MOTORCRAFT MODEL 2100-D 2-BARREL

FORD MOTOR CO.

Motorcraft Carburetor Numbers

Application	Man. Trans.	Auto. Trans.
302" Maverick, Comet, Mustang	D3GF-BB	D3ZF-EA
302" Torino, Montego	D3GF-BB	D3GF-AF
351" C Ford, Torino, Mustang, Montego, Cougar, Mercury		D3AF-DC
351" C (W/ FMXTrans.) Ford, Torino, Montego		D3AF-KA
351" W Torino, Montego, Ford		D3AF-CE
400" Ford, Mercury, Torino, Montego		D3MF-AE
400" (W 3.25 Axle) Ford, Mercury		D3MF-BA

NOTE — Ford carburetor number prefix and suffix with basic part number (9510) omitted.

AMERICAN MOTORS & JEEP VEHICLES V-8 ENGINES

American Motors Carburetor No.

Application	Man. Trans.	Auto. Trans.
304"	3DM2	3DA2
360"		3RA2

CARBURETOR IDENTIFICATION

Ford Motor Co — Carburetor number prefix and suffix (example D3ZF-EA) 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).

American Motors & Jeep — Carburetor code letters (see listing above and corresponding part number) are stamped on tag attached to carburetor by one bowl cover screw.

DESCRIPTION

Two barrel downdraft with electric choke. Carburetor is same basic design used on previous models with some minor modifications. Note the following:

Exhaust Gas Recirculation System — All models have an E.G.R. port on front of carburetor just above idle limiter caps.

Electric Choke System (Ford Motor Co.) — Electric Choke System utilizes a choke cap, thermostatic spring, a bi-metal temperature sensing disc (switch) and a ceramic positive temperature coefficient (PCT) heater. Choke is powered from center tap of alternator. Current is constantly supplied to switch and unit is grounded to carburetor body. At temperatures above 60°F sensing switch closes and current is supplied to ceramic heater. As heater warms, thermostatic spring pulls choke plates open in 1 1/2 minutes.

CARBURETOR ADJUSTMENT SPECIFICATIONS

Motorcraft Carb. Number	Idle Speed (Engine RPM)		Dry Float Setting ③	Wet Fuel Level Setting	Accel. Pump Setting	Initial Choke Pull-Down Clearance	Fast Idle Cam Linkage Clearance	Unloader Setting	Auto. Choke Setting
	Hot ①	Fast							
D3ZF-EA	④	1400	7/16"	13/16"	#2A Inner	.160"	.....	.....	1-Rich
D3GF-BB	④	1250	7/16"	13/16"	#2A Inner	.160"	.....	.....	1-Rich
D3GF-AF	④	1400	7/16"	13/16"	#2A Inner	.160"	.....	.....	3-Rich
D3AF-DC	④	1500	7/16"	13/16"	#3A Inner	.160"	.....	.....	3-Rich
D3AF-KA	④	1500	7/16"	13/16"	#3A Inner	.160"	.....	.....	3-Rich
D3AF-CE	④	1500	7/16"	13/16"	#2A Inner	.160"	.....	.....	2-Rich
D3MF-AE	④	1500	7/16"	13/16"	#3A Inner	.160"	.....	.....	3-Rich
D3MF-BA	④	1500	7/16"	13/16"	#3A Inner	.160"	.....	.....	3-Rich
Amer. Mtrs. & Jeep									
3DM2	750	1600	3/8"	3/4"	#3 Inner	.130"	.130"	.250"	1-Rich
3DA2	700 ②	1600	3/8"	3/4"	#3 Inner	.120"	.110"	.250"	2-Rich
3RA2	700 ②	1600	3/8"	3/4"	#3 Inner	.120"	.110"	.250"	2-Rich

① — Headlights on High Beam. Air Conditioning OFF. Higher RPM — Solenoid connected, with Auto. Trans. in "D", Man. Trans. in "N". Lower RPM — Solenoid disconnected, transmission (all) in "N".

