1968-69 CARTER AVS 4-BARREL

1968

CHRYSLER CORP. V8	Carter Carburetor No. Synchro-mesh	Auto. Trans.
340" V8	4424S	4425S
383" V8	4426S	4401S
440" V8 High Perf. ①	4428S	4429S

① - Holley Model 4160 used on Std. Engines.

1969

CHRYSLER CORP. V8	Carter Carburetor No. Synchro-mesh	Auto. Trans.
340" V8	4611S, SA	4612S, SA
With Air Cond.		4639S, SA
383" V8	4615S, SA	4616S, SA
With Air Cond.		4683S, SA
440" V8	4617S, SA	4618S, SA
With Air Cond.		4640S, SA

►CHANGES, CAUTIONS, CORRECTIONS

Carburetor Note - All carburetors are "CAS" type and are used on engines with "Clean Air System" installation.

► *CARBURETOR PRODUCTION CHANGE & ADJUSTMENT CAUTION ("SA" Models):* Later carburetors with "SA" part number suffix letters have revised idle system (two idle mixture screws with limiter caps) and require different adjustment procedure. *See DESCRIPTION for other changes on these carburetors.*

►*340", 383", 440" V8 ENGINE ROUGH IDLE AND LOW SPEED SURGE CORRECTION:* This problem may be caused by improper idle limiter screw setting, unbalancing right and left carburetor bores.

1) Remove both lead plugs in carburetor base to expose idle limiter screws, using a small drill and "Easy-Out."
2) Using a narrow screwdriver. turn both idle limiter screws clockwise until completely seated against idle discharge ports, no matter how much torque is required. Then turn both screws equally 2-3 turns counterclockwise.
3) Turn single idle adjusting screw in until seated, then ¾ turn out. *NOTE - Do not disturb this screw during steps that follow.*

4) Make idle speed and mixture adjustments as required for "CAS" type carburetors *except that idle limiter screws should be used for adjustment (instead of regular single idle adjuster screw).* Both idle limiter screws must be turned equally for this adjustment.

5) When correction completed, install lead plugs over limiter screws.

CARBURETOR IDENTIFICATION

Carter carburetor number is stamped on tag attached to carburetor by one air horn attaching screw. Do not remove tag.

DESCRIPTION

AVS (air valve secondary) 4-Barrel carburetors are similar in design to previous models with special features listed below. These carburetors have external Vacuum Kick Diaphragm (for initial choke opening) and are used with separate well type automatic choke.

Secondary Air Valve - Spring-loaded velocity type valve located in air horn adjacent to choke valve which provides smooth response when secondary throttle valves operated. *See Adjustments.*

CARBURETOR ADJUSTMENT SPECIFICATIONS

Carter Carb. No.	Idle Speed (Engine RPM) Hot ①	Fast ②	Fast Idle Cam Position	Float Level Setting	Bowl Vent Setting	Accel. Pump Setting	Unloader Setting	Vacuum Kick Setting	Auto. Choke Setting
4401S	650	1600	#54	5/16"	1/8"	7/16"	1/4"	#38	Index
4424S	700	1700	#54	7/32" ③	1/8"	7/16"	1/4"	#11	Index
4425S	650	1400	#54	7/32" ③	1/8"	7/16"	1/4"	#50	Index
4426S	650	1600	#54	5/16"	1/8"	7/16"	1/4"	#11	Index
4428S	650	1600	#54	7/32" ③	1/8"	7/16"	1/4"	#11	Index
4429S	650	1400	#54	7/32" ③	1/8"	7/16"	1/4"	#25	Index
4611S	750	1700	#50	7/32"	1/8"	7/16"	1/4"	#35	Index
4612S	700	1700	#50	7/32"	1/8"	7/16"	1/4"	#50	Index
4615S	700	1700	#50	5/16"	1/8"	7/16"	1/4"	#35	Index
4616S	650	1700	#50	5/16"	1/8"	7/16"	1/4"	#50	Index
4617S	700	1700	#50	7/32"	1/8"	7/16"	1/4"	#25	Index
4618S	650	1700	#50	7/32"	1/8"	7/16"	1/4"	#35	Index
4638S	650	1700	#50	5/16"	1/8"	7/16"	1/4"	#50	Index
4639S	700	1700	#50	7/32"	1/8"	7/16"	1/4"	#50	Index
4640S	650	1700	#50	7/32"	1/8"	7/16"	1/4"	#35	Index
4682S	650	1700	#50	5/16"	1/8"	7/16"	1/4"	#50	Index
4711S	700	1700	#50	5/16"	1/8"	7/16"	1/4"	#35	Index

① - Auto. trans. in NEUTRAL, Air Cond. OFF.
② - Fast idle screw on second highest step of fast idle cam.
③ - Plus or minus 1/64".

