1970-72 Carter BBD 2-Barrel

CHRYSLER CORP.

Carter Carburetor No.

1970

Application	Man. Trans.	Auto. Trans.
318" V8 "C.A.S." Carb.①	4721S	4722S
With A/C①		4895S
"E.C.S." Carb.①	4723S	4724S
383" V8 "C.A.S." Carb.②	4725S	4726S
With A/C②		4894S
"E.C.S." Carb.②	4727S	4728S

1971

318" V8①	4957S	4958S
383" V8②	4961S	4962S
400" V8②		4962S

1972

318" V8 (Exc. Calif.)①	6194S	6150S
(Calif. Only)①	6151S	6152S

① – BBD 1 1/4" Carburetor.
② – BBD 1 1/2" Carburetor.

▶ CHANGES, CAUTIONS, CORRECTIONS

▶ *1970 CARBURETORS NOTE* – "C.A.S." (Cleaner Air System) carburetors are used on all 1970 cars except those first sold in California. "E.C.S." carburetors are used on all 1970 cars first sold in California. Major difference in carburetors is the venting of fuel bowl vapors. "C.A.S." carburetors vent fuel bowl vapors to underhood air. "E.C.S." carburetors vent fuel bowl vapors through a hose to the crankcase. All 1971-72 carburetors are vented to the crankcase.

▶ *TUNE-UP CARBURETOR NOTE* – Do not tamper with or remove plastic limiter caps attached to idle mixture adjusting screws. If limiter caps and idle mixture screws are removed for carburetor overhaul, fuel bowl or throttle body replacement, special procedure is required to correctly readjust idle mixture screws.

CARBURETOR IDENTIFICATION

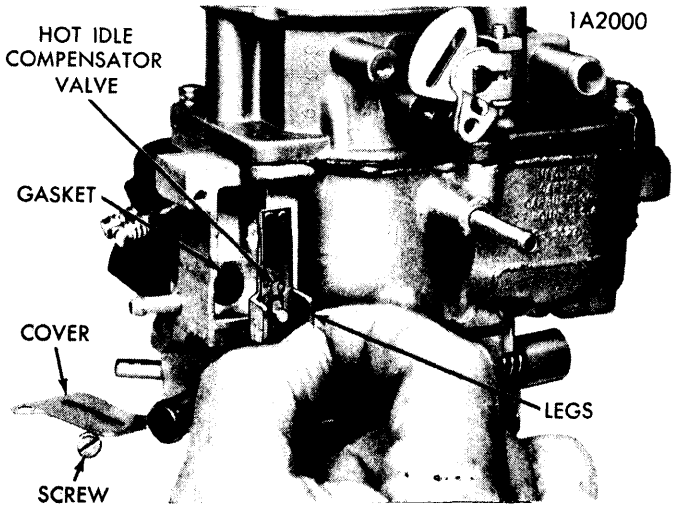
Carter carburetor number is stamped on metal tag attached to carburetor by one air horn screw.

DESCRIPTION

Two barrel downdraft types with remote "Well Type" automatic choke coil mounted on manifold. Idle mixture screws have idle limiter caps installed that limit range of adjustment. Other features are as follows:

Distributor Ground Switch – (Used on BBD 1½") – This switch controls distributor advance solenoid and consists of an insulated contact button serving as a stop for the idle speed adjusting screw. At closed throttle when screw contacts button, solenoid is grounded and shuts off vacuum to distributor vacuum advance diaphragm, thus retarding ignition timing. No adjustment is required.

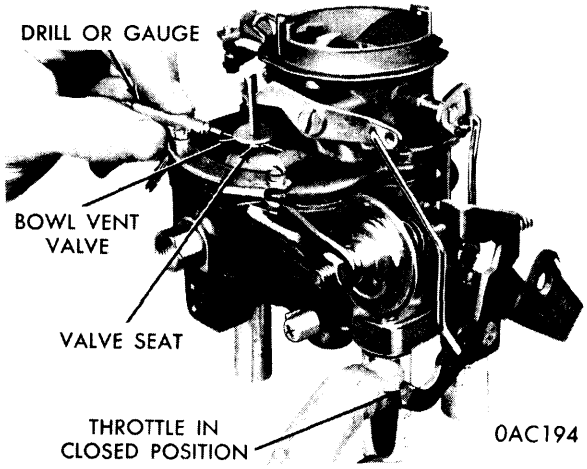
Hot Idle Compensator Valve – All carburetors are equipped with this bimetal thermostatic valve assembled in recess on side of main body casting. Valve is an air bleed which relieves an overrich condition at idle caused by excessive heat.

