1975-79 MOTORCRAFT CARBURETORS
Motorcraft 2700 & 7200 VV 2-Barrel

1977-79 Ford Motor Co.

CARBURETOR APPLICATION

1977-78 FORD MOTOR CO. (2700 VV)

Application	Man. Trans.	Auto. Trans.
1977		
2.8L V6		
Calif.	D7ZE-AC	D7ZE-BD
302" V8		D7ZE-GD
1978		
2.8L V6		
Calif.	[1] D8ZE-VB	[2] D8ZE-YB [1] D8ZE-HB
302" V8		
Federal		[3] D84E-DB
Calif.		D8BE-EB [3] D84E-KA
High Alt.		[3] D84E-FB

[1] - Mustang only.
[2] - After 6/2/77 on Bobcat, Mustang and Pinto.
[3] - Versailles only.

1979 FORD MOTOR CO. (2700 & 7200 VV)

Application	Ford Carb. No.
2.8L V6	
Calif.	D9ZE-LC
302" V8	
Federal	D9AE-JB, YB, D84E-KA, VA, [1] D94E-FA
Calif.	
Without A/C	D9AE-ZB, D9BE-AFA, D9ZE-BEA
With A/C	D9AE-CA, CB, D9DE-HB, D9ZE-AZB [2], [4] D94E-EB, [2], [4] GA, [3] JA
Altitude	D94E-AB
351" "W" V8	
Federal	[4] D9ME-AA
Calif.	[4] D9AE-ACA

[1] - D84E-KA, Versailles before 11-1-78; D84E-VA, Versailles from 11-1-78 to 11-6-78, D94E-FA, Versailles from 11-16-78.
[2] - D94E-EB and GA, Versailles with EEC II.
[3] - D94E-JA, Versailles without EEC II.
[4] - Model 7200 VV carburetor.

CARBURETOR IDENTIFICATION

Carburetor part number identification is stamped on top of carburetor on flat surface of venturi valve cover plate.

DESCRIPTION

Motorcraft models 2700 and 7200 variable venturi carburetors differ from other standard type carburetor units in that they have the ability to change the area of the venturi for varying demands of the engine. This assembly uses a dual-element venturi valve that moves in and out of the air stream flowing into 2 carburetor throats. Valve is controlled by throttle position and engine vacuum.

Systems on the 2700 unit include a fuel inlet, main metering, control vacuum, cranking and cold enrichment, idle trim and accelerator pump systems. Carburetor is also externally vented to a carbon canister. Choke is the heated air type.

Systems on the 7200 unit are basically the same as the 2700 with the following differences: The 7200 unit is equipped with a "Feedback" control system. The system works in conjunction with an on-board Electronic Engine Control (EEC II). The "Feedback" system provides a more precise metering of the air/fuel ratio as dictated by the computer through a series of sensors. The 7200 unit is also equipped with an electric dual stage choke and an improved cold enrichment system.

ADJUSTMENTS

NOTE: When performing any adjustment requiring that the engine be running, make sure wheels are blocked and parking brake is engaged. If vehicle is equipped with a vacuum parking brake release, disconnect line to parking brake control and plug line. Engine must be at normal operating temperature for all engine running adjustments.

HOT (SLOW) IDLE RPM

See appropriate article in TUNE-UP PROCEDURES section.

IDLE MIXTURE

Idle mixture adjustment on model 2700 and 7200 VV carburetors is usually not required. If a mixture problem is present, ensure all other areas of engine control and operation are okay first. These include available spark, fuel pressure, all vacuum hoses routed correctly, no vacuum leaks, engine in good mechanical condition and good fuel quality.

If the carburetor is being overhauled, or the vehicle fails emission tests, ensure all "On-Bench" type adjustments are performed as presented in this article. If the idle mixture needs adjustment, see AIR BY-PASS, CONTROL VACUUM & MAIN METERING JETS adjustments procedure near end of this article.

NOTE: Some 1979 vehicles with 7200 feedback carburetors may develop an overrich mixture condition. This may be due to the Feedback Stepper Motor metering rod remaining in the closed position.

To diagnose, ensure the Electronic Engine Control (EEC-II) system is trying to control the mixture. If necessary, see the EEC-II article in the COMPUTERIZED ENGINE CONTROLS section. If no problem with the EEC-II, remove the feedback stepper motor. Inspect the metering rod for binding condition. Inspect the return spring for breaking or collapsing. Ensure the internal passages are clear. Install feedback stepped assembly and adjust mixture.

COLD (FAST) IDLE RPM

See appropriate article in TUNE-UP PROCEDURES section.

ACCELERATOR (INTERNAL VENT)

1) Ensure curb idle speed is correctly adjusted. Measure clearance between accelerator pump stem and pump operating link with a feeler gauge. *See Fig. 1.*

2) If clearance is not to specification, tighten or loosen nut on end of link to obtain specified clearance.

NOTE: This adjustment must be checked whenever curb idle speed is adjusted.

FUEL LEVEL

1) With upper body removed, place a new upper body gasket in position. Turn upper body upside down. *See Fig. 2.*

2) Construct a gauge (as shown in Fig. 2) to specified fuel level setting. Using gauge, measure distance from cast surface of upper body (not against gasket) to bottom of float.