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1968-69 CARTER AVS 4-BARREL (Continued)

Secondary Fuel Nozzles - Nozzles are pressed in secondary side of bowl (used instead of secondary venturi clusters).

Idle Mixture Adjusting Screw (Early "S" Carbs.) - Carburetors have one idle mixture screw (adjusts both primary barrels). This screw has **left hand** thread. Screw does not have a limiter cap.

Idle Mixture Adjusting Screws (Later "SA" Carbs.) - Two idle mixture adjusting screws (with limiter caps) are used and each screw adjusts one primary barrel. These carburetors do not have sealed "off-idle" adjusting screw in air horn.

Sealed Idle Adjuster Screws - All carburetors have two idle limiter screws (at throttle flange) and early "S" carburetors have additional off-idle mixture screw in air horn. These screws are factory adjusted and sealed. *Seal plugs should not be removed or any attempt made to adjust these screws except as noted under "Changes, Cautions, Corrections" above.*

ADJUSTMENT

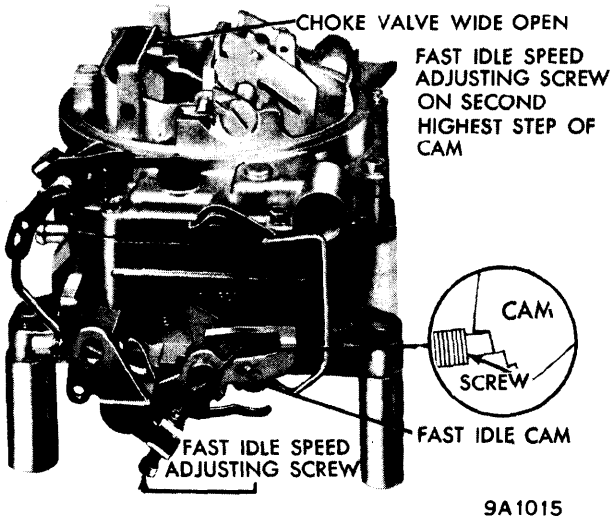
NOTE – If initial adjustment required to warm up engine, turn idle mixture adjusting screw out 1-2 turns from a lightly seated position *(CAUTION – This screw has a left hand thread).* Make idle speed and mixture adjustment with engine at normal operating temperature, automatic transmission in neutral, and air conditioner OFF.

Idle Speed & Mixture

Exhaust Analyser must be used to ensure correct fuel air mixture setting.

Fast Idle Speed (On Engine)

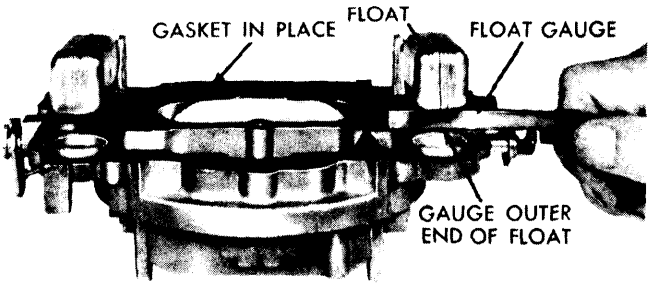
Position fast idle screw on second highest step of fast idle cam (see illustration). With engine idling at normal operating temperature and transmission in Neutral or Park, turn fast idle screw in or out for correct fast idle speed (see Specifications).



