1975-1979 FUEL SYSTEMS
Carter BBD 2-Barrel

CARBURETOR APPLICATION

1976-1979 AMERICAN MOTORS CO.

Application	[1] Carter Carb. No. Man. Trans.	Auto. Trans.
1976		
258" 6-Cyl.		
Pacer	8073	8067
1977		
258" 6-Cyl.		
Federal	8104	8103
California		7117
1978		
258" 6-Cyl.		
Federal	8129	8128
1979		
258" 6-Cyl.		
Federal	8186	8185, 8221
California	8188	8187

[1] - All carburetor numbers are prefixed "BBD-".

1975-1979 CHRYSLER CORP.

Application	[1] Carter Carb. No. Man. Trans.	Auto. Trans.
1975		
318" V8		
Federal	8000S	8001S, 8064S
California		8003S
1976		
318" V8		
Federal	8071S	8069S, 8077S
California		8070S
1977		
225" 6-Cyl.		
Federal	8127S	8087S
California	8089S	8089S
318" V8		
Federal	8093S	8094S, 8126S 8170S
California		8096S, 8172S
1978		
225" 6-Cyl.		
Federal & Canada	8136S	8137S
318" V8		
Federal & Canada	8175S	
High Altitude		8143S
1979		
225" 6-Cyl.		
Federal	8198S	8199S
318" V8		
Federal	8230S	8245S

[1] - All carburetor numbers are prefixed "BBD-".

CARBURETOR IDENTIFICATION

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

DESCRIPTION

The model BBD carburetor is a 2-barrel downdraft type, incorporating 3 basic fuel metering systems. The idle system provides mixture for idle and low speed operation. The accelerator pump system provides additional fuel for acceleration. The main metering system provides a more economical mixture for normal driving.

The carburetor is also equipped with a fuel inlet system which supplies a constant amount of fuel to provide sufficient fuel to the metering circuits for all engine operating conditions. The choke system (electrically assisted on Chrysler Corp. vehicles) provides temporary enrichment of the air/fuel mixture to aid in starting and running a cold engine.

ADJUSTMENTS

NOTE: For all on-vehicle adjustments not covered in this article, see appropriate TUNE-UP PROCEDURES article.

FLOAT LEVEL

American Motors - 1) Remove air horn. Apply light pressure to float arm, gently seating needle in seat and raising float. *See Fig. 1.*

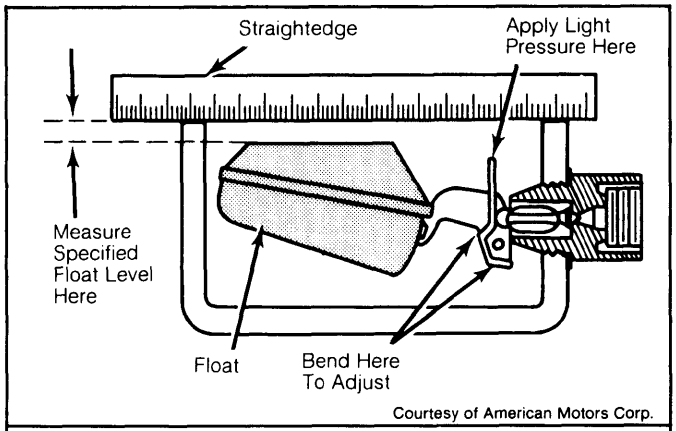


Fig. 1: American Motors Float Level Adjustment

2) Place a straightedge across main body. Measure float level specified clearance between top edge of float and bottom of straightedge.

3) To adjust, bend float tang to obtain specified clearance. Float tang is portion of float that contacts end of float needle valve.

CAUTION: Do not adjust float while tang is resting against needle. Damage to synthetic tip of needle may occur.