NOTE: There is a notch cut in gasket to allow for measuring gauge.

3) To adjust, bend adjustment tab on float arm. Make sure float is parallel with new gasket.

FLOAT DROP

1) With upper body removed, hold in upright position and allow floats to hang by their own weight. *See Fig. 3.*

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2) Construct a gauge (as shown in illustration) to specified float drop setting. Using gauge, measure distance from cast surface of upper body to bottom of float.
3) To adjust, bend float drop tab on float arm. Make sure float is parallel with new gasket.

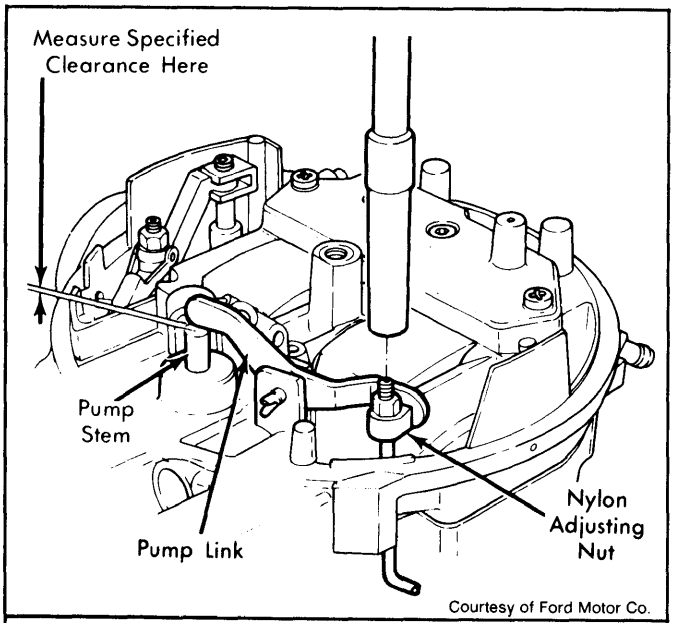

Fig. 1: Adjusting Internal Vent

COLD ENRICHMENT METERING ROD

1) Remove choke cover. On California models equipped with model 7200 carburetor, cover is riveted on.
2) Install stator cap (T77L-9848-A) as a weight to seat cold enrichment rod. *See Fig. 4.*
3) Connect a dial indicator to carburetor with indicator stem on top surface of enrichment rod. Adjust dial indicator to zero. Raise weight slightly and release to ensure indicator returns to zero.
4) Remove stator cap and reinstall at Index position. Dial indicator reading should be as specified.
5) To adjust, turn adjusting nut clockwise to increase height and counterclockwise to decrease height.

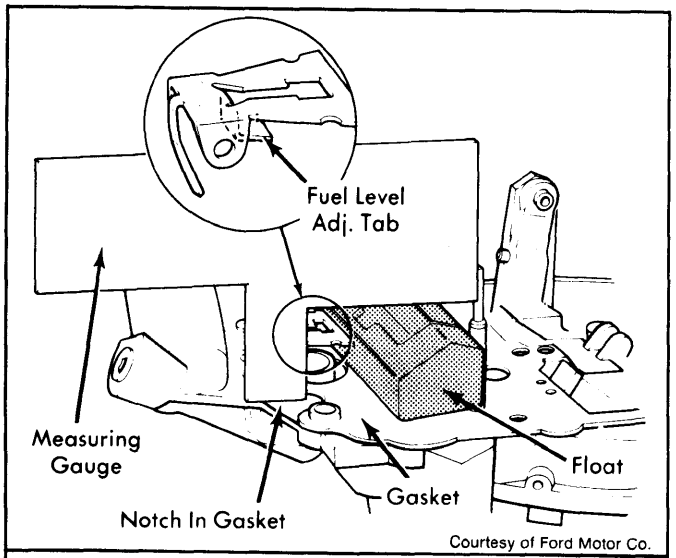

Fig. 2: Adjusting Fuel Level

NOTE: If Control Vacuum Regulator is being adjusted, remove stator cap but do not remove dial indicator. Do not reset dial indicator to zero after removing stator cap. Also, if Control Vacuum Regulator, Choke Control Diaphragm or Fast Idle Cam are being adjusted, do not install choke cover.

