1975-79 FUEL SYSTEMS
Carter BBD 2-Barrel Carburetor

1975-79 Chryler Corp.
1977-79 Jeep Corp.

NOTE: All carburetor numbers are prefixed by "BBD-".

CARBURETOR APPLICATION

1975 CHRYSLER CORP.

Application	Carter Carb. No. Man. Trans.	Carter Carb. No. Auto. Trans.
318" V8		
Exc. Motor Home		
Federal	8020S	8025S
	6586S	6585S
California	8024S	8025S
	6585S, 8016S	6585S, 8026S
Motor Home		
Federal		6540S
California		8026S

1976 CHRYSLER CORP.

Application	Carter Carb. No. Man. Trans.	Carter Carb. No. Auto. Trans.
318" V8		
Federal	6536S, 8085S	6537S, 8081S
California	8013S, 8082S	8014S
		8081S, 8108S

1977 CHRYSLER CORP.

Application	Carter Carb. No. Man. Trans.	Carter Carb. No. Auto. Trans.
225" 6-Cyl.		
Federal	8110S	8110S
318" V8		
Federal	6536S, 6586S	6586S
	8085S, 8115S	8081S, 8112S
	8147S	8121S, 8146S
		8147S
California	8082S, 8113S	8081S
		8108S, 8113S
High Altitude		8112S

1978 CHRYSLER CORP.

Application	Carter Carb. No. Man. Trans.	Carter Carb. No. Auto. Trans.
225" 6-Cyl.		
Federal	8149S	8151S
	8176S	8176S
California	8152S	8180S
318" V8		
Federal	81554S	8156S
	8147S	8146S

1979 CHRYSLER CORP.

Application	Carter Carb. No. Man. Trans.	Carter Carb. No. Auto. Trans.
225" 6-Cyl.		
California	8214S	8215S
318" V8		
Federal	8210S	8211S
	8249S	8232S

1977-78 JEEP CORP.

Application	Jeep Code No. Man. Trans.	Jeep Code No. Auto. Trans.
258" 6-Cyl.		
Cherokee & Truck		
Federal	8107	8107

1979 JEEP CORP.

Application	Jeep Code No. Man. Trans.	Jeep Code No. Auto. Trans.
258" 6-Cyl.		
California	8188	8187
Federal	8229, 8186, 8195	8185, 8195

CARBURETOR IDENTIFICATION

Carter carburetor number is stamped on a tag under one carburetor 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 some 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 article.

FLOAT LEVEL

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.1.*

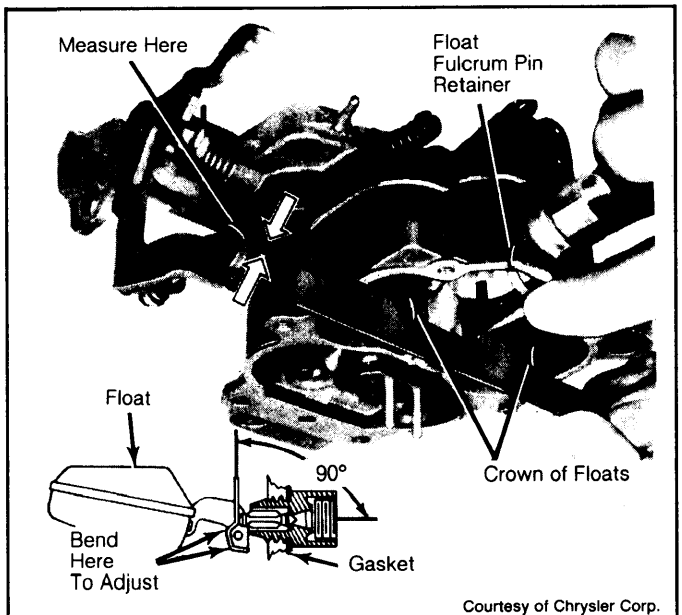


Fig. 1: Chrysler Corp. Float Level Adjustment

1975-79 FUEL SYSTEMS
Carter BBD 2-Barrel Carburetor (Cont.)