Chrysler Corp. - 1) Remove air horn. Turn main body upside-down. Catch accelerator pump check ball as it falls out. Hold float pin retainer in with finger. Weight of float should be closing float needle. *See Fig.2.*

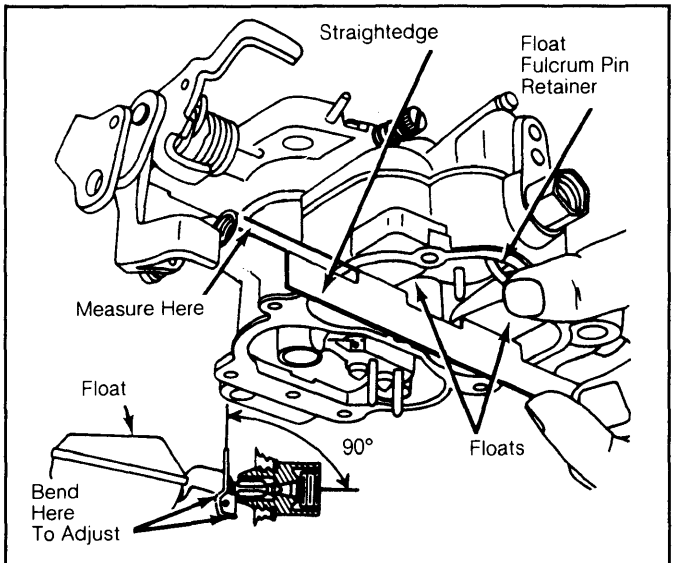


Fig. 2: Chrysler Corp. Float Level Adjustment

2) Place a straightedge across main body. Measure float level specified clearance between straightedge and crown of each float.

3) To adjust, bend float tang to obtain specified clearance. Float tang is portion of float that contacts end of float needle valve.

CAUTION: Do not adjust while tang is resting against needle. Damage to synthetic tip of needle may occur.

VACUUM STEP-UP PISTON GAP QUALIFICATION

NOTE: This adjustment is required if step-up piston is removed or if piston lifter position is changed on actuating rod. This adjustment positions piston in a "mean" or centered position.

1) Remove step-up piston cover plate and gasket. Remove lifter lock screw and piston.
2) Measure piston gap. *See Fig. 3.* If not to specifications, adjust Allen head screw on top of piston.

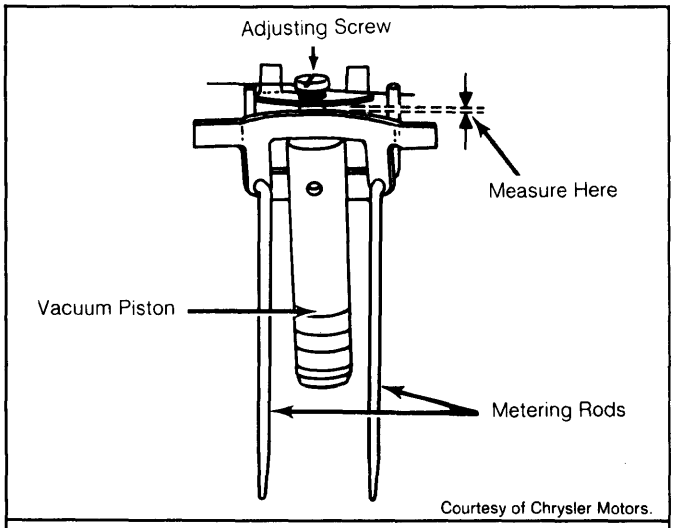


Fig. 3: Vacuum Step-Up Piston Gap Qualification

3) Turning screw clockwise makes mixture richer. Turning screw counterclockwise makes mixture leaner.

VACUUM STEP-UP PISTON

NOTE: Perform VACUUM STEP-UP PISTON GAP QUALIFICATION adjustment first.

1) With vacuum piston installed, back off curb idle speed screw until throttle valves are seated. Count number of turns required to seat throttle valves.