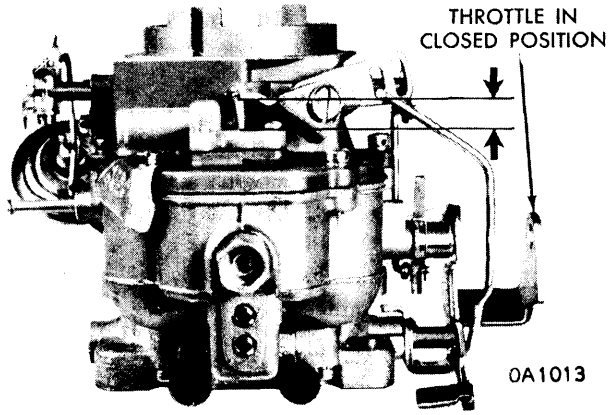


HOT IDLE COMPENSATOR VALVE (TYPICAL)

Idle Retard Dashpot – (Used on BBD 1¼") – Carburetors on vehicles equipped with manual transmission only make use of a dashpot to retard the return of the throttle to idle position.

Bowl Vent Valve – Used on all carburetors. Valve is enclosed and fuel bowl vapors are vented through the valve to a hose connected to the crankcase air cleaner. On BBD 1¼" carburetors, no separate adjustment of this valve is required. Adjustment is correct when accelerator pump is correctly adjusted.





CHECKING BOWL VENT OPENING (1 1/4" C.A.S. & E.C.S. CARBS.)

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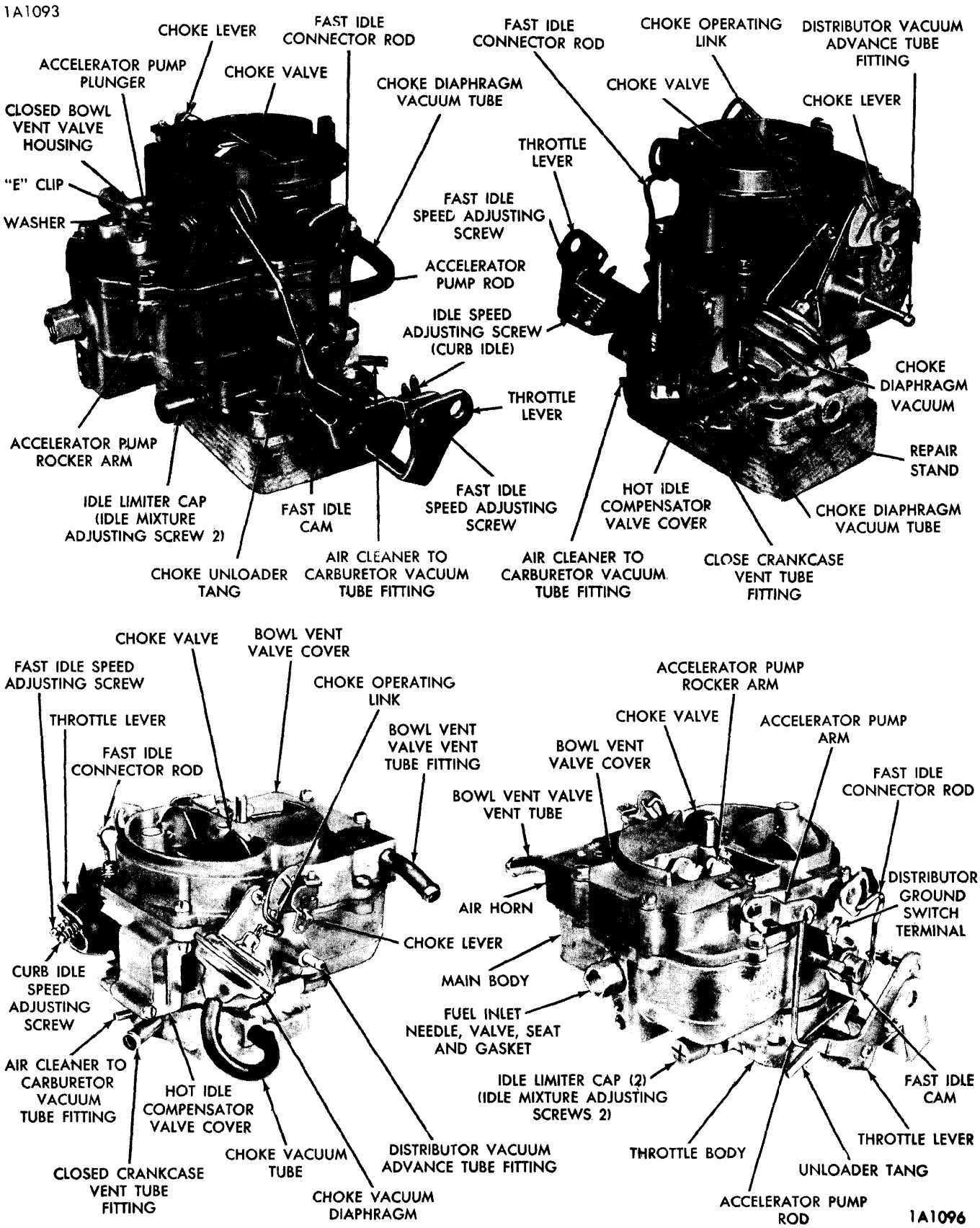


