1968-69 CARTER BBS SINGLE BARREL

DART & VALIANT	Carter Carburetor Number Synchro-mesh	Auto. Trans.
1968 170" 6 Cyl.	4414S	4415S
1969 170" 6 Cyl.	4601S	4602S, SA
CANADIAN CARS		
1968 170" 6 Cyl.	4288S	4289S
1968 225" 6 Cyl.	4111S	4112S
	4290S	4291S

▸CHANGES, CAUTIONS, CORRECTIONS

U.S. CARBURETORS – All carburetors are "CAS" type (used with "Clean Air System" engine installations).

CANADIAN CARBURETORS – These carburetors used on conventional engines without "Cleaner Air System".

CARBURETOR IDENTIFICATION

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

DESCRIPTION

Single barrel downdraft type with separate "Well Type" automatic choke. Carburetors are similar to previous models with externally mounted choke vacuum kick diaphragm to provide initial choke valve opening when engine starts and a "spring-staged" choke which reduces choke valve closing torque when engine cranked at low temperatures and also provides better starting mixture for both low and moderate temperatures.

ADJUSTMENT

***"ON ENGINE" ADJUSTMENT NOTE** – Engine must be at normal operating temperature when making idle speed and mixture adjustment and fast idle speed adjustment. When adjusting idle speed, headlights must be ON. If car equipped with air conditioning, turn Air Conditioner OFF.*

Idle Speed & Mixture

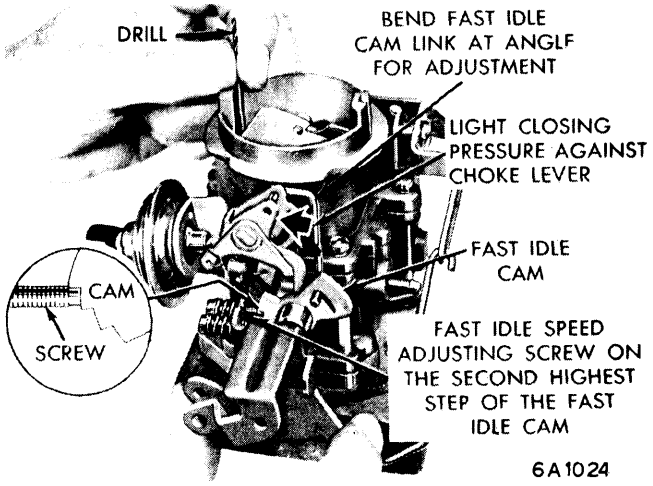
NOTE – If initial adjustment required to warm up engine, turn idle mixture screw out 1-2 turns from a lightly seated position. *CAUTION – On "CAS" carburetors, screw has limited travel (locks at 2 turns open) and will be broken if any attempt is made to remove it from carburetor.*

U.S. "CAS" Carburetors – *Exhaust Analyser must be used to assure correct fuel-air mixture setting.*

1968 Canadian Carburetors – Adjust idle speed to correct RPM (see specifications) with choke valve open and fast idle screw not contacting cam. Adjust idle mixture screw for highest engine RPM, then turn screw in to lean mixture until speed begins to drop off, finally turn screw out to richen mixture just enough to recover the lost engine speed. *This procedure will assure leanest possible fuel mixture for smooth idling.* Recheck idle speed. If necessary to readjust idle speed, repeat idle mixture adjustment.

Fast Idle Speed (On Engine)

