

HITACHI DCG 306 & DCH 306 2-BARREL (Cont.)

POWER SYSTEM

During low speed operation, fuel delivery is made by the primary side. A booster power valve is operated by intake manifold vacuum. During light load operation this vacuum is high enough to keep the power valve closed against spring pressure. During heavy load operation and acceleration, intake manifold vacuum drops and allows spring action to open the valve and supply fuel to the primary throttle bore.

SECONDARY BARREL
AUXILIARY THROTTLE VALVE

Valve is installed on upper part of secondary barrel. This valve does not open until mixture in the primary barrel is flowing at a high rate (high engine speed). A counterweight is attached to the auxiliary valve shaft and serves to keep valve closed until the force of the mixture overcomes counterweight.

BY-PASS SYSTEM

For purposes of exhaust emission control, a by-pass system is incorporated into the carburetor design. The purpose of the system is to provide correct air/fuel ratio during periods of deceleration. Operation of the system is as follows:

- 1) When intake manifold vacuum becomes higher than 19" Hg., while vehicle is decelerating, a by-pass valve is actuated by a vacuum diaphragm. This opens the valve to provide a passage from the air horn or carburetor to the lower portion of the secondary throttle valve.
- 2) This causes an air/fuel mixture to be produced by the by-pass jet and by-pass air bleed. This mixture is drawn through the valve and ejected to the lower portion of the secondary throttle valve.
- 3) When vacuum is lower than the designated value, as during acceleration or normal running, the by-pass valve is left closed and the system remains inactive. A vacuum control valve is utilized to control the operation of the by-pass system.

FUEL CUT-OFF SOLENOID

The valve of the solenoid switch is installed in the primary slow passage. The switch is controlled by the ignition switch. When ignition is turned on, current flows to solenoid and valve opens, allowing normal fuel flow. When ignition is turned off, the valve is pushed back by a return spring and closes primary slow stage, cutting off fuel supply. This system is to prevent dieseling of engine when ignition is turned off.

ADJUSTMENT

IDLE RPM & MIXTURE

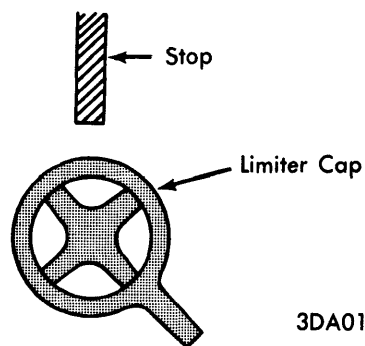
NOTE — All three manufacturers recommend that the idle RPM and mixture adjustment be accomplished with a CO meter. Subaru and Honda give an alternate method while Datsun gives the CO meter method only.

Datsun 1200 — 1) With engine at normal operating temperature, manual transmission in neutral and automatic transmission in "N", adjust throttle adjusting screw so that engine is idling at 800 RPM. Check and if necessary adjust timing to specification.

2) On manual transmission vehicles, adjust idle adjusting screw until CO meter reads $1.5 \pm 0.5\%$. Check idle RPM and if necessary repeat procedure to ensure that CO reading is $1.5 \pm 0.5\%$ at 800 RPM.

3) On automatic transmission vehicles, apply parking brake, place blocks in front of all four tires and place gear shift lever in "D". Now adjust idle adjusting screw so that CO readings is $1.5 \pm 0.5\%$ at 650 RPM.

4) If idle limiter cap must be removed to properly reach CO level, it must be installed in correct position. With correct CO level obtained, install cap so that screw can still rotate $\frac{3}{8}$ turn in the CO rich direction (see illustration).