1 1/2" CARBURETOR ASSEMBLY (E.C.S.)

1970-72 Carter BBD 2-Barrel (Cont.)

ADJUSTMENT

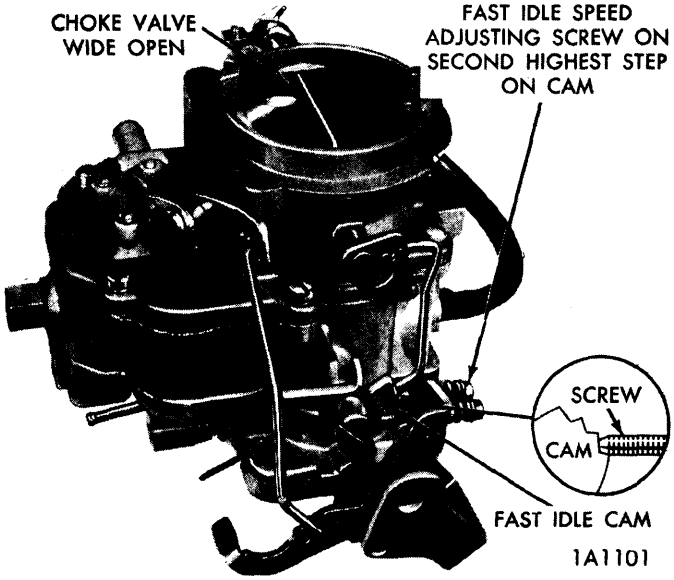
Idle Speed & Mixture

Idle Speed – With engine at normal operating temperature, automatic transmission in Neutral (not Park), air cleaner in position and A/C Off, adjust carburetor idle speed screw to obtain specified RPM (see Specifications).

Idle Mixture – Exhaust analyzer must be used to ensure correct air-fuel mixture setting.

Fast Idle Speed

After correctly adjusting curb idle speed and with operating conditions as previously stated, position fast idle screw on second step of fast idle cam. Adjust fast idle screw to obtain specified fast idle speed (see Specifications).



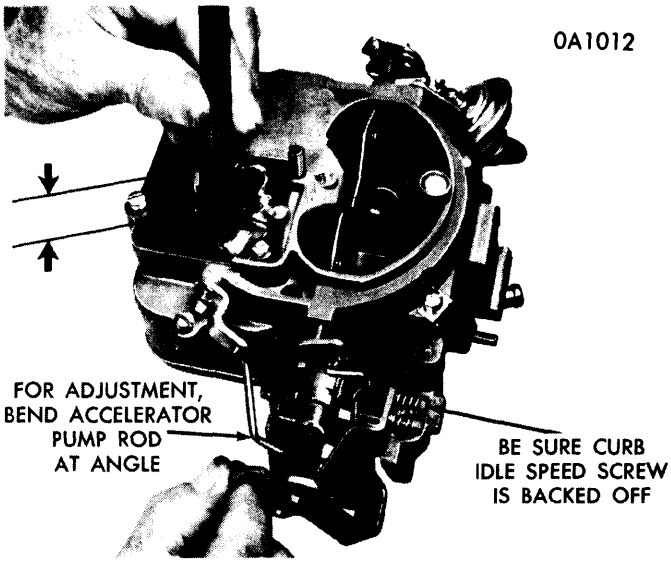
FAST IDLE ADJUSTMENT (TYPICAL)

ACCELERATING PUMP & BOWL VENT (1970 1 1/4" CARBURETORS)

NOTE – Three holes provided in throttle lever for pump rod engagement for pump stroke setting as indicated below and three grooves are provided in pump plunger shaft for corresponding vent valve pin setting (both settings must be changed at same time). Pump arm has two holes and pump rod must be connected in correct hole on each carburetor.

