

Holley Carburetors

HOLLEY SINGLE BARREL MODEL 1920

1962 MODELS

LANCER & VALIANT	Holley Carburetor No.	
	Synchro-mesh	Auto. Trans.
170" Engine.....	2136A.....	2416A
225" Engine.....	2303A.....	2417A
DART & PLYMOUTH SIX		
225" Engine.....	2418A.....	2419A

1963 MODELS

DART & VALIANT		
170" Engine.....	2533A.....	2534A
225" Engine.....	2535A.....	2536A
DODGE & PLYMOUTH SIX		
225" Engine.....	2537A.....	2538A

1964 MODELS

DART & VALIANT SIX		
170" Engine (Early).....	2765A.....	2766A
(Late).....	2885A.....	2886A
225" Engine (Early).....	2767A.....	2768A
(Late).....	2887A.....	2888A
DODGE & PLYMOUTH SIX		
225" Engine (Early).....	2769A.....	2770A
(Late).....	2889A.....	2890A

1965 MODELS

DART, VALIANT, & BARRACUDA SIX		
170" Engine (No Air Cond.).....	3053A.....	3054A
(With Air Cond.).....	3149A.....	3150A
225" Engine (No Air Cond.).....	3057A.....	3058A
(With Air Cond.).....	3151A.....	3152A
DODGE & PLYMOUTH SIX		
225" Engine.....	3059A.....	3060A

1966 MODELS

DART, VALIANT, SIGNET & BARRACUDA 225" SIX		
Std. Engine (No Air Cond.).....	3271A, -1A.....	3272A, -1A
(With Air Cond.).....	3275A, -1A.....	3276A, -1A
"CAP" Engine (No Air Cond.)..	3273A, -1A.....	3274A, -1A
(With Air Cond.).....	3277A, -1A.....	3278A, -1A
DODGE CORONET & PLYMOUTH BELVEDERE 225" SIX		
Std. Engine (No "CAP").....	3279A, -1A.....	3280A, -1A
"CAP" Engine.....	3281A, -1A.....	3282A, -1A

1967 MODELS

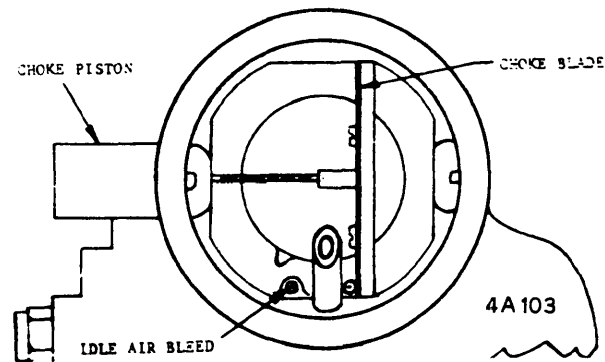
DART, VALIANT, SIGNET & BARRACUDA 225" SIX		
Std. Engine (No "CAP").....	3275-1A.....	3276-1A
"CAP" Engine.....	3671A.....	3672A
DODGE CORONET & PLYMOUTH BELVEDERE 225" SIX		
Std. Engine (No "CAP").....	3279-1A.....	3280-1A
"C.A.P." Engine.....	3673A.....	3674A

► CHANGES, CAUTIONS, CORRECTIONS

"CAP" CARBURETOR NOTE - These carburetors are special units used on cars with "Cleaner Air Package" and require special adjustment procedures for Idle Speed & Mixture adjustment and Fast Idle Speed adjustment.

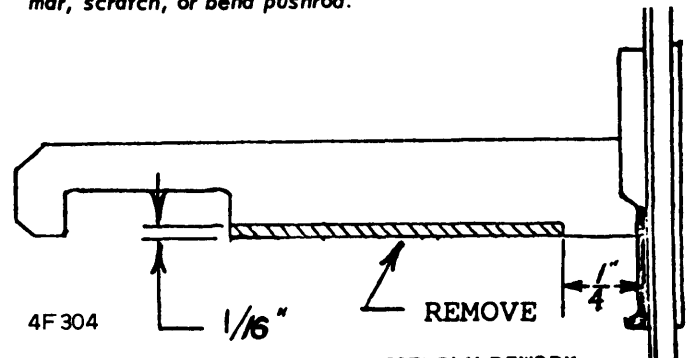
- 1963 DODGE, DART, PLYMOUTH, VALIANT 6 CYL. EXCESSIVE FUEL CONSUMPTION CORRECTION (Holley 1920 Carburetors No. 2533A, 2534A, 2535A, 2536A, 2537A): If this condition not corrected by complete Tune-up and carburetor adjustment, install one size smaller Main Metering Jet, and increase Idle Air Bleed by drilling out passage (see table below for leaner jet and idler air bleed sizes). When drilling idle air bleed, use drill in pin vise and drill by hand only (coat drill with grease to catch chips). See illustration for location of air bleed passage.

