SOLEX 28-32 DID 2-BARREL

Dodge Colt (1971-73)

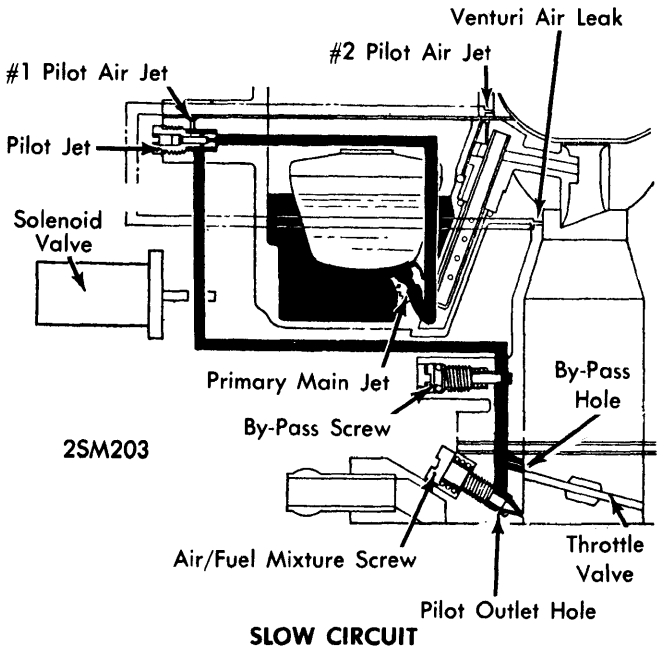
DESCRIPTION

The Solex 28-32 DID is a 2-barrel, downdraft design carburetor. This 2-stage type unit utilizes primary and secondary circuits. Components included in this unit are a throttle positioner (1971-72 models), solenoid fuel cutoff, water-heated automatic choke, diaphragm-type accelerator pump, vacuum-actuated secondary circuit, idle compensator (1971-72 models), and a water-heated throttle body.

OPERATION

SLOW CIRCUIT

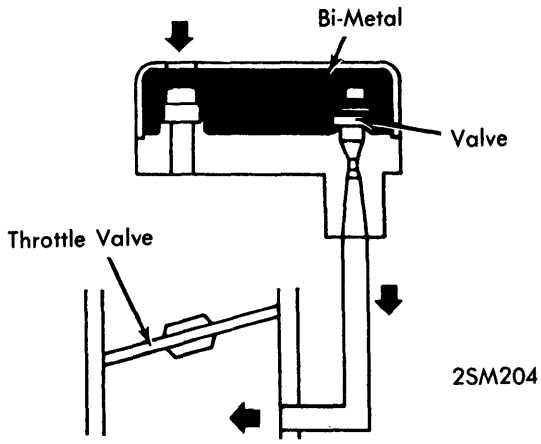
The function of slow circuit is to deliver proper air/fuel mixture for smooth engine idling, off idling, and low-load operations. Flow of fuel from float chamber is past the primary main jet, through pilot air jet No. 1, and pilot screw (air/fuel mixture screw) where it is metered into venturi, below throttle valve. This mixture is adjusted for idling by means of the pilot screw. By-pass screw adjusts the mixture for off-idling and medium load operation.



SLOW CIRCUIT

IDLE COMPENSATOR (1971-72)

When carburetor temperature is high, during idle, there exist an unstable air/fuel mixture (rough idle). To compensate for this overrich mixture, air is fed through an idle compensator valve into choke bore.



