MOTORCRAFT 4300 4-BARREL

FORD MOTOR CO.

TORINO, MONTEGO & MUSTANG	Man. Trans.	Auto. Trans.
351"	①D3ZF-BC	D3ZF-AC
FORD, MERCURY, TORINO, MONTEGO & THUNDERBIRD		
429"		D3AF-HA
LINCOLN, MARK IV, FORD, MERCURY & THUNDERBIRD		
460"		D3VF-DA
FORD, MERCURY, TORINO & MONTEGO		
460" Police		D3AF-EB

AMERICAN MOTORS

MATADOR, JAVELIN & AMBASSADOR	Man. Trans.	Auto. Trans.
360" & 401"	3TM4	3TA4
JEEP WAGONEER		
360"	3TM4	3TA4

① — Ford carburetor prefix and sufix number given with basic part number (9510) omitted.

② — Mustang may also be equipped with D3ZF-DC carburetor.

③ — American Motors Code Number stamped on carburetor tag.

CARBURETOR IDENTIFICATION

Carburetor model designation and suffix stamped on tag attached to carburetor by one air horn screw. First letter on second line of tag indicates design changes which may affect parts replacement. Ford carburetors may have Ford or Motorcraft stamped on identification tag.

DESCRIPTION

Four barrel downdraft carburetor of same design as previous models with the following special features:

EGR Port — An additional port has been added to carburetor body to accommodate new Exhaust Gas Recirculation System.

Throttle Shafts — Primary throttle shafts are teflon coated to prevent sticking.

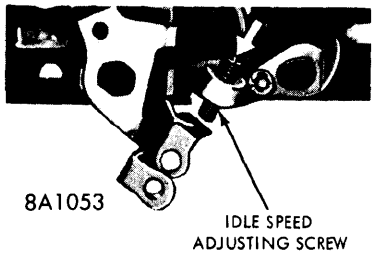
Main Well Tubes — New design main well tubes are used. New tubes are closed at bottom end.

Accelerator Pump Vent — Accelerator pump vent system now uses a check ball. When removing air horn assembly, do not drop check ball into engine.

ADJUSTMENT

Idle Speed & Mixture

American Motors — *NOTE — Do not idle engine for over 3 minutes at a time. If idle mixture adjustment not completed within 3 minutes, run engine at 2000 RPM for 1 minute. Recheck idle mixture adjustment at specified RPM and adjust as required. Repeat above as often as necessary to compensate for fuel and temperature variations while performing this adjustment.* Remove idle limiter caps by installing a sheet metal screw in center of cap and turning clockwise. Discard the caps. With engine at normal operating temperature, adjust idle speed to 30 RPM over specified idle RPM (see specifications). *NOTE — On cars with automatic transmission, adjust idle speed by turning hex screw on throttle stop solenoid.* Adjust mixture as follows; starting from full rich stops, turn mixture screws clockwise (leaner) until a loss of RPM is indicated, then turn mixture screws counterclockwise until highest RPM reading is obtained at "lean best idle" setting. Be sure to adjust both screws equally unless engine demands otherwise. If idle speed changed more than 30 RPM during mixture adjustment, reset to 30 RPM over specified RPM and repeat adjustment. As a final adjustment, turn mixture screws clockwise until a 40 RPM drop is obtained. Install new idle limiter caps.



IDLE SPEED SCREW

► *UNSATISFACTORY IDLE PERFORMANCE CORRECTION: If idle performance is not satisfactory after making carburetor adjustment and is not improved by general engine tune-up, see "American Motors Tune-Up" in Exhaust Emission Manual.*

Ford Motor Co. — Obtain the following conditions: Headlights on High Beam, air conditioning OFF, automatic transmission in "D", manual transmission in "N". *CAUTION — On vehicles with vacuum release parking brake, plug vacuum line and set brake before placing transmission in "D". This will permit parking brake to remain engaged while engine is running and transmission in "D".* With air cleaner installed and engine at normal operating temperature, set idle speed to specifications found on tune-up decal in engine compartment with throttle solenoid energized (if equipped). With throttle solenoid (if equipped) de-energized, set idle speed to 500 RPM.