FAST IDLE SPEED ADJUSTMENT

Float Level

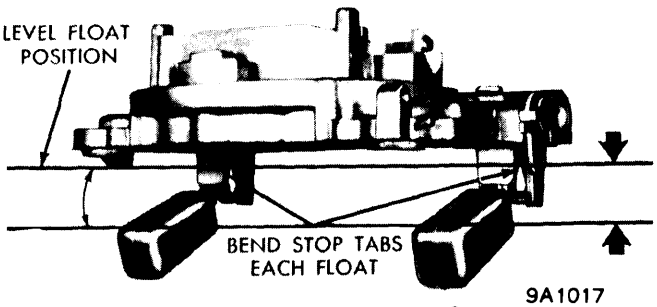
With air horn gasket in place, invert air horn and float assembly so that weight of float is on seated needle. Align floats by bending float lever so that side of each float is parallel with outer edge of air horn casting (this adjustment important to prevent floats hanging up in bowl when installed), remove as much clearance as possible from between float lever arms and air horn lugs (arms should be parallel with lugs). Check float level by inserting gauge of correct size (see Specifications) between air horn gasket and top of each float. If adjustment required, bend float arm. *CAUTION - Do not allow float to contact inlet needle when making adjustment (pressure on needle will compress rubber tip and cause false setting).*



FLOAT LEVEL CHECKING

Float Drop

This specification is float travel. Check distance from air horn gasket to top of float at free end with air horn and float assembly inverted, then repeat same measurement with air horn upright. Difference in these two measurements is float drop which should be 23/32" (1968 carburetors) and 1/2" (1969 carburetors). Adjust by bending stop tabs on floats (bend stop tabs away from the needle seat to increase float drop).



FLOAT DROP CHECKING

Accelerating Pump

This is a pump stroke adjustment and is not a seasonal adjustment. With choke valve wide open (so that fast idle cam rotated out of engagement) and throttle stopscrew backed off so that throttle valves are fully seated in bores, measure distance from top of air horn to top of pump plunger shaft. If this distance not correct (see Specifications), adjust by bending throttle connector rod at lower angle. Then adjust bowl vent valve.

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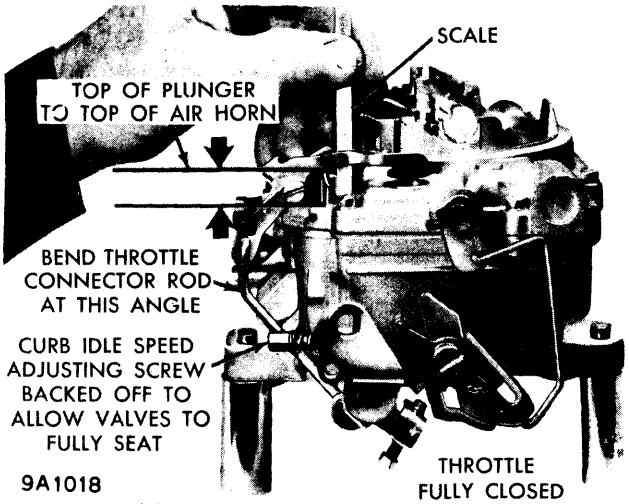
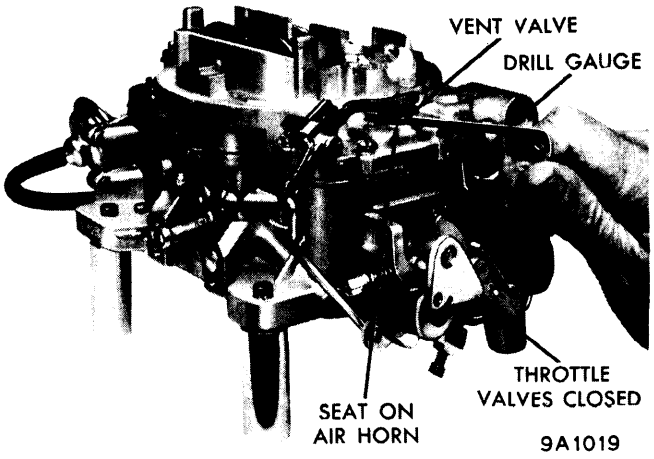
1968-69 CARTER AVS 4-BARREL (Continued)



ACCELERATING PUMP ADJUSTMENT

Bowl Vent Valve

Check after accelerating pump adjusted. With throttle valves fully closed, use gauge or drill rod to check vent valve opening or clearance between vent valve and air horn at smallest opening point. If clearance not correct (see Specifications), adjust by bending adjusting tang on pivot end of vent valve lever as necessary.