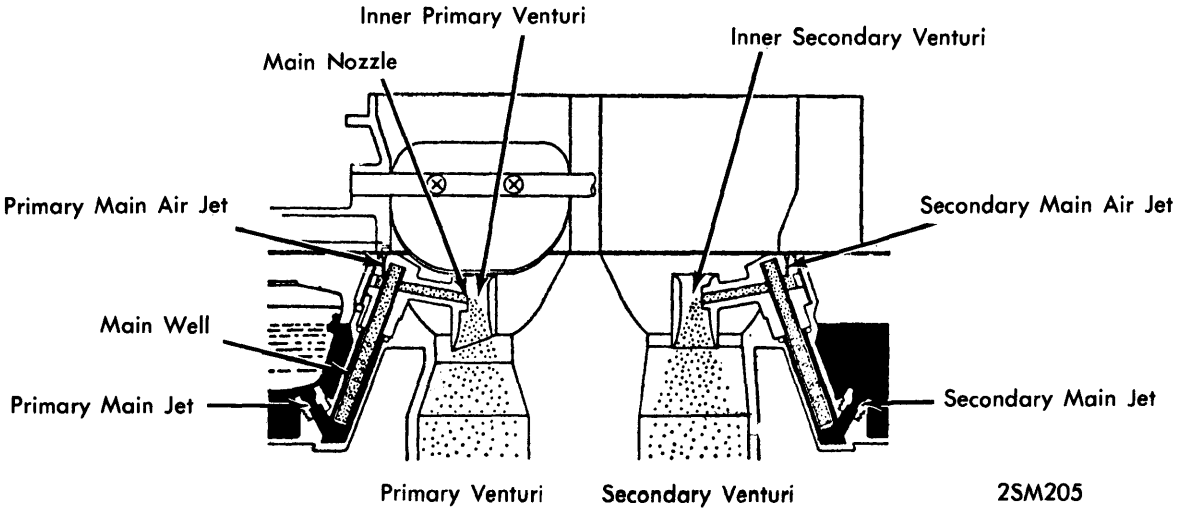
IDLE COMPENSATOR (1971-72)

FUEL CUTOFF SOLENOID

The engine has a tendency to diesel when the engine is overheated. To prevent dieseling, an electric fuel cutoff valve is used. The function of this valve is to shut off fuel supply, when ignition switch is turned to "OFF" position.

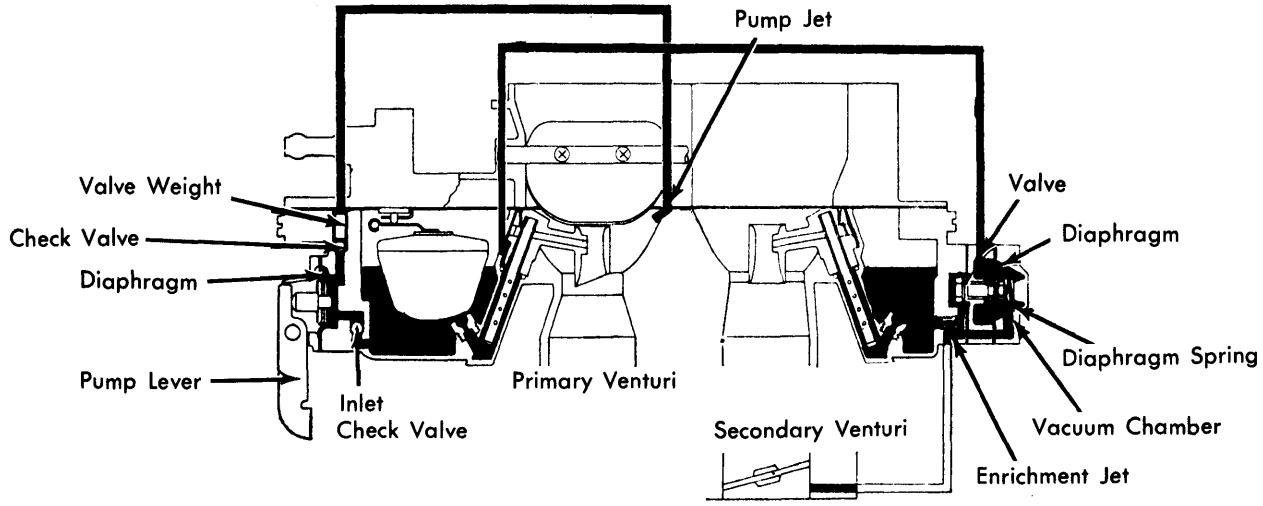
MAIN CIRCUITS

Carburetor has a primary and secondary circuit. Primary circuit is used up to medium-load range. If more power and speed are needed the secondary circuit is also operated. As throttle valve is opened wider, air velocity increases inside inner venturi. Because of this increased vacuum, fuel rises from the float chamber, through the main jet, up through the main well and is mixed with air from main air jet to form an air/fuel mixture. Mixture then passes into inner primary venturi. If throttle is opened sufficiently wide, then secondary circuit will also operate in same way.



PRIMARY & SECONDARY MAIN CIRCUITS

SOLEX 28-32 DID 2-BARREL (Cont.)



