

1968-69 FORD (AUTOLITE) 4-BARREL MODEL 4100

FORD & MERCURY

(Police Interceptor)

Ford Carburetor No.

428" V8 Thermactor (Auto. Trans.).....C8AF-AE

CARBURETOR IDENTIFICATION

Carburetor number Prefix and Suffix (Example C6DF A) is stamped on tag attached to carburetor by one air horn screw. First letter of second line on tag ("A" etc.) indicates design changes which may affect parts replacement (other letters on this line are assembly code designating time of manufacture).

DESCRIPTION

Four barrel downdraft carburetors similar in design to carburetors used on previous models. Automatic choke carburetors have choke vacuum piston and some carburetors have a hot idle compensator.

Hot Idle Compensator - This is a thermostatically controlled unit located on the air horn above secondary booster venturis. High air temperature at carburetor air inlet causes hot idle compensator to open and allow air to bypass throttle plates through a passage in air horn and main body to minimize rich mixture and improve idle stability. No adjustment provided.

Idle Limiter Caps - Idle mixture adjusting screws have idle limiter caps installed on screws which limit range of adjustment (ear on cap contacts stop lug on power valve cover) for exhaust emission control. *Do not remove or deform limiter caps and make certain power valve cover is installed so as to provide a positive stop for the adjusting screws.*

ADJUSTMENT (ON ENGINE)

NOTE - Before making idle speed and mixture adjustment, turn both idle mixture screws counterclockwise to limit of travel with limiter cap ear against power piston cover lug. Stabilize engine and underhood temperatures by running engine for minimum of 20 minutes at 1500 RPM. Make adjustments as follows:

Idle Speed & Mixture

With engine at normal operating temperature (choke valve wide open and fast idle inoperative), place transmission selector lever in Drive, turn on headlights (to place alternator under load), turn Air Conditioner ON (if used), make

certain that air cleaner installed (if necessary to remove air cleaner for adjustment, final idle speed and mixture setting must be checked with air cleaner in place). Adjust throttle stopscrew for correct hot engine idle speed (see Specifications), then turn both idle mixture adjusting screws inward (clockwise) evenly for smoothest possible idle within range of adjusting screw limiters. Recheck idle speed and repeat idle mixture adjustment if necessary.

**Throttle Linkage
(Auto. Trans. Cars)**

See **CARBURETOR** on car model *Tune-Up* pages.

Fast Idle Speed

Automatic Choke Carburetors - Rotate fast idle cam and place fast idle speed screw on next to highest step of fast idle cam (against shoulder of highest step), then adjust fast idle screw to obtain specified engine RPM (see specifications).

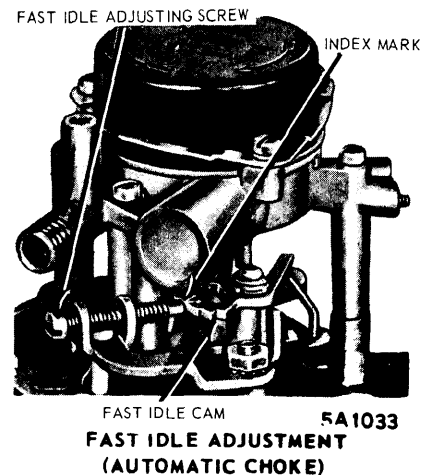
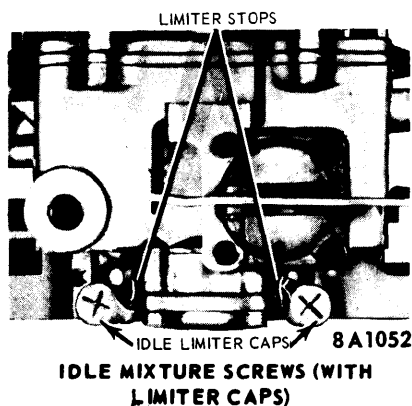
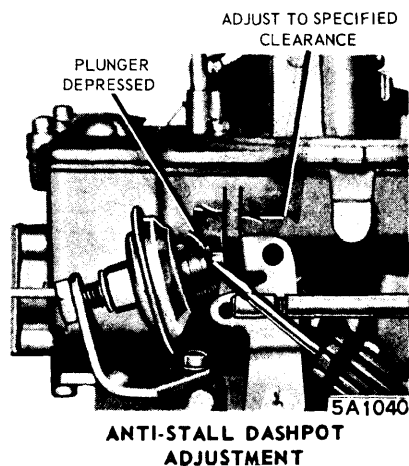
Anti-Stall Dashpot

With engine hot or slow idle speed correctly adjusted, and with throttle valves closed, fully depress dashpot plunger and measure clearance between plunger tip and throttle valve. Clearance should be $7/64" \pm 1/64"$. Adjust by loosening locknut and turning dashpot in or out of mounting bracket.