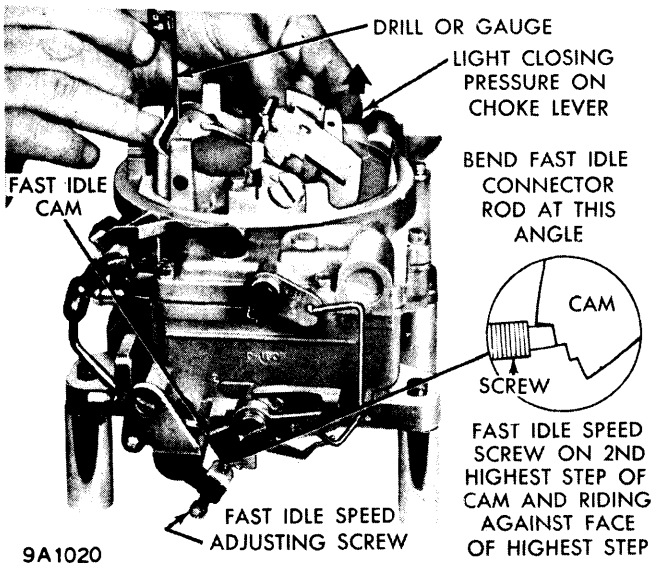
BOWL VENT VALVE ADJUSTMENT

Fast Idle Cam Linkage (Off Engine)

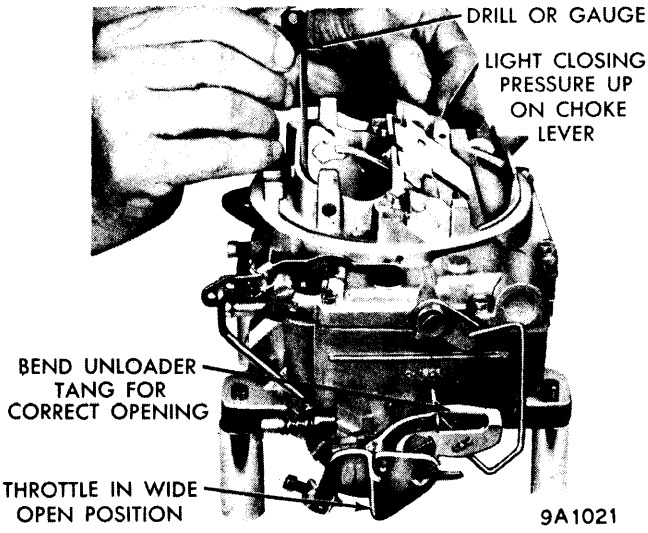
Position fast idle adjusting screw on second highest step of fast idle cam (see illustration), close choke valve as far as possible with light pressure on choke shaft lever. Check clearance between upper edge of choke valve and air horn wall with gauge or drill rod of correct size (see Specifications). If slight drag not noted as drill rod is removed, adjust by bending fast idle connector rod at lower angle as required.

Unloader

Hold throttle valves in wide open position, close choke valve as far as possible with light pressure on choke shaft lever. Check clearance between upper edge of choke valve and air horn wall using gauge or drill rod of correct size (see Specifications). If slight drag not noted as drill rod is removed, adjust by bending unloader tang on fast idle cam as required.



FAST IDLE CAM LINKAGE ADJUSTMENT



UNLOADER ADJUSTMENT

Vacuum Kick (Choke Vacuum Diaphram)

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

Checking - Disconnect fast idle linkage 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 air horn wall, apply sufficient closing pressure 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 not correct, adjust diaphragm link length as necessary. Reconnect fast idle linkage.

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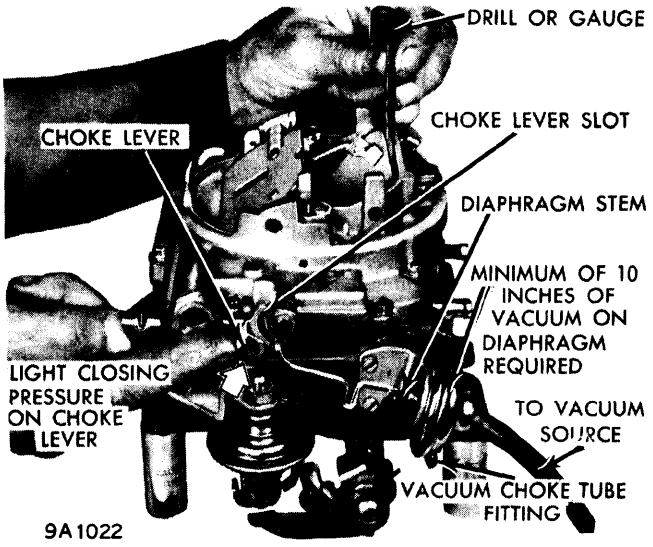
1968-69 CARTER AVS 4-BARREL (Continued)