Pump Stroke Setting – Pump connector rod should be assembled in center hole (medium stroke) of throttle lever and bowl vent valve clip installed in center groove of pump plunger stem for standard setting. If connector rod moved to outer hole (maximum stroke) or inner hole (minimum stroke) of throttle lever, valve clip must be moved correspondingly to lower groove or upper groove of pump plunger stem.

Bowl Vent (1970 "C.A.S." Carbs.) – Back off idle speed screw so that throttle valves are tightly closed. Make certain fast idle screw is not resting on fast idle cam. Use drill gauge (see Specifications) to measure clearance between vent valve and valve seat on bowl cover. If adjustment required, adjust by bending pump rod at lower angle. *NOTE – Pump stroke will be correct when bowl vent clearance correctly adjusted.*



ACCELERATOR PUMP ADJUSTMENT (1 1/2" CARB.)

Bowl Vent (1970 "E.C.S." Carbs.) – Same procedure as "C.A.S." carburetors except that distance is measured between top surface of vent valve plastic housing on bowl cover to top of pump plunger stem.

ACCELERATING PUMP & BOWL VENT (1970 1 1/2" CARBURETORS)

NOTE – Pump travel must be checked and adjusted before adjusting bowl vent. Pump stroke setting must be correctly set when checking pump travel.

Pump Stroke Setting – Standard pump setting is with pump connector rod engaged in outer hole of throttle lever and this setting must be used when checking pump travel and bowl vent setting. Center hole provides medium pump stroke and inner hole minimum pump stroke.

Pump Travel (All 1970 Carburetors) – Back off idle speed adjusting screw so that throttle valves will completely shut in bore. Measure distance from top surface of air horn to top of pump plunger stem (see Specifications). If necessary, adjust by bending pump connector rod at lower angle.

Bowl Vent (1970 "C.A.S." Carbs.) – After checking pump travel, and with throttle valves tightly closed, use drill gauge (see Specifications) to measure clearance between vent valve and valve seat on bowl cover (measure at outer edge or greatest clearance point on valve). If clearance not correct, adjust by bending vent valve lifter arm.

Bowl Vent (1970 "E.C.S." Carbs.) – Remove vent valve cover for access to vent valve. With pump travel correctly adjusted and with throttle valves tightly closed, use a scale to measure from top of rubber tip of vent valve to top edge of air horn casting. If adjustment necessary (see Specifications), use a suitable tool to bend vent valve lift arm. *CAUTION – Do not bend vent valve leaf spring. Improper valve operation will result.*

ACCELERATOR PUMP & BOWL VENT (1971-72 1 1/4" CARBURETORS)

With accelerator pump operating rod in medium stroke hole in throttle lever, open choke valve so that fast idle cam allows throttle valves to seat in bore. With throttle valves tightly closed, measure distance from air cleaner gasket surface of air horn to top of accelerator pump rod. If measurement not as specified (see Specifications), bend pump operating rod at lower bend.

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CARBURETOR ADJUSTMENT SPECIFICATIONS