Accelerating Pump Stroke

NOTE - Pump over-travel lever has four holes (No. 1 hole nearest the throttle shaft and No. 4 hole furthest from throttle shaft). Accelerating pump plunger lever has two holes. On all carburetors, install pump link in inner hole of pump plunger lever. Install opposite end of pump link in specified hole of over-travel lever.

Accelerating Pump Setting - #3 hole (all carburetors).



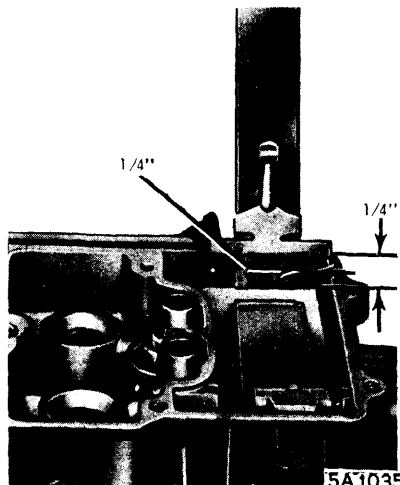
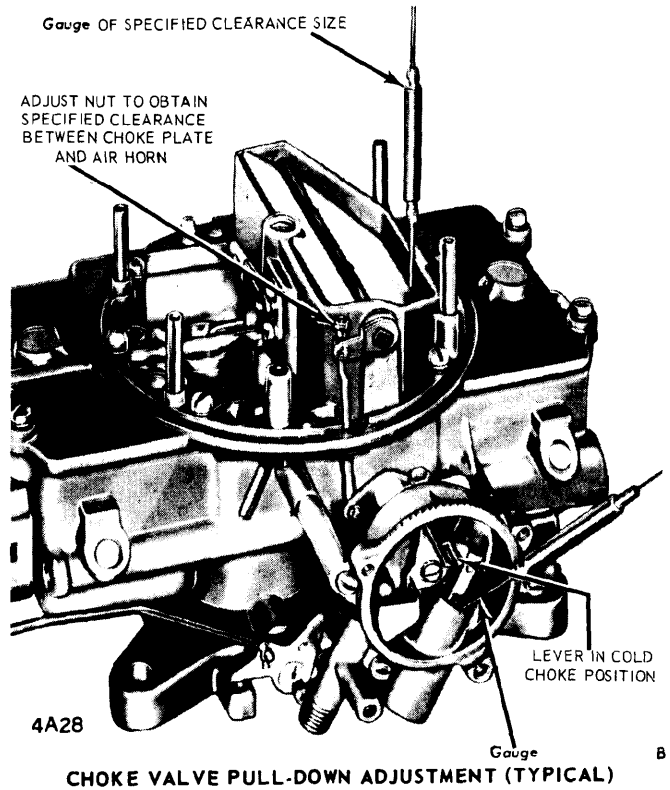
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Fuel Level