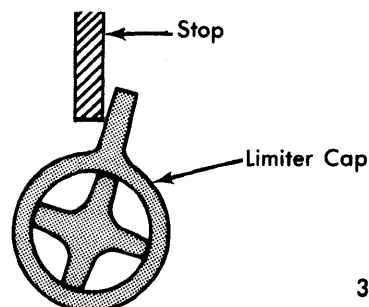
3DA01
IDLE LIMITER CAP INSTALLATION POSITION
DATSUN

Subaru 1400 W/CO Meter — 1) With engine at normal operating temperature, disconnect and plug vacuum hose to retard unit for distributor. Check and if necessary adjust timing to specification. With timing properly set, adjust engine idle to 800 RPM.

2) Reconnect vacuum line, check and if necessary readjust engine idle to 800 RPM. Using a CO meter, check CO level. If CO level is not 1 to 3%, adjust idle mixture screw until CO level meets specifications.

3) If CO level cannot be obtained within the limits of idle limiter cap, pry cap off with a screwdriver and turn idle adjuster screw until correct CO level is obtained. Recheck engine idle and adjust if necessary.

4) With correct CO level obtained, install a new red idle limiter cap. Cap must be installed so tang on limiter cap is in correct position (see illustration). This places idle mixture screw at the full rich position.



3SU02
IDLE LIMITER CAP INSTALLATION POSITION
(SUBARU)

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Subaru 1400 W/O CO Meter - With engine at normal operating temperature, adjust throttle adjusting screw so that engine is idling at 850 RPM. Turn idle adjusting screw until engine is idling at 800 RPM. This should make the CO level within the specified 1 to 3% range.

Honda Civic W/ CO Meter - 1) With engine at normal operating temperature, manual transmission in neutral, automatic transmission in "D", headlights on and cooling fan off, adjust engine idle to specifications.

Honda Idle RPM Specifications

Application	Specifications
Auto. Trans. (In "D")	750 ± 50
Man. Trans.	800 ± 50

2) With engine at specified idle RPM, adjust idle adjusting screw until CO level is 1 to 3%. If specified level cannot be obtained within limits of idle limiter cap, stop engine and remove cap.

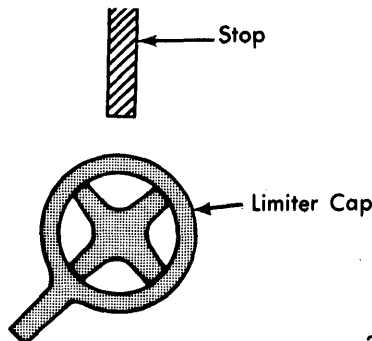
3) Remove idle adjuster screw and blow compressed air through passage in carburetor to ensure that it is open. Install screw, start engine and adjust screw until specified CO level is obtained. Install a new limiter cap in correct position (see illustration).

Honda Civic W/O CO Meter - 1) Adjust engine to specified idle RPM as previously outlined in CO meter procedure. Remove limiter cap and turn idle adjusting screw counterclockwise until engine idle drops.

2) Now turn adjusting screw clockwise until engine reaches highest RPM. If RPM exceeds specified RPM, repeat step one. Continue turning screw clockwise until specified RPM drop is obtained.

Honda RPM Drop Specification

Application	Specification
Auto. Trans.	20 RPM
Man. Trans.	40 RPM



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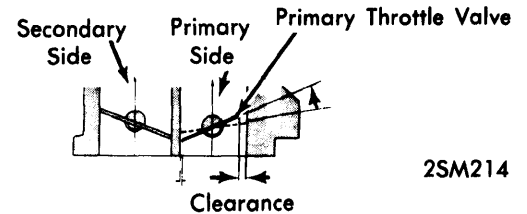
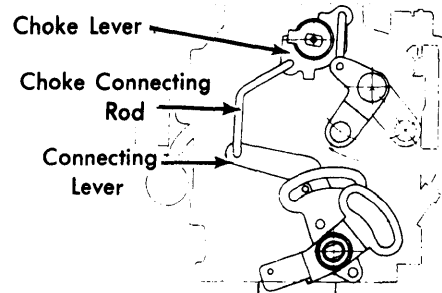
IDLE LIMITER CAP INSTALLATION POSITION (HONDA)

CHOKE & PRIMARY THROTTLE LINKAGE ADJUSTMENT

Subaru & Honda - With choke valve fully closed, measure clearance between primary throttle valve and throttle bore. If clearance is not to specification, bend connecting rod until correct clearance is obtained.

