CARTER RBS SINGLE BARREL

1963 MODELS

RAMBLER AMERICAN	Carter No.
"L" Head Engine	3487S
"L" Head Engine (With "E-Stick")	3498S
STUDEBAKER	
Lark 6 Cyl	3538S
Lark 6 Cyl	3653S
Lark 6 Cyl. (Taxicab)	3537S

1964 MODELS

RAMBLER	
American	3708S
American ("E-Stick")	3709S
Classic Six (Synchro-mesh)	3727S
Classic Six ("E-Stick")	3728S
Classic Six (Auto. Trans.)	3488S
STUDEBAKER	
6 Cyl	3653S
6 Cyl. Taxicab	3537S

1965 MODELS

RAMBLER SIX	
196" L-Head Engine	3708S
199" OHV Engine	3766S

1966 MODELS

RAMBLER CLASSIC & MARLIN	
232" 6 Cyl. (Auto. Trans.) Ⓒ	3882S
Canadian Cars	3765S

1967 MODELS

RAMBLER AMERICAN, REBEL, MARLIN	
232" 6 Cyl. (Auto. Trans.) Ⓒ	3882S

Ⓒ - Holley Model 1931 Carburetor used on other engines.

►CHANGES, CAUTIONS, CORRECTIONS

►*1963 RAMBLER CARBURETOR STEP-UP DIAPHRAGM COVER RETAINER PRODUCTION CHANGE & SERVICE INSTALLATION NOTE:* Carburetors with date code K-2 or later (stamped on carburetor flange) have a new method of retaining the step-up rod diaphragm cover. On carburetors prior to date code K-2, install a split wire ring, Part No. 3204528 and conical washer, Part No. 3204529 as outlined under "Overhaul" below. The above parts are also included in Overhaul Kit, Part No. 3204290.

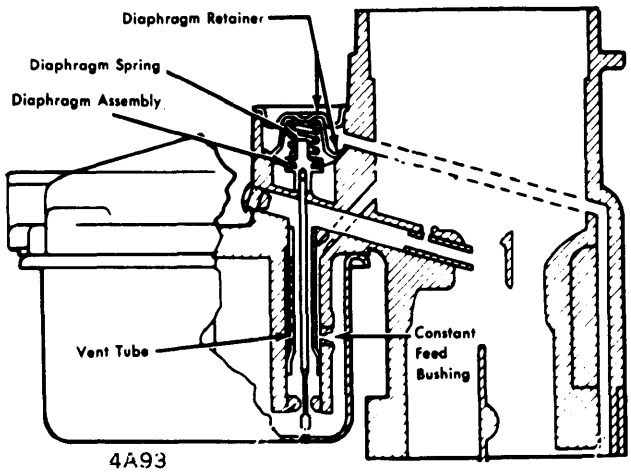
►*1963 STUDEBAKER CARBURETOR NO. 3538S (WITHOUT BLUE DOT ON CARBURETOR BOWL COVER) LOOSE, LEAKING, OR MISSING DIAPHRAGM CHAMBER COVER CORRECTION:* Install Repair Kit, Part No. 1560178, following the installation procedures included with repair kit. The above carburetors will have a code date prior to L-2 stamped on carburetor flange. Later carburetors (after code date L-2) and all carburetors having a blue dot on bowl cover were revised in production.

►*1963 STUDEBAKER HARD STARTING WITH COLD ENGINE CORRECTION (Early Carburetors with Code Date Prior to "L-2"):* Set automatic choke to 1 Point **Rich instead** of Centered (On Index).

►***1963-64 STUDEBAKER STALLING DURING WARM-UP & IMPROVED COLD STARTING CORRECTION:*** **Install Choke Coil** & Housing Assembly, Stude. Part No. 1563427; Gasket, Stude. Part No. 1563428; Choke Piston Lever, Stude. Part No. 1563445. On automatic transmission cars, set choke **one notch rich.** On synchro-mesh cars, set choke **on index (centered).** Carburetors having the new parts installed in production are identified by code symbol "B" stamped on mounting flange of carburetor.