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.

Jeep - 1) Remove air horn. Apply light pressure to float arm, gently seating needle in seat and raising float. *See Fig. 2.*

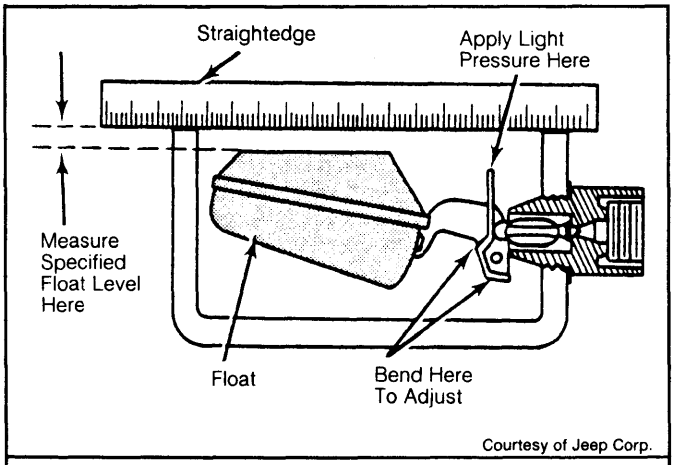


Fig. 2: Jeep Float Level Adjustment

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.

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.

1) Remove step-up piston cover plate and gasket. Remove lifter lock screw and piston. Measure piston gap. *See Fig. 3.*

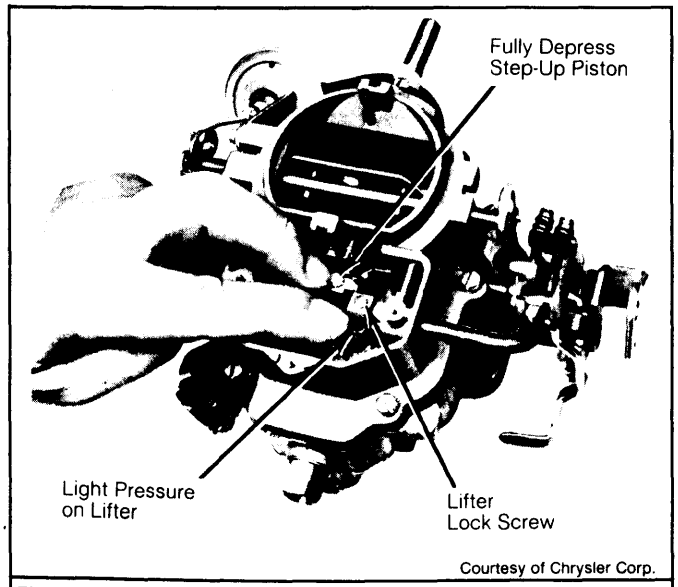


Fig. 3: Vacuum Step-Up Piston Gap Qualification

2) If not to specifications, adjust Allen head screw on top of piston. 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.
2) Loosen lifter lock screw. *See Fig. 4.* Fully depress piston in bore while holding 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.