Carb. No.	Idle Bleed Drill Size	Metering Jet No.
2533A.....	No. 50.....	25-40-052
2534A.....	No. 48.....	25-40-056
2535A.....	No. 49.....	25-40-056
2536A.....	No. 49.....	25-40-055
2537A.....	No. 49.....	25-40-056



1963 EXCESSIVE FUEL CONSUMPTION CORRECTION

- 1964 DODGE, DART, PLYMOUTH, VALIANT 6 CYL. POOR IDLE RETURN CORRECTION: If carburetor throttle linkage hangs up and does not return to closed throttle idle position smoothly, remove pump pushrod and diaphragm assembly from carburetor and remove 1/16" of stock from lower side of pushrod by grinding or filing (see illustration), remove all burrs. CAUTION - Do not mar, scratch, or bend pushrod.



1964 PUMP PUSHROD ASSEMBLY REWORK

- 1966 DODGE, DART, PLYMOUTH, VALIANT 6 CYL. CARS HARD COLD START OR FAILURE TO START CORRECTION (Cars with Holley Model 1920 Carburetor with "Spring-Staged" Choke): NOTE - Later carburetors (marked "-1") do not have spring-staged choke and will not

HOLLEY SINGLE BARREL MODEL 1920 (Continued)

require correction. When this condition caused by binding of spring-staged choke levers which prevent closing of choke valve, correct by replacing choke staging spring with wire link as follows:

1) Make up a wire link to dimensions shown in illustration using soft zinc plated steel wire .040-.050" in diameter and 1½" long (paper clip may be used in an emergency).

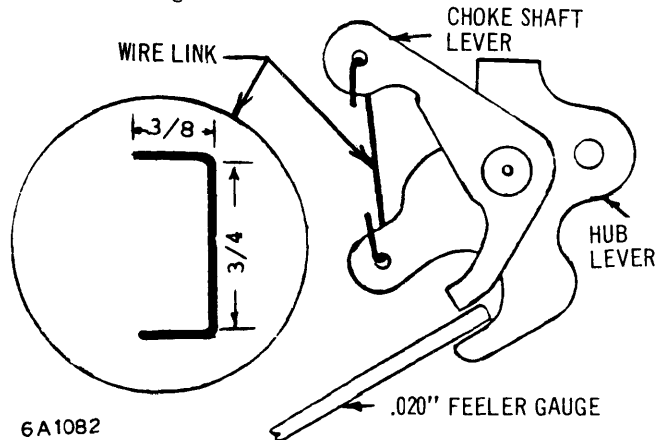
2) Remove and discard spring connecting choke system hub and shaft levers, install wire link in place of spring with open ends pointing out away from carburetor. Place .020" feeler gauge between hub and shaft levers (see illustration), bend each end of wire link toward center until drag noted on feeler gauge. Remove gauge.

3) Rotate choke to full open position. Wire link should be loose and move freely. Move choke lever to fully closed position. Choke valve should close completely with a small gap between hub and shaft levers.

4) Readjust Fast Idle Cam Position and Vacuum Kick Diaphragm. See **ADJUSTMENTS**.

5) Check linkage for freedom of travel between closed and open positions. If any binding noted, wire link was not free in open choke position. Lengthen link but do not exceed .020" clearance between levers (step "2" above).

6) Remove E-clip from choke shaft end of vacuum kick diaphragm link, install Holley No. 46D-372 washer on rod end (washer with .250" outer diameter, .100" minimum hole diameter, and maximum thickness of .045"), reinstall E-clip over washer and make certain linkage operates without binding.



1966 SPRING-STAGED CHOKE REWORK

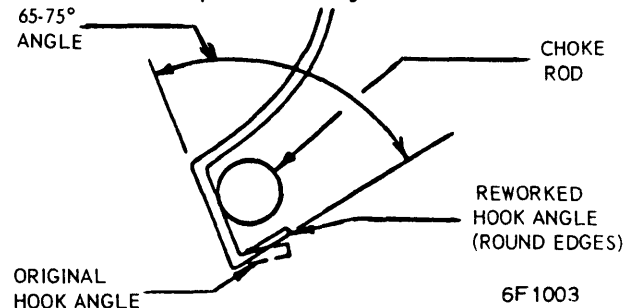
- ▶ 1966 DODGE, DART, PLYMOUTH, VALIANT 225" 6 CYL. CARS FAILURE TO START CORRECTION (Cars with Original Choke Assembly stamped "3283"): This condition may be caused by choke valve failing to close due to choke coil end catching on rough surface in choke well in manifold and can be detected by "twang" heard as choke assembly removed or by bright spots on bottom of well. Check and rework choke assembly as follows:

Checking Choke Assembly for Distortion - Remove choke assembly from engine and cool in water at 70-75°F. After cooling, extend choke rod for zero clearance between choke lever and housing. In this position, choke coil hook should contact rod end. If coil does not contact rod, coil has been distorted and new Choke Assembly, Part No. 2658398, should be installed. If coil not distorted rework coil hook as follows:

Reworking Coil Hook - Loosen adjusting nut and rotate coil so that hook end is exposed. Change Outer bend of hook to angle of 65-75° (see illustration), round sharp outer hook edge with a file. Rotate coil to position index disc at "2 Notch Rich" position, tighten adjusting nut. Make

certain that bottom of coil hook engages choke rod (bent end must clear rod). Reinstall choke assembly and check for free operation.