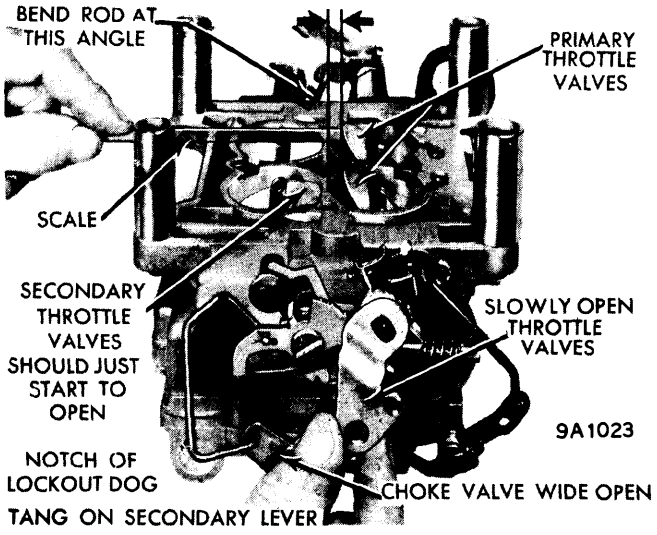
Adjustment - Change link length by opening or closing the link bend *(CAUTION - Do not apply twisting or bending force to diaphragm).*
Final Check - With no vacuum applied, choke valve must move freely between open and closed positions.



VACUUM KICK SETTING CHECK

Automatic Choke

CAUTION – This unit is serviced as a complete assembly. Do not attempt to repair unit or change the adjustment. If setting has been disturbed, it can be reset by loosening locknut and using a screwdriver to turn assembly until index mark on disc is aligned with correct mark on bracket (see specifications), tighten locknut.



SECONDARY THROTTLE OPENING & LOCKOUT ADJUSTMENT

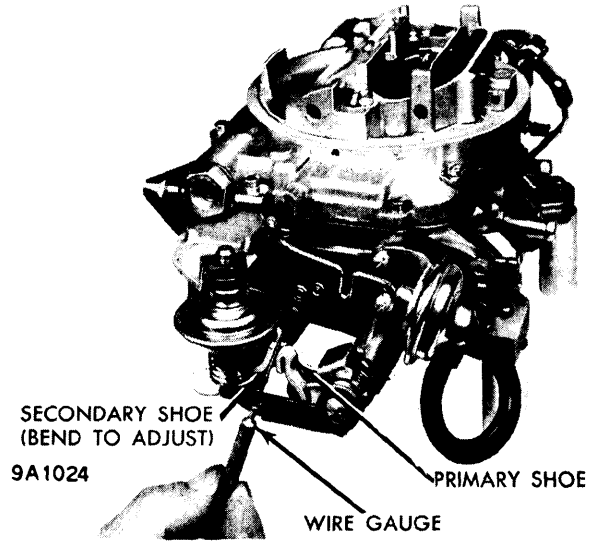
Secondary Throttle Lever

Two separate adjustments required as follows:

1) Secondary Throttle Opening - Block choke valve in wide open position. Invert carburetor and open primary throttle valves until clearance between lower edge of valves and carburetor wall as shown in table below. At this point, secondary throttle valves should just start to open. Adjust by bending secondary throttle operating rod at the angle.

Carb. No.	Primary Opening
4428S	11/32"
4429S	3/8"
All Others	21/64"

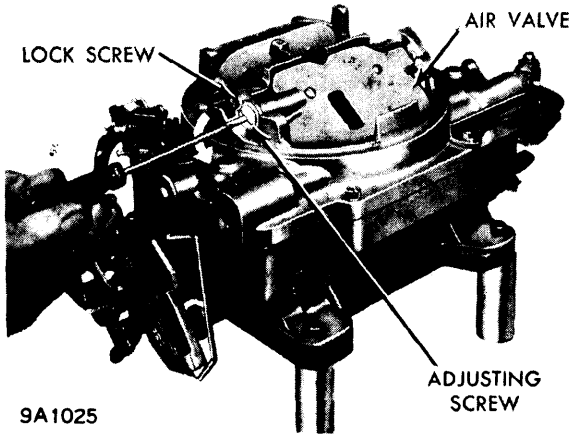
2) Closing Shoe Clearance - With both primary and secondary throttle valves tightly closed, use feeler gauge to measure clearance between primary and secondary closing shoes (see illustration). This clearance should be .020" (all carburetors). Adjust by bending secondary throttle shoe as required.