② — In Drive, do not accelerate engine.

③ — ± 1/16".

④ — See Engine Tune-Up Decal in Engine Compartment.

MOTORCRAFT MODEL 2100-D 2-BARREL (Cont.)

Staged Choke (Ford Motor Co. 351"W Engines) – Staged Choke System ulitizes a bi-metal sensor and a series of diaphragms to pull open choke plate within 15-60 seconds. System operates only during times when underhood temperatures are above 60°F. Instructions for adjusting unit are given under "Adjustments" in this story.

ADJUSTMENTS

IDLE SPEED & MIXTURE

► *NOTE – Do not attempt to adjust or tamper with idle mixture screws locked in position with plastic limiter caps. If limiter caps and idle mixture screws are removed for carburetor overhaul, bowl or throttle body replacement, special procedure is required to correctly readjust idle mixture screws. See appropriate Tune-Up article in Exhaust Emission Manual.*

Ford Motor Co. (All Models) – With engine at normal operating temperature, Auto. Trans. in "D", headlight ON high beam, A/C OFF and air cleaner installed, adjust energized throttle positioner or throttle stopscrew to obtain specified idle speed. Turn both idle mixture screws in equally to obtain smoothest idle. Recheck final engine idle speed and mixture adjustments with air cleaner installed.

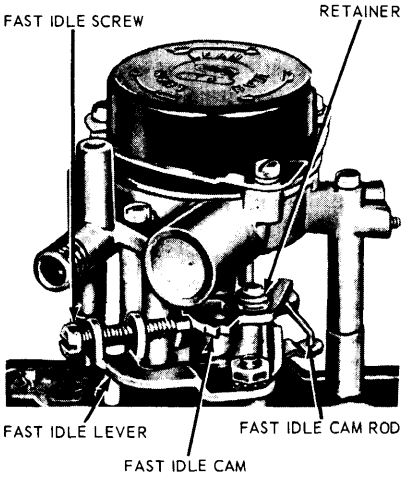
On vehicles equipped with solenoid throttle positioner, disconnect solenoid lead at bullet connector and adjust throttle stopscrew to obtain specified lower idle speed. Reconnect solenoid lead and open throttle slightly by hand. Solenoid plunger should follow throttle lever to maintain original higher idle speed when throttle is released.

American Motors & Jeep – With engine at normal operating temperature, Auto. Trans. in "D", and air conditioning OFF, adjust solenoid throttle positioner or idle stopscrew to correct hot idle speed. Starting from full rich (counterclockwise) position of idle mixture screws, turn both screws clockwise equally until idle speed drops off, then turn both screws counterclockwise until highest engine RPM is obtained at "lean best idle" setting. If idle speed changes more than 30 RPM during adjustment, reset idle speed to specified RPM and repeat idle mixture adjustment. If equipped with solenoid, disconnect solenoid lead at bullet connector, adjust throttle stopscrew to obtain lower idle speed, reconnect solenoid lead and open throttle slightly by hand. Solenoid plunger should follow lever and remain in extended position to maintain original higher idle speed setting when throttle is released.

► *UNSATISFACTORY IDLE PERFORMANCE CORRECTION: If idle performance not satisfactory after making above adjustments, idle limiter caps may be removed and carburetor idle speed and mixture adjusted as directed under American Motors & Jeep in Tune-Up section of Exhaust Emission Manual.*

FAST IDLE SPEED

Ford Motor Co. (All Models) – With engine at normal operating temperature, position fast idle adjusting screw on kick-down step of fast idle cam, then adjust screw to specified RPM. *NOTE – Carburetors used on 351"C and 400" engines have two piece fast idle lever with tang on intermediate lever contacting fast idle cam (fast idle screw contacts lug on intermediate lever).*



