1968-69 HOLLEY 4-BARREL MODELS 4150 & 4160

1968 MODELS 4150 & 4160

CAMARO, CHEVELLE & CHEVROLET	Model	Ⓒ Holley Carburetor No. Synchro-mesh	Auto. Trans.
302", 396" 375 HP 427" 425 HP V8	4150	R4053A	
CORVETTE			
427" 430 HP V8	4150	R4054A	
CHRYSLER CORP.			
440" V8	4160	R3917A	R3918A

1968 U. S. Thermactor & IMCO Engines

MONTEGO, MUSTANG COUGAR & FAIRLANE			
390" GT V8	4150C	C8OF-C	C8OF-D
427" V8	4150C		C8AF-AD

1968 Export Non-Emission Engines

MONTEGO, COUGAR			
390" GT V8	4150C	C7OF-A	C7OF-B

Ⓒ – Ford Motor Co. Part Number prefix and suffix with basic part number (9510) omitted.

1969 MODELS 4150 & 4160

CAMARO	Model	Ⓒ Holley Carburetor No. Synchro-mesh	Auto. Trans.
302" 290 HP V8	4150	R4053A	
396" 375 HP V8	4150	R4346	R4346
CORVETTE			
427"430 HP V8	4150	R4296A	R4296A
NOVA			
396" 375 HP V8	4150	R4346	R4346
CHRYSLER CORP.			
440" V8	4160		R4166A
1968 FAIRLANE, MONTEGO, MUSTANG & COUGAR (COBRA JET)			
428" V8	4150C	C8OF-AA	C8OF-AB
1969 FAIRLANE & MONTEGO (COBRA JET)			
428" V8	4150C	C9AF-M	C9OF-H
1969 MUSTANG & COUGAR (COBRA JET)			
428" V8	4150C	C9AF-M	C9AF-N

Ⓒ – Ford Motor Co. Part Number prefix and suffix with basic part number (9510) omitted.

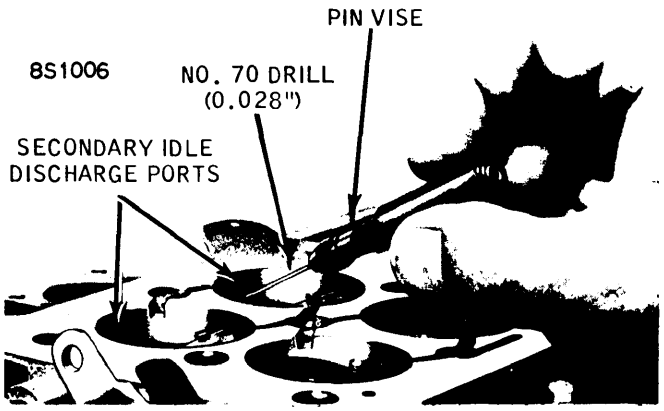
►CHANGES, CAUTIONS, CORRECTIONS

►*1968 CHRYSLER CORP. 440" V8 ENGINE STALLING AFTER HOT START CORRECTION (Auto. Trans. Cars with Air Conditioning):* If this condition occurs with air conditioner ON, correct by setting idle speed with Air Cond. ON (instead of OFF as originally specified).

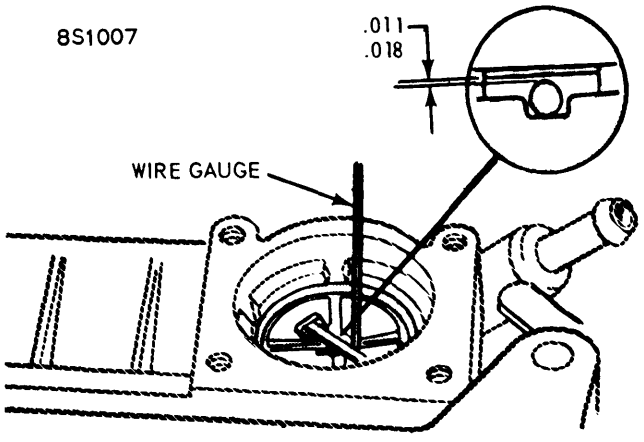
►*1968 MONTEGO & COUGAR WITH 390" V8 ROUGH IDLE AND MOMENTARY HESITATION ON ACCELERATION CORRECTION (Holley C8OF-C (Synchro-Mesh) and C8OF-D (Auto. Trans.) Engines Built Before Dec. 15, 1967):* This condition is usually caused by lean fuel condition at idle and off idle engine speeds. Later carburetors have been corrected, and have a daub of white paint on code tag.

1) Raise fuel level in primary fuel bowl 1/8", using instructions in "Adjustment". Turning primary float adjustment hex nut ½ turn counterclockwise should raise fuel level required amount.

2) Remove carburetor from engine and enlarge secondary idle discharge ports using a No. 70 (.028") drill held in a pin vise. *NOTE – Do not use a larger drill.* Coat drill with grease and slowly rotate to prevent chips from being left in idle channel.



SECONDARY IDLE DISCHARGE PORTS ENLARGEMENT



CHECK BALL & RETAINER DISTANCE MEASUREMENT

1968-69 HOLLEY 4-BARREL MODELS 4150 & 4160 (Cont.)

3) Remove primary fuel bowl accelerator pump cover and diaphragm. Bend a .015" wire gauge at 90° angle 1/8" from end and measure distance between accelerator pump ball check and ball check retainer. Clearance should be .011" to .018". If clearance excessive, use a screwdriver blade to lightly tap retainer down to specified dimensions. Reinstall cover.

4) Check surface flatness of carburetor flange with a 12" steel scale and .015" feeler gauge, measuring from corner-to-corner diagonally and along each side. If flange surface is .015" or less out of flat, reinstall carburetor using a new gasket (Part No. C8OZ-9447-A) which has brass grommets in mounting stud holes, and modify gasket as in step 5.

5) If flange more than .015" out of flat, cut off ears on a C8SZ-9447-A base gasket, and cement gasket to bottom of C8OZ-9447-A base gasket using gasket cement. *NOTE – Be sure venturi holes are perfectly aligned. Cut web between right and left venturi on modified gasket to make both gaskets similar.* Reinstall carburetor with a C8SZ-9447-A gasket on manifold, C8AZ-9A589-C metal spacer next, and C8OZ-9447-A sandwich on top, with earless gasket below eared gasket. Torque attaching bolts to 6-8 ft. lbs. alternately, then increase torque to 12-15 ft. lbs. alternately.

6) *Set Curb idle speed to 550 RPM (Auto. Trans. in DRIVE), or 700 RPM (Synchro-mesh), and set air-fuel ratio to 14.0-1 (Auto. Trans.), or 13.2-1 (Synchro-mesh).*

►*1968-69 CHRYSLER CORP. 440" V8 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 1 turn counterclockwise.