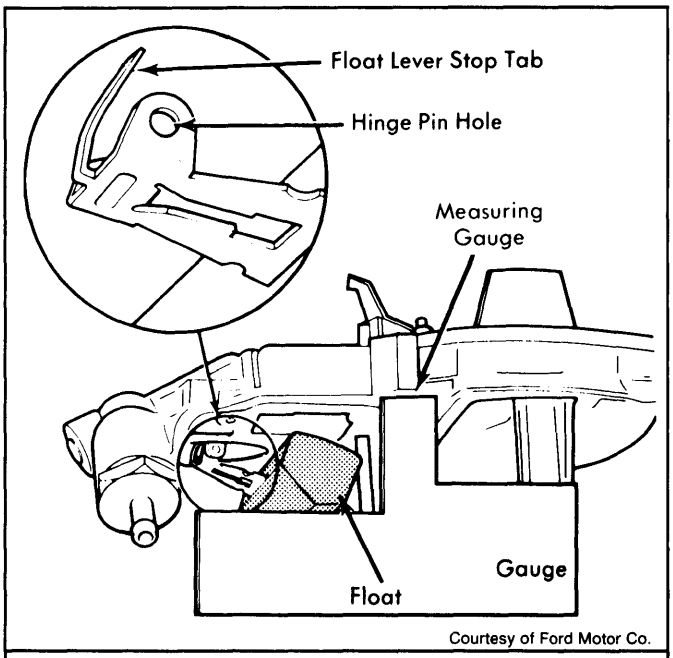

Fig. 3: Adjusting Float Drop

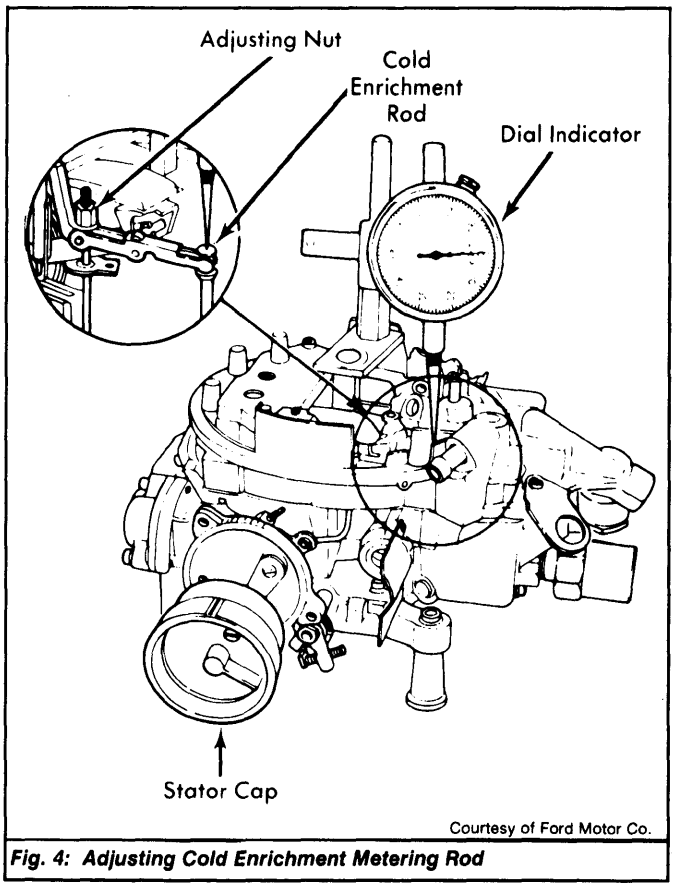

Fig. 4: Adjusting Cold Enrichment Metering Rod

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CONTROL VACUUM REGULATOR

NOTE: Cold Enrichment Metering Rod must be adjusted first.

1) With dial indicator installed, push down on control vacuum rod until it bottoms against seat. Measure downtravel of rod on dial indicator. *See Fig. 5.*

2) If downtravel is not to specification, position a 3/8" wrench over the control vacuum rod adjusting nut to prevent from turning.

3) Using a $^{3}/_{32}$" Allen wrench, turn the control vacuum rod counterclockwise to increase travel and clockwise to decrease travel.

