make sure primary and secondary components are installed in correct positions. Ensure throttle body retaining screws are properly installed. Float collar must be properly installed. Replace idle limiter cap (blind plug on Calif. models) during overhaul.

CARBURETOR ADJUSTMENT SPECIFICATIONS

Application	Idle Speed (Engine RPM)		Float Level Setting	Float Drop Setting	Choke Linkage	Secondary Throttle	Unloader Setting	Vacuum Break
	Hot	Fast	In. (mm)	In. (mm)	In. (mm)	In. (mm)	In. (mm)	In. (mm)
Datsun 510	600①	②	.283 (7.2)	.051-.076 (1.3-1.7)	.....	.271-.310 (6.88-7.88)	.081-.112 (2.05-2.85)	.103-.127③ (2.62-3.22)

① — Man. Trans. in neutral. Auto. Trans. in drive.
② — See procedure in article.
③ — Calif. models — .123-.147" (3.12-3.72 mm)