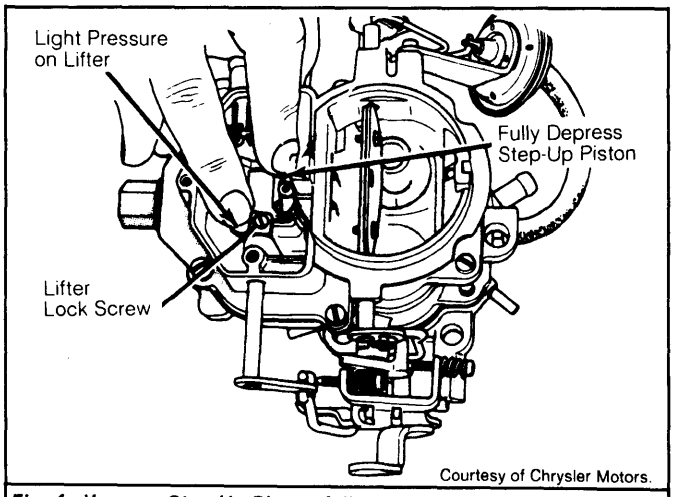


Fig. 4: Vacuum Step-Up Piston Adjusment

2) Loosen lifter lock screw. *See Fig. 4.* Fully depress piston in bore. At same time, hold pressure against rod lifter tab. Tighten lifter lock screw.
3) Release lifter and piston. Adjust accelerator pump. Readjust curb idle speed screw to its original position.

ACCELERATOR PUMP STROKE

1) Remove step-up piston cover plate and gasket. Back off curb idle speed screw until throttle valves are seated. Count number of turns required to seat throttle valves. Fast idle cam must be in open choke position. *See Fig. 5.*

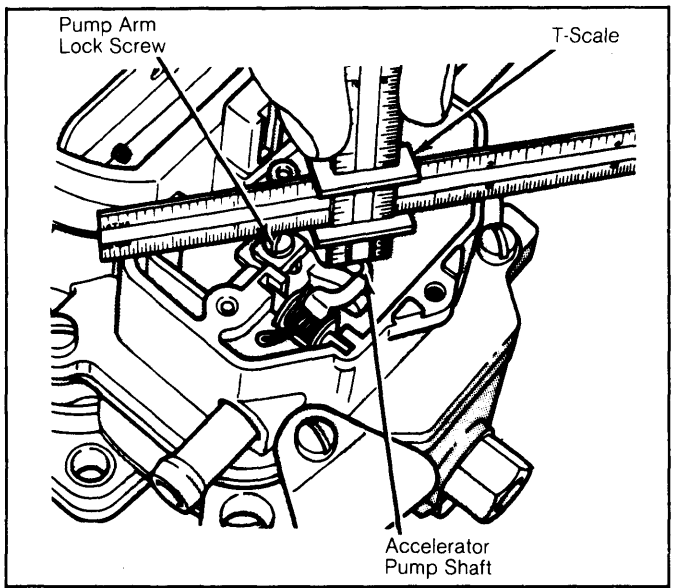


Fig. 5: Accelerator Pump Stroke Adjustment

2) Turn curb idle screw clockwise until it just touches stop. Continue 2 more complete turns.
3) Some Chrysler Corp. models may have 2 holes in accelerator pump arm. If so, make sure accelerator pump "S" link is in outer hole.
4) Measure distance between surface of air horn and top of accelerator pump shaft. If adjustment is needed, loosen pump arm adjusting lock screw and turn sleeve to adjust pump travel. When correct measurement is obtained, tighten lock screw.
5) Install step-up piston cover plate and gasket. Readjust curb idle speed screw to its original position.

NOTE: On Chrysler Corp. models, if the accelerator pump adjustment is changed, the Bowl Vent Adjustment must be reset.

MECHANICAL BOWL VENT VALVE ADJUSTMENT

NOTE: This is not a precise adjustment. The purpose of this adjustment is to ensure that bowl vent is open at idle and closed at greater throttle openings. It may be performed on or off the vehicle.

American Motors - 1) Remove rollover check valve from air horn. Open throttle and position throttle on high step of fast idle cam. Bowl vent should be closed.
2) Manually move fast idle cam until fast idle speed screw drops to 2nd step. Bowl vent should just start to open.
3) If bowl vent valve is not closed on high, 4th or 3rd steps of fast idle cam, bend tab of valve until is it closed.
4) If valve is not starting to open on 2nd step of cam, bend tab of valve until it just lifts off seat.
Chrysler Corp. - 1) Accelerator pump and curb idle speed must be correctly adjusted before adjusting bowl vent valve. Remove step-up piston cover plate and gasket from carburetor.

1975-1979 FUEL SYSTEMS
Carter BBD 2-Barrel (Cont.)