►*1964 STUDEBAKER CARBURETOR STEP-UP ROD & DIAPHRAGM ASSEMBLY NOTE:* Carburetors with yellow colored diaphragm cover have a one-piece step-up rod and diaphragm assembly which requires no adjustment. Carburetors with gray colored diaphragm cover have a separate step-up rod and diaphragm which require a step-up rod adjustment as follows: Invert carburetor and press in lower end of step-up rod until upper end of diaphragm assembly touches retainer (resistance will be felt at this point), then continue to press rod inward until tip of rod extends .040" outward from lower surface of jet. Install step-up rod spring. *NOTE - Overhaul kits will include the one-piece type assembly.*

►*1964 RAMBLER CLASSIC (6 CYL. ENG. WITH CARTER RBS CARB.) LEAN SURGE CORRECTION:* Install Carburetor Kit, Part No. 3205412 in carburetors identified by revision code letter "A", "B", "C" or "D" (letter is stamped on carburetor flange ahead of carburetor number) as follows: On carburetors stamped "A", "B", or "C", use a pin vise and a No. 62 (.038") drill and enlarge the opening in constant feed bushing (see illustration). *NOTE - Coat drill with heavy lubricant to pick up metal chips. Drill by hand only.* On carburetors stamped "A", "B", "C", & "D", install the new step-up rod spring (color coded green), retainer, and cover. Use Tool J-21202 positioned on cover and tap lightly with a small hammer until cover is pressed into place. In addition to carburetor changes, install Champion "H-14Y" spark plugs and reset ignition timing to 8° BTDC (Reg. Fuel); 12° BTDC (Premium Fuel). Make sure there is no intake manifold leakage.



1964 RAMBLER LEAN SURGE CORRECTION

►*1966 DASHPOT INSTALLATION TO ELIMINATE DRIVE LINE BACKLASH NOISE:* Noise **caused by** reversal of engine torque and is particularly **noticeable** at city driving speeds. Correct by **installing Dashpot** Kit Part No. 3207561. Install dashpot **bracket on carburetor** mounting stud (remove stud **nut, install bracket**

CARTER RBS SINGLE BARREL (Continued)

on stud, install screw furnished in kit in small hole in carburetor flange adjacent to stud hole, tighten mounting stud nut). Make certain dashpot stem contacts pad on throttle lever and adjust dashpot. *See ADJUSTMENTS.*

CARBURETOR IDENTIFICATION

Carter number stamped on tag attached to carburetor by air horn screw or stamped on side of carburetor flange near throttle lever. "S" indicates basic carburetor design, "SA" etc. indicates changes in parts, jet calibration, or adjustment settings as listed.

DESCRIPTION

Single barrel downdraft type with vacuum diaphragm controlled step-up rod. Carburetor assembly consists of a single aluminum casting with a pressed steel fuel bowl.

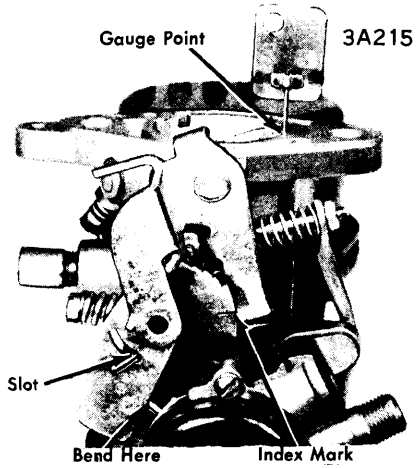
ADJUSTMENT

Idle Speed & Mixture

With air cleaner in place and engine idling at normal operating temperature (choke valve wide open and fast idle screw not contacting fast idle cam), adjust throttle stopscrew for correct engine RPM (see Specifications), turn idle mixture screw out until engine speed begins to drop off, then turn screw in to lean mixture until maximum idle speed obtained and continue to turn screw in until engine speed begins to drop off due to lean mixture, finally turn screw out just enough to secure maximum engine idle speed (this will assure a "lean as possible" setting). Readjust idle speed. If necessary to change idle speed more than 50 RPM, repeat idle mixture adjustment.