► *UNSATISFACTORY IDLE PERFORMANCE CORRECTION: If idle performance is not satisfactory after making carburetor adjustment and is not improved by general engine tune-up, see "Ford Motor Co. Tune-Up" in Exhaust Emission Manual.*

Fast Idle Speed

Rotate fast idle cam so that fast idle screw contacts kick-down (middle) step of fast idle cam. With engine at normal operating temperature, adjust fast idle screw by turning screw in or out for correct fast idle speed. See *Specifications*.

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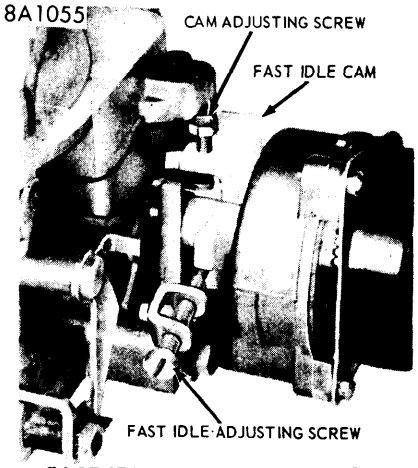


FAST IDLE SPEED ADJUSTMENT

NOTE – On Ford Motor Co. vehicles equipped with spark delay device, set fast idle with ambient temperature above 55°F with a vacuum line connected directly from carburetor spark port to advance side of distributor and vacuum line to EGR valve disconnected and plugged.

Accelerating Pump

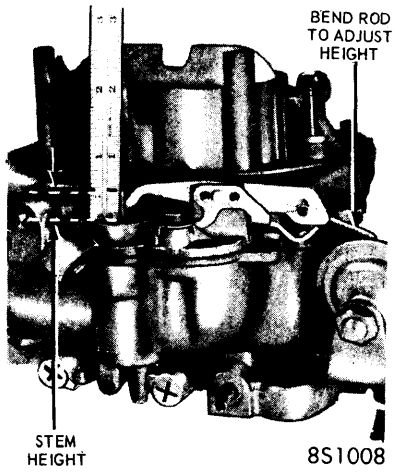
The accelerator pump stroke has been set to help maintain the exhaust emission level of the engine within specified limits and normally the accelerator pump stroke should not be changed from the specified setting. However, three holes are provided in pump link or operating arm and bracket, and pump may be adjusted, if necessary.

Pump Stem Height (Ford Motor Co.) – Before adjusting accelerator pump stroke, measure height of pump piston stem (as shown in illustration). Bend pump control rod to adjust to correct height (see below).

Pump Stem Height

351" ..... .380" ± .020"
429" & 460" ..... .430" ± .020"

Pump Adjustment (All) – Disconnect pump rod from pump link before removing pump pivot pin. Line up holes in pump link and pivot hole in main body casting before attempting to reinstall pivot pin in correct hole (see Specifications). Make certain that split end of pivot pin is spread, so it will be retained in place.



ACCELERATING PUMP HEIGHT

CARBURETOR ADJUSTMENT SPECIFICATIONS

Carb. No.	Idle Speed (Engine RPM)		Float Level		Choke Valve Pull-Down	Fast Idle Cam Clearance	Accel. Pump Setting	Unloader Setting	Auto. Choke Setting
	Hot (1)	Fast	Primary Valve (2)	Auxiliary Valve (3)					
Ford									
D3AF-EB	(4)	1900	.88"	.03"	.200"	.200"	#1	.....	Index
D3AF-HA	(4)	1350	.76"	.06"	.210"	.200"	#1	.....	Index
D3VF-DA	(4)	1350	.76"	.06"	.210"	.190"	#1	.....	Index
D3ZF-AC	(4)	1300	.82"	.03"	.180"	.180"	#1	.....	Index
D3ZF-BC	(4)	1300	.82"	.03"	.170"	.170"	#1	.....	Index
D3ZF-DC	(4)	1300	.82"	.03"	.180"	.180"	#1	.....	Index
Amer. Mtrs.									
3TA4	700	1600	3/16"	.060"	.190"	.160"	#2	.275"	2-Rich
3TM4	750	1600	3/16"	.060"	.190"	.160"	#2	.275"	2-Rich