NOTE - Later cars with reworked choke assembly stamped "3283-1" or with revised choke coil assembly stamped "3283-2" do not require reworking in the field.



1966 CHOKE COIL REWORK DIMENSIONS

CARBURETOR IDENTIFICATION

Holley part number is stamped on the fuel bowl. The complete number (Example R-3271-A) may not appear on carburetor. "R" indicates carburetor and "A" indicates assembly. A suffix figure ("1" etc.) indicates modifications.

DESCRIPTION

Single barrel downdraft type with separate "Well Type" automatic choke. Carburetor consists of a single casting (air horn, main body, throttle body) with a separate fuel bowl cover enclosing the float assembly. Float is plastic. Power valve and accelerating pump are diaphragm type. Some carburetors have special features as follows:

Vacuum Kick Diaphragm (1964 & Later) - Diaphragm unit mounted on air horn and linked to choke valve lever. Replaces vacuum piston in air horn to provide initial choke opening. See **Adjustments**.

Spring-Stage Choke (Some 1963 & Later Carburetors) - This device reduces choke valve closing torque at low temperatures and results in better starting mixture at low and moderate temperatures. See **Adjustments**.

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 ON.

Idle Speed & Mixture

NOTE - If initial adjustment required to warm up engine, turn idle mixture adjusting screw out approximately 2 turns from a lightly seated position (all carburetors).

Std. Carburetors - On automatic transmission cars, unsnap transmission throttle rod ball connector at accelerator shaft bellcrank and, after adjustment completed, adjust socket on rod so that it mates with ball connector before connecting rod. Adjust idle speed to correct engine RPM (see Specifications) with choke valve wide 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.

"CAP" Carburetors - Exhaust Analyser must be used to assure correct fuel mixture setting.

(Continued)

Holley Carburetors

HOLLEY SINGLE BARREL MODEL 1920 (Continued)