2) Measure clearance by inserting .080" pin gauge between top of bowl vent valve and seat. If adjustment is needed, bend bowl vent lever tab. Support vent lever assembly while bending tab to avoid damage to assembly. Reinstall cover plate and gasket.

FAST IDLE CAM POSITION

NOTE: Some American Motors models use tamper-proof screws to retain choke coil cover. Grind screw heads until cover retaining ring can be removed and then remove remaining portion of cover screws from choke housing.

1) On American Motors models, remove choke coil cover retaining screws. Rotate choke coil cover 90 degrees in the "Rich" direction. Install and tighten one slot-type retaining screw. On all models, place fast idle speed screw on 2nd step of fast idle cam. *See Fig. 6.*

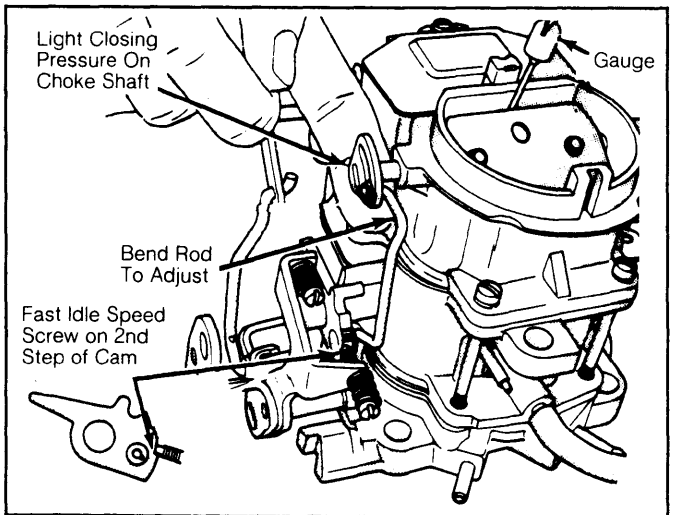


Fig. 6: Fast Idle Cam Position Adjustment

2) Hold choke valve toward closed position. Measure fast idle cam specified clearance between upper edge of choke valve and air horn wall.

3) If clearance is not to specification, adjust by bending fast idle cam rod. Bend rod down to increase clearance and up to decrease clearance. On American Motors models, readjust automatic choke and install new tamper-proof choke coil cover screws.

CHOKE VACUUM BREAK (INITIAL CHOKE VALVE CLEARANCE)

1) On American Motors models, remove choke coil cover retaining screw. Rotate choke coil cover 90 degrees in "Rich" direction. Install and tighten one slot-type retaining screw. On all models, place fast idle speed screw on highest step of fast idle cam. *See Fig. 7.*

2) Apply an outside vacuum source of at least 15 in. Hg to choke vacuum break diaphragm. Apply enough closing force on choke valve to compress spring on diaphragm stem.

3) Measure choke vacuum break specified clearance between upper edge of choke valve and air horn wall. To adjust, bend vacuum break diaphragm rod. On American Motors models, readjust automatic choke and install new tamper-proof choke coil cover screws.

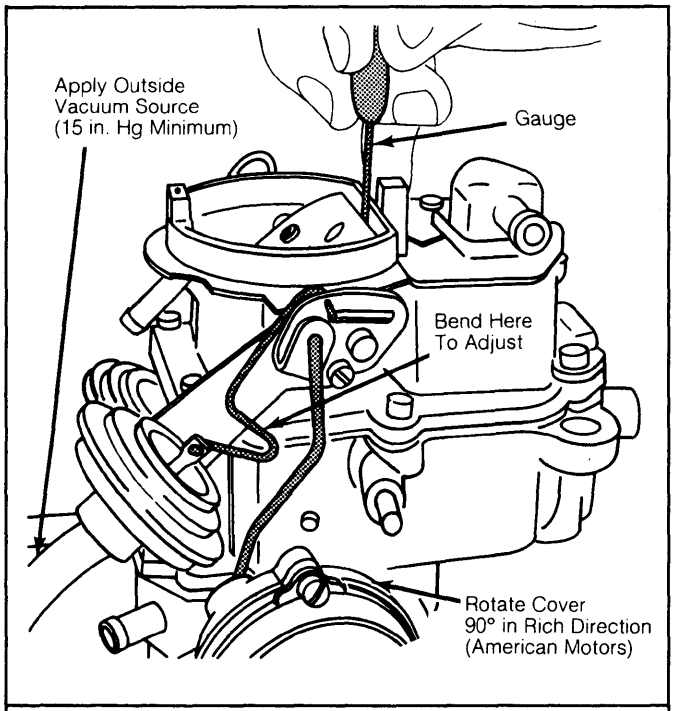


Fig. 7: Choke Vacuum Break Adjustment

CHOKE UNLOADER

1) Open throttle valves wide open. Apply light closing pressure to choke valve. *See Fig. 8.*