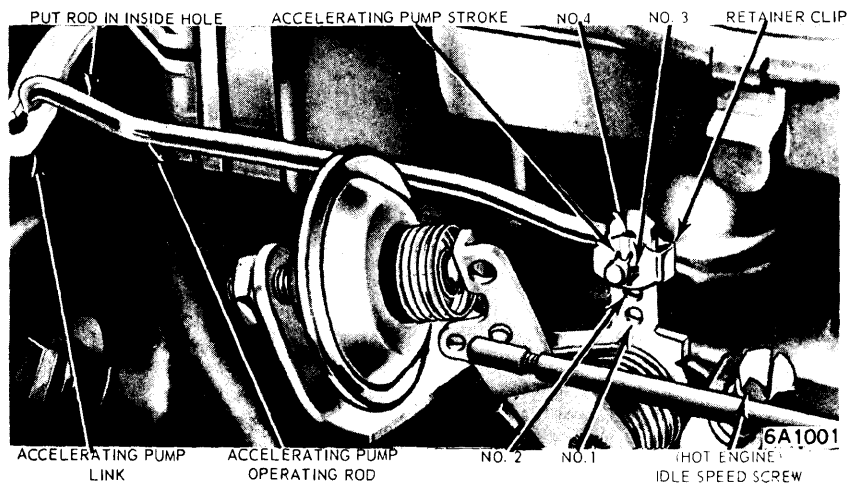
NOTE - Float setting (on bench) should be used as a guide only. Check and adjust fuel level as follows: With engine at normal operating temperature, air horn and gasket removed from carburetor, temporarily install air horn and gasket in position on carburetor body and start engine. Allow engine to idle a few minutes, then remove air horn gasket. With engine idling, measure vertical distance from top machined surface of main body to level of fuel in fuel bowl. **NOTE** - Make this measurement at least 1/4" from any vertical surface. If fuel level is not within specifications (see specification table), stop engine and bend float tab contacting fuel inlet valve as necessary. Restart engine and check fuel level after each float tab adjustment. **CAUTION** - Allow fuel level to stabilize by running engine at idle speed for approximately 3 minutes after each adjustment until specified level is obtained. After adjustment completed, install air horn with new gasket and readjust carburetor as required.

Choke Valve Pull-down & Fast Idle Cam Linkage

Choke Valve Pull-down Adjustment - Bend a .036" wire gauge at a 90° angle approximately 1/8" from one end, then remove thermostatic coil spring housing and block throttle valve half way open so fast idle screw is not contacting fast idle cam. Insert bent end of gauge between lower edge of piston slot and upper edge of right hand slot in choke housing (see illustration), then pull choke countershaft lever counterclockwise until gauge is snug



FUEL LEVEL ADJUSTMENT (ON ENGINE)



PUMP ADJUSTMENT LOCATION (ALL MODELS)

CARBURETOR ADJUSTMENT SPECIFICATIONS									
Ford Carb. Number	Idle Speed (Engine RPM) ①		Initial Float Setting		Fuel Level		Choke Valve Pull-down	Fast Idle Cam Linkage	Automatic Choke Setting
	Hot	Fast	Pri.	Sec.	Pri.	Sec.			
C8AF-AE	600	1350	17/32"	11/16"	29/32"	1 1/16"	140" ②	.120" ②	2 Rich

① - Auto. Trans. in Drive. Air Conditioner ON.

② - Plus or Minus .010".

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in piston slot. Hold wire gauge in position with pressure on countershaft lever, and adjust choke valve clevis (pulldown) adjusting nut to obtain specified clearance (see specifications) between front of choke valve and wall of air horn. Install thermostatic spring coil housing and adjust fast idle cam linkage (following).

Fast Idle Cam Linkage - Loosen choke cover screws and rotate cover and thermostatic coil assembly 90° counter clockwise (Rich) from regular setting, position fast idle screw at index mark on fast idle cam and make certain screw remains in this position during adjustment. Check clearance between front edge of choke valve and air horn using gauge of correct size (see Specifications). If clearance not correct, adjust by turning the fast idle cam lever adjusting screw on fast idle cam lever behind choke housing (see illustration) in to increase clearance, or out to decrease clearance, as required. **CAUTION** - Fast idle screw must remain at index mark on fast idle cam during this adjustment. Readjust automatic choke to correct specification (see below).

Automatic Choke Setting

Loosen thermostatic coil housing clamp screws and align index mark on coil housing with proper mark on choke housing (see specifications).

Unloader

Rotate primary throttle valve to fully opened position and measure clearance between choke valve and air horn wall. Clearance should be .060". To adjust, bend tang on fast idle adjusting lever.