CARBURETOR ADJUSTMENT SPECIFICATIONS									
Holley Carb. No.	Idle Speed (Engine RPM)		Fast Idle Cam Position	Float Level Gauge No.	Fuel Level Setting	Choke Setting	Bowl Vent	Spring Staged Choke	Vacuum Kick Setting
	Hot ①	Fast							
2136A	550	1500④	.....	C-3903②	11/16"	Index	1/16"	.....	.....
2303A	550	1500④	.....	C-3903②	11/16"	Index	1/16"	.....	.....
2416A	550	1800④	.....	C-3903②	11/16"	Index	1/16"	.....	.....
2417A	550	1700④	.....	C-3903②	11/16"	Index	1/16"	.....	.....
2418A	550	1500④	.....	C-3903②	11/16"	Index	1/16"	.....	.....
2419A	550	1700④	.....	C-3903②	11/16"	Index	1/16"	.....	.....
2533A	550	1500④	.....	C-3903	11/16"	2 Rich	1/16"	1/16"	.....
2534A	550	1500④	.....	C-3903	11/16"	2 Rich	1/16"	1/16"	.....
2535A	550	1500④	.....	C-3903	11/16"	2 Rich	1/16"	.....	.....
2536A	550	1500④	.....	C-3903	11/16"	2 Rich	1/16"	.....	.....
2537A	550	1500④	.....	C-3903	11/16"	2 Rich	1/16"	.....	.....
2538A	550	1500④	.....	C-3903	11/16"	2 Rich	1/16"	.....	.....
2765A	550	700⑤	15/64"	C-3903	11/16"	2 Rich	1/16"	.010-.025"	3/16"
2766A	550	700⑤	15/64"	C-3903	11/16"	2 Rich	1/16"	.010-.025"	11/64"
2767A	550	700⑤	15/64"	C-3903	11/16"	2 Rich	1/16"	.....	13/64"
2768S	550	700⑤	15/64"	C-3903	11/16"	2 Rich	1/16"	.....	5/32"
2769A	550	700⑤	15/64"	C-3903	11/16"	2 Rich	1/16"	.....	13/64"
2770A	550	700⑤	15/64"	C-3903	11/16"	2 Rich	1/16"	.....	5/32"
2885A	550	700⑤	15/64"	C-3903	11/16"	2 Rich	1/16"	.010-.025"	3/16"
2886A	550	700⑤	15/64"	C-3903	11/16"	2 Rich	1/16"	.010-.025"	11/64"
2887A	550	700⑤	15/64"	C-3903	11/16"	2 Rich	1/16"	.....	13/64"
2888A	550	700⑤	15/64"	C-3903	11/16"	2 Rich	1/16"	.....	5/32"
2889A	550	700⑤	15/64"	C-3903	11/16"	2 Rich	1/16"	.....	13/64"
2890A	550	700⑤	15/64"	C-3903	11/16"	2 Rich	1/16"	.....	5/32"
3053A	550	700	5/64"	C-3903	27/32"	2 Rich	1/16"	.020-.040"	# 32
3054A	550	700	5/64"	C-3903	27/32"	2 Rich	1/16"	.020-.040"	3/32"
3057A	550	700	5/64"	C-3903	27/32"	2 Rich	1/16"	.....	#32
3058A	550	700	5/64"	C-3903	27/32"	2 Rich	1/16"	.....	# 46
3059A	550	700	5/64"	C-3903	27/32"	2 Rich	1/16"	.....	# 32
3060A	550	700	5/64"	C-3903	27/32"	2 Rich	1/16"	.....	# 46
3149A	550	700	5/64"	C-3903	27/32"	2 Rich	1/16"	.....	# 32
3150A	550	700	5/64"	C-3903	27/32"	2 Rich	1/16"	.....	3/32"
3151A	550	700	5/64"	C-3903	27/32"	2 Rich	1/16"	.....	# 32
3152A	550	700	5/64"	C-3903	27/32"	2 Rich	1/16"	.....	# 46
3271A, IA	550	700⑤	# 52	C-3903	27/32"	2 Rich	3/32"	.005-.025"	# 30
3272A, IA	550	700⑤	# 52	C-3903	27/32"	2 Rich	3/32"	.005-.025"	# 38
3273A, IA	650	1550④	# 41	C-3903	27/32"	2 Rich	3/32"	.005-.025"	# 28
3274A, IA	650	1550④	# 52	C-3903	27/32"	2 Rich	3/32"	.005-.025"	# 38
3275A, IA	550	700⑤	# 52	C-3903	27/32"	2 Rich	3/32"	.005-.025"	# 30
3276A, IA	550	700⑤	# 52	C-3903	27/32"	2 Rich	3/32"	.005-.025"	⑥
3277A, IA	650	1550④	# 41	C-3903	27/32"	2 Rich	3/32"	.005-.025"	# 28
3278A, IA	650	1550④	# 52	C-3903	27/32"	2 Rich	3/32"	.005-.025"	# 38
3279A, IA	550	700⑤	# 52	C-3903	27/32"	2 Rich	3/32"	.005-.025"	# 30
3280A, IA	550	700⑤	# 52	C-3903	27/32"	2 Rich	3/32"	.005-.025"	⑥
3281A, IA	650	1550④	# 41	C-3903	27/32"	2 Rich	3/32"	.005-.025"	# 28
3282A, IA	650	1550④	# 52	C-3903	27/32"	2 Rich	3/32"	.005-.025"	# 38

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HOLLEY SINGLE BARREL MODEL 1920 (Continued)

CARBURETOR ADJUSTMENT SPECIFICATIONS									
Holley Carb. No.	Idle Speed (Engine RPM)		Fast Idle Cam Position	Float Level Gauge No.	Fuel Level Setting	Choke Setting	Bowl Vent	Spring Staged Choke	Vacuum Kick Setting
	Hot ①	Fast							
3671A	650	1550 ⑥	# 41	C-3903	27/32"	2 Rich	3/32"	.....	# 28
3672A	650	1550 ⑥	# 52	C-3903	27/32"	2 Rich	3/32"	.....	# 38
3673A	650	1550 ⑥	# 41	C-3903	27/32"	2 Rich	3/32"	.....	# 28
3674A	650	1550 ⑥	# 52	C-3803	27/32"	2 Rich	3/32"	.....	# 38

① - Auto. Trans. in Neutral. Headlights ON. Air Conditioning ON.

② - Float should be within 3/32" of gauge ("Touch" Leg), should clear gauge by 3/32-1/8" ("No Touch" Leg). Use 3/32" drill rod in conjunction with gauge.

③ - Turns open from a lightly seated position.

④ - Fast idle screw on SECOND step of fast idle cam.

⑤ - Fast idle screw on LOW step of fast idle cam.

⑥ - # 38 (1966), # 43 (1967).