Carter Carb. No.	Idle Speed (Engine RPM) Hot①	Idle Speed (Engine RPM) Fast②	Fast Idle Cam Position	Float Level Setting	Pump Travel Setting	Bowl Vent Setting	Unloader Setting	Vacuum Break Setting	Auto. Choke Setting
4721S	750	1600	#41	1/4"	③	1/32"	1/4"	#20	Index
4722S	700	2000	#41	1/4"	③	1/32"	1/4"	#20	Index
4723S	750	1600	#41	1/4"	③	9/16"	1/4"	#20	Index
4723S	700	2000	#41	1/4"	③	9/16"	1/4"	#20	Index
4725S	750	1700	#28	5/16"	1.00"	1/16"	1/4"	#20	2-Rich
4726S	650	1700	#28	5/16"	1.00"	1/16"	1/4"	#28	2-Rich
4727S	750	1700	#28	5/16"	1.00"	5/32"	1/4"	#20	2-Rich
4728S	650	1700	#28	5/16"	1.00"	5/32"	1/4"	#28	2-Rich
4894S	650	1700	#28	5/16"	1.00"	1/16"	1/4"	#28	2-Rich
4895S	700	2000	#41	1/4"	③	1/32"	1/4"	#20	Index
4957S	750	1600	#41	1/4"	.200"	③	1/4"	#20	Index
4958S	700	1900	#41	1/4"	.200"	③	1/4"	#20	Index
4961S	750	1900	#20	5/16"	1.00"	3/16"	1/4"	#20	2-Rich
4962S	700	1700	#20	5/16"	1.00"	3/16"	1/4"	#28	2-Rich
6149S	750	1700	#41	1/4"④	.225"	③	1/4"	#25	Fixed
6150S	750	1900	#41	1/4"④	.225"	③	1/4"	#25	Fixed
6151S	750	1800	#41	1/4"④	.225"	③	1/4"	#25	Fixed
6152S	700	2000	#41	1/4"④	.225"	③	1/4"	#25	Fixed

① – Auto. Trans. in "N", A/C OFF.
② – Fast idle screw on second step of fast idle cam.
③ – Not required.
④ – At center of floats.

ACCELERATOR PUMP (1971 1 1/2" CARBS.)

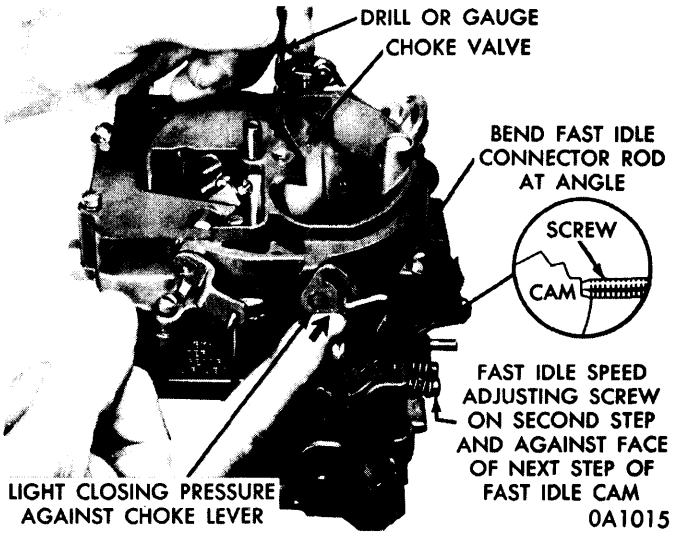
With pump connector rod in outer hole of throttle lever, back out curb idle speed screw and open choke valve so that fast idle cam allows throttle valves to seat in bore. With throttle valves tightly closed, measure distance between top of air horn and end of plunger shaft. Bend pump operating rod if measurement not as specified (see Specifications).

BOWL VENT VALVE (1971 1 1/2" CARBS.)

With bowl vent valve cover removed and pump operating rod in long stroke hole in throttle lever, open choke valve so that fast idle cam allows throttle valves to close to curb idle position. Use a narrow rule to measure the distance from top of bowl vent valve (rubber tip) to top of air horn casting. Bend bowl vent lift arm if measurement not as specified (see Specifications). *CAUTION – Do not bend bowl vent valve leaf spring during bending operation.*

Fast Idle Cam Position

With fast idle speed adjusting screw on second highest step of fast idle cam, move choke valve toward closed position with light pressure on choke shaft lever. With specified drill (see Specifications) inserted between choke valve and air horn wall, a slight drag should be felt as drill is withdrawn. Bend fast idle connector rod at lower angle if adjustment required.