Fast Idle Speed (On Engine)

With engine idling at normal operating temperature, position fast idle adjusting screw on high step of fast idle cam (in line with index mark on cam), turn screw in or out for correct engine fast idle RPM (see Specifications).



FAST IDLE ADJUSTMENT

Fast Idle (Off Engine)

Rotate fast idle cam and align index mark on cam with center of tang on throttle lever. Clearance between throttle valve and carburetor bore on idle port side should be as indicated in specification table. To adjust, bend tang on throttle lever. With choke valve closed and fast idle connector rod against end of slot in cam (see illustration), index mark on cam should align with tang on throttle lever. To adjust, bend connector rod at offset portion.

Dashpot

Rambler "E-Stick" Carburetors - Back off throttle stopscrew so that throttle valve tightly closed, depress dashpot plunger fully, check clearance between end of dashpot plunger and throttle lever. If clearance not correct (see Specifications), adjust by loosening locknut and turning dashpot in or out of mounting bracket. Reset idle speed.

CARBURETOR ADJUSTMENT SPECIFICATIONS

Carter No.	Idle Speed (Engine RPM) Hot	Idle Speed (Engine RPM) Fast	Initial Idle Mixture	Float Level	Pump & Bowl Vent	Auto. Choke Setting	Unloader Setting	Fast Idle Setting (Off Eng.)	Dashpot Setting
3487S	550 ①	1800	¼-1½ ③	15/32"	1/16"	Index	7/64"	.035"	3/32-1/8"
3488S	500	1800	¼-1½	15/32"	1/16"	Index	7/64"	.023"	1/8"
3498S	550	1800	¼-1½	15/32"	1/16"	Index	7/64"	.035"	3/32-1/8"
3537S	550	.....	¼-1½	15/32"	1/16"	Index ③	5/32"	.052"	.....
3538S	550	.....	¼-1½	15/32"	1/16"	②	5/32"	.052"	.....
3653S	550	.....	¼-1½	15/32"	1/16"	Index ③	5/32"	.052"	.....
3708S	550 ①	1800	¼-1½	15/32"	1/16"	Index	7/64"	.023"	.....
3709S	550	1800	¼-1½	15/32"	1/16"	Index	7/64"	.023"	1/8"
3727S	550	1800	¼-1½	15/32"	1/16"	Index	7/64"	.023"	.....
3728S	550	1800	¼-1½	15/32"	1/16"	Index	7/64"	.035"	1/8"
3765S	550 ⑭	2000	¼-1¾	15/32"	1/16"	1 Rich	1/8"	.028"	1/8"
3766S	550 ①	1800	¼-1¼	15/32"	1/16"	Index	1/8"	.023"	.....
3882S	550 ⑭	2000	¼-1¾	15/32"	1/16"	1 Rich	1/8"	.040"	1/8"

① - Synchro-mesh & Overdrive. 500 RPM Auto. Trans. in "N". 500 RPM Air Cond. Cars (Air Cond. ON).

② - 1 Point Rich (Carbs. stamped "L2" or later on carburetor flange. Index (earlier carburetors).

③ - 1 Point Rich (Auto. Trans. Cars with latest revised carburetor). See "Changes, Cautions, Corrections".

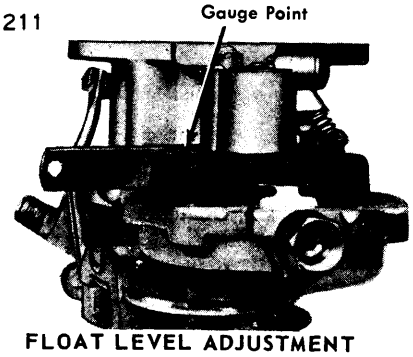
⑭ - Synchro-mesh & Auto. Trans. in Neutral. 500 RPM Air Cond. Cars (Air Cond. ON).