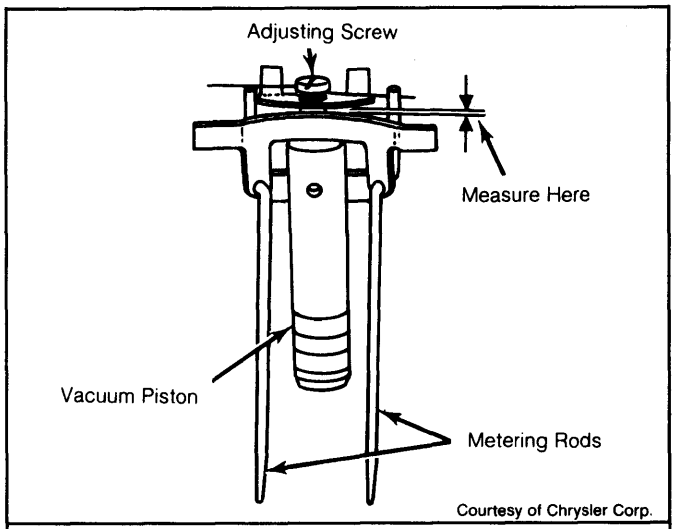


Fig. 4: Vacuum Step-Up Piston Adjusment

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.*

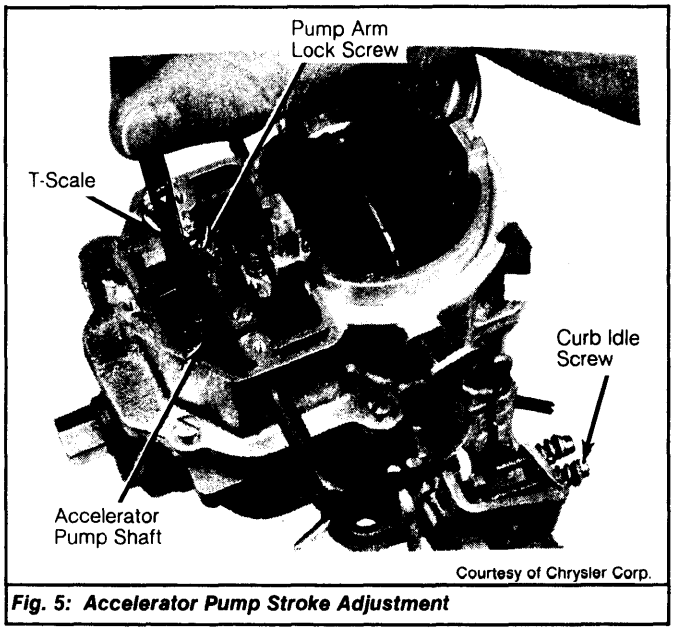


Fig. 5: Accelerator Pump Stroke Adjustment

1975-79 FUEL SYSTEMS
Carter BBD 2-Barrel Carburetor (Cont.)

2) Turn curb idle screw clockwise until lightly seated. Turn an additional 2 more complete turns. Some Chrysler Corp. models may have 2 holes in accelerator pump arm. If so, make sure accelerator pump "S" link is in outer hole.
3) 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.
4) 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 off-idle throttle openings. It may be performed on or off the vehicle.

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.
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.

Jeep - 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.

FAST IDLE CAM POSITION

NOTE: Some Jeep 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.

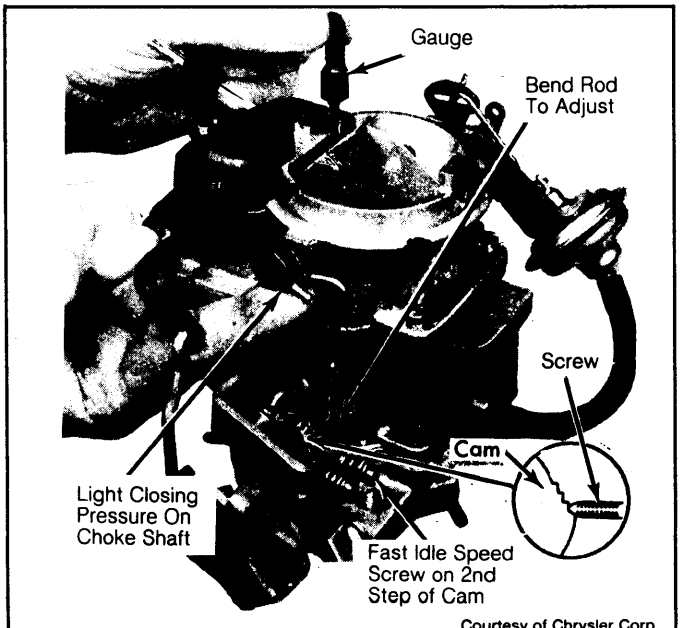


Fig. 6: Fast Idle Cam Position Adjustment

1) On Jeep 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.*
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. See appropriate CARBURETOR ADJUSTMENT SPECIFICATIONS table. On Jeep, readjust automatic choke and install new tamper-proof choke coil cover screws.