ENRICHMENT SYSTEM & ACCELERATOR PUMP

ENRICHMENT CIRCUIT

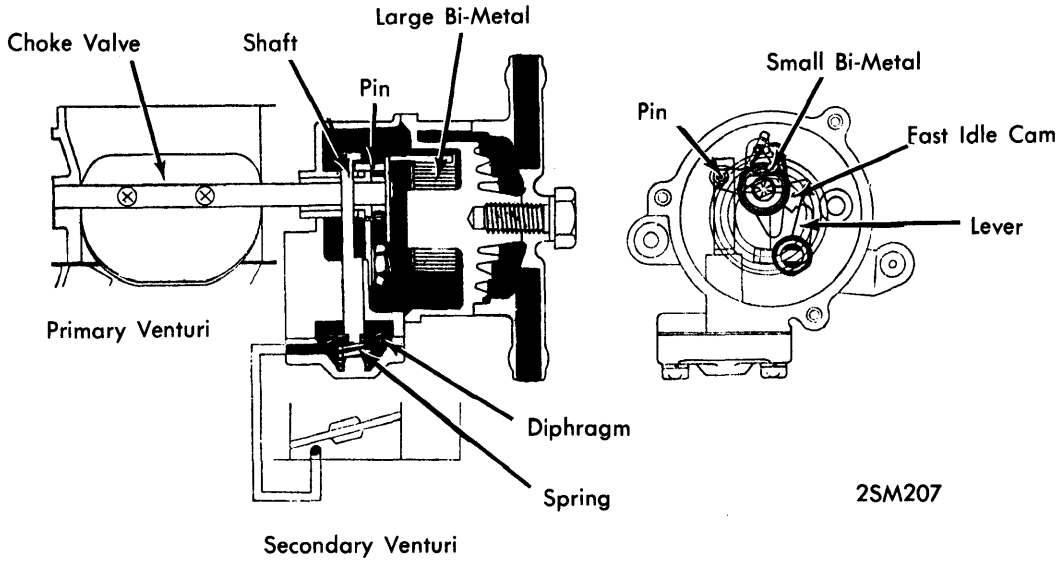
Function of this circuit is to supply additional quantities of fuel to primary main circuit, under heavy load conditions. Under normal driving conditions, there is a high vacuum, which is enough to overcome spring and keep the valve closed. But under heavy load, intake manifold vacuum decreases, and spring pressure is strong enough to open valve. When valve opens, fuel from secondary circuit float chamber is metered through enrichment jet, passes through the valve, enters passage in primary main circuit, and is mixed with some air into a form of air/fuel mixture and then introduced into engine to overcome lean mixture.

ACCELERATOR CIRCUIT

Fuel is drawn into accelerator circuit through an inlet check valve. When throttle is suddenly opened, pump lever operates a diaphragm to compress fuel. The compressed fuel is jetted into main bore to temporarily enrich the air/fuel mixture. This provides for smoother acceleration and better transition between low and high speed running.

AUTOMATIC CHOKE

To meet the conditions of starting a cold engine, a coolant heated bi-metal choke is used. Coolant, depending on its temperature, actuates the bi-metal to operate linkage to choke valve. Choke valve is installed off center so that when closed, fuel will be supplied chiefly through main nozzle. After engine is started, vacuum from primary venturi increases until it overcomes spring force of the automatic choke. At this time, pin in the interlock with the shaft, moves toward opening butterfly valve, so that an overrich mixture is prevented. When coolant (and thus engine) temperature reaches a satisfactory level, the bi-metal does not exert a closing force on choke valve and valve stays open.



AUTOMATIC CHOKE

SOLEX 28-32 DID 2-BARREL (Cont.)

THROTTLE POSITIONER (1971-72)

For exhaust emission purposes, carburetor is equipped with a throttle positioner. Controlled by intake manifold vacuum and speed sensing device, positioner holds throttle valve open during periods of no-load (deceleration). *For further information, see Dodge Colt Throttle Positioner & Fuel Cutoff in EXHAUST EMISSION Section.*

ADJUSTMENTS

IDLE ADJUSTMENT (HOT)

NOTE — Curb idle screw is difficult to see. It is located on a boss under the choke housing. Before checking curb idle adjustment, run the engine up to 2500 RPM 2 or 3 times.