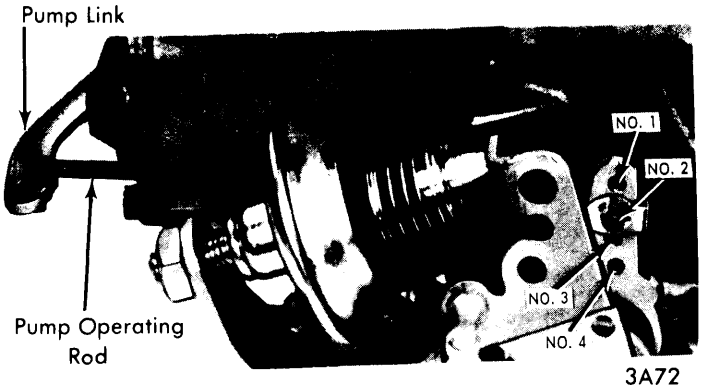
FAST IDLE SPEED ADJUSTMENT

American Motors & Jeep – Set fast idle speed with engine at normal operating temperature and fast idle screw against index mark (second) step of fast idle cam. Adjust to correct RPM by turning fast idle screw.

ACCELERATING PUMP STROKE

All Carburetors – *Pump lever has two holes (inner and outer) and pump over-travel lever on throttle shaft has four holes(No. 1 hole nearest throttle lever) for pump rod engagement.*

Connect pump rod in **inner** hole of pump lever on all carburetors and connect rod in specified hole of over-travel lever.



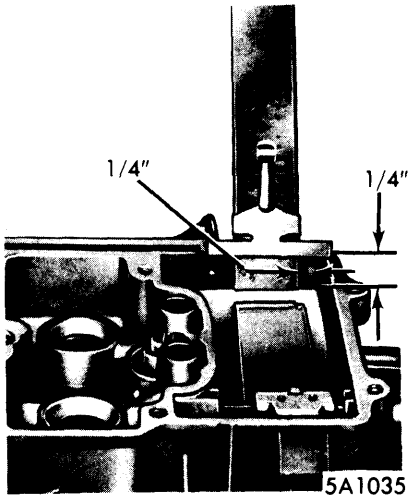
ACCELERATION PUMP ADJUSTMENT

FUEL LEVEL (WET FLOAT ADJUSTMENT)

With air horn and gasket installed temporarily on carburetor, idle engine for at least three minutes to stabilize fuel level in bowl, then remove air horn and gasket. With engine idling, use "T" scale to measure from top machined surface of bowl to surface of fuel at a point at least 1/4" away from any vertical surface. If fuel level not correct, stop engine and adjust by bending float tab toward or away from inlet needle as required *(CAUTION – Do not allow float tab to contact*

MOTORCRAFT MODEL 2100-D 2-BARREL (Cont.)

needle while making adjustment). Repeat entire procedure to recheck fuel level. After adjustment completed, install air horn and gasket and make necessary carburetor adjustments.