(1) – Headlights on High Beam. Air Conditioner OFF. Solenoid connected with Auto. Trans. in Drive, Man. Trans. in Neutral. Set to 500 RPM with solenoid disconnected.
(2) – ± 1/32".
(3) – ± 1/64".
(4) – See Tune-Up decal in engine compartment for idle speed specifications.

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Choke Valve Pull-down & Fast Idle Cam Linkage

Adjust in the following order:

Choke Valve Pull-down – Remove choke cover screws and retainer, remove choke cover and thermostatic coil. 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 is held snugly in piston slot. Maintain slight pressure on choke lever to hold gauge in place. Use gauge or drill of correct size *(See Specifications)* to check clearance between lower edge of choke valve and air horn wall. If clearance not correct, adjust as follows:

1) Loosen hex head screw (left hand thread) on choke valve shaft and pry link away from tapered choke shaft.

2) With a drill gauge .010" under the specified clearance between the lower edge of choke plate and air horn wall, hold the choke valve against the gauge with a light pressure on the choke lever.

3) With the choke piston firmly against the .036" wire gauge and the choke valve against the drill gauge, tighten the hex head screw on the choke valve shaft. *NOTE – Adjustment is made with choke valve drill gauge .010" under specified clearance to allow for tolerances in linkage.*

4) Recheck choke valve pull-down using choke valve drill gauge of size specified in adjustment specifications (.010" larger than adjusting gauge).

Fast Idle Cam Linkage – Install choke cover and thermostatic coil loosely (make certain coil end engages choke lever slot). Rotate cover to 90° rich position, then place fast idle speed screw on kickdown (center) step of the fast idle cam, against shoulder of the high step of the cam, and hold it in this position. Using a drill or gauge of correct size (see Specifications), check clearance between lower edge of choke valve and air horn wall. If fast idle cam clearance not correct, adjust by turning fast idle cam adjusting screw in or out as necessary. *NOTE – This is not the fast idle speed adjusting screw, but the cam adjusting screw*

Unloader

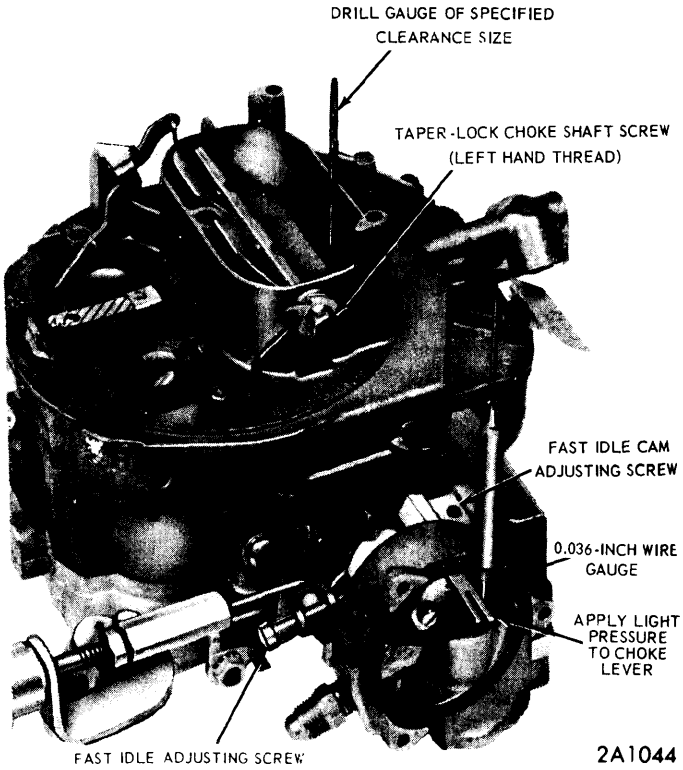
Hold throttle valves in wide open position, rotate choke valve toward closed position until pawl on fast idle lever contacts fast idle cam. Use gauge or drill of specified size to check clearance between lower edge of choke valve and air horn wall. If this clearance not correct (see Specifications), adjust by bending pawl on fast idle speed lever forward or backward as required.