ADJUSTMENT (OFF ENGINE)

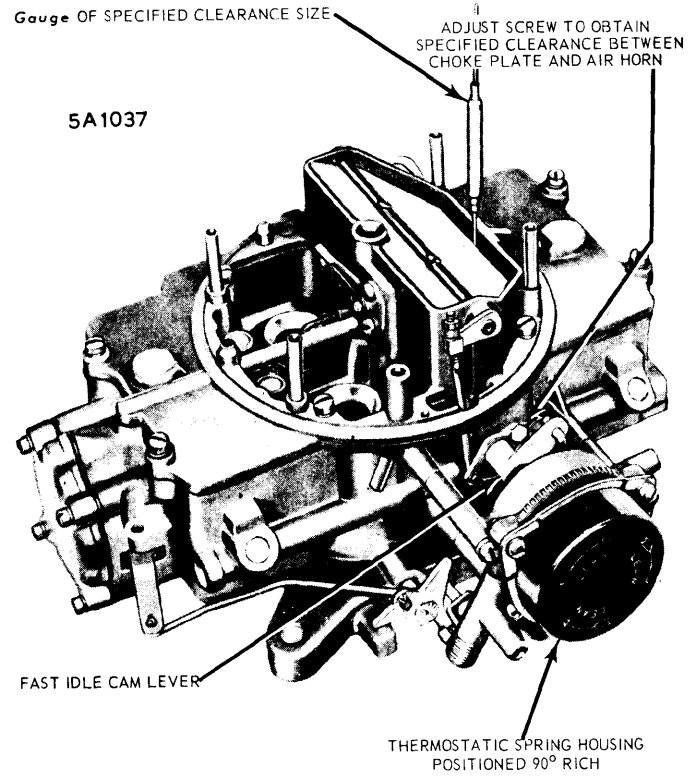
Float Level

CAUTION - Fuel inlet needle is "Viton" tipped. Do not place excessive force on needle as damage will result. With air horn removed, raise float so needle valve is seated, then check distance between gasket surface of main body and top of float at a point 1/8" from free end of float and 5/16" in from side of float adjacent to inside wall of fuel bowl. This measurement should be as indi-

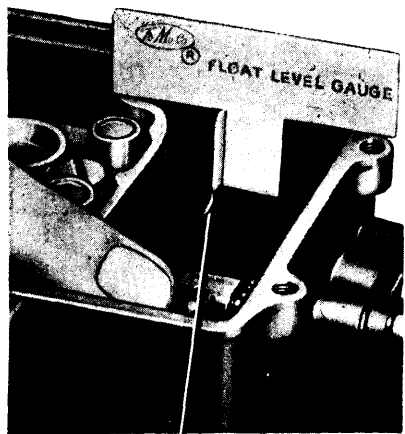
cated in specifications. To adjust, bend tab on float arm
NOTE - Secondary float setting on 4-Barrel carburetors is same as primary floats except as noted in the Specifications.

Secondary Throttle Valve

Hold secondary throttle valves closed, turn secondary valve lever adjusting screw (see illustration) out until valves are tightly closed, turn screw in to just contact secondary lever, then turn screw in (clockwise) an additional 1 turn to provide correct secondary throttle opening.



FAST IDLE CAM LINKAGE ADJUSTMENT (TYPICAL)



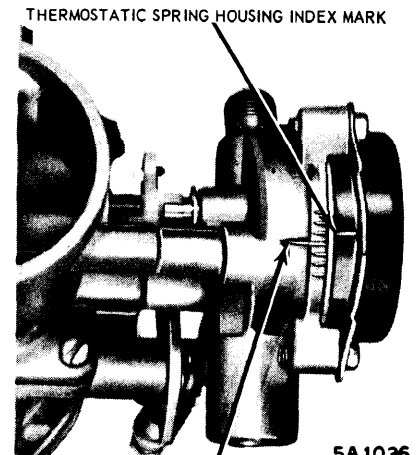
FLOAT SHOULD JUST TOUCH AT THIS POINT
5A1038

DRY FLOAT LEVEL ADJUSTMENT



ADJUSTMENT SCREW
SECONDARY THROTTLE LEVER 5A1039

SECONDARY THROTTLE VALVE ADJUSTMENT



THERMOSTATIC SPRING HOUSING INDEX MARK
5A1036

AUTOMATIC CHOKE ADJUSTMENT

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Automatic Choke - 1) Remove fast idle cam retainer, then remove thermostatic choke cover retaining screws and remove clamp, cover assembly, and gasket.

2) Remove choke housing assembly retaining screws and remove choke housing assembly, gasket, and fast idle cam. Remove fast idle cam and rod from fast idle cam lever.

3) Remove choke lever retaining screw and washer from end of shaft within housing, remove choke piston lever by rotating lever to withdraw vacuum piston from cylinder. If necessary to remove piston from link, remove pin. Remove choke lever and fast idle cam lever from choke housing.