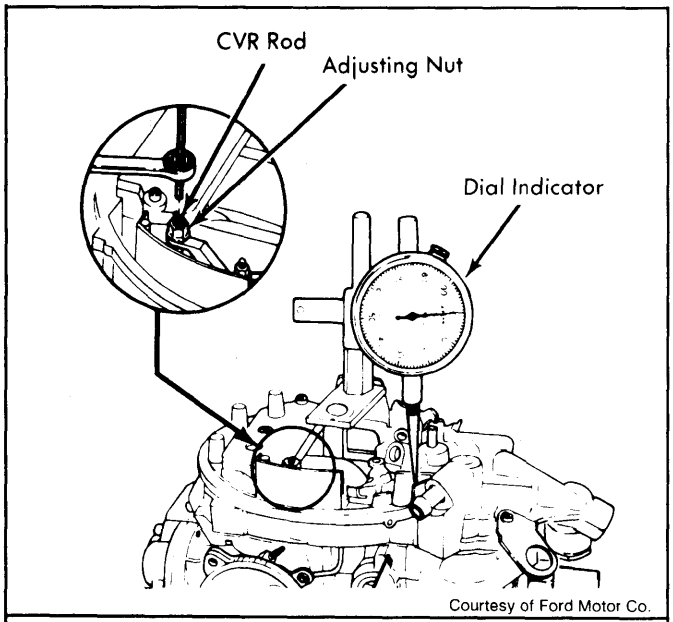

Fig. 5: Adjusting Control Vacuum Regulator

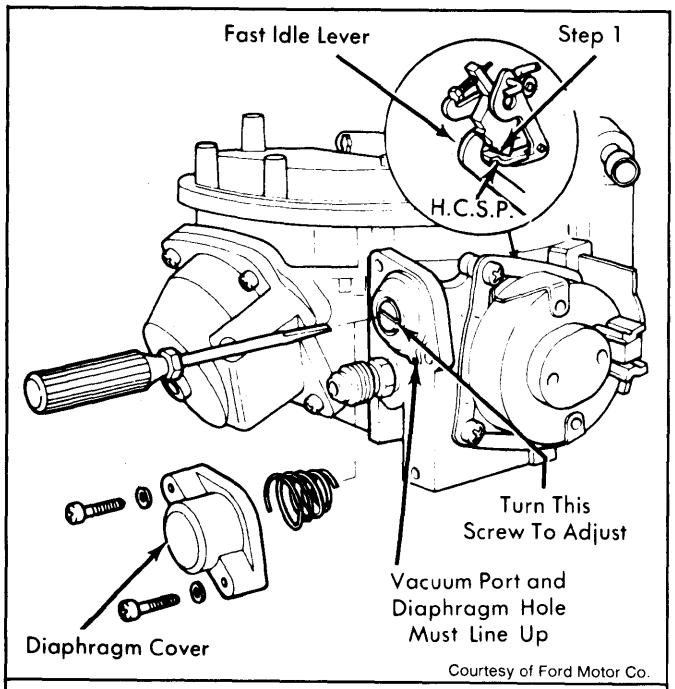

Fig. 6: Adjusting Choke Control Diaphragm (2700 Models - High Cam Speed Positioner)

CHOKE CONTROL DIAPHRAGM

2700 Models (High Cam Speed Positioner) - 1) Position High Cam Speed Positioner (HCSP) on specified step of fast idle cam. Highest step is considered first step. *See Fig. 6.*

2) Now place fast idle lever in corner of high cam speed positioner. Hold throttle firmly closed to hold linkage in this position.

3) Remove diaphragm cover and spring. Rotate diaphragm assembly clockwise until lightly bottomed on casting. Now rotate diaphragm assembly counterclockwise ½ to 1½ turns until vacuum port and diaphragm holes are aligned.

NOTE: On 7200 model carburetors, Cold Enrichment Metering Rod must be adjusted first. Remove stator cap but do not remove dial indicator. Do not reset dial indicator to zero after removing stator cap.

7200 Models (At 75°F Position) - 1) Remove choke diaphragm cover and spring. Manually seat choke diaphragm assembly in direction of fast idle cam. *See Fig. 7.*

2) With dial indicator installed, it should read as specified. To adjust, rotate the choke diaphragm assembly clockwise to decrease reading and counterclockwise to increase reading. Install diaphragm cover and spring.

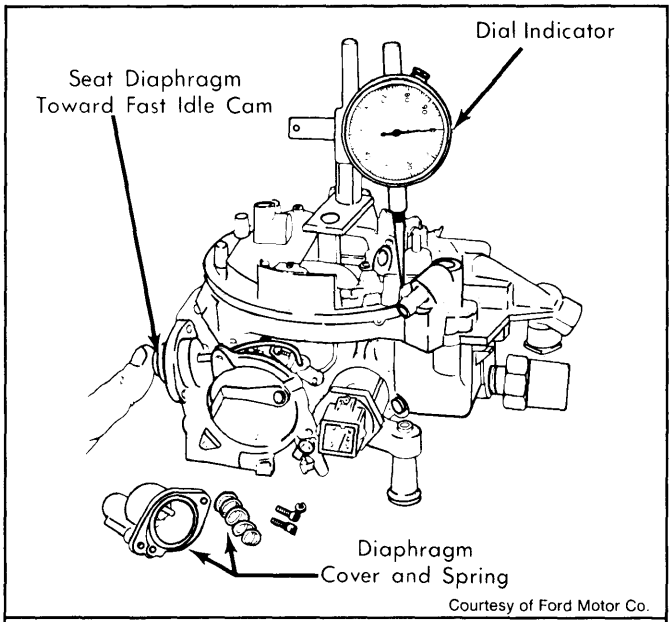

Fig. 7: Adjusting Choke Control Diaphragm (7200 Models - At 75°F Position)

FAST IDLE CAM

1) Remove choke cover. On California models equipped with model 7200 carburetor, cover is riveted on.

2) Position fast idle lever in specified step of fast idle cam. Highest step is considered first step. If carburetor is removed from vehicle, hold throttle closed with a rubber band to hold fast idle cam in position. *See Fig. 9.*

3) Install stator cap (T77L-9848A) in place of choke cover. Rotate stator cap clockwise until fast idle speed screw contacts leverl.

4) Adjust fast idle cam adjusting screw until index mark on stator cap aligns with specified notch on choke housing. Remove stator cap and install choke cover. Adjust choke cover to specified setting.

NOTE: On California models with model 7200 carburetor, install retaining ring with screws or new rivets (388575).

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7200 Models (At 0°F Position) - 1) Depress choke diaphragm by pushing on choke diaphragm rod (do not push on fast idle intermediate lever) until it bottoms on choke diaphragm cover adjusting screw. *See Fig. 8.*
2) Rotate thermostat lever inside choke housing (choke cover removed) clockwise until choke shaft lever pin contacts fast idle intermediate lever. Dial indicator should read as specified.
3) To adjust, remove lead ball covering choke diaphragm cover adjusting screw. Turn adjusting screw clockwise to increase height and counterclockwise to decrease height. Install a new lead ball over adjusting screw.