Automatic Choke

Loosen choke cover retainer screws, rotate cover to align index mark on cover flange with correct graduation of scale on housing (see Specifications). Tighten retainer screws after adjustment completed.

Staged Choke Control

With choke plate fully closed, back off the adjusting sleeve locknut until it is clear of the adjusting sleeve. Turn adjusting sleeve inward until the choke plate just begins to move. Scribe a mark on the upper flat of the sleeve, then back off the sleeve one complete turn and tighten locknut firmly against sleeve. *NOTE – Do not turn the diaphragm stem.*



CHOKE VALVE PULL-DOWN & FAST IDLE CAM ADJUSTMENT

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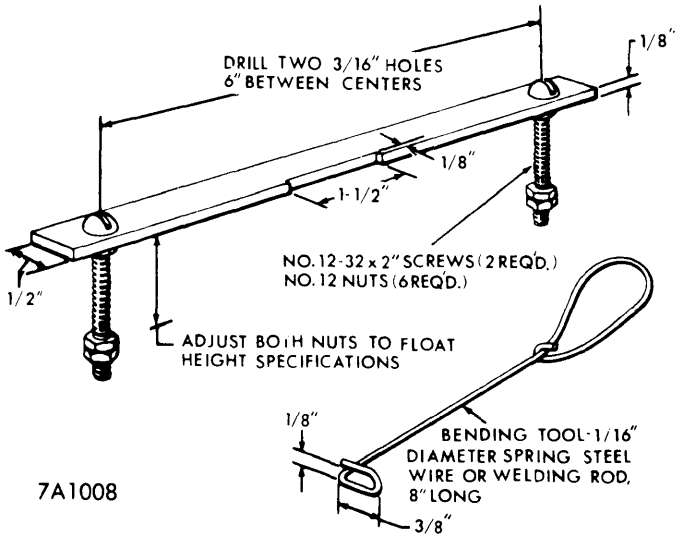
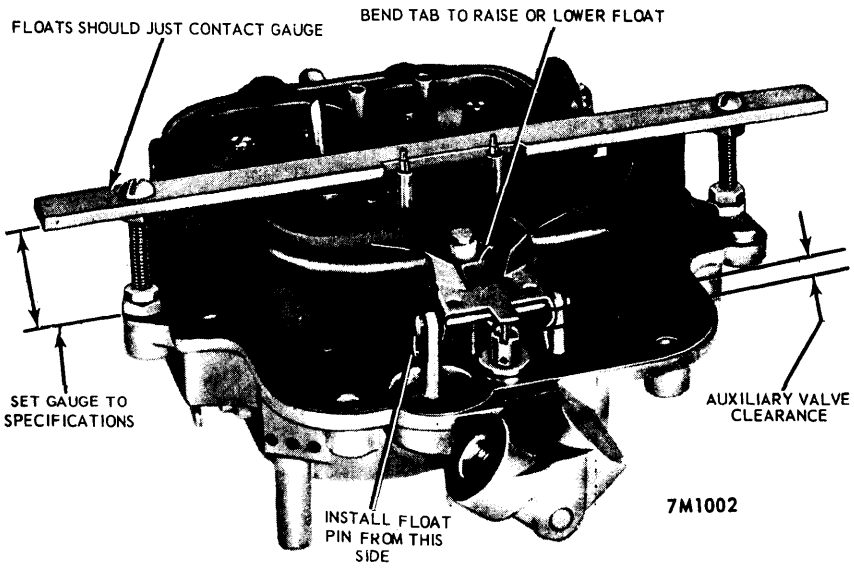