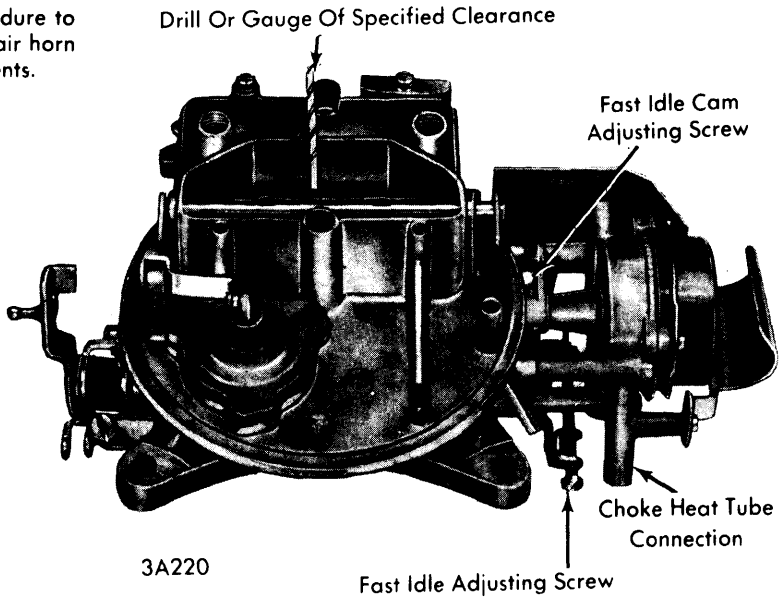
FUEL LEVEL ADJUSTMENT

INITIAL CHOKE VALVE CLEARANCE (CHOKE VALVE PULL-DOWN)

Ford Motor Co. (351"W) – With engine at normal operating temperature, remove air cleaner, loosen choke housing cover screws and position cover and thermostatic spring 90° in the **Rich** direction, disconnect and remove heat tube from choke housing, back off fast idle adjusting screw one full turn. Start engine and check clearance between lower edge of choke valve and air horn wall using correct size gauge. If clearance not correct, turn diaphragm stopscrew (located on underside of choke diaphragm housing on lower face of air horn flange) clockwise to decrease clearance or counterclockwise to increase clearance as required. Connect heat tube but do not reset automatic choke until after fast idle cam linkage adjustment is completed.

Ford Motor Co. (Exc. 351"W Engines) – Choke plate pull-down is preset at factory. If vehicle indicates leaness during cold starting, decrease clearance between choke plate and air horn wall by .020". If overrich condition exists during cold starting, increase pull-down clearance by .020".

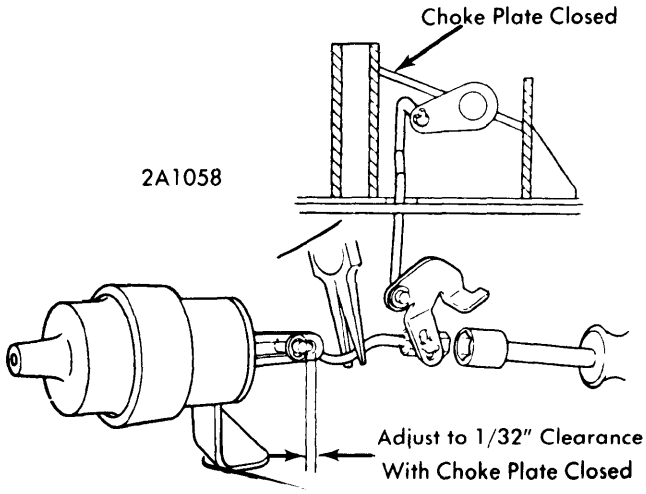
American Motors & Jeep – Remove choke shield and loosen retaining screws to allow movement of cover. Rotate choke cover 1/4" turn counterclockwise (rich) from index and tighten retaining screws. Disconnect choke heat inlet tube. Align fast idle screw with second step (index) and against shoulder of high step. Start engine without moving accelerator linkage. Turn fast idle cam adjusting screw counterclockwise 3 full turns. Adjust initial choke valve clearance (measured between lower edge of choke valve and air horn wall) to specified setting. Grasp modulator arm securely with pliers and twist arm with second pair of pliers. Twist toward front of carburetor to increase clearance and toward rear of carburetor to decrease clearance. *CAUTION – Use extreme care while twisting modulator arm to avoid damaging nylon piston rod of modulator assembly.* After completing intial choke valve clearance adjustment, stop engine, perform fast idle cam linkage adjustment and connect choke heat tube and choke shield.