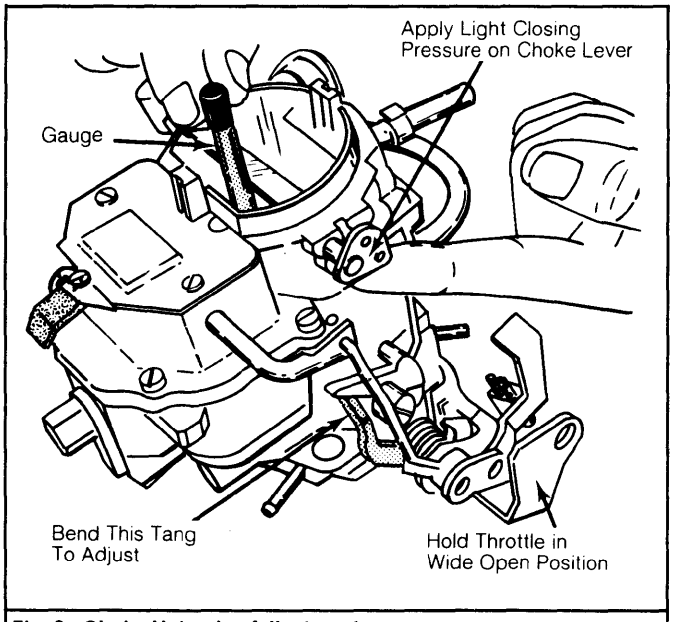
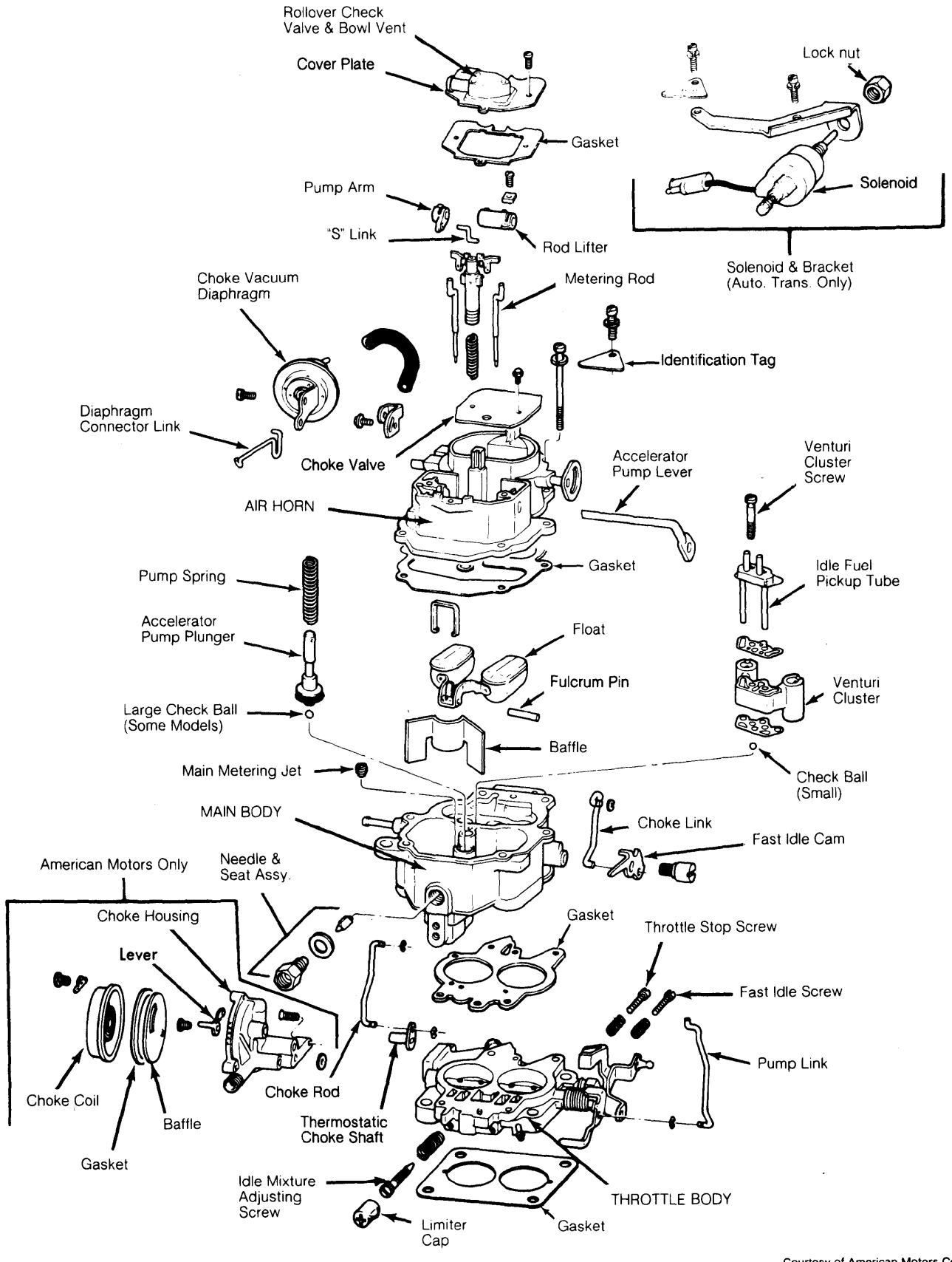