FLOAT LEVEL GAUGE

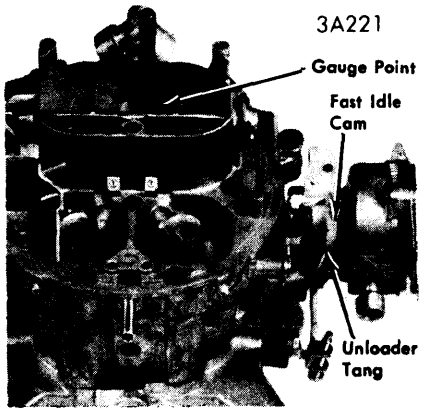
Float Level

NOTE – It is recommended that a Float Gauge tool be made up for this purpose. Dimensions of tool are shown in illustration.

Float Level (Primary Fuel Valve) – Adjust nuts on float gauge tool for correct float level setting *(See Specifications)*. With air horn and float assembly removed and inverted, install float gauge over floats with locating bolts installed in outboard holes of air horn. Both floats should just touch underside of float gauge bar. Align floats by slightly twisting float arms, adjust float height by bending primary needle tab (inner tab on float arm) up or down as required. *NOTE – Raise floats so that tab clears primary needle.*



FLOAT LEVEL ADJUSTMENT



UNLOADER ADJUSTMENT

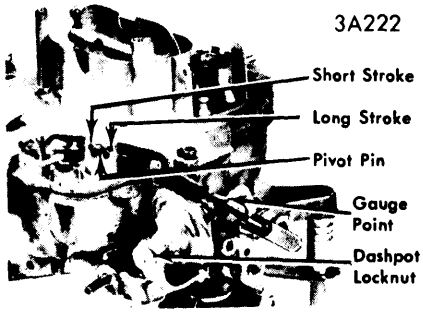
Auxiliary Fuel Valve – After adjusting primary fuel valve, check clearance between auxiliary fuel valve pin and tab on rear of float arm. If clearance not correct *(See Specifications)* adjust by bending this tab up or down as required.

Dashpot

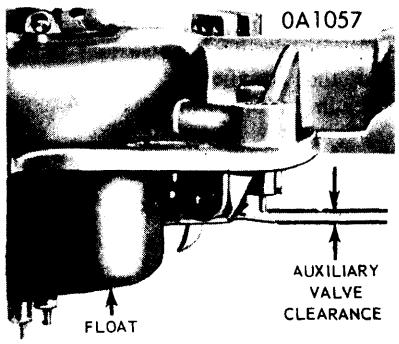
With throttle valves closed at curb idle position, depress dashpot plunger fully and check clearance between dashpot plunger stem and throttle lever. If clearance not in accordance with specifications in following table adjust by loosening locknut and turning dashpot in or out of mounting bracket as required.

Dashpot Setting

All American Mtrs. with Auto. Trans.....9/64"



ACCELERATOR PUMP STROKE & DASHPOT ADJUSTMENT



AUXILIARY FLOAT VALVE SETTING

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OVERHAUL

NOTE - Carburetor consists of three main castings: Air Horn, Main Body, and Throttle Body, which are separated and then disassembled separately as follows:

Disassembly

Air Horn - 1) Disconnect choke control rod from automatic choke lever and accelerating pump rod from throttle lever. Remove all air horn-to-main body retaining screws and carefully lift air horn off main body.

2) Remove float pivot pin and lift out float assembly, use correct size screwdriver (or jet removal tool) to remove main and auxiliary fuel inlet seat assemblies and gaskets.

3) Disconnect secondary air valve lever rods from dampener piston assembly and air valve, remove dampener piston and rod assembly.

4) If necessary to remove secondary air valves or shaft, scribe index mark on air valve housing and body casting, remove valve retaining screws and valves, then slide shaft out of air horn.