FAST IDLE CAM LINKAGE ADJUSTMENT

FAST IDLE CAM LINKAGE

All Carburetors – With choke cover set 90° in Rich direction (as for intial choke clearance adjustment above), press down on fast idle cam lever until fast idle cam index mark (at second step of cam on Amer. Mtrs. & Jeep; kick-down step of cam on Ford Motor Co.) is aligned with fast idle screw (or tang of intermediate lever on Ford 351"C & 400"). Check clearance between lower edge of choke valve and air horn wall using gauge of correct size. If clearance not correct, adjust by turning fast idle cam lever screw (see illustration – this is not the fast idle speed adjusting screw) clockwise to increase clearance or counterclockwise to decrease clearance as required. Reset automatic choke to specifications.



STAGED CHOKE ADJUSTMENT

STAGED CHOKE VACUUM CONTROL ASSEMBLY

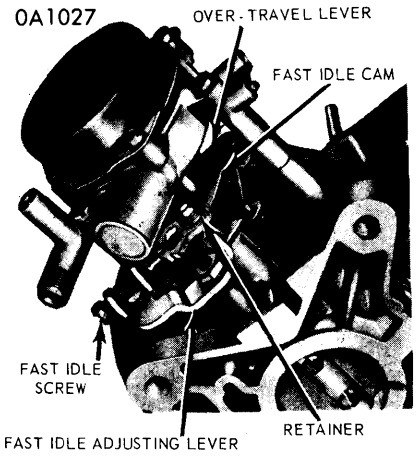
Ford Motor Co. – Adjustment is necessary only if the control unit has been replaced, carburetor overhauled or a choke

MOTORCRAFT MODEL 2100-D 2-BARREL (Cont.)

adjustment made. Choke pulldown and fast idle cam adjustments must be made before this adjustment is performed. Adjustment procedure is as follows:

1) With choke plate fully closed, measure clearance between forward edge of choke link and edge of slot in choke vacuum lever (see illustration). Clearance should be 1/32".

2) If adjustment is required, grasp choke link with pliers to prevent flexing, and with a 1/4" socket turn nylon adjuster in or out to obtain proper clearance.



UNLOADER ADJUSTMENT

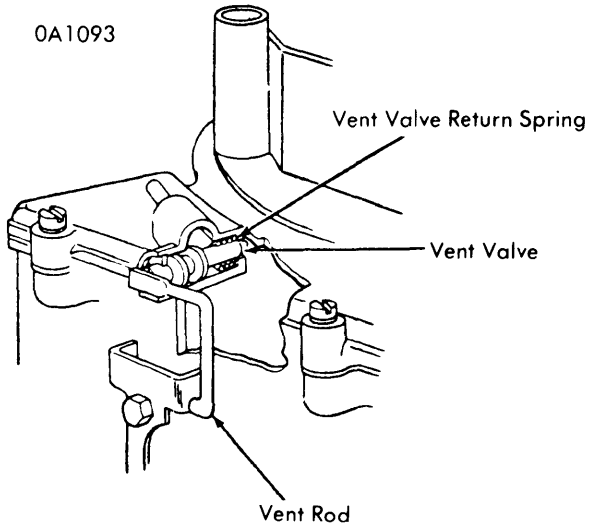
UNLOADER

All Carburetors – With throttle valves wide open apply light closing pressure to choke valve. Use gauge of correct size to measure clearance between lower edge of choke valve and air horn wall. Adjust by bending tang on fast idle speed lever on throttle shaft as required.

EXTERNAL FUEL BOWL VENT VALVE

Ford Motor Co. – Fuel bowl is vented through an external vent connected by a hose to fuel evaporation carbon canister. Adjust vent valve as follows:

1) Fully depress vent valve into valve bore. Measure clearance between flat portion on vent rod and fully seated valve.