3) Turn single idle adjusting screw in until seated, then turn out 3/4 turn. *NOTE – Do not disturb this screw during steps that follow.*

4) Make idle speed and mixture adjustments as required for "CAS" type carburetors. IDLE LIMITER SCREWS ARE USED TO ADJUST RATHER THAN SINGLE IDLE ADJUSTING SCREW. Be sure that both idle limiter screws are turned equally on each adjustment.

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

CARBURETOR IDENTIFICATION

All Carburetors (except Ford) - Holley part number is stamped on fuel bowl. Complete number (R3230A) may not appear on carburetor ("R" indicates carburetor, "A" indicates assembly). A suffix number ("-1" etc.) indicates modifications in basic design or specifications.

Ford Carburetors - Ford number prefix and suffix is stamped on choke valve flange (Example "C5AF BD").

DESCRIPTION

Carburetors are downdraft type of same design used on previous models except as noted below. All carburetors except Chrysler have idle mixture adjusting screws located on each side of primary metering block only (no secondary adjustment).

Ford Cobra Jet Carburetors - Carburetors have Idle Fuel Mixture Limiter Caps and new Automatic Choke System with special Fast Idle Cam Clearance and Choke Plate Pull-down adjustments.

CHRYSLER IDLE MIXTURE ADJUSTING SCREW NOTE: Idle mixture adjusting screws on metering block have been replaced by "Idle Limiter Screws" which are factory adjusted and sealed. *DO NOT attempt to adjust these screws.* A single idle mixture adjusting screw for service adjustment is now located just inside air cleaner ring on air horn directly above primary metering block. This screw has a left hand thread.

Model 4150 - Primary and secondary metering blocks are used. Secondary metering block may or may not have Power Valve (power enrichment system).

Model 4150C - These carburetors are similar to other 4150 models except for the following features: "Center Hinged" Float with float hinge on side of float. External Vent Rod (primary fuel bowl vent valve operated by rod from throttle shaft lever), and External Fuel Distribution Tube (linking fuel bowls).

Model 4160 - Has conventional primary metering block and a Secondary Metering Body mounted on side of main body within secondary fuel bowl. No secondary Power Valve is used.

CHEVROLET & CHRYSLER CORP. CARBURETOR NOTE: These carburetors have vacuum diaphragm type "Vacuum Break" or "Vacuum Kick" instead of choke vacuum piston and separate well type automatic choke linked to choke. *See Adjustments.*

ADJUSTMENT (ON ENGINE)

NOTE - If initial adjustment required to warm up engine, turn both idle mixture screws in until lightly seated, then turn screws out the number of turns shown in specifications. With engine at normal operating temperature (choke valve wide open and fast idle not operative), adjust each model exactly as follows:

Idle Speed & Mixture

Chevy Nova, Chevelle, Camaro, Chevrolet & Corvette – On all engines except 1969 390 & 400 HP Corvette engines, turn air conditioner OFF; on Corvette 390 & 400 HP engines set idle with air conditioner ON. Adjust idle stopscrew for correct hot engine idle RPM

1968-69 HOLLEY 4-BARREL MODELS 4150 & 4160 (Cont.)

(see Specifications). Adjust idle mixture screw for highest steady idle speed, readjust throttle stopscrew for correct engine idle RPM, then turn mixture screw in until engine speed drops off 20 RPM (lean roll point), finally turn screw out exactly ¼ turn. Adjust second idle mixture screw in exact same manner. Readjust throttle stopscrew for specified idle speed.

Chrysler, Imperial, Dodge, Plymouth – *Exhaust Analyser must be used to ensure correct air-fuel mixture setting.*

Cougar, Fairlane, Ford, Montego, Mustang - Turn both idle mixture screws counterclockwise to limit of travel with limiter cap ear against stop on carburetor body. With engine at normal operating temperature (choke valve wide open and fast idle inoperative), disconnect parking brake release vacuum line at power cylinder and block this line (where used), place automatic transmission selector lever in Drive, turn headlights ON (to place alternator under load), turn air conditioner ON. With air cleaner installed(*NOTE - If necessary to remove air cleaner for adjustment, final idle speed and mixture setting must be checked with air cleaner in place*), make certain that hot idle compensator valve closed and adjust throttle stopscrew for correct hot engine idle (see Specifications), then turn both idle mixture adjusting screws inward (clockwise) for smoothest possible idle within range of adjusting screw limiters. Recheck idle speed and repeat idle mixture adjustment if necessary.

Fast Idle (On Engine)

NOTE - Make this adjustment after hot or slow idle speed and idle mixture adjustment have been made. Adjust each model as follows:

Chevy Nova, Chevelle, Camaro, Chevrolet, & Corvette - With engine at normal operating temperature and idling with choke valve wide open, position fast idle lever on high step of fast idle cam, bend fast idle lever as required for correct fast idle speed (see Specifications).

Chrysler, Imperial, Dodge, Plymouth - With engine at normal operating temperature and idling with transmission selector lever in Park or Neutral, position fast idle tang on second highest step of fast idle cam (see illustration). If fast idle speed is not correct (see Specifications), adjust by bending fast idle tang **perpendicular** to contact surface of fast idle cam. *CAUTION - Bending tang in any other manner will change Fast Idle Cam Position adjustment (see "Off Engine" adjustments).*

Cougar, Fairlane, Montego, & Mustang - With engine idling at normal operating temperature, Transmission in Neutral, Headlights On (high beam), and Air Conditioner On, position fast idle adjusting screw on center step of fast idle cam and adjust screw for correct fast idle speed (see Specifications).

Accelerating Pump

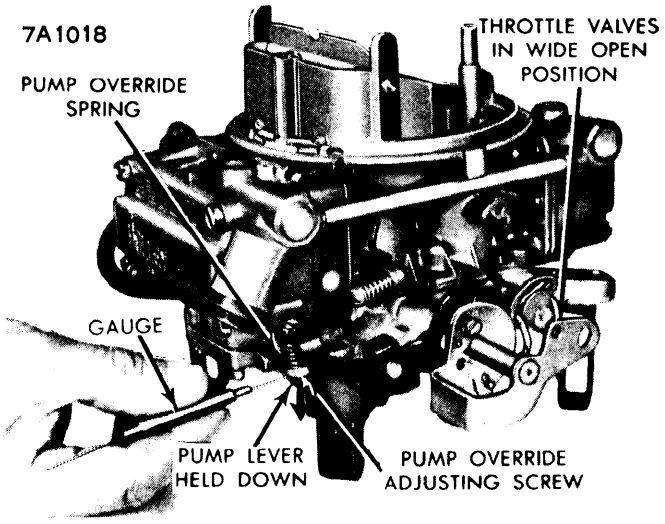
Override Adjustment - Hold throttle valves wide open, manually depress pump diaphragm actuating lever. In this position, clearance between head of operating lever adjusting screw and pump arm should be .015" (all carburetors). Adjust by turning the adjusting screw (one-half turn of screw is equal to .015"). Check pump action by fully closing throttle valves and then opening the valves. Slightest movement of throttle lever should cause corresponding movement of pump lever (lag will result in a top-in stumble or flat spot). Correct by lengthening adjusting screw.