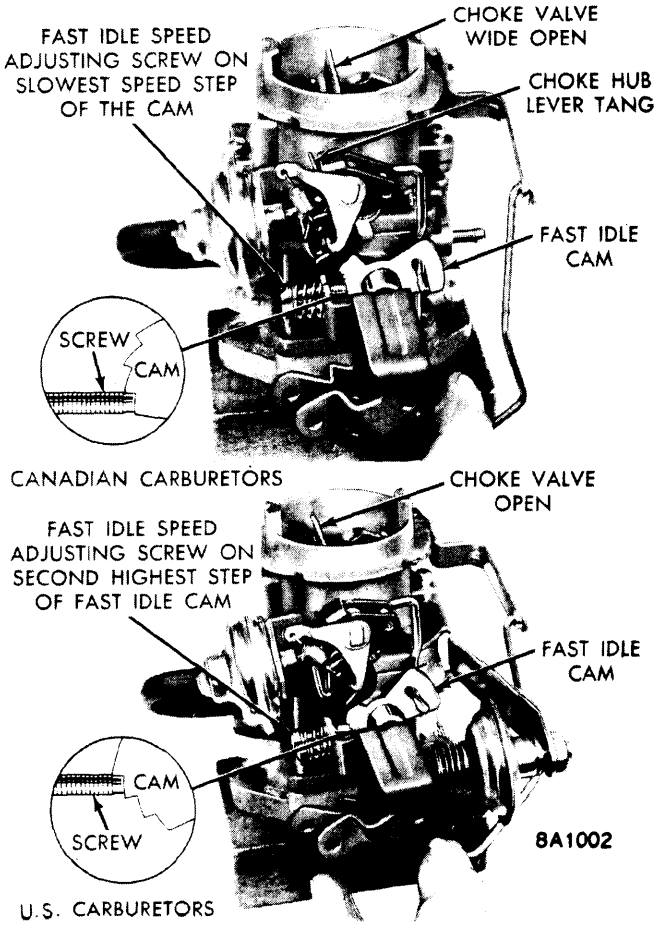
All Carburetors – With hot idle speed correctly adjusted and engine idling at normal operating temperature and with transmission in Neutral or Park, position fast idle screw on second highest step of fast idle cam (U.S. "CAS" carburetors), on lowest step of fast idle cam (Canadian carburetors) as shown in illustration. Turn fast idle adjusting screw in or out for correct fast idle speed (see specifications).



FAST IDLE CAM POSITION ADJUSTMENT

Fast Idle Cam Position

All Carburetors – Position fast idle screw on second step of fast idle cam and against shoulder of highest step (see illustration). Check choke valve opening by inserting gauge or drill rod of correct size (see Specifications) between edge of choke valve and air horn wall. If slight drag not noted as gauge is withdrawn, adjust as necessary by bending fast idle connector rod at upper angle (see illustration) until correct choke valve opening secured. With choke valve fully closed, there should be a slight clearance between tang on choke lever and stop on air horn.

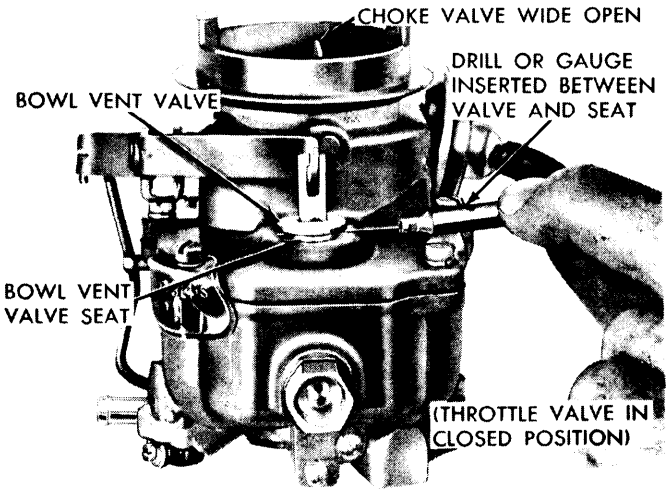


FAST IDLE SPEED ADJUSTMENT (ALL CARBS.)

1968-69 CARTER BBS SINGLE BARREL (Continued)

Accelerating Pump & Bowl Vent

NOTE - Throttle lever has three holes for pump connector rod engagement to allow seasonal pump setting adjustment as indicated below. With throttle stopscrew backed off and throttle valve fully closed, make certain that pump connector engaged in correct hole of throttle lever as listed below and that bowl vent clip on pump stem is installed in corresponding notch (see Pump Seasonal Setting for this adjustment). Check clearance between vent valve and seat on bowl cover using gauge or drill rod of correct size (see Specifications). If clearance not correct, adjust by bending pump operating rod at lower angle (see illustration).