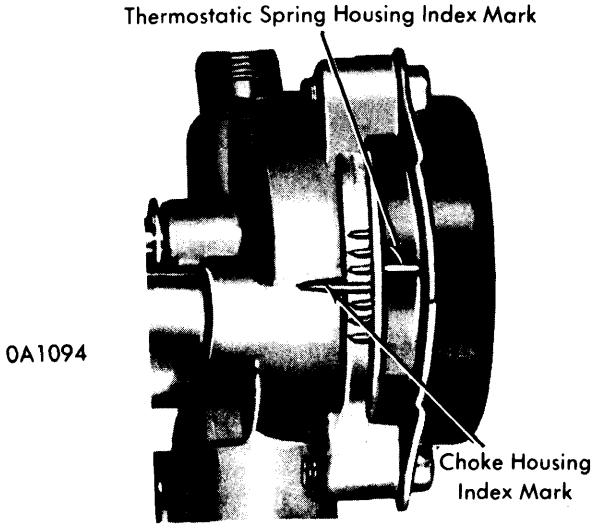


BOWL BENT VALVE ADJUSTMENT

2) If adjustment is required, bend vent rod at point where it contacts accelerator pump lever.

AUTOMATIC CHOKE

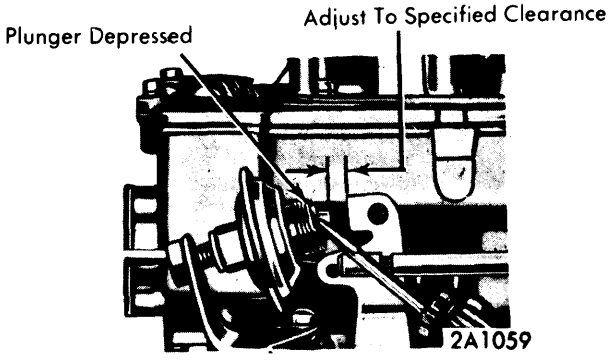
All Carburetors – Loosen choke cover retaining screws and rotate cover and thermostatic coil assembly in "Rich" or "Lean" direction to align reference mark on cover with correct scale graduation on housing. *NOTE – "Index" setting is with reference mark on cover aligned with longer center mark on housing.*



AUTOMATIC CHOKE ADJUSTMENT

DASHPOT

All Carburetors (If Equipped) – With throttle valves closed in curb idle position, fully depress dashpot plunger and measure clearance between end of plunger stem and throttle valve lever. If clearance not correct (1/8"), adjust by loosening locknut and turning dashpot in or out of mounting bracket.



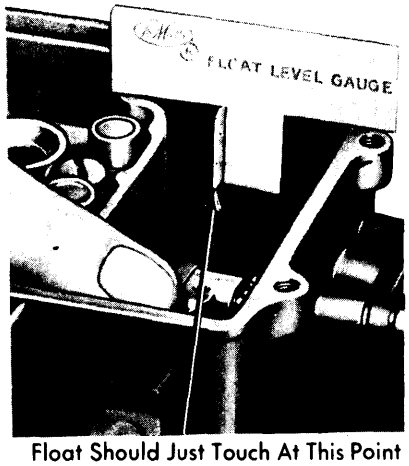
DASHPOT ADJUSTMENT

MOTORCRAFT MODEL 2100-D 2-BARREL (Cont.)

FLOAT LEVEL (DRY FLOAT ADJUSTMENT)

NOTE — This is a preliminary adjustment only. Fuel level (wet float adjustment) should be checked after carburetor installed on engine.

All Carburetors — With air horn and gasket removed, raise float by pressing lightly on float lever tab to seat inlet needle, use "T" scale to measure from top machined surface of bowl to top of float at free end (1/8" from end and 5/16" in from side of float). If this distance not correct, adjust by bending float tab toward or away from needle as required *(CAUTION — Do not allow float tab to contact needle while making adjustment as Viton tipped needle may be damaged).*



0A1028

Float Should Just Touch At This Point

DRY FLOAT LEVEL ADJUSTMENT

OVERHAUL

Disassembly

Air Horn — 1) Remove air cleaner anchor screw and automatic choke control rod retainer. Remove air horn attaching screws, lockwashers, carburetor I.D. tag, then remove air horn and gasket. Remove choke control rod by loosening screw securing choke shaft lever to choke shaft. Remove rod from air horn and slide plastic dust seal out of air horn.