Fig. 8: Choke Unloader Adjustment

2) Measure specified choke unloader clearance between upper edge of choke valve and air horn wall.

3) To adjust, bend choke unloader tang. Make sure linkage is free and does not bind after making adjustment.

1975-1979 FUEL SYSTEMS
Carter BBD 2-Barrel (Cont.)



Courtesy of American Motors Corp.

Fig. 9: Exploded View of Carter Model BBD 2-Barrel Carburetor

1975-1979 FUEL SYSTEMS
Carter BBD 2-Barrel (Cont.)

AUTOMATIC CHOKE

NOTE: Some American Motors models use tamper-proof screws to retain choke coil cover. Grind screw heads until cover retaining ring can be removed and then remove remaining portion of cover screws from choke housing.

Automatic choke adjustment is made by removing choke housing retaining screws and turning housing to correct index or notch on choke housing. Refer to CARBURETOR ADJUSTMENTS SPECIFICATION TABLE for correct position for each carburetor.

OVERHAUL

DISASSEMBLY

1) Place carburetor on stand and remove retaining clip from accelerator pump arm link and remove link.
2) Remove cover plate from over step-up piston and remove gasket. Remove locks and screws from accelerator pump arm and vacuum piston rod lifter. Slide pump lever out of air horn.
3) Lift vacuum piston and step-up rods up and out of air horn as an assembly. Remove the vacuum piston spring. Remove choke vacuum diaphragm hose. Disconnect clips and remove link from choke housing lever and choke lever.
4) On American Motors models, rotate bowl vent assembly up out of bowl as far as possible and remove rubber valve seal.
5) On all models, remove screw and lever from end of choke shaft. Remove choke vacuum break diaphragm. On American Motors models, remove automatic choke assembly. On all models, remove fast idle cam retaining screw and remove fast idle cam, linkage and clip.
6) Remove screws securing air horn and lift air horn up and away from main body. Discard gasket. Turn air horn upside-down and compress accelerator pump drive spring. Remove "S" link from pump shaft. Remove pump assembly.
7) Remove fuel inlet needle valve, seat and gasket from main body. Carefully lift out float fulcrum pin retainer and baffle. Lift out floats and fulcrum pin. Remove main metering jets.
8) Remove venturi cluster screws. Lift cluster and gaskets away from main body. Discard gaskets. DO NOT remove idle orifice tubes or main vent tubes from cluster. They may be cleaned with solvent and dried with compressed air while assembled.
9) Turn carburetor upside-down and catch accelerator pump discharge and intake check balls as they fall out.