BOWL VENT ADJUSTMENT

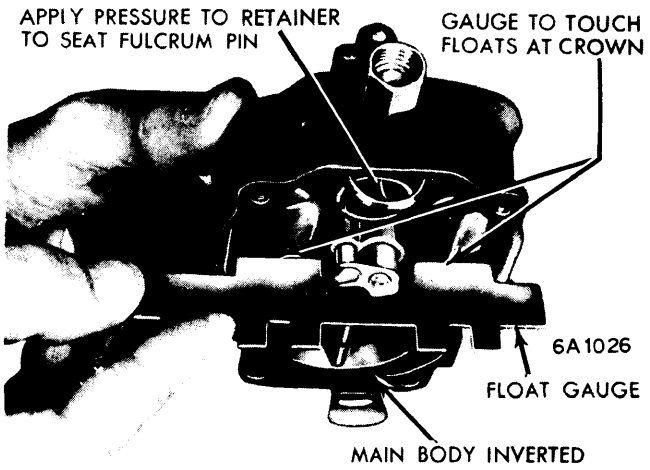
Accelerating Pump Normal Setting

Carburetor	Pump Connector Location
All Carburetors	Outer Hole (long stroke)

Pump Seasonal Setting - See table above. Outer hole provides maximum pump discharge, inner hole minimum pump discharge. *NOTE - Whenever pump rod moved from one hole to another, corresponding change must be made in vent valve clip on pump stem as follows: Center hole (center groove), inner hole (upper groove), outer hole (lower groove). Recheck bowl vent clearance.*

Float Level

With air horn and bowl cover removed, invert carburetor so that weight of floats only is holding inlet needle against seat (hold finger on retainer to fully seat float fulcrum pin). Use suitable gauge or "T" scale to measure from top edge of fuel bowl to crown of each float at center (see illustration). If float setting not correct (see Specifications), remove float and bend float lever lip as required. *CAUTION - Do not attempt to adjust float without removing it from carburetor (inlet needle has synthetic rubber tip which may be compressed sufficiently to cause a false setting).*



FLOAT SETTING MEASUREMENT

Vacuum Kick (Choke Vacuum Diaphragm)

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

Checking - Back off fast idle speed screw so choke can be closed to kick position with carburetor throttle at curb idle. Insert drill of correct size (see Specifications) between choke valve and wall of air horn, apply sufficient closing force on choke rod lever to provide minimum choke valve opening without distorting diaphragm link *(CAUTION - Diaphragm internal spring must be fully compressed which will be noted by extension of diaphragm stem).* At this point, slight drag should be noted as drill withdrawn from choke valve. If choke valve opening not correct, adjust diaphragm link length as necessary. Reset fast idle speed.

CARBURETOR ADJUSTMENT SPECIFICATIONS

Carter Carb. No.	Idle Speed (Engine RPM)		Fast Idle Cam Position	Float Level Setting	Pump & Bowl Vent	Auto. Choke Setting	Unloader Setting	Spring Staged Choke	Vacuum Kick Setting
	Hot ①	Fast							
4111S, 12S	550	700 ②	#48	1/4"	1/16"	2 Rich	3/16"	.010-.040"	#28, ④
4288S, 89S	550	700 ②	#48	1/4"	1/16"	2 Rich	3/16"	.010-.040"	#20, ⑤
4290S, 91S	550	700 ②	#48	1/4"	1/16"	2 Rich	3/16"	.010-.040"	#28, ⑥
4414S	700	1550 ③	#48	1/4"	1/16"	2 Rich	3/16"	.010-.040"	#20
4415S	650	1700 ③	#48	1/4"	1/16"	2 Rich	3/16"	.010-.040"	#35
4601S	750	1600 ③	#48	1/4"	1/16"	2 Rich	3/16"	.010-.040"	#35
4602S	750	1800 ③	#48	1/4"	1/16"	2 Rich	3/16"	.010-.040"	#35
4602SA	750	1800 ③	#48	1/4"	1/16"	2 Rich	3/16"	.010-.040"	#35

① - **Headlights ON.** Transmission in Neutral. Air Cond. OFF.
② - **Fast idle** screw on **low** step of fast idle cam.
③ - **Fast idle** screw on **second highest** step of fast idle cam.
④ – 4112S #35.
⑤ – 4289S #41.
⑥ – 4291S #35.