2) Remove choke diaphragm assembly, then if necessary to remove choke plate, remove staking marks on attaching screws and remove screws. Remove choke plate by sliding it out of the shaft from the top of the air horn, then remove shaft from air horn.

Automatic Choke — 1) Remove fast idle cam retainer, thermostatic choke spring housing screws and then remove clamp, housing and gasket.

2) Remove choke housing assembly retaining screws, choke housing assembly, gasket and the fast idle cam rod and cam lever. Remove choke lever retaining screw and washer, then remove choke lever and fast idle cam lever.

Main Body — 1) Pry float shaft retainer from fuel inlet seat with a screwdriver, then remove float, float shaft retainer and fuel inlet needle assembly. Remove retainer and float shaft from float lever.

2) Remove fuel inlet needle, seat, filter screen, and main jets. Remove booster venturi screw (accelerator pump discharge), air distribution plate, booster venturi and gasket. Invert main body and catch accelerating pump discharge weight and ball in hand. Remove accelerator pump operating rod from over-travel lever and retainer by pressing the ends of the retainer together, while at the same time, pressing the rod away from the retainer until it is free, then remove rod and retainer.

3) Remove accelerating pump cover attaching screws, pump cover, diaphragm assembly and spring. If necessary to remove Elastomer valve, grasp firmly and pull it out; if valve tip broke off during removal, be certain to remove it from fuel bowl. Elastomer valve must always be replaced whenever it has been removed from carburetor.

4) Invert main body and remove power valve cover and gasket then remove valve with a box wrench, along with gasket. Remove idle fuel mixture adjusting needles and springs, then remove limiters from needles. If necessary, remove nut and washer securing fast idle adjusting lever assembly to throttle shaft and remove lever assembly. Remove anti-stall dashpot or solenoid. If necessary to remove throttle plates, scribe throttle plates along shaft and mark each plate and its corresponding bore for reassembly. Slide throttle shaft from main body.

Cleaning & Inspection

Clean all parts, except accelerating pump diaphragm, power valve, secondary operating diaphragm, and anti-stall dashpot, in a suitable solvent. Check all parts for wear, damage, nicks, burrs, or traces of foreign material. Blow out all passages with compressed air. Replace parts as necessary.