NOTE: 1978 American Motors vehicles with carburetor date code "K718", suffix "A" (on metal identification tag) or later have a redesigned accelerator pump. There is no check ball or drilled passage at bottom of pump well.

10) Turn idle limiter caps to stop. Remove plastic caps from idle mixture screws. Be sure to count number of turns it takes to set screws for reassembly reference. Remove screws and springs.
11) Remove screws and separate throttle body from main body. Discard gasket. Check choke plate in air horn for freedom of movement. If any sticking or binding is evident, clean thoroughly.

CLEANING & INSPECTON

- Do not clean rubber, plastic parts or diaphragms, solenoid assemblies or pump plunger in solvent.
- Do not use wire, drill bit or hard parts to clean passages in carburetors.
- Inspect all parts for wear, cracks, nicks or burrs, uneven gasket sealing surfaces or warpage.
- Check for stripped threads, and excessive wear on throttle shafts. Replace throttle body assembly if shafts are worn.

REASSEMBLY

NOTE: Use new gaskets and seals. Make sure new gaskets fit correctly and all holes are punched through and correctly located.

To reassemble carburetor, reverse disassembly procedures while noting the following:
Idle Mixture Screw & Limiter Cap - 1) Install idle mixture screws and springs in throttle body. Tapered portion of screw must be straight and smooth. If tapered portion is grooved or ridged, use a new screw.
2) Turn each screw lightly against its seat with fingers. DO NOT use a screwdriver for installation. Back screws off seated position number of turns noted during disassembly and install plastic limiter caps with tab against stop.
Accelerator Pump Assembly - 1) Check operation as follows. Pour clean gasoline into carburetor bowl (1/2" deep). Operate pump plunger several times to fill cylinder and expel all air.
2) Using a small brass rod, hold discharge check ball down on its seat. Raise plunger and press downward. No fuel should be emitted from either intake or discharge passage. If fuel does escape from passages, check if ball seat is damaged or dirty.
3) Clean check ball seat and retest. If leakage is still present, attempt to form a new ball seat. To form a new seat, install discharge check ball and place a piece of drill rod on top of check ball. Lightly tap drill rod with a mallet to form a new seat.
4) Remove and discard check ball and install a new one. Retest as previously described. If service does not correct problems, replace carburetor.
Step-Up Piston & Rod Assembly - Be sure step-up rods move freely on each side of vertical position. Carefully guide step-up rods into main metering jets.

1975 CARBURETOR ADJUSTMENT SPECIFICATION TABLE

Carter Carb. No.	Idle Speed (Engine RPM)		Fast Idle Cam Position	Float Level Setting ①	Acc. ② Pump Travel	Unloader Setting	Vacuum Break Setting
	Hot	Fast					
BBD-8000S	750	1500	.070"	1/4"	1/2"	.280"	.130"
BBD-8064S	750	1500	.070"	1/4"	1/2"	.310"	.070"
BBD-8001S	900	1500	.070"	1/4"	1/2"	.310"	.110"
BBD-8003S	750	1500	.070"	1/4"	1/2"	.310"	.110"

① At center of floats.
② Throttle closed tightly.

1975-1979 FUEL SYSTEMS
Carter BBD 2-Barrel (Cont.)

1976 CARBURETOR ADJUSTMENT SPECIFICATION TABLE

Carter Carb. No.	Idle Speed (Engine RPM)		Fast Idle Cam Position	Float Level Setting ①	Acc.② Pump Travel	Unloader Setting	Vacuum Break Setting
	Hot	Fast					
AMC							
8073	850	1700	.095″	.250″	.500″	.250″	.128″
8067	700③	1700	.095″	.250″	.500″	.250″	.128″
Chry. Corp.							
8069S	750	1200	.070″	.250″	.500″	.310″	.070″
8070S	750	1500	.070″	.250″	.500″	.310″	.110″
8071S	750	1500	.070″	.250″	.500″	.280″	.130″
8077S	900	1250	.070″	.250″	.500″	.280″	.110″

① — At center of floats.
② — Throttle closed tightly.
③ — 600 RPM — Calif.