Main Body - 1) Use screwdriver to pry float shaft retainers from fuel inlet seats, remove float, float shaft, and fuel inlet needle assemblies from each fuel bowl. Use a jet wrench to remove fuel inlet needle seat, gasket, and filter screen from each fuel bowl. Remove primary and secondary stage main jets using a suitable jet wrench.

2) Remove primary stage booster venturi assembly and gasket, then invert main body and remove pump discharge weight and ball. Remove secondary stage booster venturi assembly and gasket. Remove accelerating pump rod retainer and remove rod.

3) Remove pump cover retaining screws and remove pump cover, diaphragm assembly and return spring. If necessary to remove Elastomer (rubber) pump inlet valve from pump recess, grasp valve firmly and pull it out (if valve tip breaks off during removal, be sure to remove tip from fuel bowl). Discard the valve. **CAUTION** - *New Elastomer valve must be installed whenever valve removed from carburetor. See Reassembly.*

4) Remove secondary diaphragm operating rod, remove diaphragm cover, return spring, palnut (if used), and diaphragm. Invert main body to remove secondary ball check.

5) Invert main body and remove power valve using a suitable box or socket wrench, remove and discard power valve gasket.

6) Remove idle limiter caps then remove idle mixture screws and springs. Remove idle speed adjusting screw and spring. Remove anti-stall dashpot (if used).

7) If necessary, remove fast idle adjusting lever assembly by removing nut and washer retaining assembly on primary throttle shaft.

8) If it is necessary to remove throttle valve plates, lightly scribe plates along shaft and mark plates and bores so they may be reassembled in the same location. File off staking on valve retaining screws, being careful not to damage throttle shaft or venturi, then remove screws. Remove primary and secondary throttle valve shafts from main body. Remove accelerating pump over-travel lever from primary shaft.

Reassembly

Reverse disassembly procedure and note the following:

Throttle Valve Installation - Refer to scribed lines and marks made at disassembly and install throttle valves with attaching screws snug (not tight), close valves and check fit by holding assembly up to a light (little or no light should show between valve edges and bore). Tap valves lightly to centralize them, then tighten screws securely. Stake screws while supporting them on a metal bar.

Choke Valve Installation - Install choke valve with attaching screws snug (not tight), check valve fit and free operation by moving valve from closed to open position (binding can be corrected by grinding edge of valve), then tighten screws securely while holding valve closed: Stake screws while supporting shaft on metal bar.

Accelerating Pump Elastomer Valve Installation - Lubricate tip of new valve and insert valve tip in center hole in pump cavity, then use needle nosed pliers inserted in fuel bowl to pull valve in until it is fully seated, cut off valve tip at retaining shoulder and remove tip from fuel bowl.

Accelerating Pump Diaphragm Installation - Position return spring on boss in pump chamber, assemble diaphragm and cover and tighten cover screws finger-tight, then push pump plunger to full distance of its travel and tighten cover screws while holding plunger and diaphragm in this position.

Secondary Throttle Operating Diaphragm Installation - Install diaphragm and palnut (if used) on secondary operating lever, install return spring on cover and install cover with screws finger-tight, then tighten screws securely with diaphragm in fully extended position. After linkage installed, check secondary system for vacuum leaks as follows: Open secondary throttle valves, place finger over secondary vacuum inlet hole in main body and release secondary throttle lever. Secondary throttle valves should not close fully (valves will move slightly and should then stop without further movement toward closed position). If leakage indicated, replace diaphragm or tighten cover screws as necessary to correct leakage.

Secondary Throttle Control Vacuum Tube Installation - Start new tubes into air horn so that pick-up will extend downward toward booster venturi when air horn installed, grip tubes lightly below shoulders with pliers and tap pliers with a hammer to drive tubes in until they stop against shoulders. **CAUTION** - *Do not crush or bend tubes.* Use care not to damage tubes when installing air horn and make certain that tubes do not touch booster venturi wall when air horn installed. Clearance between tubes and booster venturi wall should be .020-.060".

Idle Mixture Screw Installation - Install idle mixture screws and springs. Turn screws in gently until seated then back out 1½ turns for a preliminary idle fuel mixture adjustment. **NOTE** - *Idle limiter caps should not be installed until final idle mixture adjustment is made.*