SECONDARY CLOSING SHOE ADJUSTMENT

Secondary Throttle Lockout

Crack throttle valves, then open and close choke valve. Tang on secondary throttle lever should freely engage notch in lockout dog to lock secondary throttle valves when choke valve closed. Adjust by bending tang on secondary throttle lever.



SECONDARY AIR VALVE ADJUSTMENT

Secondary Air Valve

Loosen lockscrew and allow air valve to position itself at wide open position. From wide open position, (spring

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1968-69 CARTER AVS 4-BARREL (Continued)

barely moving valve), turn slotted sleeve two full turns counterclockwise. Hold in position with finger, then tighten lockscrew securely. Check valve for freedom of movement.

Dashpot ("CAS" Carburetors)

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

OVERHAUL

Disassembly

Air Horn - 1) Disconnect pump rod from pump lever and choke rod from choke kick lever on choke shaft.

2) Disconnect vacuum hose between kick diaphram and carburetor, then remove vacuum kick diaphram assembly. Disconnect vacuum kick link from lever.

3) Remove two power piston and metering rod cover plates on air horn, remove power pistons, metering rods, and power piston springs.

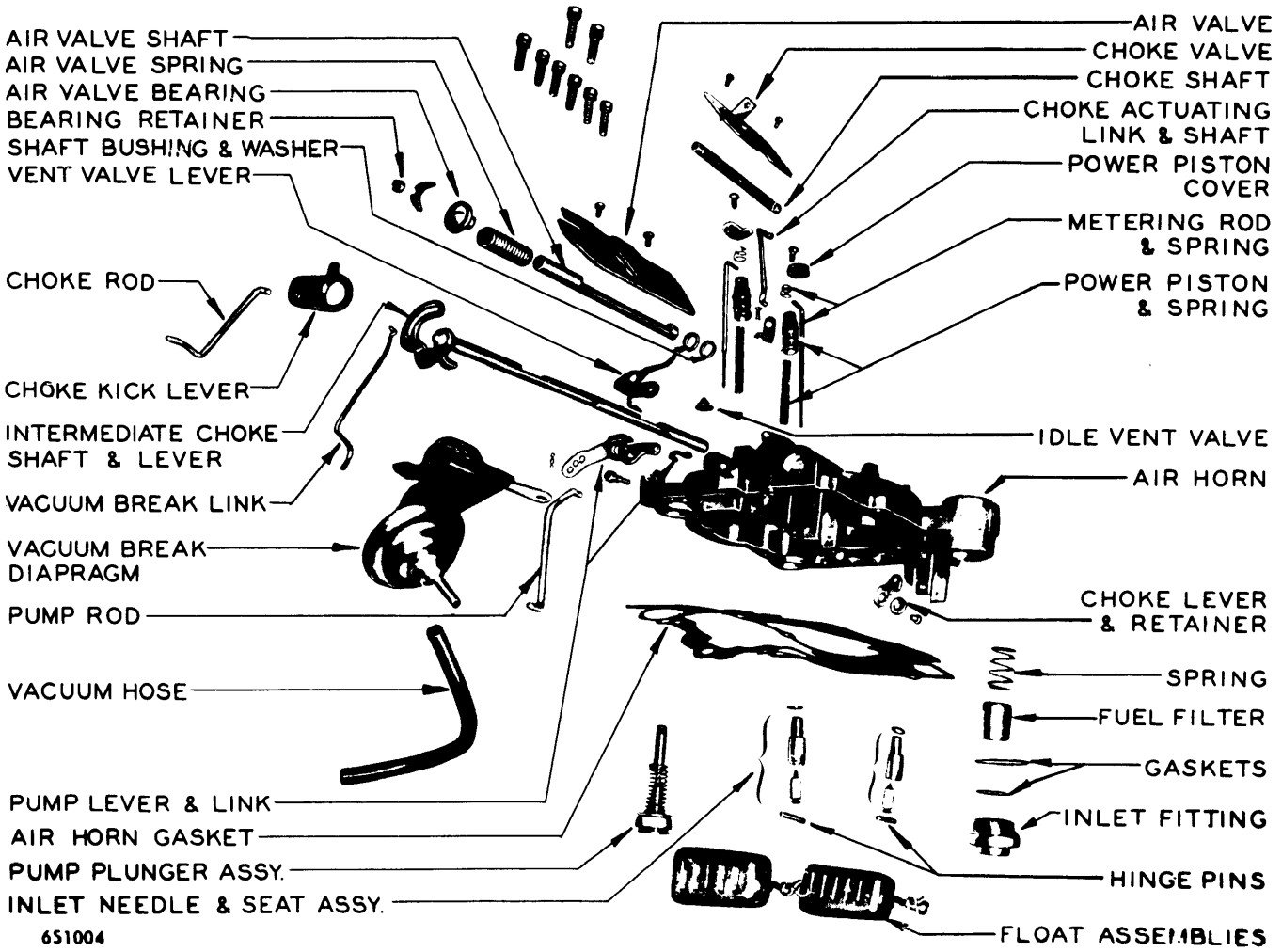
4) Take out air horn screws, carefully lift air horn off body to avoid damage to floats and pump plunger. Remove fuel inlet fitting, fuel filter, spring, and gaskets. Remove float lever pins, remove floats, inlet needles and seats, and gaskets. Keep parts for each float separate. Remove dashpot (if so equipped).