1968-69 CARTER BBS SINGLE BARREL (Continued)

Adjustment - Change link length by opening or closing the link bend *(CAUTION - Do not apply twisting or bending force to diaphragm).*

Final Check - With no vacuum applieu, choke valve must move freely between open and closed positions.

Unloader

Hold throttle valve in wide open position, insert gauge or drill rod of correct size (see Specifications) between upper edge of choke valve and air horn wall. A slight drag should be noted as gauge is withdrawn. If choke valve opening not correct, bend unloader tang on throttle lever as necessary (see illustration).

Automatic Choke

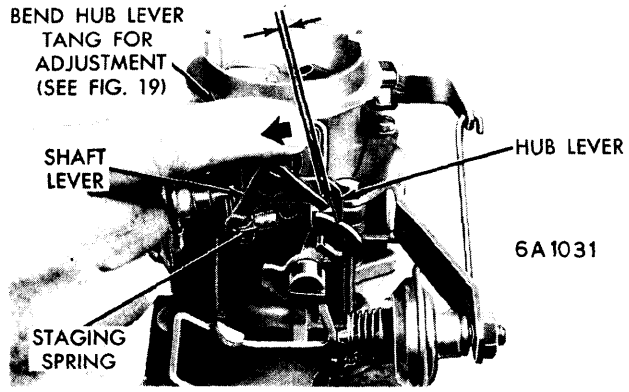
CAUTION - This unit is serviced as a complete assembly. Do not attempt to repair unit or change the adjustment. Check for free movement by moving choke rod up and down. If binding noted, replace unit. Do not lubricate any part of the choke linkage or control unit.

Spring-Staged Choke

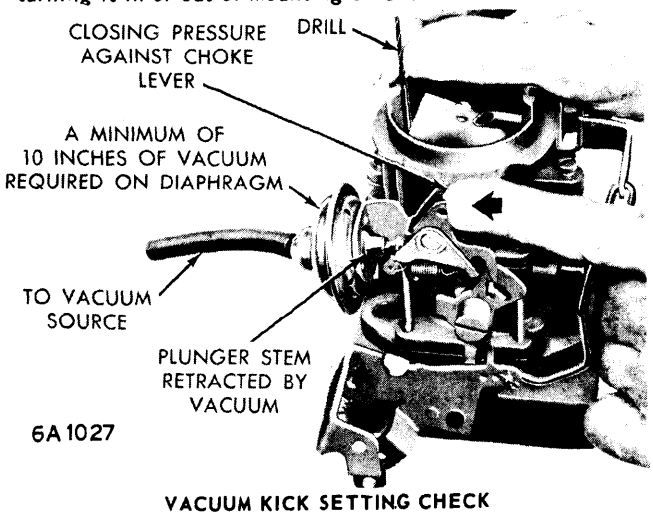
With choke valve closed, press on hub lever (see illustration) and check clearance between shaft and hub levers using a gauge or drill rod of correct size (see Specifications). If clearance not correct, adjust by bending hub lever tang.

Dashpot ("CAS" Carburetors)

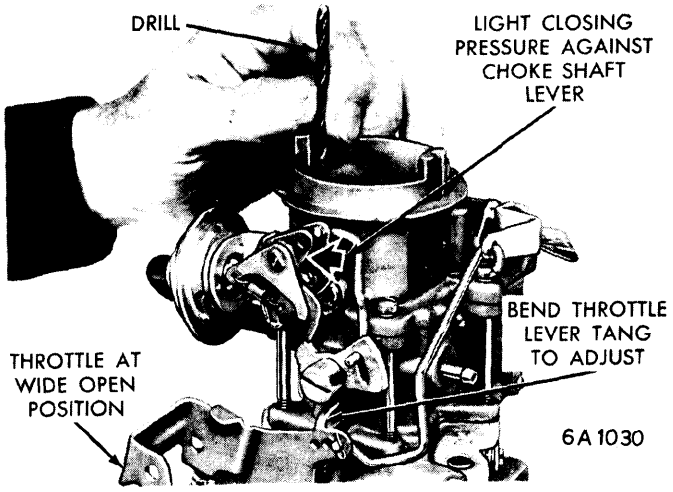
After idle speed and mixture adjusted, run engine with tachometer attached and open throttle to point where actuating tab on throttle lever contacts dashpot stem (stem must not be compressed), note tachometer reading. Engine speed should be 2000 RPM. Adjust dashpot by turning it in or out of mounting bracket.