CHOKE VACUUM BREAK (INITIAL CHOKE VALVE CLEARANCE)

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

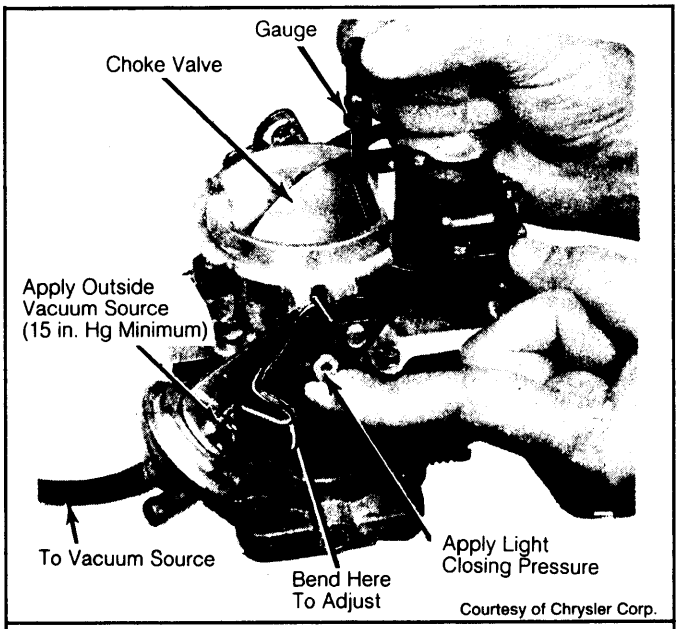


Fig. 7: Choke Vacuum Break Adjustment

2) Apply an external 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 Jeep models, readjust automatic choke and install new tamper-proof choke coil cover screws.

CHOKE UNLOADER

1) Open throttle valves wide open. Apply light closing pressure to choke valve. *See Fig. 8.* Measure specified choke unloader clearance between upper edge of choke valve and air horn wall.
2) To adjust, bend choke unloader tang. Make sure linkage is free and does not bind after making adjustment.

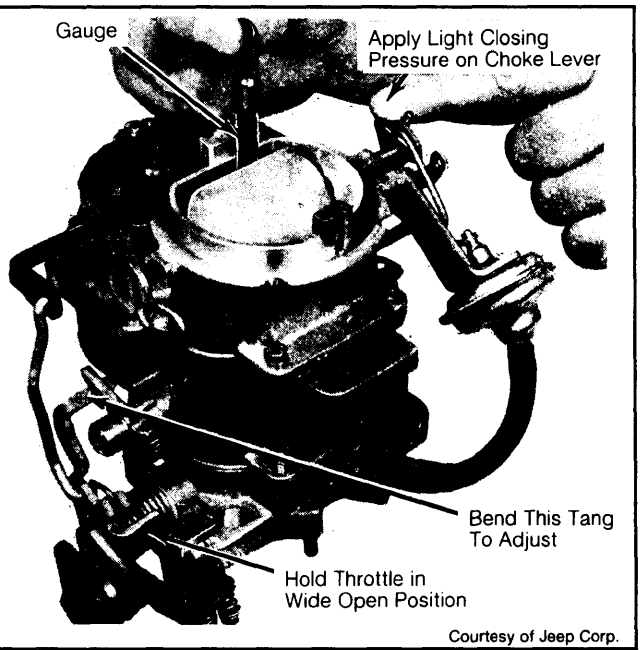


Fig. 8: Choke Unloader Adjustment

AUTOMATIC CHOKE

NOTE: Some Jeep 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 appropriate CARBURETOR ADJUSTMENT SPECIFICATION table for correct position for each carburetor.