1977 CARBURETOR ADJUSTMENT SPECIFICATION TABLE

Carter Carb. No.	Idle Speed (Engine RPM)		Fast Idle Cam Position	Float Level Setting ①	Acc.② Pump Travel	Unloader Setting	Choke Valve Clearance
	Hot	Fast					
AMC							
8103	600	1600	.120″	.250″	.496″	.280″	.150″
8104	600	1500	.095″	.250″	.520″	.280″	.128″
8117	700	1600	.112″	.250″	.480″	.280″	.152″
Chrys. Corp.							
8087S	750	1600	.070″	.250″	.469″	.280″	.100″
8089S	800	1600	.070″	.250″	.469″	.280″	.130″
8090S	850	1700	.070″	.250″	.469″	.280″	.130″
8093S	700	1400	.070″	.250″	.469″	.310″	.130″
8094S	700	1400	.070″	.250″	.469″	.310″	.070″
8096S	850	1500	.070″	.250″	.469″	.310″	.110″
8126S	850	1500	.070″	.250″	.469″	.310″	.110″
8127S	750	1500	.070″	.250″	.469″	.280″	.110″
8170S	700	1300③	.070″	.250″	.500″	.310″	.110″
8172S	750	1500③	.070″	.250″	.500″	.310″	.110″

① — At center of floats. ② — Throttle closed tightly. ③ — RPM after 500 miles.

1975-1979 FUEL SYSTEMS
Carter BBD 2-Barrel (Cont.)

1978 CARBURETOR ADJUSTMENT SPECIFICATION TABLE

Carter Carb. No.	Idle Speed (Engine RPM) Hot	Idle Speed (Engine RPM) Fast	Fast Idle Cam	Float Level Setting	Acc. Pump Travel	Choke Unloader Setting	Vacuum Kick Setting	Step-Up Piston Gap	Choke Valve Clearance	Auto. Choke Setting
American Motors										
258" 6 Cyl.										
BBD-8128	①	1600②	.110"	.25"③	.496"	.280"	.....	.040"	.150"	INDEX
BBD-8129	①	1500②	.095"	.25"③	.520"	.280"	.....	.040"	.128"	1 NR
Chrysler Corp.										
225" 6 Cyl.										
BBD-8136S	①	1500	.070"	.25"③	.500"	.280"	.110"	.035"	.....	.....
BBD-8137S	①	1600	.070"	.25"③	.500"	.280"	.100"	.035"	.....	.....
BBD-8177S	①	1600	.070"	.25"③	.500"	.280"	.100"	.035"	.....	.....
318" V8										
BBD-8143S	①	1500	.070"	.25"③	.500"	.280"	.150"	.035"	.....	.....
BBD-8175S	①	1400	.070"	.25"③	.500"	.280"	.160"	.035"	.....	.....

① – See Emission Control/Tune-Up Decal.
② – ± 100 RPM. Hot with TCS solenoid & EGR disconnected.
③ – ± 1/32" (.031").

1979 CARBURETOR ADJUSTMENT SPECIFICATION TABLE

Application	Float Level Setting	Vacuum Piston Gap Setting	Accel. Pump Stroke Setting	Fast Idle Cam Setting	Choke Vacuum Kick Setting	Choke Unloader Setting	Auto. Choke Setting
American Motors							
8185	1/4"	.035"	.470"	.110"	.140"	.280"	1 Rich
8186	1/4"	.035"	.520"	.110"	.150"	.280"	1 Rich
8187	1/4"	.035"	.470"	.110"	.140"	.280"	1 Rich
8188	1/4"	.035"	.520"	.110"	.150"	.280"	1 Rich
8221	1/4"	.035"	.530"	.110"	.150"	.280"	1 Rich
Chrysler Corp.							
BBD-8198S	1/4"	.035"	.500"	.070"	.100"	.280"	.....
BBD-8199S	1/4"	.035"	.500"	.070"	.100"	.280"	.....
BBD-8230S	1/4"	.035"	.500"	.070"	.110"	.280"	.....
BBD-8245S	1/4"	.035"	.500"	.070"	.100"	.280"	.....