With engine at normal operating temperature, turn pilot screw (air/fuel mixture screw) and primary throttle screw alternately until best idle at 800-850 RPM is achieved. If CO meter is available, adjust to CO content of 3.5-5.0%. After correct idle is achieved, throttle positioner should be adjusted.

THROTTLE POSITIONER (1971-72)

NOTE — The throttle positioner screw is located between curb idle and fast idle screws. This screw can be easily seen and is often confused with the curb idle adjusting screw.

1) Remove vacuum pipe between air cleaner and intake manifold at intake manifold, and plug hole. Disconnect negative (green) wire from terminal of solenoid and raise engine speed to 2500 RPM. Ground negative wire to carburetor and set solenoid to ON.

2) Release throttle lever. Make sure throttle positioner is set for 1350-1450 RPM. If necessary, adjust with adjusting nut.

FAST IDLE

NOTE — Fast idle screw is located below throttle bore shaft.

Engage fast idle cam in third stage and set fast idle adjustment screw for 1700-1750 RPM.

FUEL LEVEL (1971-72)

A sight glass is fitted in float bowl. Fuel level should be adjusted to center in sight glass. Adjustment of float is accomplished by bending float support plate.

FUEL LEVEL (1973)

Check fuel level through sight glass on float chamber. Fuel level should be even with center of glass. If fuel level is not as specified, increase or decrease packing under needle valve seat until correct fuel level is obtained. A sheet of packing .039" thich will change float level .118".

FUEL CUTOFF SOLENOID TEST

NOTE — In some cases, a condition of intermittent or consistent engine stalling at idle can be attributed to the fuel shut-off solenoid. If solenoid is faulty, it may shut off fuel intermittently, causing a stalling condition.

Remove solenoid from carburetor. Do not disconnect ground wire from top of carburetor. Connect a 12 volt power supply to positive lead and let solenoid remain actuated for at least 5 minutes. Make and break connection several times to be sure plunger retracts when current is applied. Replace solenoid if plunger is in retracted position when current is applied.

OVERHAUL

DISASSEMBLY

NOTE — Do not remove inner venturi, by-pass screw (sealed with white paint), throttle shaft or valve. Do not disassemble parts of the automatic choke body.

1) Disconnect carburetor linkage, water hose to choke body, and choke rod. Remove idle compensator (1971-72 models), float chamber cover, float, and related parts. Disassemble and remove depression chamber. Remove throttle positioner (1971-72 models).

2) Remove accelerator pump, cover, spring, and membrane from main body. Take out accelerator pump weight and ball. Remove enrichment cover, spring, and valve body, but do not disassemble valve body. Remove both main jet and pilot jet.

3) Disassemble throttle body by removing throttle lever nut, throttle lever, collar, abatement plate, collar, and intermediate lever.

INSPECTION

1) Clean all parts in suitable solvent. Blow all parts and passage ways dry with compressed air. Check all parts and carburetor body for cracks, wear, and abrasions. Check all membranes and valve seats for leakage and damage to contact surfaces. Test linkage for damage and proper operation.

2) Depress connecting rod of depression chamber, close vacuum passage with finger, release connecting rod, and check for leakage at diaphragm. On 1971-72 models, check throttle positioner solenoid and valve seat. If seat is worn or any foreign matter is present, boost pressure continues to act on throttle position and engine will not return to prescribed idle speed.

REASSEMBLY

1) Oil choke shaft and throttle shaft interlocking section. Reassemble throttle body and all related parts, making sure that all parts move smoothly. Set throttle stop screw with throttle in full closed position and give adjustment screw additional 1/4 turn. Be sure to secure it. with lock nut.

2) Reassemble main body and related parts, making sure that pilot jet "O" ring fits well into groove. Install enrichment valve, accelerator pump, and pump cover.