CARTER RBS SINGLE BARREL (Continued)

Rambler 1966 Carburetors - Back off throttle stopscrew so that throttle valve fully closed, hold dashpot stem fully depressed, adjust dashpot in bracket by loosening locknut and turning dashpot in or out for correct clearance between end of dashpot stem and throttle lever (see Specifications). Readjust idle speed.

Float Level

With carburetor assembly inverted (bowl and bowl gasket removed) and with weight of float only resting on inlet needle, measure distance from machined surface of casting to top of "bump" at each end of float (see illustration and specifications). To adjust, remove float from carburetor and bend bracket at narrow portion. *NOTE - If adjustment is made with float in carburetor do not allow any pressure to be placed on resilient inlet needle seat.*



FLOAT LEVEL ADJUSTMENT

Accelerating Pump

NOTE - This adjustment must be made each time carburetor is disassembled and must be made before fast idle and unloader adjustment. Back out idle speed screw and hold choke valve wide open so throttle valve seats in bore. Turn pump adjusting nut to obtain proper clearance (see specification table) between washer on pump plunger and boss on bowl cover.

Unloader

With throttle valve wide open, clearance between upper edge of choke valve and wall of air horn should be as indicated in table. To adjust, bend tang on throttle lever (see illustration).

Step-Up Rod

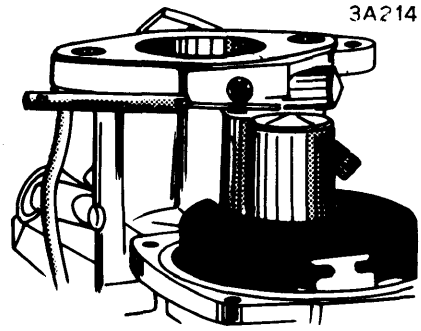
NOTE - This adjustment required only on early carburetors with two-piece step up rod and diaphragm assembly and should be made whenever step-up rod removed from diaphragm assembly. Later carburetors with one piece step up rod and diaphragm assembly do not require adjustment. Invert carburetor and press in lower end of step-up rod until upper end of diaphragm assembly touches retainer (resistance will be felt at this point), then continue to press rod inward until tip of rod extends correct distance outward from lower surface of jet (see specification table below). Install step-up rod spring.

Step-up Rod Setting

Car & Carb.	Step-up Rod Setting
Rambler 3487S, 3498S	.040"
Studebaker 3537S, 3538S, 3653S	.040"

Automatic Choke

Loosen choke cover screws and rotate choke cover and coil assembly to align reference mark on cover with correct graduation of scale on housing. See Specifications.



STEP-UP ROD ADJUSTMENT (EARLY CARBURETORS)

UNLOADER ADJUSTMENT

OVERHAUL

Disassembly

1) Remove pump adjusting nut, then push plunger down and remove spring and washer. Remove pump plunger shaft retainer, then remove pump arm retainer and arm, upper plunger spring and washer.

2) Remove fast idle cam and disengage cam from connector rod. Remove thermostatic coil housing and gasket. *NOTE - Do not remove choke valve unless it is necessary for cleaning or repair.* To remove choke, remove choke piston lever and slide piston out of cylinder, then disconnect choke piston link (wire).

CARTER RBS SINGLE BARREL (Continued)

Spread fork of choke lever with a screwdriver and slide from shaft. Remove choke valve screws and valve, and slide shaft out of air horn.

3) Remove bowl and gasket, then remove float pin attaching screws, float, pin, and needle and seat assembly. Remove step-up rod retainer spring. Press pump plunger shaft down as far as it will go, then hold in place and tap upper end of shaft with a light hammer. Use hand to catch plunger and spring (and intake ball retainer, ball, and spring on 1964 and earlier carburetors) as they are driven out lower end of cylinder.