Pump Setting Adjustment - Two holes provided in throttle lever for pump cam screw engagement as follows:

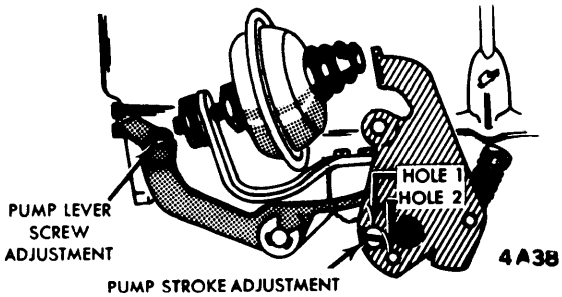
Ford Motor Co. 390" GT V8 (1968) – Install pump cam screw in No. 1 hole in cam (minimum pump stroke).

Ford Motor Co. 427" V8 (1968) – Install pump cam screw in No. 2 hole in cam (maximum pump stroke).

Ford Motor Co. Cobra Jet Engines (All Carburetors) - Install pump cam screw in No. 2 hole in pump cam.



ACCELERATING PUMP ADJUSTMENT



ACCELERATING PUMP SEASONAL SETTING

1968-69 HOLLEY 4-BARREL MODELS 4150 & 4160 (Cont.)

CARBURETOR ADJUSTMENT SPECIFICATIONS

Carburetor No. ①	Idle Speed (Engine RPM)		Initial Idle Mixture ②	Float Setting ③		Fast Idle (Off Eng.) Setting	Unloader Setting	Vacuum Break Setting	Auto. Choke Setting
	Hot	Fast		Primary	Secondary				
R3917A	–	–	–	–	–	–	–	–	–
R3918A	600 ④	1400 ⑥	1-1 1/4	15/64"	17/64"	#46	5/32"	#35	2 Rich
R4053A	④ ⑦	2200	3	.350"	.500"	.025"	.350"	.300"	⑨
R4054A	④ ⑧	2200	3	.350"	.500"	.025"	.350"	.300"	⑨
R4053A ⑯	900	2200	3	.350"	.500"	.025"	.350"	.300"	⑨
R4166A	600	1400	⑭	15/64"	17/64"	#46	5/32"	#46	2 Rich
R4296A	1000	2200	3	.350"	.50"	.025"	.350"	.350"	⑨
R4346	750 ⑫	2200	3	.350"	.50"	.025"	.350"	.300"	⑨
Ford ⑪									
C5AF-BV	600	2100	1-1 1/2	⑩	⑩	–	–	–	–
C8AF-AD	600	2100	1-1 1/2	⑩	⑩	–	.300"	–	–
C8OF-C	700	1900	1-1 1/2	⑩	⑩	–	.300"	–	Index
C8OF-D	550	2100	1-1 1/2	⑩	⑩	–	.300"	–	Index
C8OF-AA	700	1350 ⑮	⑭	⑩	⑩	–	–	None	Index
C8OF-AB	650	1550 ⑮	⑭	⑩	⑩	–	–	None	Index
C9AF-M	700	1350 ⑮	⑭	⑩	⑩	–	–	None	2 Rich
C9AF-N	650	1350 ⑮	⑭	⑩	⑩	–	–	None	1 Rich
C9OF-H	650	1350 ⑮	⑭	⑩	⑩	–	–	None	1 Rich

① – Holley Carburetor No.
② – Turns open from lightly seated position.
③ – Dry float setting (on bench). See Adjustments.
④ – Air Conditioner ON (except as noted).

⑤ – Fast idle screw on highest step of fast idle cam (except as noted).
⑥ – Fast idle tang on No. 2 step of fast idle cam.
⑦ – 900 RPM (302" Eng.). 750 RPM (396" 375 HP Eng.), with Air Cond. OFF.
⑧ – 1000 RPM (427" 430 HP Eng.) with Air Cond. OFF.

⑨ – See text for adjustment procedure.
⑩ – Floats parallel to float chamber floor.
⑪ – Ford carburetor number prefix and suffix.
⑫ – With Air Cond. ON (to correct stalling after hot start with air conditioner on).

⑬ – Auto. Trans. uses idle solenoid.
⑭ – Limiter caps used.
⑮ – Fast idle screw on second high (kickdown) step of fast idle cam.
⑯ – 1969 Model carburetor.

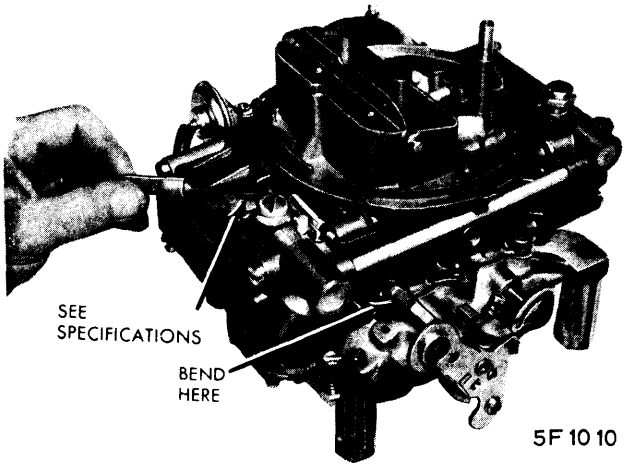
Bowl Vent

Chevrolet (All Carburetors) - With throttle stopscrew backed off and throttle valves fully closed, clearance between vent valve button and seat on bowl cover should be .065". Adjust by bending vent valve rod at lower end (at throttle lever contact). Reset throttle stopscrew 1½ turns in from point of initial contact with throttle lever as a preliminary setting (make final idle speed setting with engine running).

Chrysler, Imperial, Dodge, Plymouth - With idle speed properly set and throttle valves closed to curb idle position, check vent valve opening or clearance between valve and top surface of primary fuel bowl with a 5/64" drill rod. If clearance not correct, adjust by bending vent rod to change contact arc on throttle lever.

Cougar, Fairlane, Montego, & Mustang – With engine running at normal hot or slow idle speed check clearance between bottom of rubber vent valve and top of primary fuel bowl. Clearance should be .060-.090". Adjust by bending vent rod at lower angle adjacent to throttle lever.