FAST IDLE CAM POSITION (TYPICAL)

Vacuum Break (Kick)

NOTE – Adjustment can be made with carburetor on engine and engine running (to supply vacuum) as follows:

Disconnect fast idle linkage so choke can be closed to break (kick) position with carburetor throttle at curb idle. Insert specified drill (see Specifications) between choke valve and air horn wall and apply sufficient closing pressure on choke rod lever to provide minimum choke valve

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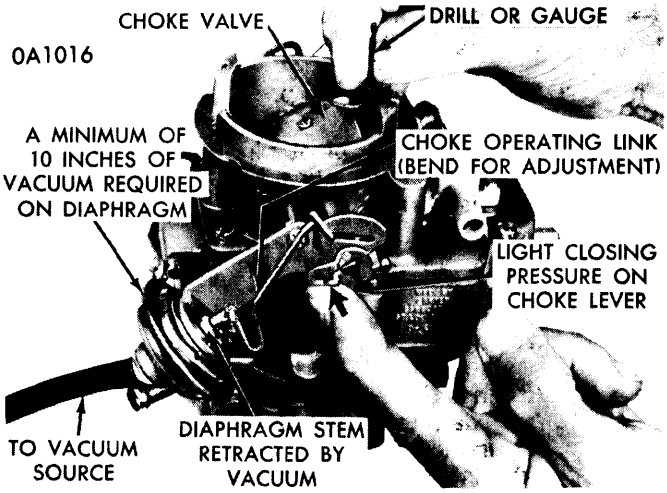
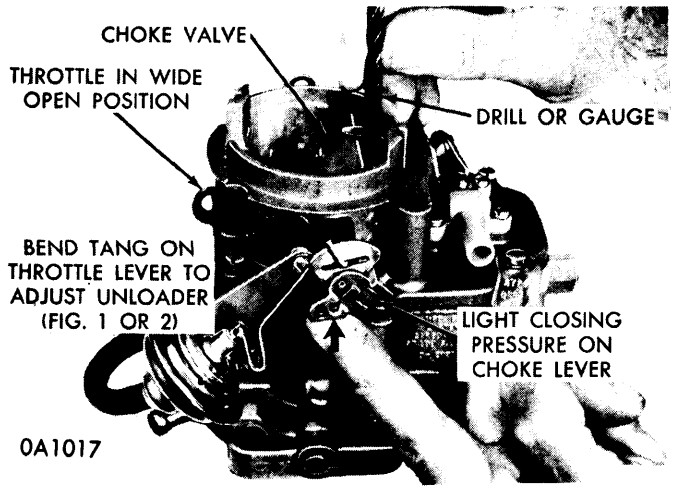
opening without distorting diaphragm link. *NOTE – Diaphragm internal spring must be fully compressed which will be noted by extension of diaphragm stem.* If slight drag not felt as drill is withdrawn adjust by opening or closing "U" bend of diaphragm link. *CAUTION – Do not apply twisting or bending force to diaphragm. With no vacuum applied, choke valve must move freely between open and closed positions.*



VACUUM KICK ADJUSTMENT (TYPICAL)

Unloader

Hold throttle valves in wide open position, insert specified drill or gauge (see Specifications) between upper edge of choke valve and air horn wall. Move choke valve toward closed position with light pressure on choke shaft lever. If slight drag is **not** felt as drill is withdrawn, adjust by bending unloader tang on throttle lever.



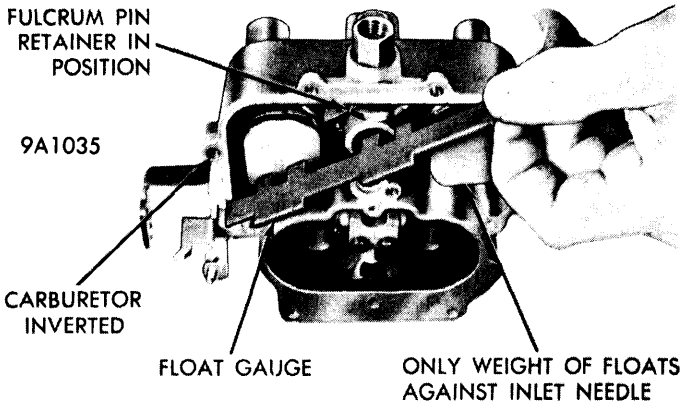
CHOKE UNLOADER ADJUSTMENT (TYPICAL)

Float Level

NOTE–*Float level can be checked with carburetor on engine or on bench as follows:*

On Engine – Disconnect and remove accelerating pump rod, disconnect choke rod at choke lever, remove air horn attaching screws and lift air horn straight up and off main body, remove air horn gasket. Make certain bowl filled with fuel so that float lever lip presses firmly against needle, seat fulcrum pin by pressing on fulcrum pin retainer. Use suitable gauge (T-109-280) or "T" scale to measure distance from top surface of bowl to crowned top of each float at center (see Specifications). Adjust as directed in "on bench" procedure below.