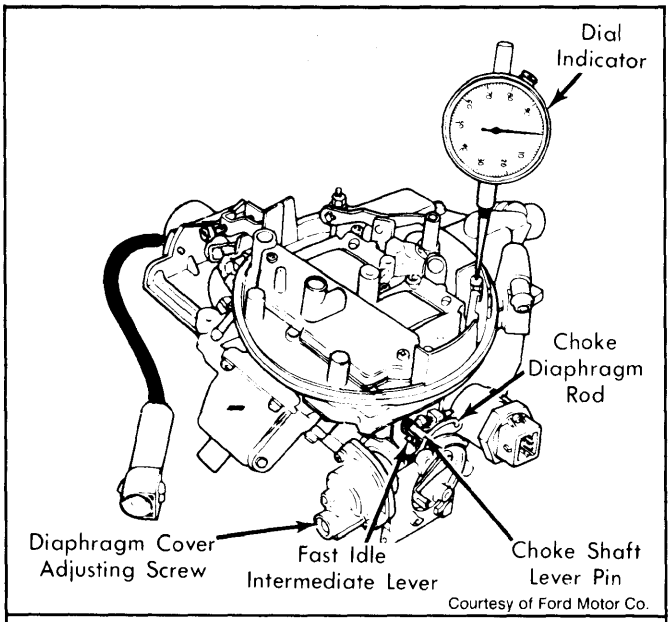

Fig. 8: Adjusting Choke Control Diaphragm (7200 Models - At 0°F Position)

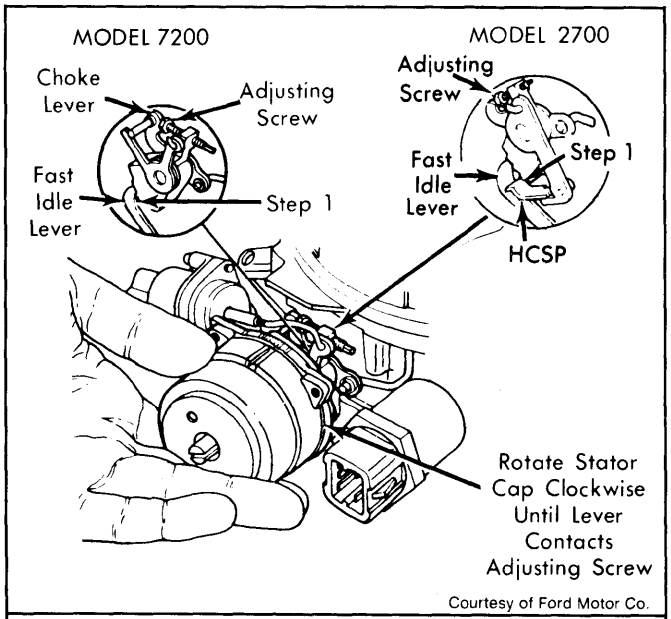

Fig. 9: Adjusting Fast Idle Cam

VENTURI VALVE LIMITER

1) With carburetor removed, remove venturi valve cover, gasket and roller bearings. Remove expansion plug at rear of main body on throttle side of carburetor with a center punch.
2) Remove venturi valve limiter stop screw with a $^{5}/_{32}$" Allen wrench. Hold throttle valves wide open. Apply light closing pressure on venturi valve.
3) Measure venturi valve limiter specified clearance between venturi valve and air horn wall. To adjust, move venturi valve to wide open position.
4) Insert a $^{5}/_{64}$" Allen wrench in hole that stop screw was removed from. Turn screw clockwise to increase gap and counterclockwise to decrease gap.
5) Remove Allen wrench. Apply light closing pressure on venturi valve and recheck specified clearance between valve and air horn wall.
6) Install stop screw and turn in until it contacts venturi valve. Hold venturi valve wide open and measure specified venturi valve limiter stop clearance between venturi valve and air horn wall. To adjust, turn stop screw.

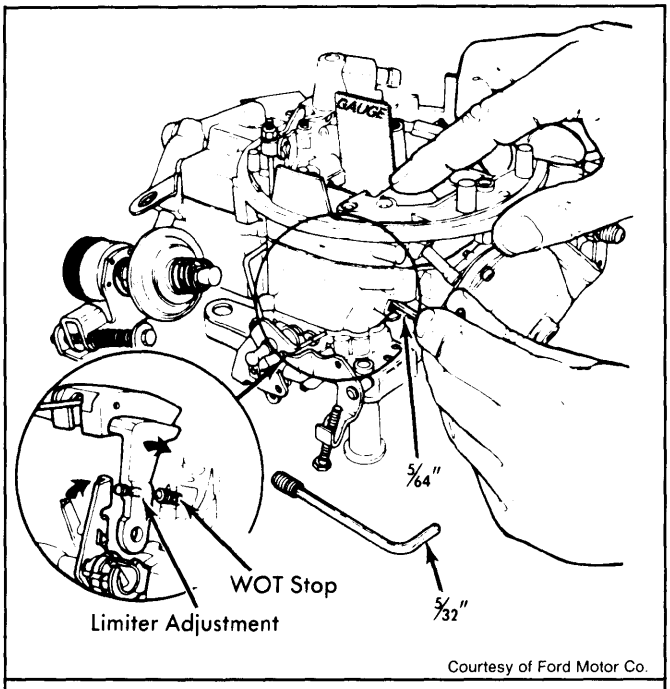

Fig. 10: Adjusting Venturi Valve Limiter

7) Install a new expansion plug in access hole. Install venturi roller bearings, gasket and valve cover. Install carburetor.