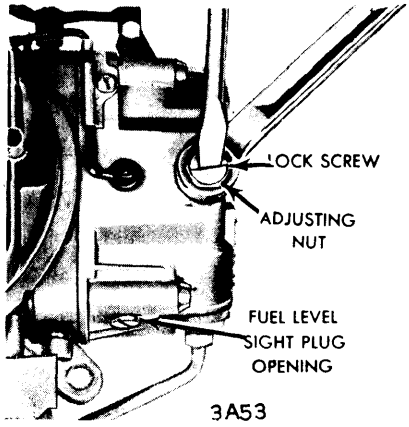
1968-69 HOLLEY 4-BARREL MODELS 4150 & 4160 (Cont.)



BOWL VENT VALVE ADJUSTMENT

Fuel Level

Chrysler, Imperial, Dodge, Plymouth - Before checking fuel level, make certain that fuel pump pressure is 5 lbs. *(CAUTION - Fuel level will vary 1/32" for each 1 lb. variation in pressure).* Remove lower bolt from fuel bowl furthest from fuel inlet, install C-4051 Wet Fuel Level Gauge in this bolt hole. Start or crank engine to refill bowl (some fuel will be lost when gauge installed). Read fuel level on gauge which should be 9/16" (primary bowl), 13/16" (secondary bowl). If adjustment required, *see "Float Level (On Bench)" for removal of float bowl and float adjustment.*



FUEL LEVEL ADJUSTMENT (WITH ADJUSTABLE NEEDLE VALVE)

All Other Carburetors - Bring engine to normal operating temperature, then remove air cleaner and stop engine. Remove sight plug in end of fuel bowl (use a container to catch fuel). Fuel level within bowl should be at lower edge of sight plug hole (± 1/32"). To adjust, proceed as directed below. *NOTE* - When checking secondary float level, first accelerate primary throttles slightly and operate secondary throttle by hand to stabilize secondary fuel level.

Fuel Level Too High - With engine stopped, loosen lockscrew on top of fuel bowl just enough to allow rotation of nut underneath. *CAUTION – Do not unlock lockscrew or attempt to adjust fuel level with engine running.* Turn adjusting screw ½ turn clockwise to lower fuel level below specifications. Tighten lockscrew, then run engine to stabilize fuel level. Check fuel level at sight plug hole. If level is not below specified level, repeat above step. With fuel level below specified level, turn adjusting nut in increments of 1/6 turn until correct fuel level is obtained. *NOTE - 1/6 turn of adjusting nut will change fuel level at sight plug opening 3/64".*

Fuel Level Too Low - Proceed as for "Fuel Level Too High" except that it will not be necessary to initially decrease fuel level below specifications.

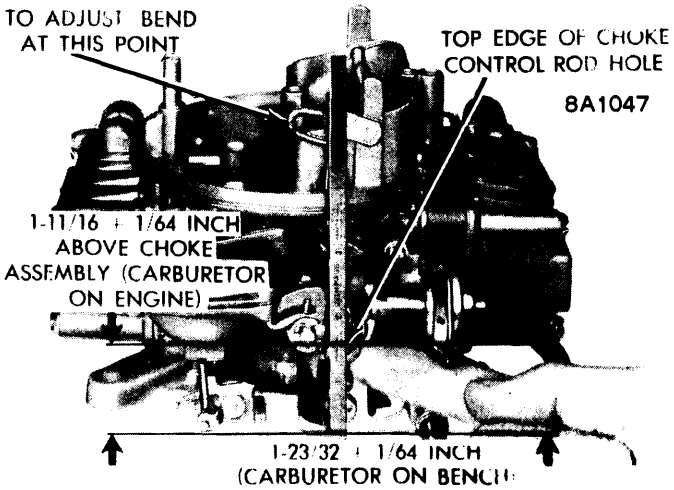
Choke Control Lever Qualifying

NOTE - On Chrysler, Imperial, Dodge & Plymouth, this adjustment must be made before checking or adjusting Fast Idle Cam Position, Unloader, or Vacuum Kick.

Chrysler, Imperial, Dodge, Plymouth - Open throttle valves to mid-position, close choke valve by applying light pressure on choke control lever. Use scale to measure distance from top of choke rod hole in control lever to top of choke assembly (carburetor on engine) or to carburetor base (carburetor off engine). If this measurement not correct (see specifications below), adjust be bending connector rod at existing bend near choke lever. *CAUTION - Check rod for free movement between open and closed positions after adjustment and rebend as necessary to relieve any binding.*

Choke Qualifying Setting

Carburetor On Engine	1 11/16" ± 1/64"
Carburetor Off Engine	1 23/32" ± 1/64"



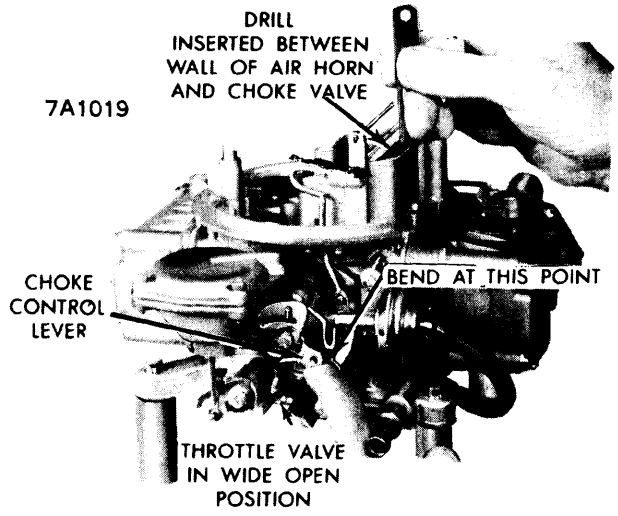
CHOKE LEVER QUALIFYING ADJUSTMENT (CHRYSLER CORP. CARBURETORS)

1968-69 HOLLEY 4-BARREL MODELS 4150 & 4160 (Cont.)

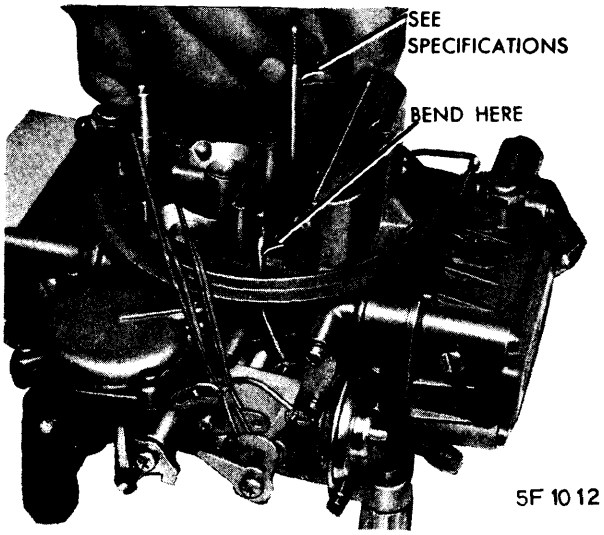
Unloader

Chrysler, Imperial, Dodge, Plymouth - With throttle valves in wide open position, insert correct size drill rod (see Specifications) between upper edge of choke valve and air horn wall, move choke valve toward closed position with light finger pressure on choke lever. Slight drag should be noted as drill rod removed. Adjust by bending unloader lever at undercut portion near throttle shaft.