Throttle Valve Clearance

Application	Clearance
Subaru	.060-.058"
Honda	.050-.066"

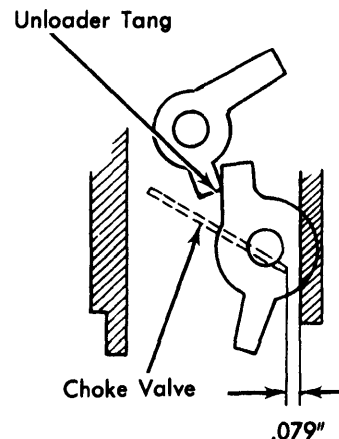


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CHOKE TO PRIMARY THROTTLE LINKAGE

CHOKE UNLOADER ADJUSTMENT

Datsun - Close choke valve completely by stretching a rubberband from choke shaft lever to a stationary part of carburetor. Open throttle valve to fully open position. Measure clearance between choke valve and carburetor body. Clearance should be .079". If clearance is not as specified, bend unloader tang (see illustration) until correct clearance is obtained.



3DA04

CHOKE UNLOADER TANG

Hitachi Carburetors

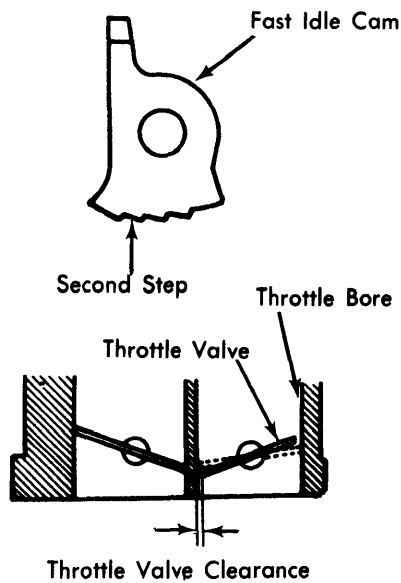
HITACHI DCG 306 & DCH 306 2-BARREL (Cont.)

FAST IDLE ADJUSTMENT

Datsun — Position fast idle arm on second step of fast idle cam. Measure clearance of throttle valve in throttle bore (see illustration). If clearance is not to specification, turn fast idle screw in or out until specified clearance is obtained.

Throttle Valve Clearance

Application	Clearance
Datsun (Man. Trans.).....	.032-.035"
Datsun (Auto. Trans.).....	.042-.046"



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FAST IDLE ADJUSTMENT

CHOKE COVER SETTING

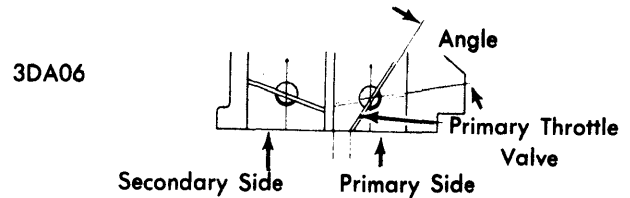
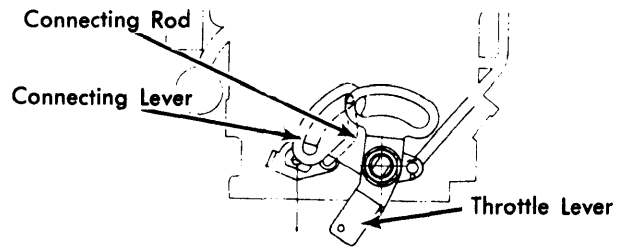
Datsun — Before adjusting choke cover, resistance of bi-metal should be checked with a suitable ohm meter. Without current through heater and at room temperature, resistance across terminal to carburetor body should be 8.6 to 9.0 ohms. Choke cover should be positioned with index mark on carburetor body in center of scale on cover.