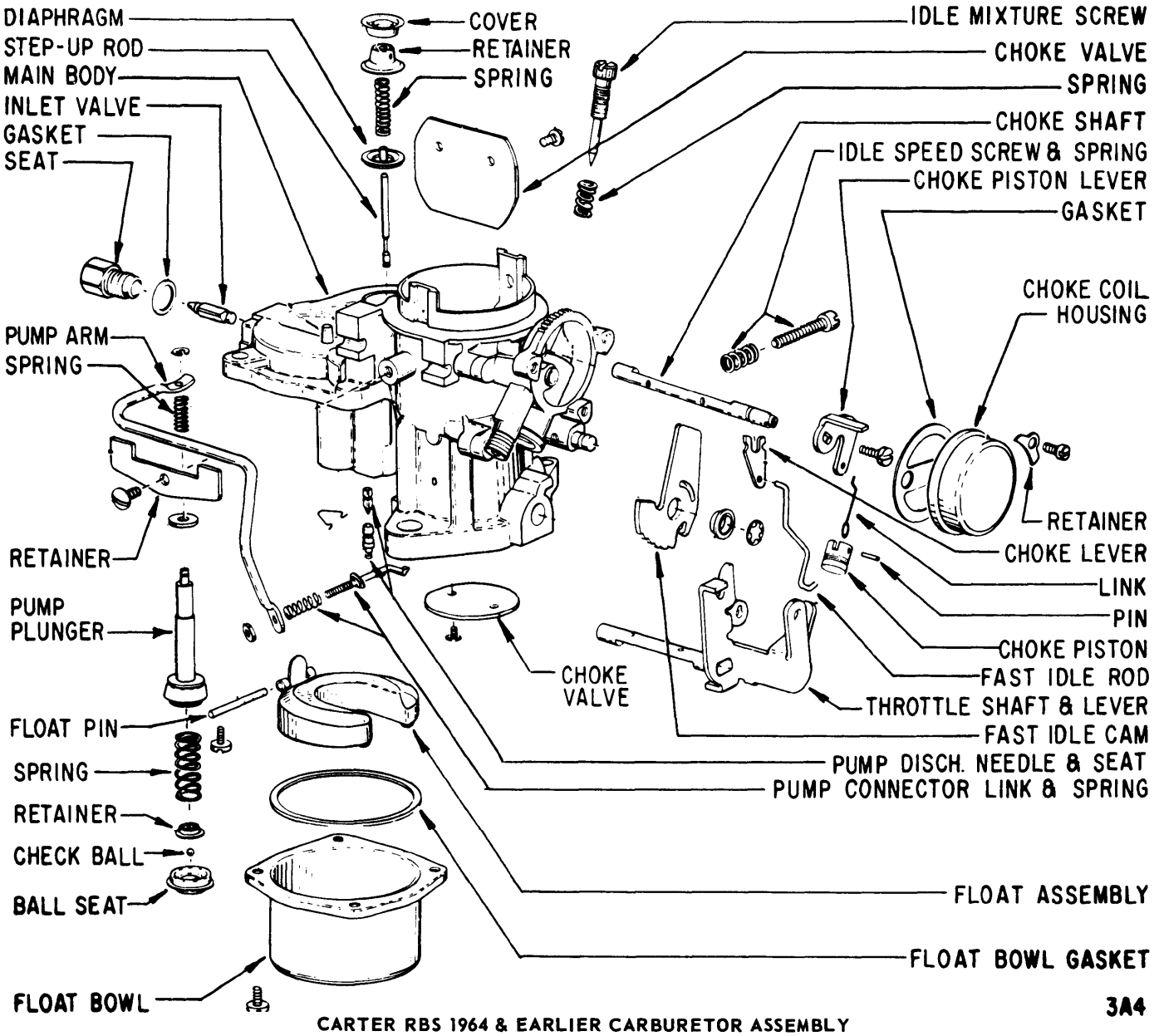
4) If necessary to remove pump discharge needle and seat (1964 and earlier carburetors), or pump intake ball and seat (1965 and later carburetors), from bottom of casting, use suitable tool for this purpose.

5) If necessary to remove diaphragm assembly, pierce cover with sharp pointed tool, pry cover and washer out of carburetor casting, remove lower retainer, spring, diaphragm assembly and step-up rod. *NOTE* - 1963 carburetors may have split ring and washer above cover which will come out with cover.