All Other Carburetors - With throttle valves in wide open position, move choke valve toward closed position against unloader tang on throttle shaft, then measure clearance between lower edge of choke valve and air horn wall with a gauge or drill rod of correct size. (see Specifications). If clearance not correct, adjust by bending choke rod at offset bend near choke valve lever (see illustration).



UNLOADER ADJUSTMENT (CHRYSLER CORP. CARBURETORS)



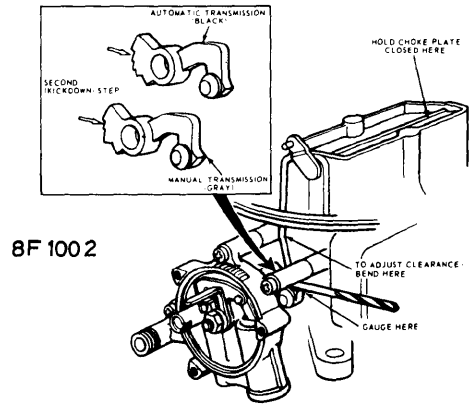
UNLOADER ADJUSTMENT (EXCEPT CHRYSLER CORP. CARBS.)

Fast Idle Cam Clearance

Ford Motor Co. Cobra Jet - With choke thermostatic cover removed, open throttle and close choke valve by pressing down on front side of valve, then release throttle valve. Measure clearance between fast idle cam flat and choke housing mounting post (see illustration). Clearance should be as listed in table below. If not correct adjust by bending choke rod as required.

Carb. No.	Clearance
C8OF-AA	①.050"
C8OF-AB	①.080"
C9AF-M	.060"
C9AF-N	.080"
C9OF-H	.080"

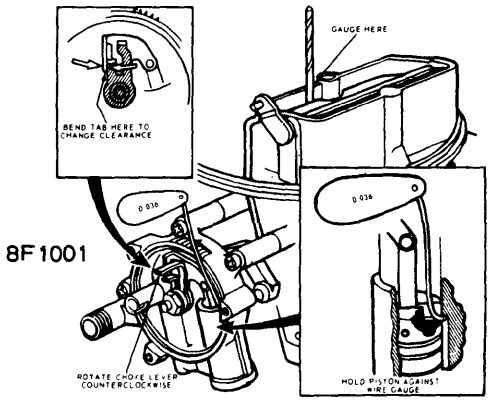
① - Setting ± .010".



HOLLEY 4150C FAST IDLE LINKAGE ADJUSTMENT

Choke Plate Pull-down

Ford Motor Co. Cobra Jet - Disconnect heat tube at thermostatic choke cover, remove cover and coil assembly. Bend a .036" wire gauge at a 90° angle approximately 1/8" from end, insert bent end of gauge between piston slot and upper edge of right hand slot in choke housing, rotate choke lever counterclockwise until gauge held snugly in piston slot and maintain light pressure on choke lever to hold gauge in place. Use gauge or drill of correct size to check clearance



HOLLEY 4150C CHOKE VALVE PULL-DOWN ADJUSTMENT

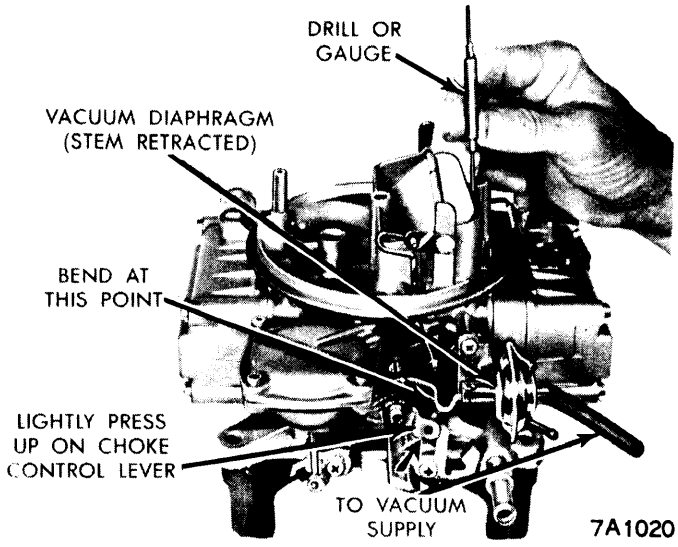
1968-69 HOLLEY 4-BARREL MODELS 4150 & 4160 (Cont.)

between lower edge of choke valve and air horn wall. If clearance is not .300" ± .010" (all carburetors), adjust by bending adjusting arm on choke shaft lever up or down as necessary (see illustration).

Vacuum Kick (Choke Vacuum Diaphragm)

Chrysler, Imperial, Dodge, Plymouth - *NOTE* - Auxiliary vacuum source (distributor tester or another vehicle engine) can be used to supply vacuum, or engine can be operated to supply vacuum of 10" of Hg. minimum for this test. If auxiliary vacuum source used, disconnect vacuum hose at carburetor fitting and connect vacuum line to this hose *(CAUTION - Disconnecting hose at diaphragm may damage system).*

Checking - With vacuum applied to diaphragm, insert drill rod 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 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 position not correct, adjust diaphragm link length as necessary.



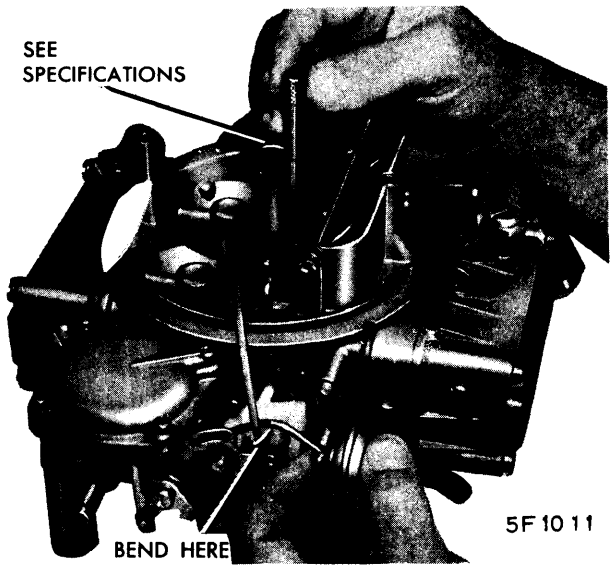
VACUUM KICK ADJUSTMENT (CHRYSLER CORP. CARBURETORS)

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 Break

Hold vacuum break diaphragm plunger in against the stop, close choke valve as far as possible, measure clearance between lower edge of choke valve and air horn wall. If clearance not correct (see Specifications), adjust by bending vacuum break link.