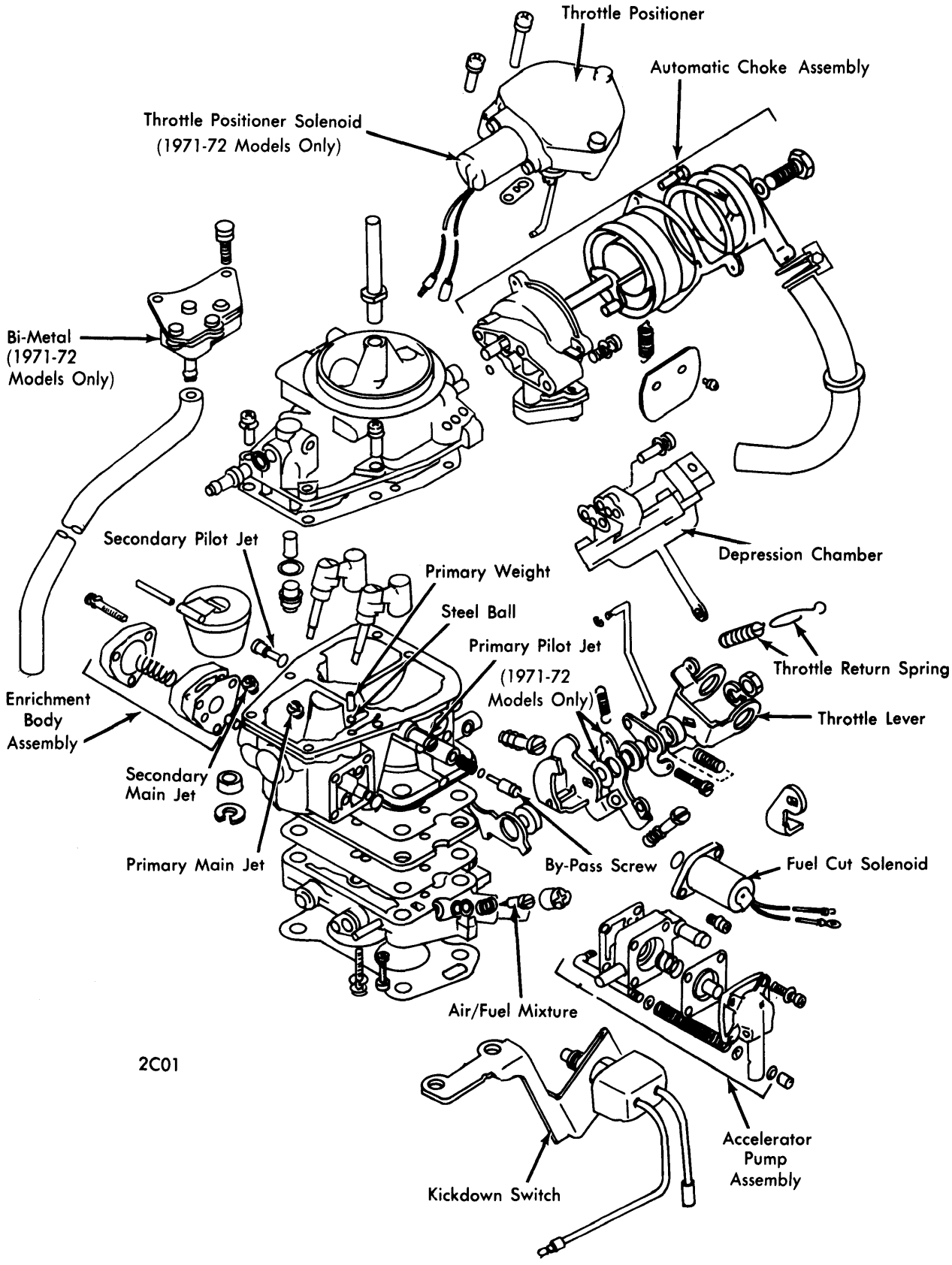
3) Reassemble main body to throttle body. Install idle compensator (1971-72 models), depression chamber to float cover, and automatic choke assembly to body. *NOTE — Automatic choke index setting is proper if choke butterfly valve is at fully closed position at room temperature (77°F). For fast idle adjustment, see Adjustments.*

CARBURETOR SPECIFICATIONS

Idle RPM	800-850 RPM
Fast Idle	1700-1750 RPM
Pilot Screw	1 1/4-2 turns
By-pass Screw	1-1 1/2 turns
Throttle Positioner	1350-1450 RPM
CO Level	3.5-5.0%
Float Level	①
Throttle Bore-to-Valve	.039-.047"
Choke Butterfly	②

① — Float Level is adjusted to show fuel in center of sight glass.
② — Fully closed at 77°F.

SOLEX 28-32 DID 2-BARREL (Cont.)



EXPLODED VIEW OF CARBURETOR