6) If necessary to remove throttle valve, file upset end of attaching screws, then remove screws, valve, and slide shaft and lever assembly out of casting. Remove idle mixture screw and idle speed screw.

Reassembly (1963-64 Carburetors)

1) Invert carburetor casting and install pump plunger, spring, ball retainer, ball and check ball seat. Press check ball seat down into position and place tool (see "Carburetor Tools" below) over end of seat. Tap tool lightly with a hammer until seat is pressed tightly into position. *NOTE - Make sure tool contacts outer surface of ball check seat.* *(Continued)*



CARTER RBS 1964 & EARLIER CARBURETOR ASSEMBLY

CARTER RBS SINGLE BARREL (Continued)

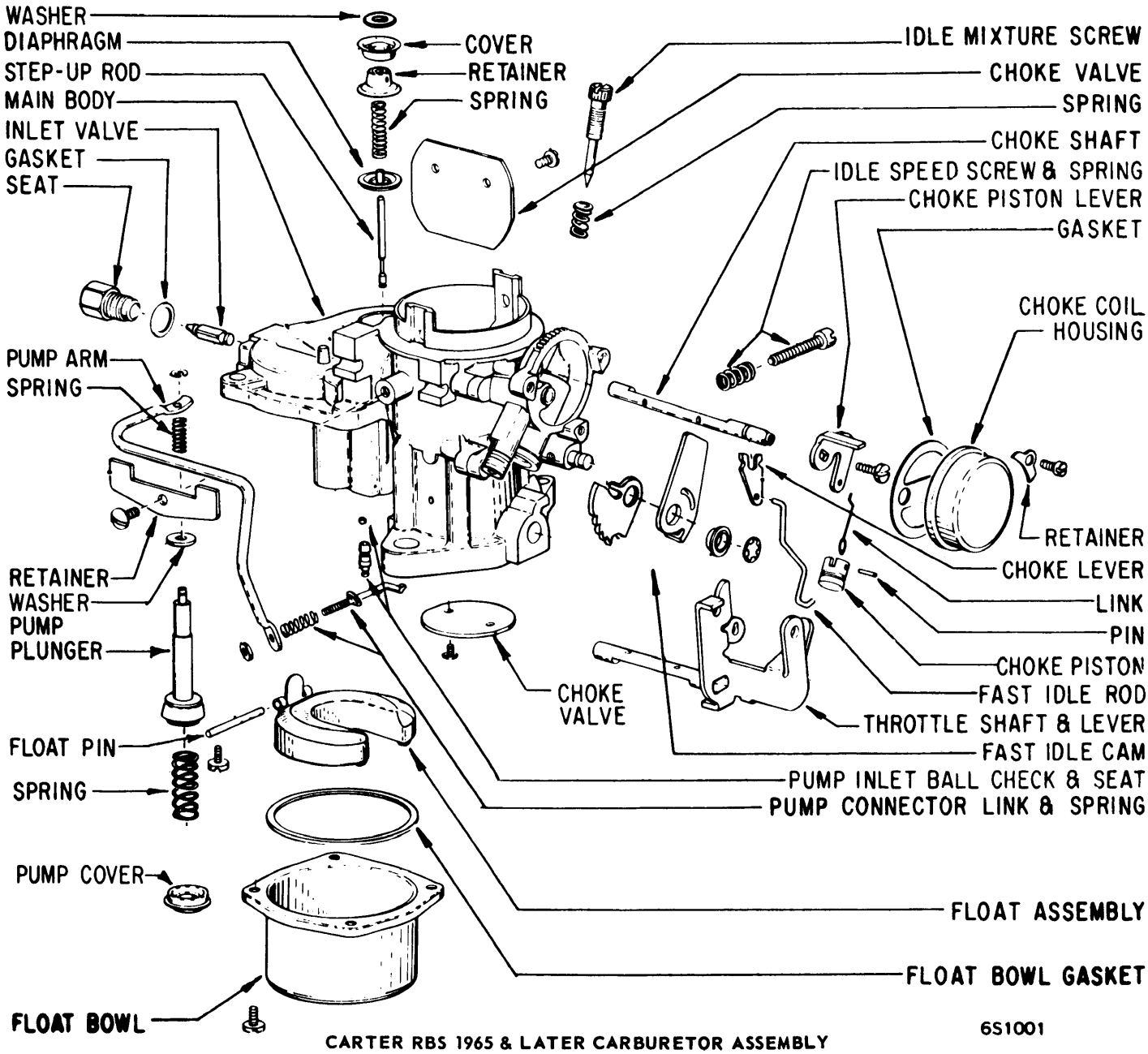
2) If pump discharge needle and seat were removed, insert needle in passage with point of needle toward seat, and install seat by driving into place (tap on protruding lip of seat) until it is just flush with lower edge of casting.