Fast Idle Speed (On Engine)

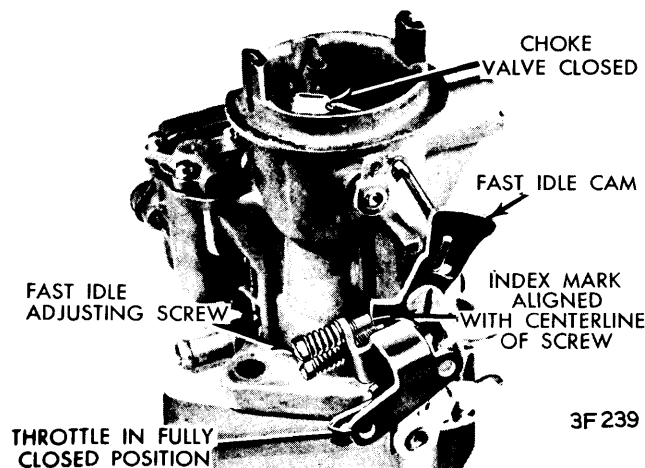
NOTE - Fast Idle Cam Position must be adjusted before adjusting fast idle speed. See Fast Idle Cam Position adjustment.

Std. Carburetors - With hot idle speed correctly adjusted and engine idling at normal operating temperature with transmission in neutral, position fast idle adjusting screw on correct step of fast idle cam as shown in specifications. With engine idling, turn fast idle screw in or out for correct fast idle speed (see Specifications).

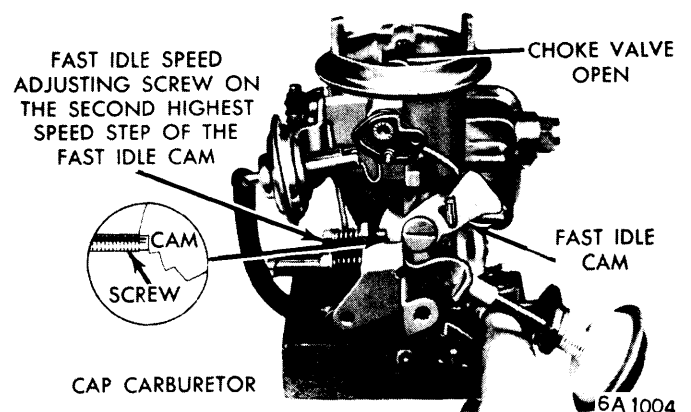
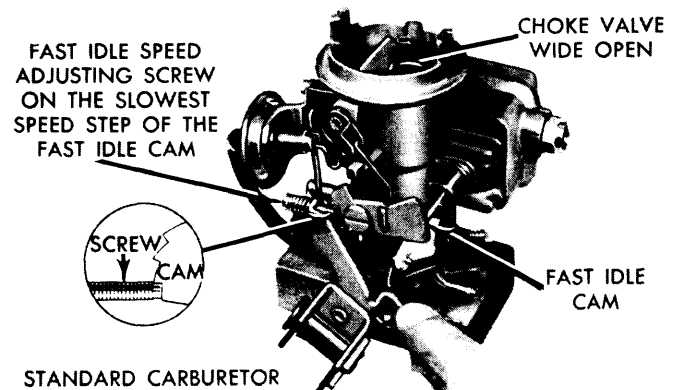
"CAP" Carburetors - **CAUTION** - Ignition timing and Distributor Control Valve adjustments must be correct before adjusting fast idle speed. See special "CAP" adjustment procedure. With air cleaner in place and engine idling at normal operating temperature, open throttle and position fast idle screw on second step of fast idle cam (see illustration). Turn fast idle adjusting screw in or out for correct fast idle speed (see Specifications).

Fast Idle Cam Position

1962-63 Carburetors (With Index Mark on Cam) - Open throttle valve, close choke valve fully, then close throttle valve. Fast idle screw should be centered on index mark on fast idle cam (see illustration). To adjust, bend fast idle connector rod.



FAST IDLE CAM POSITION ADJUSTMENT (1962-63 CARBURETORS)



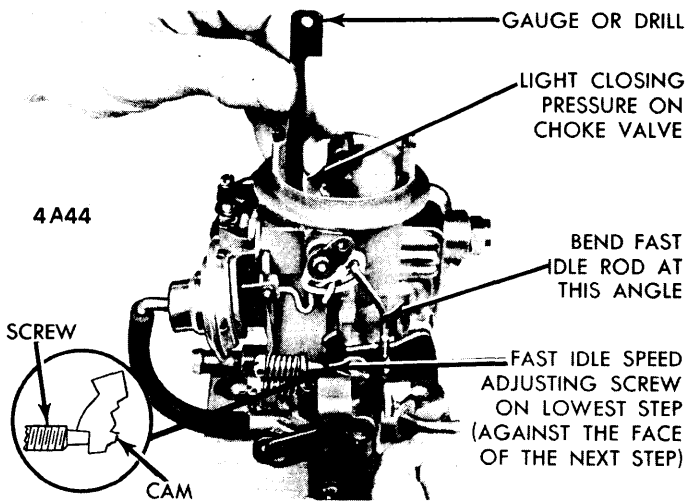
FAST IDLE SPEED ADJUSTMENT (ALL CARBURETORS - TYPICAL)

