

Hitachi Carburetors

HITACHI DCG 306-18 & DCH 306 2-BARREL

Datsun 1200 (1972)
Subaru 1300 (1972)

haust emissions during engine deceleration and automatic transmission cars have dashpots as optional equipment.

DESCRIPTION

Carburetor is a two barrel downdraft design with primary and secondary throttle systems. A choke valve and idle circuit are used in primary system only. Both primary and secondary venturis have main fuel nozzles. When the primary throttle valve is nearly wide open, the secondary throttle valve begins to open. An auxiliary air valve, located above secondary throttle system, provides smooth transitional operation when secondary system begins to operate. A mechanical accelerator pump and vacuum operated power valve are used for increased fuel requirements. An anti-dieseling valve (Subaru only) is used to stop fuel flow in idle circuit when the ignition switch is turned off. Datsun vehicles use a throttle positioner for controlling ex-

Application

Carburetor No.

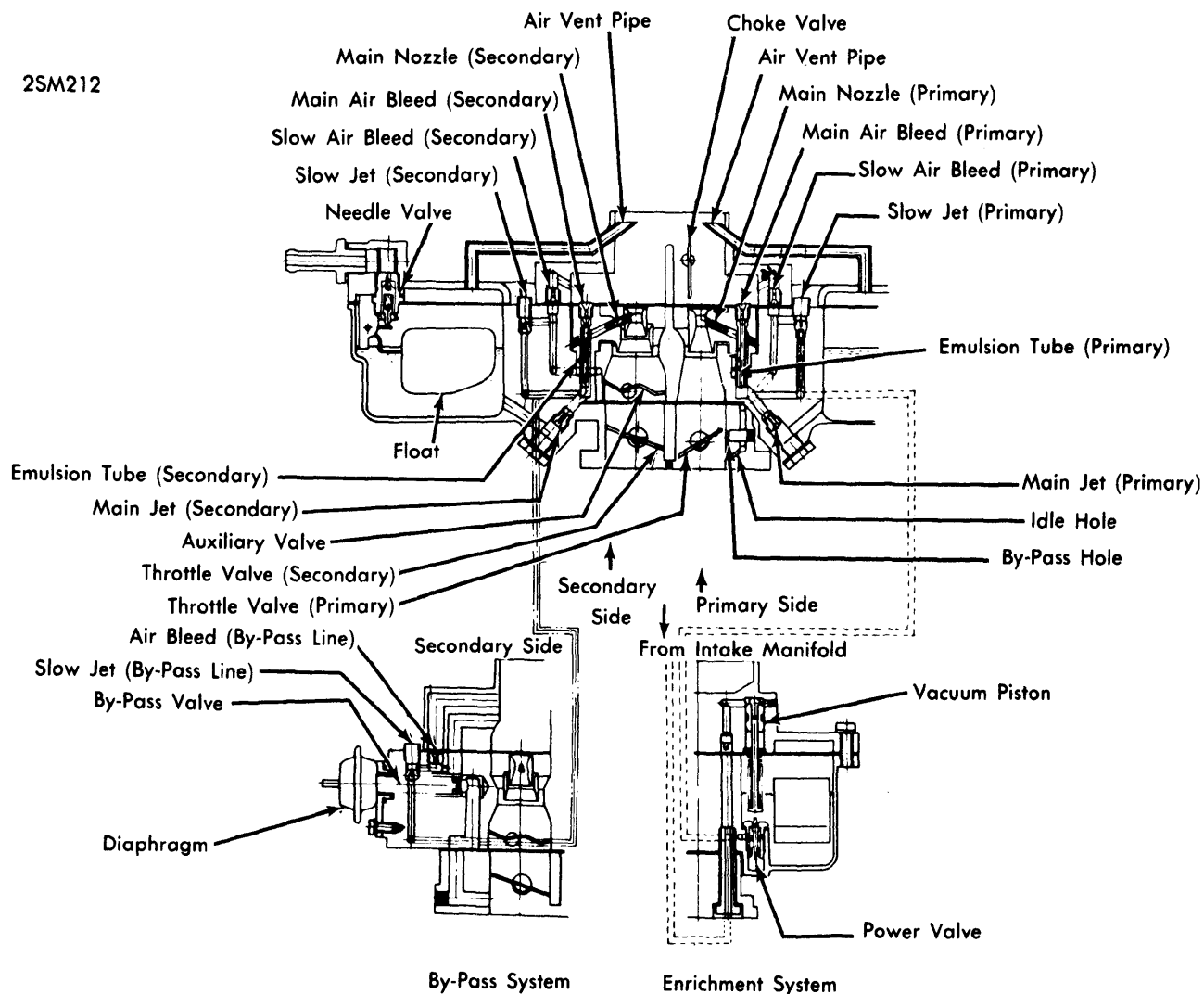
Datsun	
Man. Trans.	DCH306-1, DCH306-1A
Auto. Trans.	DCH306-3A, DCH306-3
Subaru	DCG306-18

OPERATION

CHOKE SYSTEM

Datsun - An electric heater warms a bi-metal spring connected to the choke valve. This controls the choke and throttle valve opening position during engine warm-up.