3) Place a new diaphragm assembly on top of cavity (clip end for step-up rod downward), then place brim of hat-shaped retainer (without spring) against diaphragm and use it as a tool to press diaphragm and its gasket firmly against gasket ledge in casting. Remove hat-shaped retainer and examine diaphragm for even assembly, making sure diaphragm stem is near vertical position. Install spring in cupped-shaped plate on top of diaphragm, then install hat-shaped retainer (brim down) on top of spring. Position diaphragm cover in casting, use suitable tool to tap the cover in until cover is tightly in position. Place split wire ring inside diaphragm cover and place conical washer over ring (small end of cone upward). Place a 7/16" socket attached to a suitable extension over inside diameter of washer and tap with a hammer until conical washer is flat. *CAUTION - Do not use a smaller tool which will enter cover or strike center portion of cover any time conical washer is being installed. Do not drive washer beyond the flat position.* Install step-up rod in place, making sure end of rod is in hollow end of stem of diaphragm.

4) Complete carburetor assembly by following steps (4) through (7) as detailed for "1965 & Later Carburetors" below.

Reassembly (1965 & Later Carburetors

1) Invert carburetor casting and install pump plunger and lower pump spring, then press seat (pump cover)



CARTER RBS 1965 & LATER CARBURETOR ASSEMBLY

CARTER RBS SINGLE BARREL (Continued)

down in place and position Tool J-21202 on seat *(CAUTION - Tool must contact outer circumference of seat and a new seat should be used to assure good seal in casting),* tap tool lightly with a hammer to press seat tightly into place.

2) If pump inlet ball and seat removed, install ball in passage, then tap seat into place with a light hammer (tap on protruding tip of seat and drive seat in until groove is just flush with lower end of casting).

3) With carburetor casting upright, insert step-up rod Approximately half way into sleeve of diaphragm assembly, install assembly in carburetor, install spring and retainer, position new diaphragm cover and washer on retainer. Position Tool J-21202 on cover and tap tool with a hammer to seat cover in casting.

4) If throttle shaft assembly was removed, attach connector link and insert shaft into position, then install valve with new attaching screws (do not tighten screws). *NOTE - Trade mark on valve should extend toward idle port when viewed from manifold flange side.* Tap valve lightly with screwdriver to seat valve in bore, then hold valve in position and tighten attaching screws. Upset ends of attaching screws.

5) Install upper pump washer and spring, then install washer and pump delayer spring on connecting link. Install pump arm, making sure connector link extends through hole in lower end of arm, and upper end of arm is over pump plunger. Install rod retainer, then install adjusting nut on connector link and retainer clip on plunger shaft.

6) If choke was completely disassembled, install choke valve and shaft. Center valve in bore by tapping with a screwdriver and install attaching screws. Attach fast idle connector rod to choke lever and install choke lever on shaft. Crimp forked ends of lever with pliers to secure in place. Attach fast idle cam to lower end of connector rod and install fast idle cam, washer, and retainer. Assemble choke piston and link (wire) to choke piston lever. Slide piston into cylinder, then position lever on end of shaft and secure with attaching screw. Install choke housing gasket, thermostatic coil housing, and secure in position.

7) Invert carburetor and install fuel intake needle and seal, then insert float pin into float bracket and install in carburetor. Secure float pin with attaching screws.