1964 & Later Carburetors (With Vacuum Kick Diaphragm) - Position fast idle screw on the correct step of the fast idle cam as listed in the specifications (and against the shoulder of the next higher step), move the choke valve toward closed position as far as possible with light pressure. Measure choke valve opening by inserting gauge or drill rod of correct size (see Specifications) between edge of choke valve and air horn wall. A slight drag should be noted when gauge or drill withdrawn. Adjust as necessary by bending fast idle connector rod at the lower angle (see illustration).

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Holley Carburetors

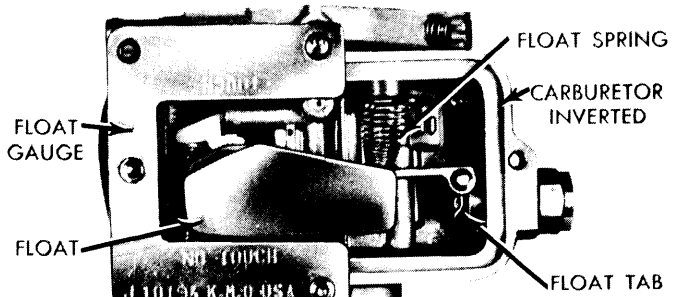
HOLLEY SINGLE BARREL MODEL 1920 (Continued)



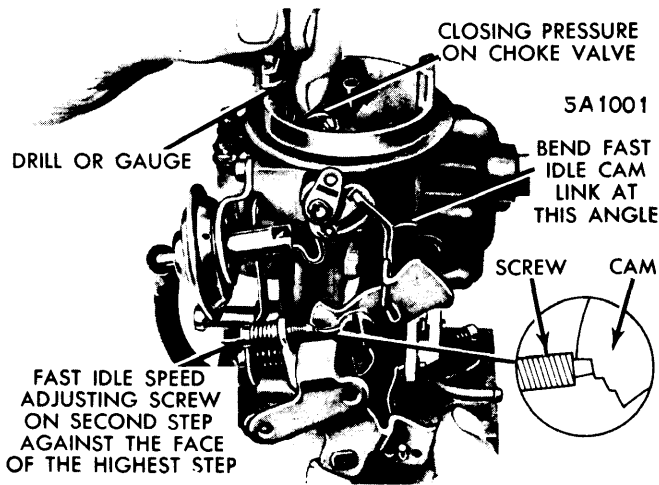
FAST IDLE CAM POSITION ADJUSTMENT (1964 CARBURETORS)

Float Level (Off Engine)

With bowl cover removed, invert carburetor and install correct float level gauge (see Specifications) as shown in illustration. Float should just contact "Touch" leg of gauge and should just clear "No Touch" leg when gauge reversed. Adjust by bending float tab (which contacts fuel inlet needle) as necessary. **CAUTION** - Do not allow float tab to contact inlet needle while adjusting, rubber tip on needle may be compressed causing false setting.



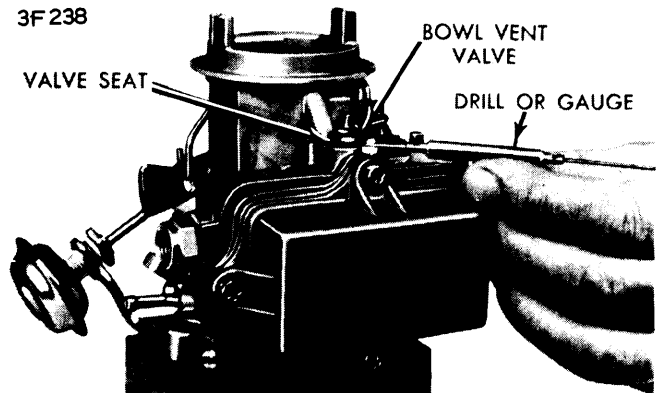
FLOAT LEVEL ADJUSTMENT



FAST IDLE CAM POSITION ADJUSTMENT (1965 & LATER CARBURETORS)