On Bench – With bowl cover and gasket removed, invert carburetor so that weight of float only is holding needle valve against seat. Seat fulcrum pin by pressing on fulcrum pin retainer. Use suitable scale (T-109-280) or "T" scale to measure distance from top surface of bowl to crowned top of each float at center. If measurement not as specified (see Specifications), hold floats down in bottom of bowl so they do not contact intake needle and bend float lever lip as required. *CAUTION – When making adjustment, do not allow lip to press against intake needle which has synthetic rubber tip. Lever lip must be perpendicular to intake needle within 10°.*



CHECKING FLOAT SETTING (TYPICAL)

Automatic Choke

Carburetors have conventional choke valve in air horn actuated and controlled by a remote thermostatic coil in well in manifold. Unit is serviced as an assembly and should not be adjusted. If unit has been tampered with, adjustment may be reset as follows:

1) With choke coil unit removed from well, loosen locknut and turn shaft so that index mark on disc is in alignment with correct mark (see Specifications, not adjustable on 318" Engines) on frame. Retain this setting while tightening locknut.

Dashpot

After idle speed and mixture adjusted, run engine with tachometer attached. Open throttle until actuating tab on throttle lever just contacts dashpot stem (stem must not be compressed). Engine speed should be 2000 RPM. Adjust by turning dashpot in mounting bracket

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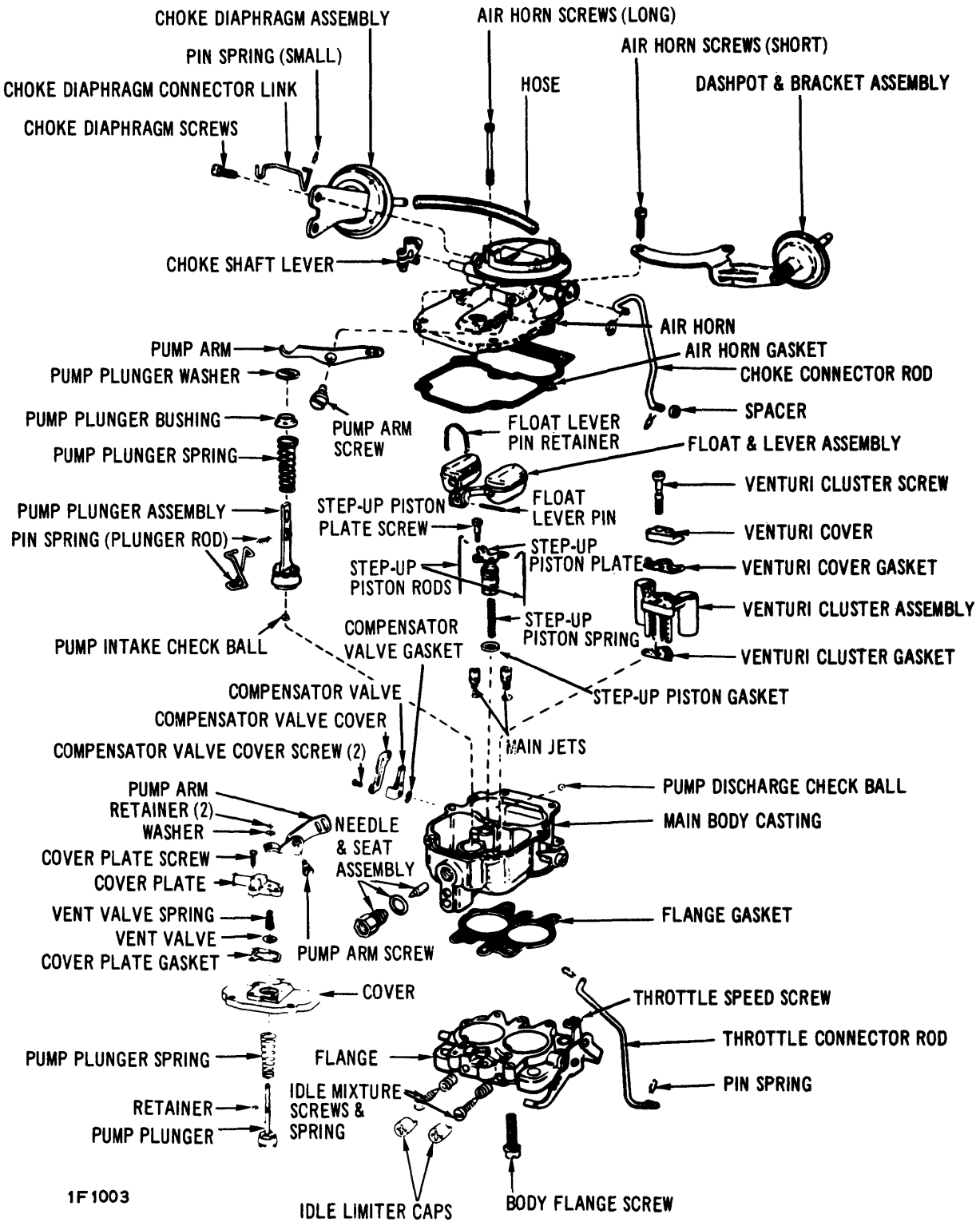