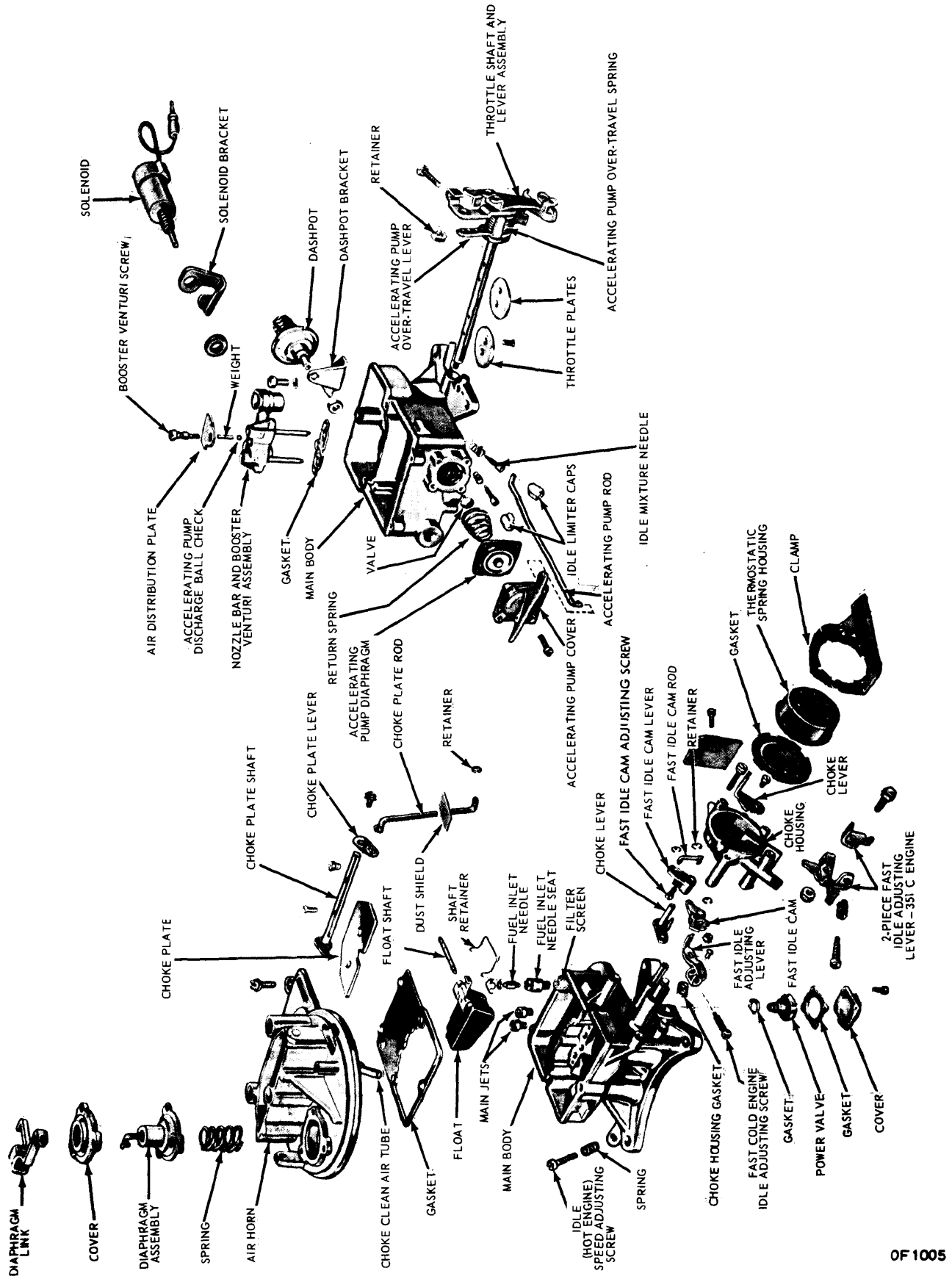
Reassembly

Use all new gaskets, 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 and stake screws securely while supporting shaft on a metal bar or a block of wood.

Choke Valve Installation — Install choke valve with attaching screws snug (not tight), check valve fit and free movement 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 with a metal bar or block of wood.

MOTORCRAFT MODEL 2100-D 2-BARREL (Cont.)



FORD MODEL 2100-D 2-BARREL CARBURETOR ASSEMBLY

MOTORCRAFT MODEL 2100-D 2-BARREL (Cont.)

Choke Valve Rod & Seal Installation – Assemble choke rod seal between two brass washers and slide them into position on seal retainer, insert choke rod through seal and air horn to engage choke shaft lever clevis nut. *NOTE – Rod is adjusted during "Choke Valve Pull-Down" adjustment.*

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 install two cover screws that do not retain vent valve bracket. Insert a new plug in vent rod, and install vent rod and bracket assembly on pump.

Idle Mixture Screw & Limiter Cap Installation – Install idle mixture needles and springs. Turn screws in until lightly seated, then back out 1½ turns (Ford Motor Co.), 2 turns (American Motors & Jeep), for an initial adjustment. NOTE – Idle limiter caps should not be installed until final idle mixture adjustment is made.

Power Valve Cover Installation – Use new gasket and position cover so that limiter stops are in position to provide positive stops for tabs on idle mixture screw limiter caps.