Bowl Vent

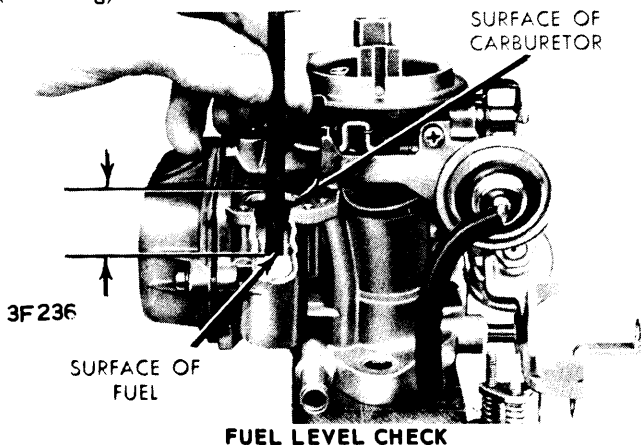
All Carburetors - With throttle valve closed in curb idle position (see Idle Speed Adjustment), check vent valve opening on fuel bowl (see illustration) by inserting gauge or drill rod of correct size (see Specifications) between vent valve and seat. Adjust by bending horizontal portion of vent rod as necessary. **CAUTION** - Make certain vent rod does not bind in guide after adjustment.



BOWL VENT ADJUSTMENT

Fuel Level (On Engine)

With car on level floor and engine running, remove economizer diaphragm assembly and check fuel level with a depth gauge inserted through economizer opening. If fuel level not correct, (see Specifications), adjust float level (following).



Vacuum Kick (Choke Vacuum Diaphragm)

All Carburetors - **NOTE** - A separate vacuum source (Distributor Tester or another engine) with minimum vacuum of 10" of Hg. must be used to energize the diaphragm for adjustment. **(Continued)**

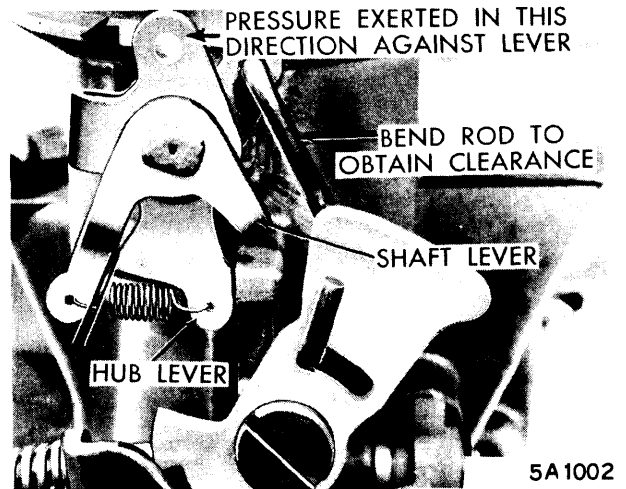
HOLLEY SINGLE BARREL MODEL 1920 (Continued)

Checking - With engine not running, open throttle valve and move choke valve to closed position. Disconnect vacuum hose from diaphragm and connect hose from test vacuum source at this point. Insert a gauge or drill rod of correct size (see Specifications) between edge of choke valve and air horn wall, apply closing pressure on choke shaft lever to provide smallest choke valve opening possible without distorting diaphragm link (**CAUTION** - Diaphragm internal spring must be compressed which will be noted by extension of diaphragm stem). At this point, a slight drag should be noted as gauge is withdrawn from choke valve. If choke valve opening not correct, adjust choke diaphragm link as follows:

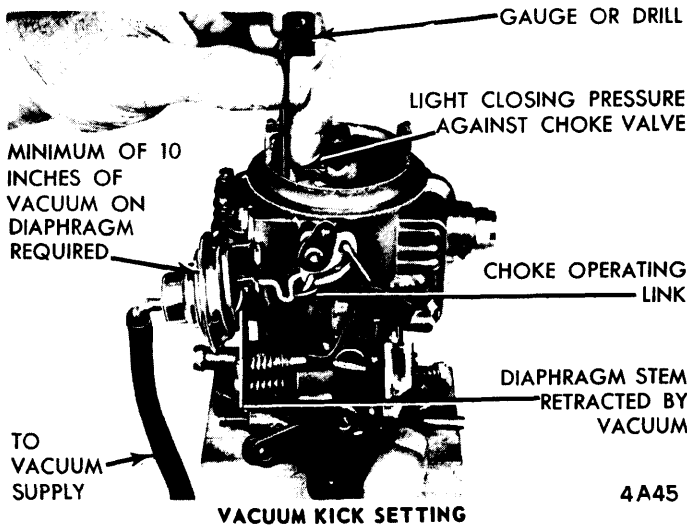
Adjustment - Disengage and remove choke operating link from diaphragm and choke lever (**CAUTION** - Damage will result if attempt made to bend link on carburetor). Bend operating link at the angle to provide correct choke valve opening (see Illustration). **NOTE** - A .010" change in link length will change choke valve opening .010" - use 1" micrometer to check original and adjusted length. Reinstall link and recheck choke valve opening.

Final Check - Reinstall vacuum hose on diaphragm fitting. With no vacuum applied to diaphragm, some clearance should exist between choke operating link and choke lever slot in both the open and closed valve positions (see illustration) to allow full opening and closing of the choke valve. With vacuum applied (engine running) choke valve must have free movement between kick position and wide open choke position. If binding exists, link has been improperly bent. Correct as necessary.