VACUUM BREAK ADJUSTMENT (ALL CHEVROLET DIV. CARBURETORS)

Automatic Choke (Well Type)

Chevy Nova, Chevelle, Camaro, Chevrolet, & Corvette - With carburetor installed on engine and choke rod connected, see that choke valve and rod operate freely. Disconnect choke rod at choke lever. Hold choke valve closed and press down on choke rod to limit of its travel. Top of rod end should be even with bottom of hole in choke lever (1 rod diameter interference fit). Adjust by bending the rod at the offset. *CAUTION - Rod end must enter choke lever hole freely without bind.*

Chrysler, Imperial, Dodge, Plymouth - *This unit is serviced as a complete assembly. Do not attempt to repair unit or change the adjustment.*

Automatic Choke (Integral Type)

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

Dashpot

Cougar, Fairlane, Montego & Mustang - With engine at normal operating temperature, idle speed and mixture adjustments completed, loosen anti-stall dashpot locknut. Hold throttle closed and depress dashpot plunger with screwdriver blade, then measure clearance between plunger tip and throttle lever. If clearance is not .100", turn dashpot to adjust. Tighten locknut.

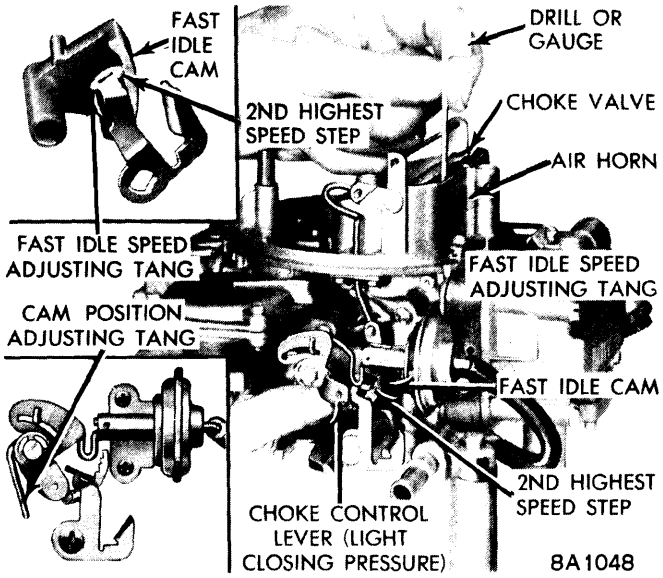
ADJUSTMENT (OFF ENGINE)

Fast Idle Cam Position

Chrysler, Imperial, Dodge, Plymouth - With fast idle speed adjusting tang contacting second highest step on fast idle cam (see illustration), move choke valve toward closed position with light pressure on choke control lever. Measure choke valve opening by inserting drill rod of correct size (see Specifications) between

1968-69 HOLLEY 4-BARREL MODELS 4150 & 4160 (Cont.)

valve edge and air horn wall. If slight drag not noted as drill withdrawn, adjust by bending fast idle speed tang **parallel** to cam contact surface. *CAUTION - Bending tang in any other manner will change Fast Idle Speed adjustment (see "On Engine" adjustments).*



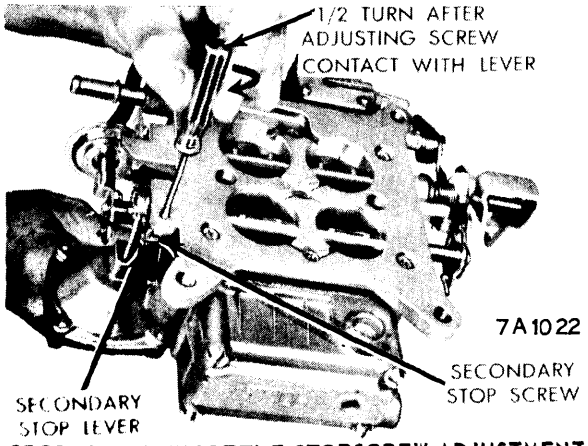
FAST IDLE CAM POSITION ADJUSTMENT (CHRYSLER CORP. CARBURETORS)

Fast Idle Cam

Chevy Nova, Chevelle, Camaro, Chevrolet, & Corvette - Open throttle slightly and close choke valve fully to position fast idle lever on high step of fast idle cam, close throttle valves. Check throttle valve opening by inserting drill rod of correct size (see Specifications) between edge of throttle valve and carburetor wall on idle transfer slot side. Adjust by bending fast idle lever. Check fast idle speed after carburetor installed on engine.

Secondary Throttle Stopscrew (On Bench)

Back off secondary throttle stopscrew (see illustration) until secondary throttle valves are tightly closed, turn stopscrew in until it just contacts the stop on the secondary throttle operating diaphragm lever, then turn stopscrew in one-half additional turn to provide correct secondary throttle valve position.



SECONDARY THROTTLE STOPSCREW ADJUSTMENT

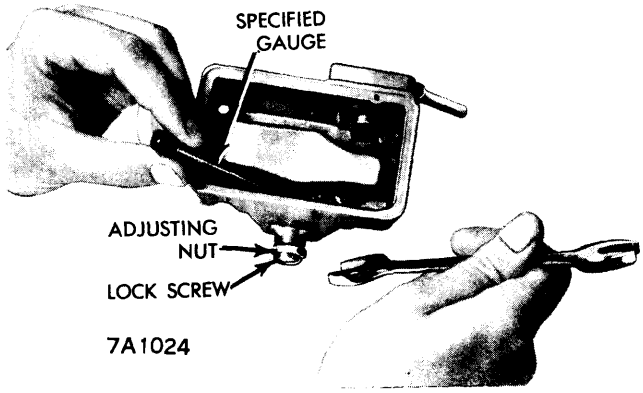
Float Level (On Bench)

NOTE - This is a preliminary adjustment only. After carburetor is installed on engine, Fuel Level must be checked and adjusted. See "Fuel Level" under ADJUSTMENT (ON ENGINE).