5) If necessary to remove choke valve or shaft, remove staking marks on choke valve retaining screws or file off flared portion of screws, remove retaining screws and valve, then slide shaft out of air horn.

6) Take out attaching screws and remove hot idle compensator valve assembly. *Do not remove power valve vacuum valve assembly unless it is to be replaced.* Remove staked areas and remove valve assembly carefully to avoid damage to air horn casting.

Main Body - 1) Invert main body assembly and catch accelerating pump discharge needle which will fall out.

2) Use 3/8" deep socket to remove power valve and jet tool to remove main metering jets from within fuel bowl.

3) Remove check ball retainer from bottom of accelerating pump cylinder with long nosed pliers, then invert main body and catch pump inlet ball check which will drop out.

4) Remove throttle body-to-main retaining screws from bottom of throttle body and separate the two castings.

Throttle Body - 1) *CAUTION - Do not remove idle mixture limiter caps, screws, and springs.* Remove automatic choke housing cover screws, remove retainer, cover, gasket, and thermostatic spring assembly. Remove choke piston lever retaining screw, then remove piston assembly.

2) Remove secondary throttle-to-primary throttle lever connecting link. If necessary to remove primary or secondary throttle valves or shafts, remove staking marks on throttle valve attaching screws, remove screws and valves.

3) After valves removed, remove nut from secondary throttle shaft, slide shaft and return spring out of throttle body.

4) After valves removed, remove nut from primary throttle shaft and remove fast idle lever and adjusting screw, then slide primary throttle shaft and lever assembly out of throttle body. Remove throttle lever assembly retainer, slide lever and springs off shaft.

5) If necessary to remove fast idle cam or bushings, press bushing out of choke housing and bushing column. *CAUTION - Housing and column must be properly supported during bushing removal and installation to prevent bending or breaking of the column.*

Cleaning & Inspection

Clean all castings and metal parts in cleaning solution (plastic fast idle cam and air valve spring cover can be cleaned in the solution but floats and gaskets should not be immersed in the solution). Rinse parts in hot water, soak in gasoline, and dry with air. Blow out all passages, jets, and tubes with air. Inspect all parts for wear, distortion or damage. Make certain power valve piston and rod move freely. *CAUTION - Do not remove calibrating shims from power valve piston rod for cleaning and use care not to distort rod.*

Reassembly

Use all new gaskets. Reassemble carburetor by reversing disassembly procedure with particular attention to the following points:

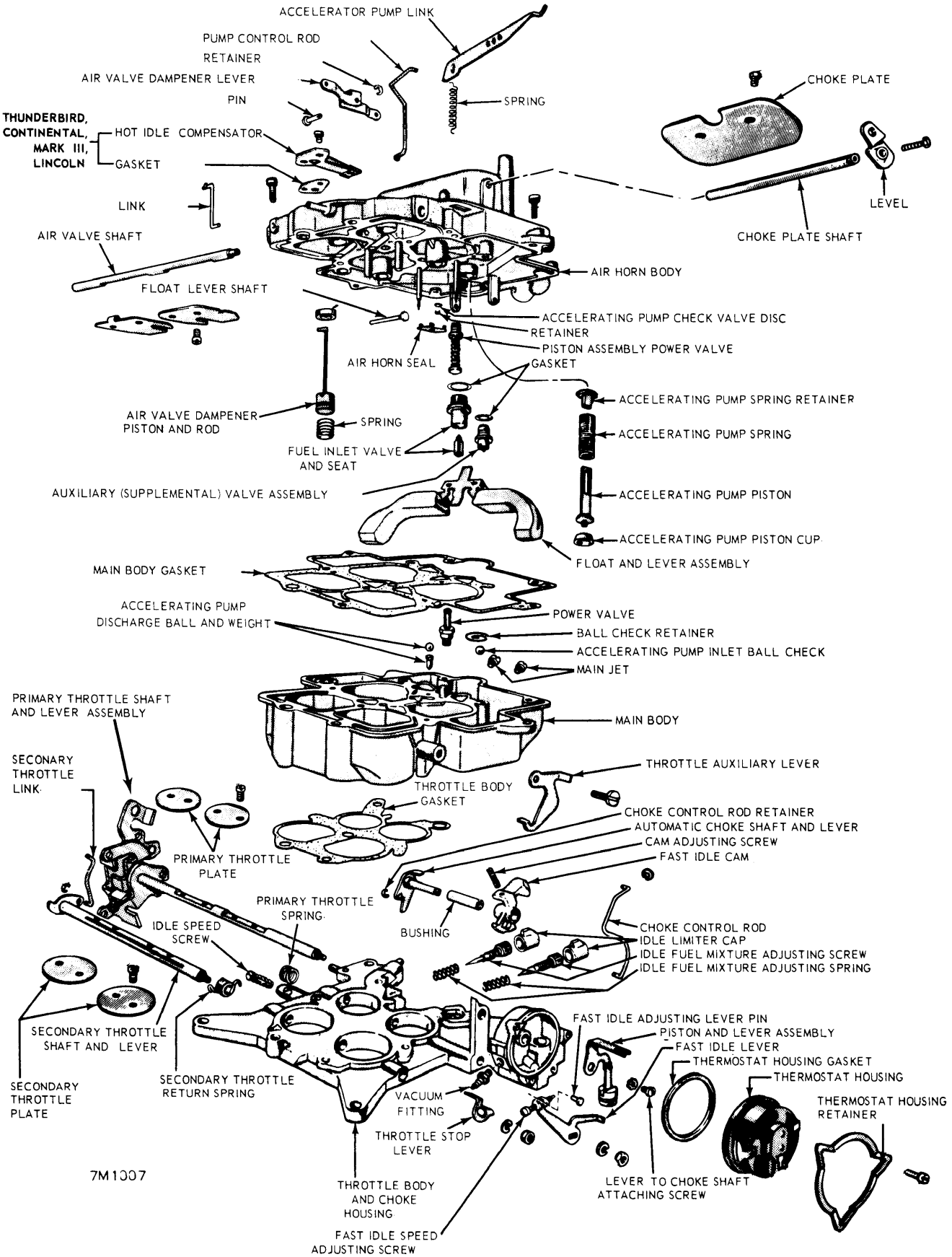
Primary Throttle Valve Installation - Install return spring (coiled clockwise) on primary throttle shaft and insert shaft in throttle body. Position throttle valves on shaft with ground flat edge of valves facing upwards and toward idle mixture needles, install valve screws just snug. Rotate shaft to closed position, tap valves lightly to properly seat them in throttle bore (when viewed against a light, little or no light should be visible around valves), then tighten valve screws securely.

Fast Idle Cam & Bushing Installation - Start bushing through choke housing, position fast idle cam between housing and bushing column and slide bushing through fast idle cam, then support bushing column and press bushing into position in column. Clean bushing with 1/4" reamer before installing choke shaft and lever.

Choke Valve Installation - Insert choke shaft in air horn with lever end on automatic choke side, install choke valve and tighten attaching screws just snug, then close valve and tap lightly to position it in air horn, tighten attaching screws and stake screws to prevent loosening. Install a new seal on choke control rod, press seal into air horn and attach control rod to choke shaft lever *(CAUTION - Seal must grip ledge in air horn at all four points to prevent unfiltered air entering carburetor).*

Air Valve Installation - Slide air valve shaft in air horn with slotted end of shaft in air valve spring chamber. Position plain air valve in air horn opening adjacent to spring chamber and tighten attaching screws just snug, install air valve in other air horn opening with control rod eye facing upward, install attaching screws just snug. Close air valves and tap valves lightly to position them in air horn, then tighten attaching screws and stake the screws to prevent loosening.

MOTORCRAFT 4300 4-BARREL (Cont.)



FORD (AUTOLITE) 4-BARREL MODEL 4300 CARBURETOR ASSEMBLY