All Carburetors - With choke valve closed, press hub lever firmly in closing direction (see illustration). Clearance between hub lever and shaft lever at point shown in illustration should be correct (see Specifications). Adjust by bending hub lever tang as required.



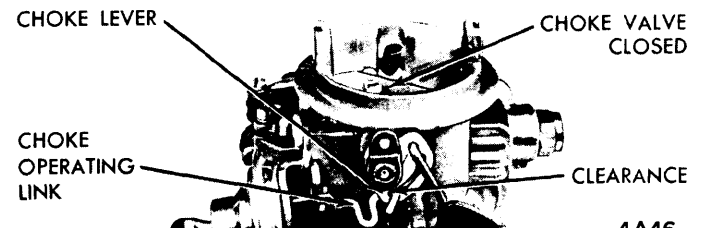
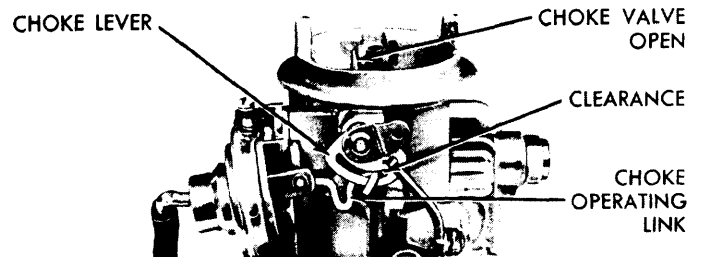
5A1002
SPRING-STAGED CHOKE ADJUSTMENT



4A45

Spring-Staged Choke

1966 CARBURETOR NOTE - Spring-staged choke used only on early carburetors. For modification of these carburetors to improve cold starting, see "Changes, Cautions, Corrections".



4A46
CHOKE VALVE OPERATING LINK CLEARANCE (WITH VACUUM KICK)

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.

OVERHAUL

Disassembly

1) Disconnect and remove vacuum hose from vacuum kick diaphragm, disengage operating link and remove vacuum diaphragm and bracket assembly. **NOTE** - Bowl vent valve rod and spring will fall out as vacuum diaphragm bracket is removed.

2) Remove fuel inlet needle valve and seat. Take out economizer retaining screws, then lift out economizer cover, diaphragm, and stem assembly.
3) Remove fuel bowl attaching screws, remove fuel bowl, baffle, and gasket (discard gasket). Slide baffle out of bowl. Remove float retaining clip, then slide float off fulcrum pin. Remove economizer body and plugs assembly from fuel bowl. Tilt pump lever on its pivot to free hook on pump diaphragm stem, slide pump diaphragm and spring out.

Holley Carburetors

HOLLEY SINGLE BARREL MODEL 1920 (Continued)

of fuel bowl. Use suitable wrench (C-3748) to remove main jet from economizer body.

4) Remove pump lever retaining clip, slide lever off pivot and disengage link from throttle lever. Take out fast idle cam retaining screw, remove cam and disengage fast idle cam rod. Remove idle mixture adjusting screw and spring from throttle flange, remove curb idle and fast idle adjusting screws and springs from throttle lever.

5) Take out choke valve retaining screws, lift choke valve out, withdraw choke shaft and lever from air horn.

6) Do not remove throttle valve and shaft unless installation of new parts required (manufacturer recommends replacement of carburetor assembly if wear is extreme). Mark position of throttle valve in bore, remove throttle valve screws (screws are staked and care should be taken not to break them off in shaft), lift throttle valve out and remove throttle shaft from carburetor body.

Cleaning & Inspection

Clean all parts except Vacuum Kick Diaphragm in suitable solvent, clean all orifices and channels with air and inspect for wear. Do not immerse vacuum kick diaphragm in any liquid (clean external surfaces with clean cloth or soft wire brush, shake dirt from stem side of diaphragm with diaphragm depressed; if compressed air used to re-

move loose dirt, do not direct air stream in vacuum diaphragm fitting).

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. Tap valve lightly to seat it in throttle bore, then tighten screws securely and stake screws by squeezing with pliers.

Choke Valve Installation - Install choke valve in same manner as throttle valve (above), check for binding by rotating choke lever through full travel.

Vacuum Kick Diaphragm - Before installing unit, check for leakage as follows: Depress diaphragm stem fully, seal vacuum passage by placing finger over vacuum fitting and release stem. If stem moves more than 1/16" in 10 seconds, leakage is excessive and unit should be replaced. To install diaphragm assembly, position bowl vent valve rod assembly on air horn with rod centered in its grooves, install vacuum diaphragm assembly on air horn making certain vent rod is not dislodged, tighten diaphragm attaching screws securely.