TYPICAL 2-BARREL BBD CARBURETOR

1970-72 Carter BBD 2-Barrel (Cont.)

OVERHAUL

Disassembly

1) Remove hairpin clips and disengage fast idle connector rod from cam and choke lever. Remove hairpin clips and disengage accelerator rod from throttle lever and pump rocker arm. Remove vacuum hose between carburetor throttle body fitting and vacuum diaphragm.

2) Remove clip from choke operating link and disengage link from diaphragm plunger and choke lever. Remove vacuum diaphragm and bracket assembly and place aside for special cleaning. Remove screws attaching hot idle compensator valve cover to main body, remove cover and lift compensator valve and gasket out.

3) Remove air horn attaching screws, lift air horn straight up and away from main body, discard gasket. On 1½" carburetors, disengage accelerator pump plunger from pump arm by pushing up on bottom of plunger and sliding plunger shaft off hook, slide plunger from air horn and remove compression spring and seat, then remove bowl vent valve cover. On 1¼" carburetors, remove "E" clip and washer from plunger stem and slide accelerator pump plunger out of air horn, remove screws attaching bowl vent housing to air horn, and remove housing, vent valve spring and valve. If old plunger can be used again, or if new one to be installed, place plunger in a jar of clean gasoline or kerosene (to prevent drying out).

4) Remove fuel inlet needle valve, seat, and gasket from main body, lift out float pin retainer, floats and fulcrum pin. Remove step-up piston and retaining screw, slide piston and rods from well. Lift out step-up piston spring and remove step-up piston from bottom of well.

5) Remove main metering jets, then remove venturi cluster screws, lift venturi cluster and jackets up and away from main body and discard gaskets. *NOTE – Do not remove idle orifice tubes or main vent tubes from cluster, they can be cleaned in a suitable solvent and dried with compressed air.*

6) Invert carburetor and drop out accelerator pump discharge check ball and intake check ball (intake check ball is the larger); separate bodies and discard gasket. Remove plastic limiter caps from idle air mixture screws, being certain to count number of turns to seat screws, as the same number of turns (from the seat), must be maintained at reassembly. Remove screws and springs from throttle body.

Cleaning & Inspection

Inspect all parts for excessive wear, replace as necessary. Wash all metal parts in a suitable solvent or cleaner, but do not place diaphragm assembly in any liquid.

Reassembly

Use all new gaskets and reverse disassembly procedures while noting the following.

Idle Mixture Screw & Limiter Cap Installation – Install idle mixture screws and springs in body, tapered portion must be straight and smooth; if tapered portion is grooved or ridged, a new screw should be used. **Do Not use a screwdriver for installation,** turn screws lightly against their seats with fingers, back off the number of turns counted at disassembly and install new plastic limiter caps with tab against stop.

Accelerator Pump Assembly – Check operation as follows: Pour clean gasoline into carburetor bowl (½" deep), operate plunger several times to fill cylinder and expel all air. Use a small brass rod and hold discharge check ball down on its seat. Raise plunger and press downward, no fuel should be emitted from either intake or discharge passage. Fuel emitted from either passage indicates either the presence of dirt or a damaged check ball seat.

Step-Up Piston & Rod Assembly – Be sure step-up rods move freely, each side of vertical position. Carefully guide step-up rods into main metering jets.

Vacuum Kick Diaphragm – Check for internal leakage by depressing diaphragm stem, then placing finger over fitting to seal opening. Release stem, if stem moves more than 1/16" in ten seconds, leakage is excessive and assembly must be replaced.