AIR BY-PASS, CONTROL VACUUM & MAIN METERING JETS

NOTE: These adjustments are extremely sensitive. The carburetor does not usually require these adjustments. Perform these adjustments only after all other possible causes of rich or lean running conditions have been checked and repaired.

NOTE: If a very rich running condition is found, ensure the venturi vacuum diaphragm is not torn. For a rich mixture (similar to a partially choked carburetor), check the cold enrichment rod or control vacuum regulator rod for sticking or binding in its passage.

1977-79 With 2700 Models Only - 1) Remove carburetor. Using a center punch, remove venturi valve diaphragm adjustment screw cup plug. If the main metering jets were removed or vehicle failed emission test, install 2 metering jet wrenchs (Thexton No. 360 or Marvel Schebler No. 39139A).
2) Remove venturi air by-pass plug in venturi valve cover. To remove plug, remove venturi valve cover screws, but hold cover in place. Turn carburetor over holding cover in place. With carburetor upside-down, remove cover, gasket and roller bearings. Using a drift punch, remove plug from cover.

1975-79 FUEL SYSTEMS
Motorcraft 2700 & 7200 VV 2-Barrel (Cont.)

3) Install roller bearings, cover gasket and cover. Install carburetor on engine. Connect a tachometer to engine.
4) Start and warm engine to normal operating temperature. Ensure curb idle speed is set to specified RPM. Return transmission to Park. Connect a inches of water (H_2O) gauge to vacuum tap on top of venturi valve cover. *See Fig. 11.*.

NOTE: On some early 1977 and 1978 Calif. vehicles with 2700 carburetor, venturi vacuum cover plate does not include the vacuum tap. This cover plate may be replaced with one which includes the vacuum port. An optional procedure is to install a 3/16" tube (use epoxy to help seal tube) in the vacuum passage of the diaphragm cover at rear of carburetor.
To install tube, coat a ⅛" drill bit with heavy grease and drill out lead plug from top rear of venturi valve diaphragm cover. If this modification is performed, ensure the tube is not pressed in more than 9/64" (or vacuum will be blocked). After adjusting, cap tube to prevent vacuum leak.

5) Remove evaporation and PCV hoses from air cleaner and allow to draw fresh all. For vehicles equipped with air injection, disconnect and plug hoses of dump valves equipped with 2 fittings. If dump valves have one fitting, remove and plug hose at valve. Connect slave hose to dump valve and intake manifold vacuum fittings.
6) Using fingers, push and hold both venturi valves against throttle body. Using an ⅛" Allen wrench, turn venturi by-pass screw until specified inches of water (4.9-5.1 on 1977, 4.9-5.6 on 1978, or 8.0 on 1979) is reached on vacuum gauge.

NOTE: Throttle must be cycled after each adjustment to obtain proper vacuum drop. Turn screw clockwise to increase vacuum reading or counter clockwise to decrease vacuum.

7) Release venturi valves. Using a $^5/_{32}$" Allen wrench, turn the venturi valve diaphragm adjusting screw until vacuum drops to 5.0 inches of water. It will be necessary to cycle throttle to get the vacuum to drop.
8) Check curb idle speed and adjust to specified RPM if necessary. If driveability or emission level problems are still present, adjust main metering jets equally in to lean or out to richen mixture.
9) Main metering jets may be adjusted using a CO meter or by the Propane Enrichment Method. For the complete Propane Enrichment Procedure, see appropiate article in TUNE-UP PROCEDURES section.
10) Check driveability of vehicle. If not satisfactory, repeat steps **4)** through **8)**. Remove mixture tools. Using plug drivers, install new main metering jet cup plugs. Install new venturi valve by-pass and diaphragm adjustment plugs.

7200 Models Only -1) Remove carburetor from vehicle. Remove venturi valve diaphragm expansion plug using a center punch. If the main metering jets were removed or vehicle failed emission test, install 2 metering jet wrenchs (Thexton No. 360 or Marvel Schebler No. 39139A).
2) If equipped, remove venturi air by-pass plug in venturi valve cover. To remove plug, remove venturi valve cover screws, but hold cover in place. Holding cover in place, turn carburetor over. With carburetor upside-down, remove cover, gasket and roller bearings. Using a drift punch, remove plug from cover.
3) Install roller bearings, cover gasket and cover. Install carburetor on engine. Attach all electrical and vacuum connections. Turn ignition switch on for 5 seconds to position electric stepper motor.
4) Unplug electrical connection at stepper motor. Start engine and warm to normal operating temperature. If main metering jets were moved, adjust equally until highest idle is obtained. Ensure engine is idling at curb idle RPM in Drive. Place transmission in Park.
5) For vehicles equipped with air injection, disconnect and plug hoses of dump valves equipped with 2 fittings. If dump valves have one fitting, remove and plug hose at valve. Connect slave hose to dump valve and intake manifold vacuum fittings.
6) Connect an inches of water (H_2O) vacuum gauge to vacuum cap on venturi valve cover. Using fingers, push and hold both venturi valves against throttle body. Using an 1/8" Allen wrench, turn venturi by-pass screw until 8.0 inches of water is reached.
7) Cycle throttle a couple of times to equalize the venturi valves. Using a 5/32" Allen wrench, turn the venturi valve diaphragm adjusting screw until vacuum drops to 5.0 inches of water.
8) Again, cycle throttle a couple of times to equalize the venturi valves. Check curb idle speed. Adjust to specified RPM if necessary. Adjust TPS (if equipped) to 2.1 volts at curb idle RPM.
9) Check mixture with CO meter or perform Lean Drop mixture adjustment. If necessary, equally adjust main metering jets in to lean mixture or out to richen mixture until CO is .2% or lean drop of 20-50 RPM is set.
10) Turn ignition switch off and connect electric stepper motor. Check driveability of vehicle. If not satisfactory, repeat steps **4)** through **9)**. Remove main metering jet tools. Using plug drivers, install new main metering jet cup plugs. Install new venturi valve by-pass and diaphragm adjustment plugs. Reconnect all disconnected hoses.