PRIMARY/SECONDARY THROTTLE LINKAGE

All Models — Open primary throttle valve until linkage just starts to open secondary throttle valve. Measure clearance of primary throttle valve and throttle bore (see illustration). If clearance is not to specification, bend connecting rod until correct clearance is obtained. With the correct clearance obtained, the appropriate angle of primary throttle valve should be obtained.

Primary Throttle Valve Opening Clearance

Application	Clearance	Angle
Datsun.....	.228"	48°
Subaru.....	.240"	49°
Honda.....	.228"	48°



PRIMARY/SECONDARY THROTTLE LINKAGE (TYPICAL)

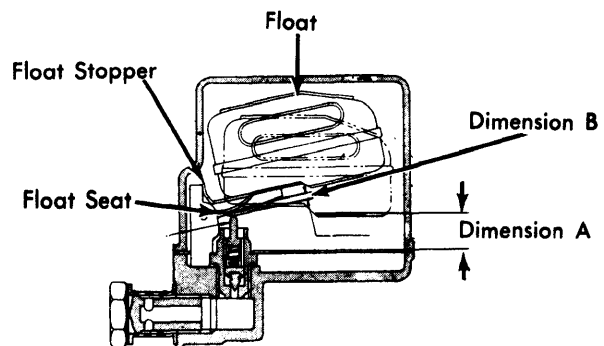
FLOAT LEVEL ADJUSTMENT

All Models — 1) Remove choke chamber and turn upside down. Raise float by hand, then slowly lower until float tang just touches needle valve stem. Measure dimension A (see illustration). If dimension A is not to specifications, bend float seat until correct dimension is obtained.

2) Raise choke by hand until float stopper contacts air horn body. Measure dimension B (see illustration), distance between float seat and needle valve stem. If dimension B is not to specification, bend float stopper.

Float Adjustment Specifications

Application	Dimension A	Dimension B
Datsun.....	.709-.748"	.051-.067"
Subaru.....	.413"	.051-.067"
Honda.....	.440"	.051-.067"



3SU07

FLOAT LEVEL ADJUSTMENT

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DASHPOT ADJUSTMENT

Datsun — Engine must be at normal operating temperature and idle speed and mixture by correctly adjusted. Open throttle valve by hand until dashpot stem just contacts stopper lever and read idle speed RPM. Adjust idle to 1900 to 2000 RPM by turning nut on dashpot. Engine speed should reduce from 3000 RPM to 1000 RPM smoothly in a few seconds.

OVERHAUL

DISASSEMBLY

- 1) With carburetor removed from vehicle, remove primary and secondary needle valves and main jets, accessible from outside of carburetor. Remove throttle return spring. Remove pump lever shaft, lever and connecting rod.
- 2) Remove throttle positioner if equipped. Remove choke cover housing bolts, pull cover up, disconnect choke connecting rod and remove choke cover housing.
- 3) Remove accelerator pump and cover, float shaft and float, needle valve and filter. Remove fuel inlet nipple, slow air bleed, choke valve, shaft and lever from shaft.

- 4) From float chamber, remove accelerator pump return spring, inlet valve, outlet valve, main air bleed and emulsion tube. Remove slow jet, power valve, drain plug and main jet. Remove idle stop solenoid.

- 5) From throttle body, remove idle mixture screw, throttle adjustment screw and spring. Remove nut from throttle lever, throttle lever, connecting lever, sleeve, choke connecting lever and adjustment plate.