OVERHAUL

CARBURETOR

Disassembly - 1) Place carburetor on stand and remove retaining clip from accelerator pump arm link and remove link.
2) Remove cover plate from 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 Jeep 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 Jeep 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.

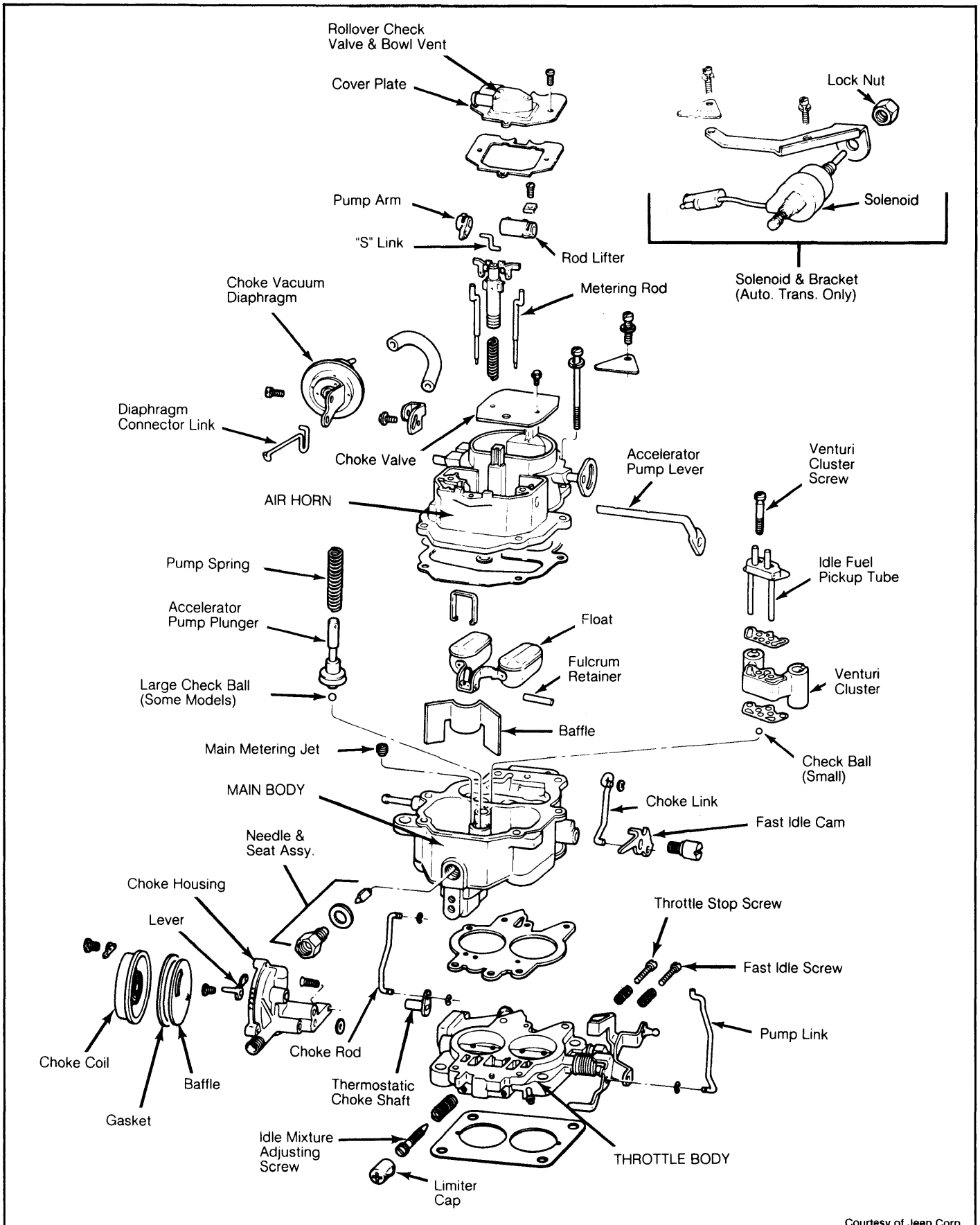
NOTE: 1978 Jeep vehicles with carburetor date code "K718", suffix "A" (on metal identification tag) or later have a redesigned accelerator pump. There is no check ball or drilled passage at bottom of pump well.