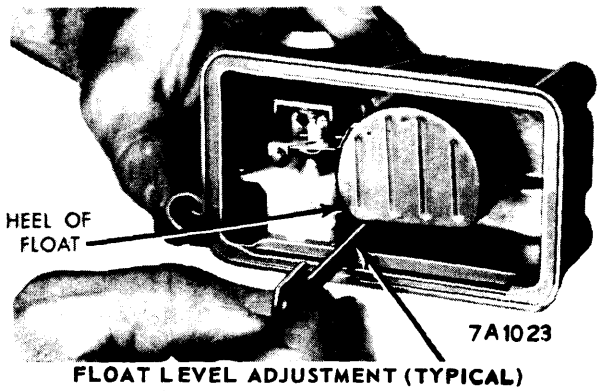
Chevy Nova, Chevelle, Camaro, Chevrolet, & Corvette - Invert fuel bowl and float assembly with weight of float resting on seated intake needle, measure distance from lower edge of float bowl to lower edge of float (at free end on "end-hinged" floats, both ends on "side-hinged" floats). Adjust by bending small tab on float lever ("end-hinged" floats), or by loosening lockscrew and turning adjusting nut on adjustable needle seat ("side-hinged" floats).

Chrysler, Imperial, Dodge, Plymouth - Invert fuel bowl and float assembly with weight of float resting on seated intake needle, measure distance between toe of float and lower surface of fuel bowl (primary fuel bowl), heel of float and lower surface of fuel bowl (secondary fuel bowl). See Specifications. Adjust by bending float lever tang.

Cougar, Fairlane, Ford, Montego, & Mustang – Invert the fuel bowl and the float assembly with weight of float on seated intake needle. Float should be parallel with lower edge of fuel bowl. Adjust by loosening lockscrew and turning adjusting nut on adjustable needle seat.



FLOAT LEVEL ADJUSTMENT (TYPICAL) (SIDE-HINGED FLOATS)



FLOAT LEVEL ADJUSTMENT (TYPICAL) (END-HINGED FLOATS)

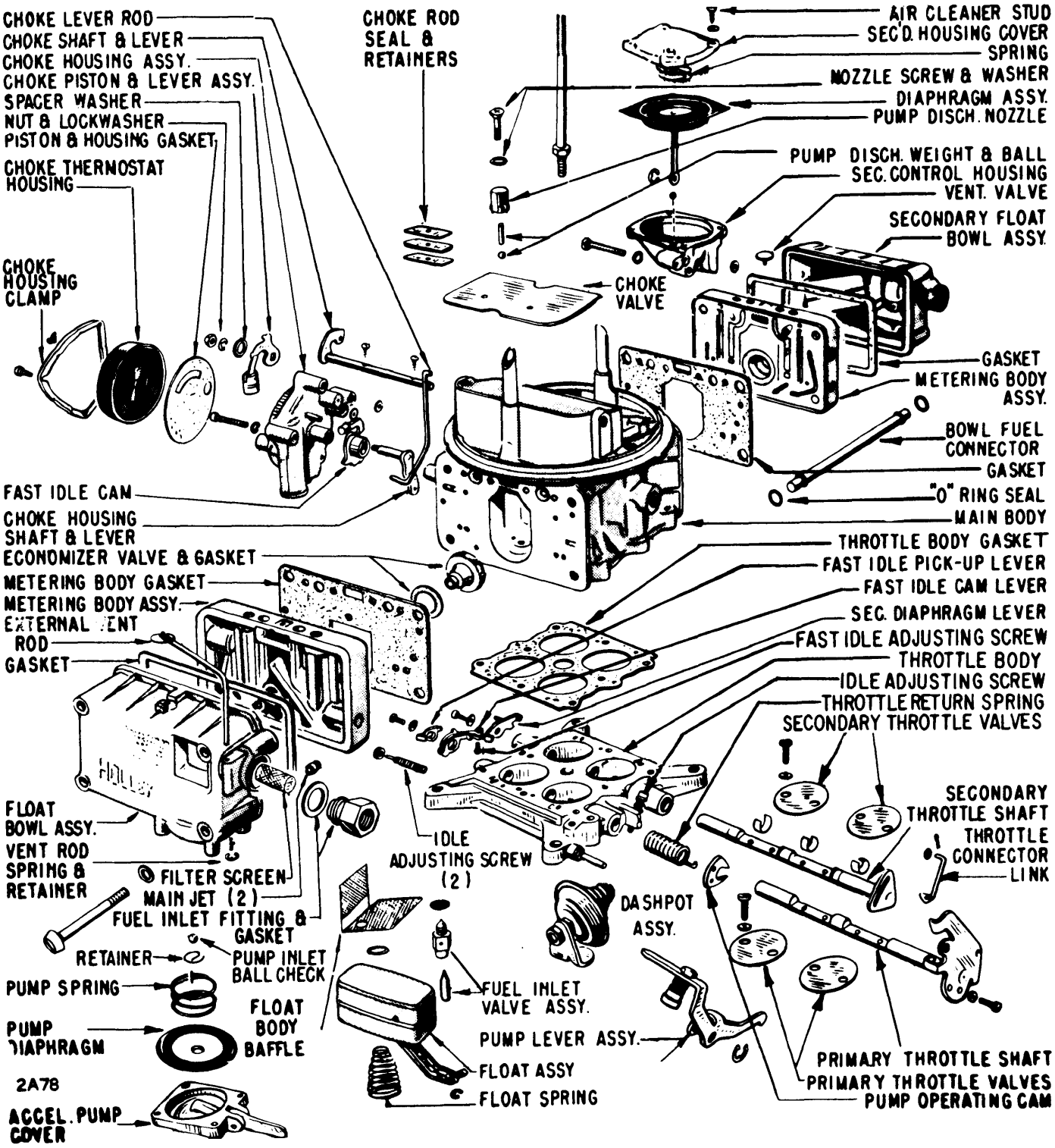
1968-69 HOLLEY 4-BARREL MODELS 4150 & 4160 (Cont.)

OVERHAUL

Disassembly

Before disassembly, loosen fuel inlet fitting, fuel bowl sight plugs, and needle and seat assembly lockscrews, then separate carburetor into main subassemblies and disassemble each of these subassemblies as follows:

1) On carburetors with external interconnecting fuel line, disconnect line at primary and secondary fuel bowls. Remove primary fuel bowl screws and remove fuel bowl, primary metering body, splash shield and gaskets, and fuel tube (fuel bowl connector) if used.



HOLLEY 4-BARREL 4150 CARBURETOR ASSEMBLY (4160 SIMILAR)

1968-69 HOLLEY 4-BARREL MODELS 4150 & 4160 (Cont.)

2) Remove secondary fuel bowl screws, remove fuel bowl, secondary metering body and gasket (Model 4150). On Model 4160, remove secondary metering body screws and lift out metering body and gasket.