Subaru - Choke valve is fully closed during engine starting. With choke closed, the primary throttle valve is opened a small amount. As the engine starts, choke valve will automatically open according to throttle opening.

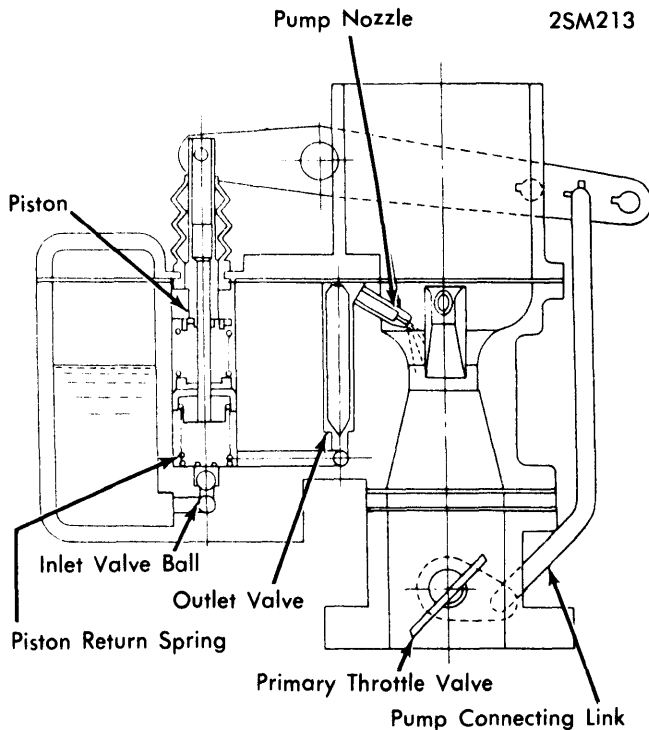


CARBURETOR SECTIONAL VIEW (TYPICAL)

HITACHI DCG 306-18 & DCH 306 2-BARREL (Cont.)

ACCELERATOR PUMP

Accelerator pump is a piston type, and is interlocked to the primary side throttle valve with a link. When throttle valve is closed, the piston moves upward, fuel flows into the pump cylinder. When throttle valve is opened, the fuel in the cylinder is placed under pressure. The pressure lifts the injector weight and fuel is delivered to the pump nozzle and sprayed into the large primary venturi.



ACCELERATOR PUMP SYSTEM

POWER SYSTEM

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 AUXILIARY 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

Subaru — For purposes of exhaust emission control, a by-pass system is incorporated into the carburetor design. Its purpose is to provide a correct air/fuel ratio during periods of deceleration. When intake manifold vacuum becomes higher than 19 in. Hg., the valve is actuated releasing air through valve passage below secondary throttle valve. This helps maintain a more complete combustion during engine deceleration. During normal engine operation, with vacuum lower than 19 in. Hg., the by-pass valve remains closed.

DASHPOT

Datsun (If Equipped) — Dashpots are used with automatic transmissions only. Its purpose is to reduce engine speed slowly in order to prevent stalling during deceleration.