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 - 1) 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.
2) 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 - 1) 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.
2) 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, replace mixture screw.
3) 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.
4) Check operation of accelerator pump by pouring clean gasoline into carburetor bowl (1/2" deep). Operate pump plunger several times to fill cylinder and purge air.
5) 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.
6) 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.
7) Remove and discard check ball and install a new one. Retest as previously described. If service does not correct problems, replace carburetor. Be sure step-up rods move freely on each side of vertical position. Carefully guide step-up rods into main metering jets.

1975-79 FUEL SYSTEMS
Carter BBD 2-Barrel Carburetor (Cont.)



Courtesy of Jeep Corp.

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

1975-79 FUEL SYSTEMS
Carter BBD 2-Barrel Carburetor (Cont.)

1975 CARBURETOR ADJUSTMENT SPECIFICATION							
Carter Carb. No. (Dodge & Plymouth)	Idle Speed (Engine RPM)		Fast Idle Cam Position	Float Level Setting	Acc. Pump Travel	Unloader Setting	Vacuum Break Setting
	Hot	Fast					
6537S	750	1500	.095"	.250"	.500"	.310"	.110"
8013S	700	1500	.070"	.250"	.500"	.310"	.130"
8014S	700	1500	.070"	.250"	.500"	.310"	.110"
6585S	700	1900	.....	.250"	.500"	.....	.....
8016S	700	1500	.070"	.250"	.500"	.310"	.130"
8026S	700	1500	.070"	.250"	.500"	.310"	.110"
6586S	700	1900	.....	.250"	.500"	.....	.....
8020S	750	1500	.070"	.250"	.500"	.280"	.130"
8024S	750	1500	.070"	.250"	.500"	.280"	.130"
8025S	750	1500	.070"	.250"	.500"	.310"	.070"
6536S	750	1700	.095"	.250"	.500"	.280"	.150"

① At center of floats.

1976 CARBURETOR ADJUSTMENT SPECIFICATION							
Carter Carb. No. (Dodge & Plymouth)	Idle Speed (Engine RPM)		Fast Idle Cam Position	Float Level Setting ①	Acc. Pump Travel	Unloader Setting	Vacuum Kick Setting
	Hot	Fast					
6536S	750	1700	.095"	.250"	.500"	.280"	.150"
6537S	750	1500	.095"	.250"	.500"	.280"	.110"
8013S	700	1500	.070"	.250"	.500"	.310"	.130"
8014S	700	1500	.070"	.250"	.500"	.310"	.110"
8081S	750	1500	.070"	.250"	.500"	.310"	.150"
8082S	750	1500	.070"	.250"	.500"	.280"	.130"
8085S	750	1500	.070"	.250"	.500"	.280"	.130"
8108S	750	1500	.070"	.250"	.500"	.310"	.150"

① — Measured at center of float.

1975-79 FUEL SYSTEMS
Carter BBD 2-Barrel Carburetor (Cont.)