3) Disconnect secondary throttle operating rod at throttle lever, then remove secondary throttle operating diaphragm assembly and gasket from main body. Disconnect vacuum hose at vacuum break or kick assembly, then remove diaphragm assembly (if used). Remove throttle body-to-main body screws, then remove throttle body and gasket from main body.

Fuel Bowls - 1) On carburetors with "end-hinged" floats, remove float hinge pin retainer, remove hinge pin and slide float from bowl. If necessary, remove spring from float assembly. Remove inlet baffle from bowl (if used). On carburetors with "side-hinged" floats, remove two float hinge screws, remove float assembly from bowl, slide hinge pin out, remove float and spring.

2) Remove fuel inlet needle and seat assembly. *NOTE - Do not disassemble fuel inlet needle and seat as they are matched assemblies.* Remove sight plug and gasket. Remove inlet fitting, fuel filter, spring, and gaskets.

3) On primary fuel bowls only, remove air vent valve assembly, then take out pump diaphragm cover assembly screws and remove pump cover, diaphragm, and spring from bowl. Check pump inlet ball for damage and make certain ball is free. Any damage to ball, passage, or retainer will require replacement of fuel bowl.

Metering Bodies - Use wide-bladed screwdriver to remove main metering jets, use 12-Pt. socket to remove power valve, remove vacuum fitting. On Model 4160 secondary metering bodies, remove plate and gasket from metering body dowel pins.

Secondary Throttle Operating Diaphragm Assembly - Take out screws and remove diaphragm cover, remove spring and diaphragm assembly from housing. Remove vacuum check ball from housing (when used).

Automatic Choke, Ford Only - 1) Remove choke rod retainer from shaft and lever assembly, remove choke and thermostatic coil assembly and gasket, then remove choke housing and gaskets from main body.

2) Remove choke housing shaft nut, lockwasher, and spacer, then remove shaft and fast idle cam. Remove choke piston and lever assembly from housing. Remove choke rod and seal from main body.

3) If necessary to remove choke valve, file staking on retaining screws *(CAUTION – Use care not to damage choke shaft or venturi while filing screws)*, remove screws and slide choke valve out, remove choke valve shaft.

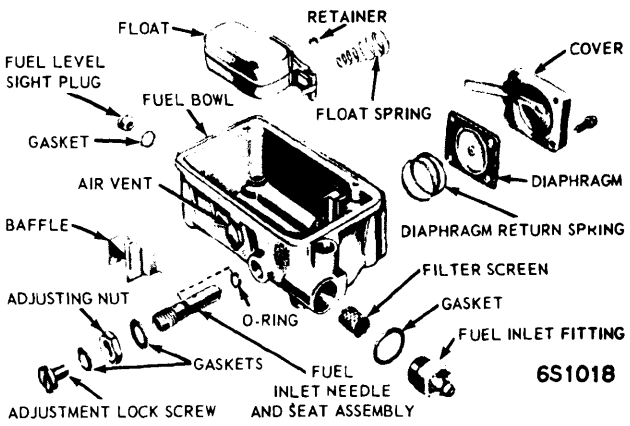
Main Body - On carburetors with vacuum break, take out retaining screws and remove vacuum break diaphragm assembly. Take out accelerating pump nozzle screw, remove discharge nozzle and gaskets, invert main body and catch pump discharge needle which will fall out.

Throttle Body – 1) Remove accelerating pump operating lever, secondary throttle connecting rod, secondary throttle diaphragm lever, and fast idle cam lever. Remove throttle stopscrew and spring.

2) If necessary to remove primary or secondary throttle valves and shafts, lightly scribe all throttle valves along throttle shafts and mark each valve and corresponding bore to ensure correct reassembly, then file off staking on valve retaining screws *(CAUTION - Use care not to damage throttle shaft or venturi while filing screws)*, take out screws and slide throttle valves out, slide throttle shafts out. Remove Teflon bushings from secondary throttle shaft.

Cleaning & Inspection

Clean metallic parts and castings with carburetor cleaner or solvent (if throttle body not disassembled, clean this assembly and all non-metallic parts in alcohol or gasoline). Blow out all passages with compressed air. Inspect all parts for wear or damage. All mating surfaces must be smooth and not burred or gouged. Inspect needle and seat for burrs, ridges, or wear, and replace both parts as an assembly.



FUEL BOWL ASSEMBLY (PRIMARY SHOWN) (WITH ADJUSTABLE NEEDLE VALVE)

1968-69 HOLLEY 4-BARREL MODELS 4150 & 4160 (Cont.)

Reassembly

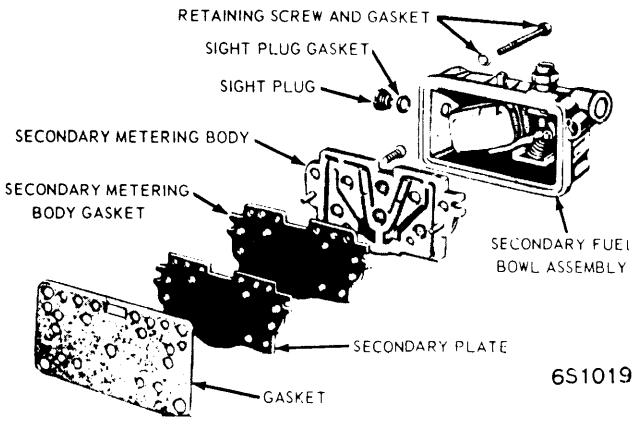
Use all new gaskets. Reverse disassembly procedure and note the following:

Throttle Valve Installation - Assemble valves on shafts in accordance with marks made at disassembly, install but do not tighten retaining screws. Center valves by tapping lightly while holding valves closed (little or no light should show between edges of valves and carburetor bore), then tighten retaining screws securely and stake the screws *(CAUTION - Support shaft on soft metal bar to prevent bending shaft during staking operation). NOTE - Roll new plastic throttle shaft bushings between thumb and first finger to shape on shaft for easier installation.*

Accelerating Pump Discharge Needle Seat - If seat is rough, use an old discharge needle and tap needle lightly using a small brass rod and fibre mallet. Install new discharge needle and make sure it is free in passage.

Secondary Diaphragm Housing Assembly - Install vacuum check ball in housing (when used), install the diaphragm and position the spring on diaphragm (small end on boss on cover), tighten cover screws just snug, then pull diaphragm rod downward as far as possible while tightening cover screws securely. Install assembly on carburetor main body.

Choke Valve Installation - Assemble choke valve on shaft, install but do not tighten retaining screws, then close valve and tap lightly to center valve, hold valve closed while tightening screws securely, stake screws by squeezing with pliers. Check valve for free movement (valve should fall open freely of own weight).



SECONDARY METERING BODY ASSEMBLY (MODEL 4160 CARBURETORS)