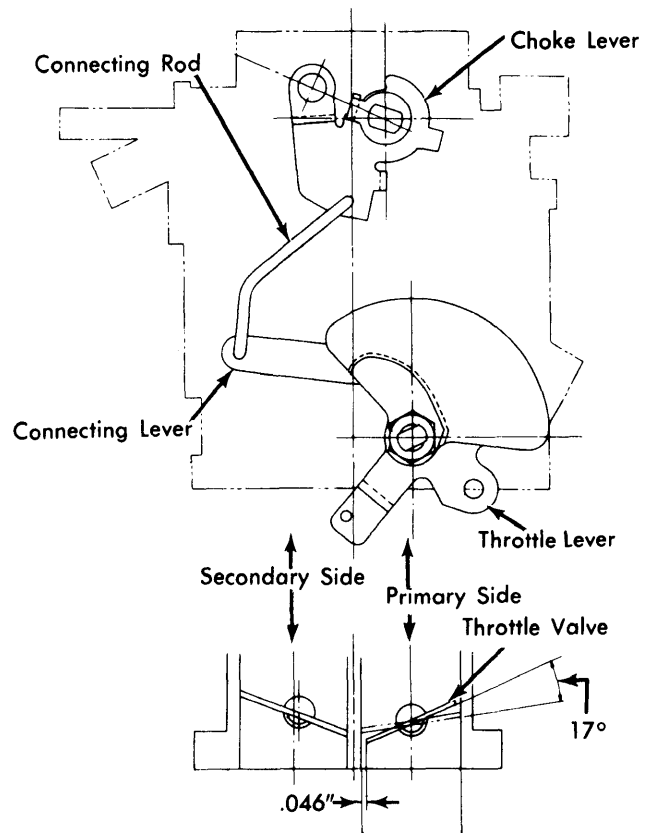
FUEL CUT-OFF VALVE

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

SUBARU CARBURETOR

Choke-to-Primary Throttle Linkage — With choke valve fully closed, measure the clearance between throttle valve and bore. Set to specification and adjust by bending the choke connecting rod.

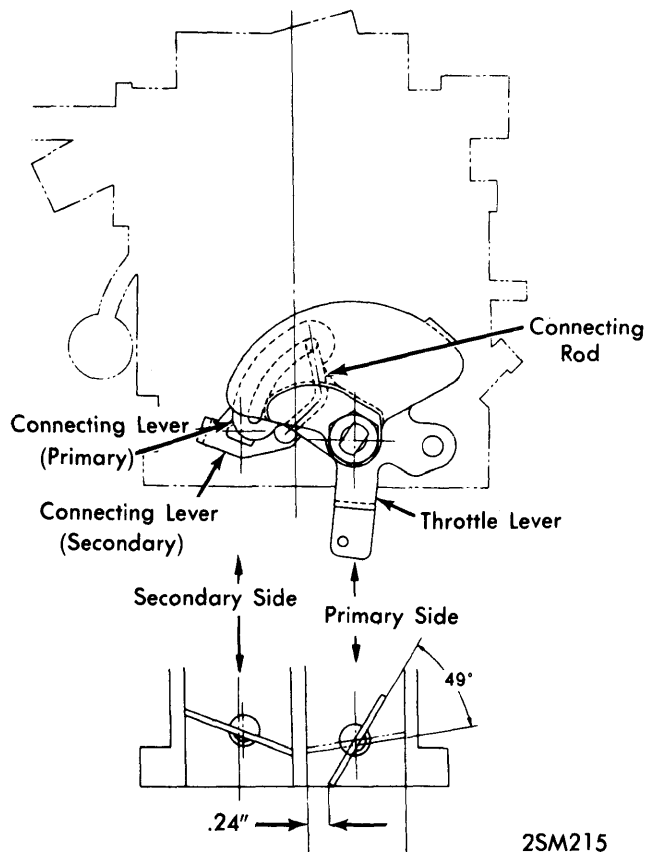


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CHOKE-TO-PRIMARY THROTTLE LINKAGE

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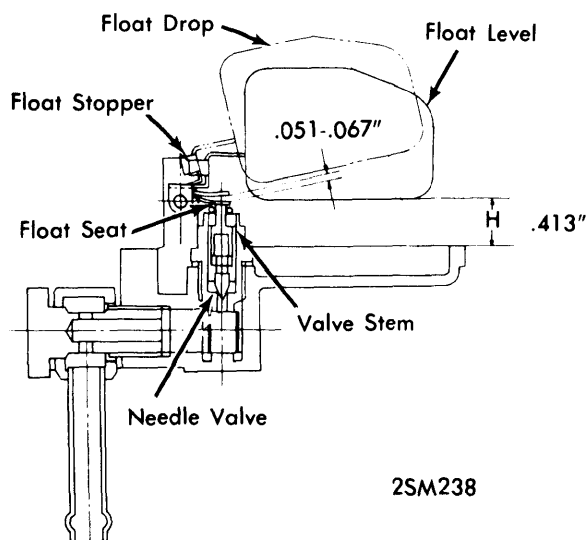
Primary-to-Secondary Linkage – Measure clearance between the primary throttle valve and bore with connecting rod contacting the groove end of connecting lever. Set to specification and adjust by bending connecting rod which links throttle valves.



PRIMARY-TO-SECONDARY THROTTLE LINKAGE

FLOAT LEVEL ADJUSTMENT (ALL MODELS)

Float Level – Turn choke chamber upside down, raise float and then lower it slowly. When float seat makes contact with



FLOAT LEVEL ADJUSTMENT

valve stem of needle valve, measure distance "H" (see illustration). Set to specification and adjust by bending float seat.

Float-to-Needle Clearance – With float bowl cover inverted, raise float and measure clearance between float seat and needle valve stem. Adjust to specification by bending the float stopper.