1977 CARBURETOR ADJUSTMENT SPECIFICATION

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
Dodge & Plymouth										
225" 6-Cyl.⑥										
BBD-8110S	①	1500	.070"	.250"②	.500"	.280"	.095"	.....	.....	.....
318" V8										
BBD-6536S	①	1600	.095"	.250"②	.500"	.280"	.150"	.....	.....	.....
BBD-6585S	①	1900	.070"	.250"②	.500"	.....	.....	.....	.....	.....
BBD-6586S	①	1900	.070"	.250"②	.500"	.....	.....	.....	.....	.....
BBD-8081S	①	1500	.070"	.250"②	.500"	.280"③	.150"	.....	.....	.....
BBD-8082S	①	1500	.070"	.250"②	.500"	.280"	.130"	.....	.....	.....
BBD-8085S	①	1500	.070"	.250"②	.500"	.280"	.130"	.....	.....	.....
BBD-8108S	①	1500	.070"	.250"②	.500"	.310"	.150"	.....	.....	.....
BBD-8112S	①	1500	.070"	.250"②	.500"	.310"	.110"	.....	.....	.....
BBD-8113S	①	1500	.070"	.250"②	.500"	.310"	.130"	.....	.....	.....
BBD-8115S	①	1500	.070"	.250"②	.500"	.280"	.130"	.....	.....	.....
BBD-8121S	①	1500	.070"	.250"②	.500"	.310"	.070"	.....	.....	.....
BBD-8146S	①	1600	.070"	.250"②	.500"	.280"	.070"	.....	.....	.....
BBD-8147S	①	1500	.070"	.250"②	.500"	.310"	.070"	.....	.....	.....
Jeep										
258" 6-Cyl.										
BBD-8107	①	1700④	.095"	.250"	.500"	.280"	.....	.040"	.128"	2 NR⑤

① — See Emission Control Tune-Up Decal
② — ± " at center of floats
③ — .310" on Compact & Voyager Models
④ — Engine warmed up, 2nd step of fast idle cam, TCS solenoid and EGR disconnected
⑤ — NR — Notches Rich
⑥ — See NOTE on BBD-8110S driveability procedure under **CHOKE UNLOADER** and **VACUUM KICK** adjustment

1978 CARBURETOR ADJUSTMENT SPECIFICATION

Carter Carb. No.	Idle Speed (Engine RPM) Hot①	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
Dodge & Plymouth									
225" 6 Cyl.									
BBD-8149S	①	1400	.070"	.250"	.500"	.280"	.110"	.....	.....
BBD-8151S	①	1600	.070"	.250"	.500"	.280"	.110"	.....	.....
BBD-8152S	①	1400	.070"	.250"	.500"	.280"	.110"	.....	.....
BBD-8180S	①	1600	.070"	.250"	.500"	.280"	.110"	.....	.....
BBD-8176S	①	1600②	.070"	.250"	.500"	.310"	.070"	.....	.....
BBD-8154S	①	1400	.070"	.250"	.500"	.280"	.110"	.....	.....
BBD-8156S	①	1500	.070"	.250"	.500"	.310"	.110"	.....	.....
BBD-8147S	①	1700③	.070"	.250"	.500"	.310"	.150"	.....	.....
BBD-8146S	①	1700③	.070"	.250"	.500"	.310"	.070"	.....	.....
Jeep④									
258" 6 Cyl.									
8107	①	1700	.095"	.250"	.440"	.280"	.....	.035"	.128"

① — See Emission Control Decal.
② — Man. Trans. given, Auto. Trans. is 1700 RPM.
③ — Man. Trans. given, Auto. Trans. is 1500 RPM.
④ — Automatic Choke Setting for Jeep is 2 Notches Rich.

1975-79 FUEL SYSTEMS
Carter BBD 2-Barrel Carburetor (Cont.)

1979 CARBURETOR ADJUSTMENT SPECIFICATION

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
Chrysler Corp.							
BBD-8210S	1/4"	①	.500"	.070"	.110"	.280"	.....
BBD-8211S	1/4"	①	.500"	.070"	.110"	.280"	.....
BBD-8214S	1/4"	①	.500"	.070"	.110"	.280"	.....
BBD-8215S	1/4"	①	.500"	.070"	.110"	.280"	.....
BBD-8232S	1/4"	①	.500"	.070"	.110"	.280"	.....
BBD-8249S	1/4"	①	.500"	.070"	.110"	.280"	.....
Jeep							
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
8195	1/4"	.035"	.470"	.110"	.140"	.280"	1 Rich
8229	1/4"	.035"	.520"	.095"	.128"	.280"	1 Rich

① — See adjustment procedure.