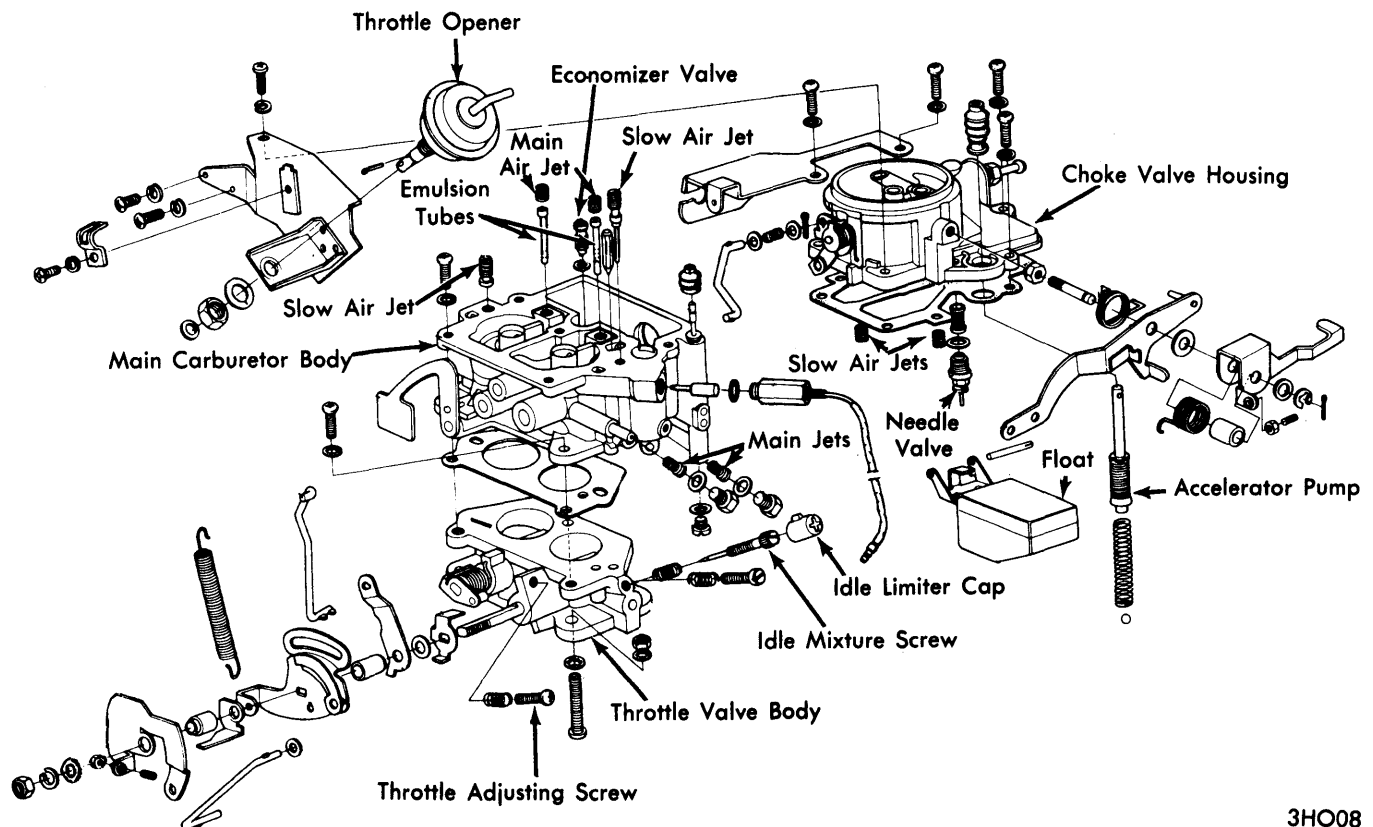
- 6) Remove primary throttle valve and pull shaft from throttle body. Remove secondary throttle valve and pull shaft from throttle body.

CLEANING

Clean all components in a suitable carburetor cleaning solution. Blow out all air passages with compressed air. Do not clean any jets or passages with wire or drills, as calibrated components might be altered.

ASSEMBLY

To assemble carburetor, reverse disassembly procedure. Replace any components as necessary. When assembling any linkage components, care must be taken not to bend or deform any parts. All linkage must work smoothly.



**CARBURETOR EXPLODED VIEW
(TYPICAL)**

3H008