DATSUN CARBURETOR ADJUSTMENTS

Automatic Choke – Open throttle a small amount and close choke valve. Now release throttle. Loosen choke cover screws and turn cover clockwise (open). Turn cover back until specified clearance is obtained between upper edge of choke valve and air horn.

Choke Vacuum Brake – Open throttle a small amount and close choke. Release throttle and remove vacuum line from diaphragm. Apply a vacuum to diaphragm and measure clearance between choke valve and air horn. If adjustment is necessary, bend diaphragm bracket or actuating link.

Choke Unloader – Open throttle valve completely. Remove slack in unloader lever by closing choke until stopped by unloader linkage. Check clearance between air horn and choke valve. If adjustment is necessary, remove choke cover, note index setting, and bend unloader tang as required.

Choke Electric Circuit Check – 1) Turn ignition switch on and connect a test lamp to ground and blue lead on choke. There should be no current to choke, if current is present, replace relay.

2) Start engine with test light connected to blue lead, current should be present. If test shows system operating correctly, no further tests are required.

3) Check fusible link, if fuse is ok, check relay as follows: With key on, current to relay through white-blue striped wire should be present. Black wire should be grounded. With engine operating, current should flow to relay from yellow wire. The relay should operate closing the switch to allow current to flow through blue wire to choke.

OVERHAUL

REMOVAL & INSTALLATION

1) Remove air filter unit, disconnect fuel line, vacuum line, automatic choke wires (Datsun), choke cable (Subaru) and anti-dieseling solenoid wires (if equipped).

2) Remove throttle lever or cable. Remove carburetor flange nuts and carburetor. To install, reverse removal procedure.

DISASSEMBLY

1) Main jets and needle valves on both primary and secondary sides are accessible from outside carburetor. Remove for service as necessary.

2) Remove throttle return spring, accelerator pump lever and connecting rod. Remove spring hanger and choke linkage if equipped and choke housing. Remove carburetor main body cover being careful not to damage float.

3) Remove accelerator piston, return spring and check ball. Remove float, needle valve and filter. Remove air bleeds and emulsion tubes. Remove slow jet and power valve. Remove drain plug and main jet.

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4) Remove throttle body from main body with three set screws. Do not remove anti-dieseling solenoid unless it is necessary to change. It is preferred not to disassemble the throttle body unless a throttle valve or rod is being replaced.

CLEANING & INSPECTION

Replace all parts contained in service overhaul kits. Soak metal parts (except anti-diesel valve) in a suitable cleaner. Blow air through passages to clean and dry. Inspect all parts for wear and replace as necessary.

SUBARU CARBURETOR SPECIFICATIONS

Application	Specification
Float Level .....	.413"
Float Seat-to-Valve Stem Clearance .....	.051-.067"
Throttle Valve Clearance	
With Choke Closed .....	.046"
Primary-to-Secondary Throttle	
Linkage Opening Touch (Throttle Clearance) .....	.24"
Accelerator Pump	
Discharge .....	.037 Cu. In. (.6 cc)/Stroke
Primary Jet Sizes ^①	
Main Jet.....	#95
Main Air Bleed	#60
Slow Jet	#43
Slow Air Bleed	#200
Power Jet	#45
Secondary Jet Sizes ^①	
Main Jet	#155
Main Air Bleed	#90
Slow Jet	#60
Slow Air Bleed	#70

① — Jet and air bleed bore sizes increase as the number stamped on each jet becomes higher.

REASSEMBLY

Reverse disassembly procedure and note following: Check each link system for smooth operation. Adjust float and linkage as required.

DATSUN CARBURETOR SPECIFICATIONS

Application	Specification
Choke Adjustment	
Set Air Horn Clearance (Below 65°F) .....	.025"
Set Choke Cover (Above 65°F)	①
Choke Vacuum Brake Clearance .....	.042"
Choke Unloader Clearance .....	.079"
Fast Idle Throttle Bore Clearance	
Man. Trans. ....	.033"
Auto. Trans. ....	.044"
Idle Mixture (Turns Out)	2
Float Level .....	.041"
Accelerator Pump Injection	
Volume .....	.037 Cu. In.
Primary Jet Sizes	
Main Jet	#97
Main Air Bleed	#80
Slow Jet	#43
Slow Air Bleed.....	#215
Power Jet	
DCH306-1A, 3A	#45
DCH306-1, 3	#50
Secondary Jet Sizes	
Main Jet	#140
Main Air Bleed	#80
Slow Jet	#50
Slow Air Bleed	#100

① — Index cover to longest mark on choke housing if ambient air temperature is higher than 65°F.