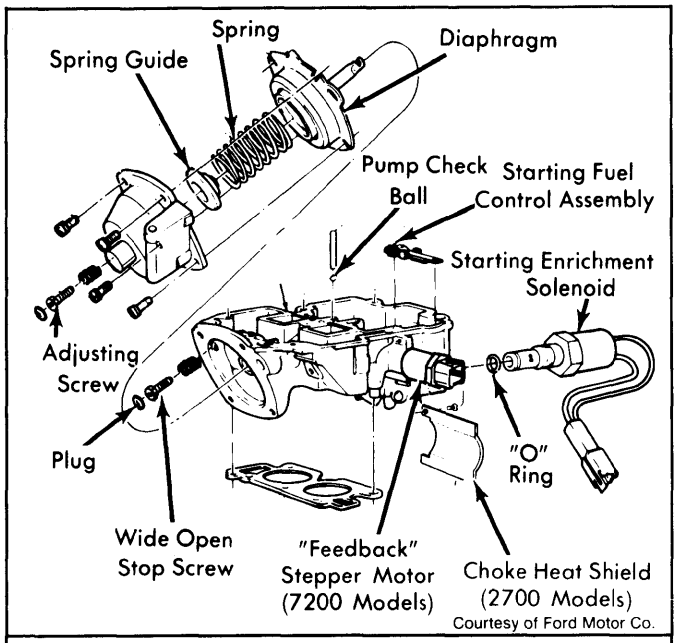

Fig. 12: Exploded View of 2700 & 7200 Carburetor Main Body

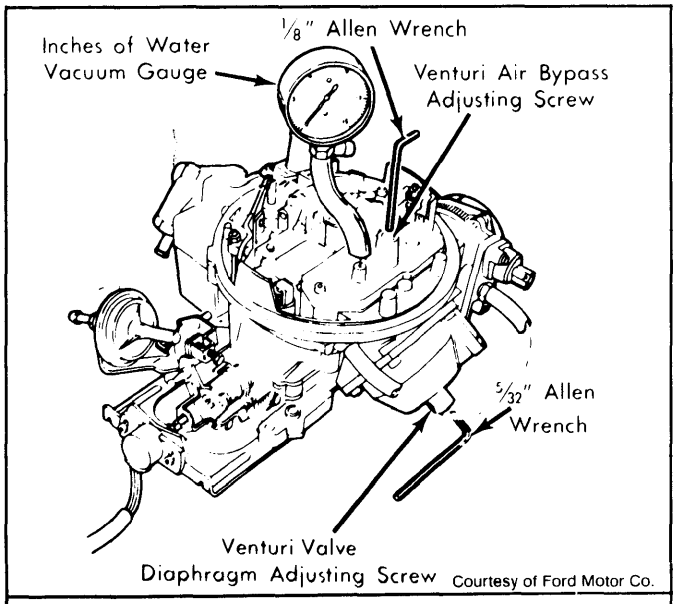

Fig. 11: Adjusting By-Pass & Control Vacuum

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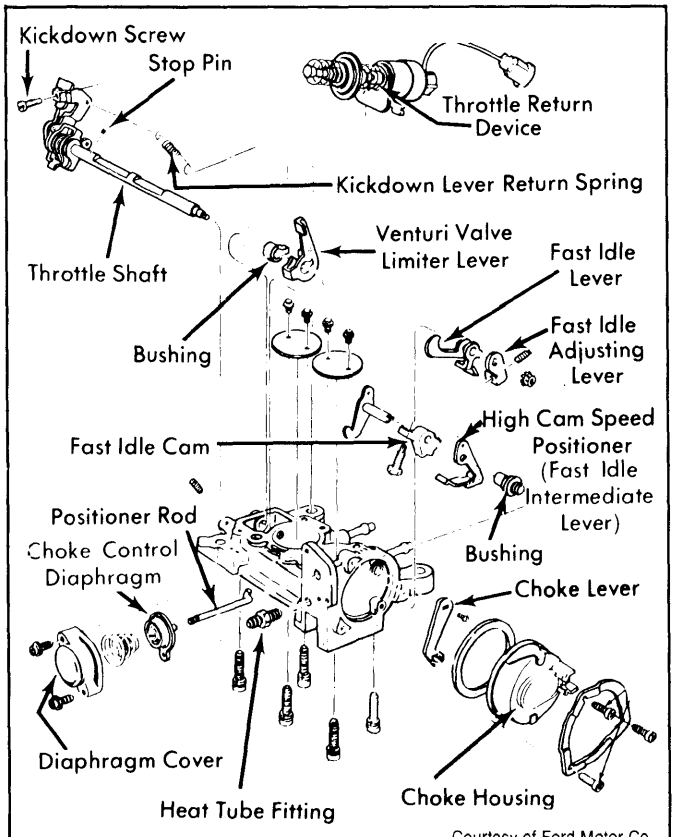