SPRING-STAGED CHOKE ADJUSTMENT



VACUUM KICK SETTING CHECK



UNLOADER ADJUSTMENT

OVERHAUL

►*"CAS" CARBURETOR IDLE MIXTURE SCREW CAUTION & REPLACEMENT PROCEDURE: Screw has limited travel and will be damaged or broken if attempt made to remove it from carburetor. For replacement of damaged or broken screws, refer to "Chrysler Corp. CAP Carter Carburetor Idle Mixture Screw Repair"*

Disassembly

1) Disengage and remove accelerating pump operating rod. Remove vacuum hose from main body fitting and vacuum diaphragm unit, remove choke operating link from vacuum diaphragm stem and choke lever. Remove vacuum diaphragm assembly.

2) Remove air horn retaining screws *(CAUTION - These screws also retain throttle body on main body, use care that throttle body is not damaged when screws taken out),* remove dashpot (if used). Tilt air horn toward throttle lever to disengage fast idle link from fast idle cam, then lift air horn straight up off main body, remove and discard air horn gasket.

3) Disengage pump plunger from rocker arm by pushing up on plunger and disengaging rocker arm hook. *NOTE* - If old plunger to be reinstalled, or new plunger used, place plunger assembly in clean gasoline or kerosene to prevent plunger leather drying out.

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

5) Remove main metering jet and gasket, remove idle tube. Invert main body and drop out pump discharge check ball (in channel in main body) and inlet check ball (in bottom of pump cylinder). Use suitable plug remover (T109-43) to remove accelerating pump jet plug, then use Tool T109-59T to remove pump jet. Remove white plastic limiter cap from idle air mixture screw. *CAUTION – Count number of turns to seat screw. The same number of turns from the seat must be maintained at installation.* Remove screw and spring from throttle body.

6) Do not remove throttle valve or shaft unless new parts being installed (replacement of throttle body is recommended if wear is extreme). To remove valve, mark position of valve in bore for correct installation, remove valve screws *(CAUTION - Screws are staked and care must be used not to break them off in shaft),* slide valve out, slide throttle shaft out of throttle body.

1968-69 CARTER BBS SINGLE BARREL (Continued)

Cleaning & Inspection

Clean all parts except vacuum kick diaphragm in suitable solvent and blow dry with air, blow out all passages with air. Do not use wire or drills to clean or gauge jets and passages. Do not immerse vacuum kick diaphragm in any liquid, clean external surfaces with clean cloth or soft wire brush and shake dirt from stem side of diaphragm with diaphragm depressed; if air used to remove loose dirt, do not direct air stream in vacuum diaphragm fitting. Inspect all parts for wear or damage.

Reassembly

Reverse disassembly procedure and note the following:

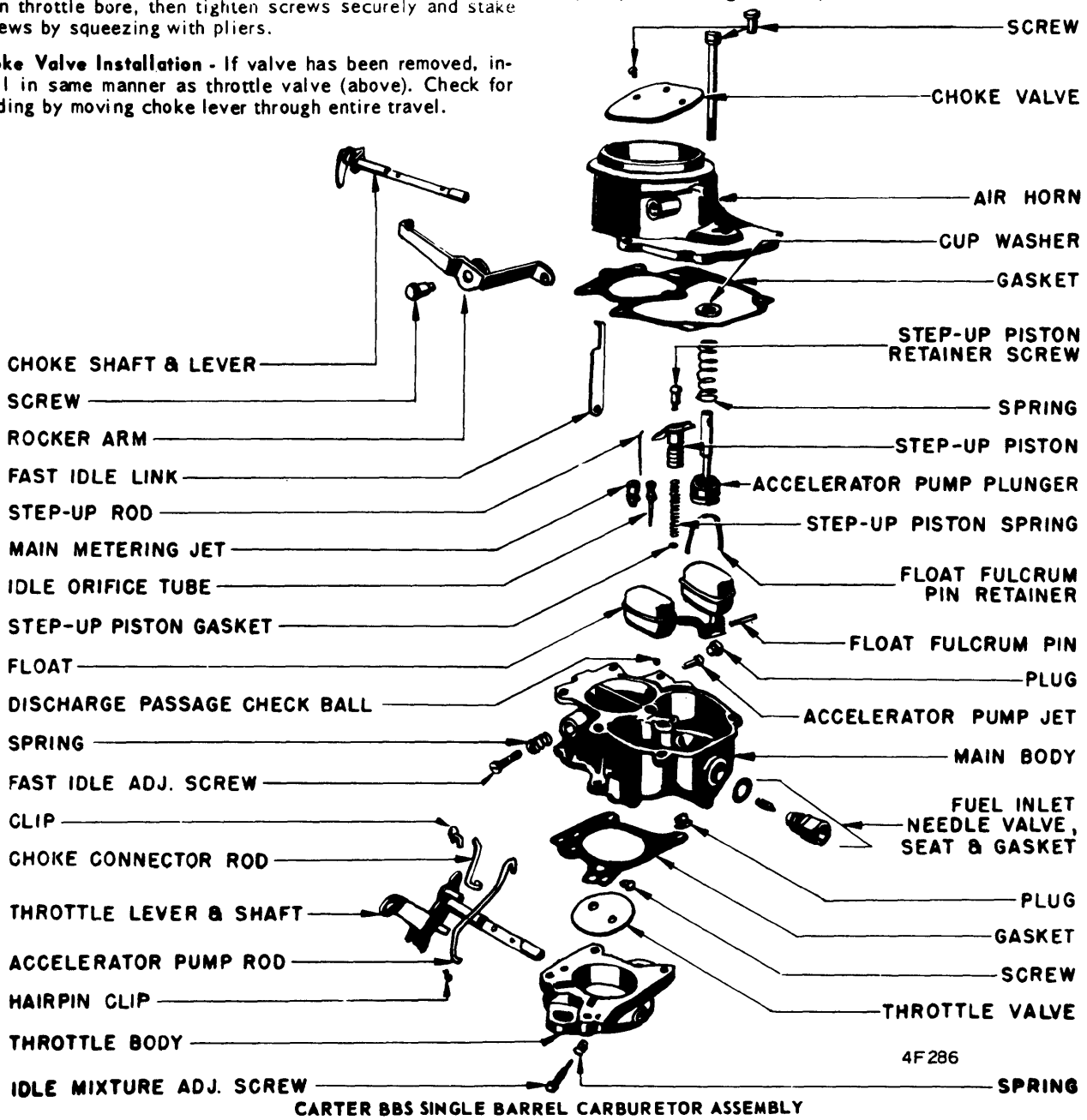
Throttle Valve Installation - Install throttle valve to marks made at disassembly, install new screws loosely, move valve to closed position and tap valve lightly to seat it in throttle bore, then tighten screws securely and stake screws by squeezing with pliers.

Choke Valve Installation - If valve has been removed, install in same manner as throttle valve (above). Check for binding by moving choke lever through entire travel.

Vacuum Kick Diaphragm - Before installing, check for internal leakage by depressing diaphragm stem and placing finger over vacuum fitting to seal passage, then release stem. If stem moves more than 1/16" in 10 seconds, leakage is excessive and unit should be replaced.

Step-up Piston & Rod Assembly - Make certain that rod is free on piston plate (must swing freely in vertical position) and see that rod enters metering jet when piston installed. Piston must move freely in cylinder.

Idle Mixture Screw Limiter Cap - Install idle mixture screw and spring in body. *NOTE - Tapered portion must be straight and smooth. If tapered portion is grooved or ridged, a new idle mixture screw must be installed.* Turn screw lightly against seat with fingers. Back off number of turns counted at disassembly. Install new plastic cap (blue) with tab against stop.



CARTER BBS SINGLE BARREL CARBURETOR ASSEMBLY (TYPICAL)