5) Take out pump lever screw and remove lever, disconnect "S" link and remove pump plunger. Place pump plunger in kerosene or gasoline to prevent plunger leather drying out.

6) *Do not remove air valve or choke valve unless damage or wear noted which requires replacement of parts.* To remove air valve, remove air valve retainer and spring, remove valve and slide shaft and bushing out of air horn. To remove choke valve, remove lever from choke control shaft, remove link lever screw, slide control shaft out of air horn. Remove staking from choke valve screws by filing screw ends level with shaft, remove screws and choke valve, slide choke shaft out of air horn.

Carburetor Body - 1) Lift out accelerating pump return spring and remove pump nozzle and gasket, then invert carburetor to drop out discharge check needle.

2) Remove four metering jets *(CAUTION - Primary metering jets are larger and jets must be installed in same positions).* Remove pump intake check ball and seat assembly. Remove venturi clusters *(CAUTION - Keep clusters separate so they can be reassembled in same positions).*



CARTER AVS 4-BARREL CARBURETOR AIR HORN ASSEMBLY

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1968-69 CARTER AVS 4-BARREL (Continued)

3) Remove idle mixture adjusting screw. *(CAUTION - This screw has a left hand thread).*

4) Do not remove throttle linkage or throttle valves unless replacement of damaged or worn parts is required. To remove throttle valves on 1968 Models, first remove fast idle screw, fast idle cam, lockout dog, secondary connecting link, then take out throttle dog lever screws and remove levers and springs from throttle shafts. On all models, file off staked ends of throttle valve attaching screws, remove screws and throttle valves. *NOTE* – It is not recommended to replace throttle shaft. If throttle shaft is worn or bent, install a new carburetor.

Cleaning & Inspection

Clean all parts except vacuum diaphragm assembly and pump plunger in carburetor cleaning solution. Inspect all parts for wear or damage, replace parts as necessary. Inspect mating surfaces of castings for burrs, gouges, or other irregularities which might cause leaks.

Pump System Check - Pour ½" of gasoline into carburetor bowl, install pump inlet check ball and seat and pump discharge check needle in body and install pump plunger in cylinder. Fill pump cylinder with gasoline by raising plunger, press lightly on shaft to expel air from passages, then hold discharge needle down on seat by pressing firmly on needle with small brass rod. Press plunger downward. No fuel should be emitted from either intake or discharge passages. If discharge noted, clean passages thoroughly, and install new check valves if necessary.

Reassembly

Reverse disassembly procedure and note the following:

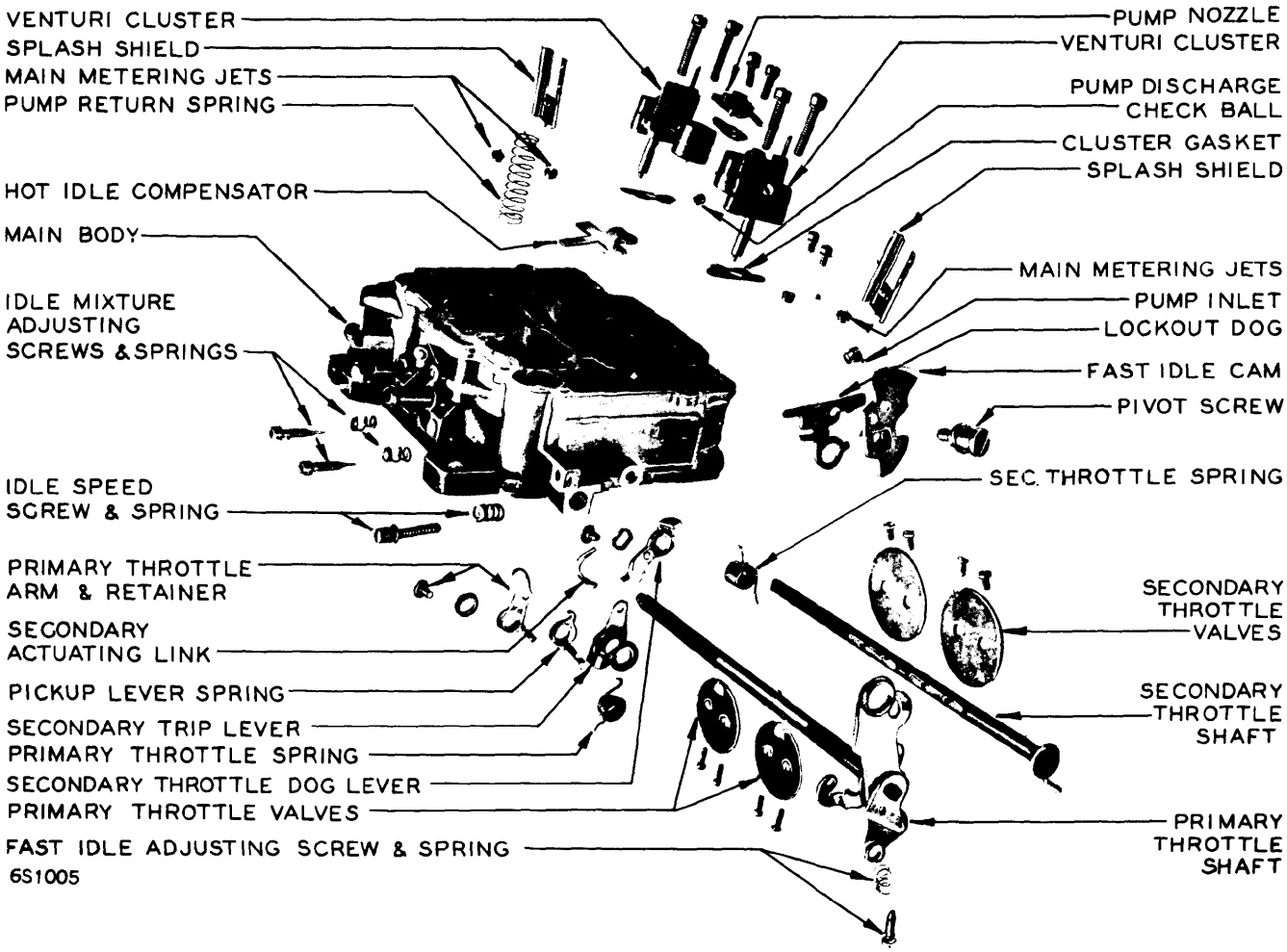
Idle Mixture Adjusting Screw Installation - Install screw and turn lightly against seat with fingers, then back off one full turn (approximate adjustment). *CAUTION* - do not use a screwdriver. This screw has a left hand thread, so turn counterclockwise to richen and clockwise to lean mixture.

Secondary Throttle Shaft Dog Lever & Spring - Spring should have a one-turn wind-up when installed.

Throttle Valve Installation - Install valves into respective bores, install new screws loosely, hold valve closed and tap lightly to centralize them in bore, then tighten screws securely. Check valves for free operation.

Choke Valve Installation - Install choke valve with markings upward, install new screws loosely. Align valve by moving choke shaft endwise while holding valve closed, then tighten screws securely and stake the screws. Check valve for uniform clearance and freedom from binding. Valve should fall open of its own weight.

Air Valve Installation - Install air valve shaft and bushing, then install valve spring, bearing and retainer. Install valve so that cut-out in valve provides clearance for choke valve operating link. Adjust air valve spring (see Adjustments).



CARTER AVS 4-BARREL CARBURETOR MAIN BODY ASSEMBLY

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