Fig. 13: Exploded View of 2700 & 7200 Carburetor Throttle Body

OVERHAUL

1) Metering jets must be removed before placing in carburetor cleaner. If not, "O" rings will be destroyed and carburetor will not work correctly.

2) Using jet plug remover (T77L-9533-B), remove both metering jet cup plugs. Using metering jet wrench (Thexton No. 360), count the number of turns required to lightly seat metering jets in a clockwise direction. Record turns.

3) Disassemble carburetor. Clean carburetor parts. Install new "O" rings on metering jets. During reassembly, install metering jets until lightly seated. Back out both metering jets to exact position as recorded in step **2)**.

4) Remove seal plug from venturi valve cover before installing if air by-pass is going to be reset. If control vacuum is going to be reset, center punch cup plug from venturi diaphragm cover before replacing.

1975-79 FUEL SYSTEMS
Motorcraft 2700 & 7200 VV 2-Barrel (Cont.)

1977 CARBURETOR SPECIFICATIONS

Motorcraft Carb. No.	Idle Speed (Engine RPM) Hot	Idle Speed (Engine RPM) Fast	Acc. Pump	Fuel Level (Dry)	Float Drop	Fast Idle Cam	Hi-Cam Speed Posit.	Control Vacuum	Control Vacuum Reg.	Venturi Valve Limiter
D7GE-AC	①	①	.010"	1 3/64"②	1 15/32"②	1 NR④⑤	Text	5.0	Text	6 1/64"③
D7GE-BD	①	①	.010"	1 3/64"②	1 15/32"②	1 NR④⑤	Text	5.0	Text	6 1/64"③
D7GE-GD	①	①	.010"	1 3/64"②	1 15/32"②	1 NR④⑤	Text	5.0	Text	6 1/64"③

① — See Emission Control Tune-Up Decal
② — ±1/32".
③ — Pinto/Bobcat — 13/32".
④ — Pinto/Bobcat — 4 NR @ 2nd Step.
⑤ — 3rd Step

NOTE — *Choke cap setting — All models — INDEX.*

1978 CARBURETOR SPECIFICATIONS

Motorcraft Carb. No.	Idle Speed (Engine RPM) Hot	Idle Speed (Engine RPM) Fast	Acc. Pump	Fuel Level (Dry)	Float Drop	Fast Idle Cam	Hi-Cam Speed Posit.	Control Vacuum	Control Vacuum Reg.	Venturi Valve Limiter
D84E-DB	①	①	.010"	1.040"②	1.460"③	1 NR④	Text	4.5-6.5⑤	Text	.94-.98"
D8BE-EB	①	①	.010"	1.040"②	1.460"③	1 NR④	Text	4.5-6.5⑤	Text	.94-.98

① — See Emission Control Tune-Up Decal
② — +1/32
③ — +1/16
④ — 3rd Step
⑤ — In. H_2O

NOTE — *Specifications for carburetors not shown in specification table were not available from manufacturer at time of publication. Refer to Emission Control Tune-Up Decal.*

1979 CARBURETOR SPECIFICATIONS

Application	Internal Vent Setting	Fuel Level Setting	Float Drop Setting	Cold Enrich. Rod Setting	Control Vacuum Regulator Setting	Choke Control Diaphragm 2700 Carb. Cam Step Setting	Choke Control Diaphragm 7200 Carb. At 75°F Position	Choke Control Diaphragm 7200 Carb. At 0°F Position	Fast Idle Cam Fast Idle Cam Step Setting	Fast Idle Cam Stator Cap Setting	Fast Idle Cam Choke Cover Setting	Venturi Limiter Limiter Setting	Venturi Limiter Limiter Stop Setting
2700 Models													
D84E-KA	.010"	1 3/64"	1 15/32"	.125"	.230"	4	.....	.....	3	1NR	Index	.960"	1.00"
D84E-VA	.010"	1 3/64"	1 15/32"	.125"	.230"	4	.....	.....	3	1NR	Index	.960"	1.00"
D9AE-CA	.010"	1 3/64"	1 15/32"	.125"	.090"	3	.....	.....	2	5NR	Index	.960"	.980"
D9AE-CB	.010"	1 3/64"	1 15/32"	.125"	.090"	3	.....	.....	2	5NR	Index	.960"	.980"
D9AE-JB	.010"	1 3/64"	1 15/32"	.125"	.090"	4	.....	.....	3	5NR	Index	.960"	1.00"
D9AE-YB	.010"	1 3/64"	1 15/32"	.125"	.090"	4	.....	.....	3	1NR	Index	.960"	1.00"
D9AE-ZB	.010"	1 3/64"	1 15/32"	.125"	.090"	3	.....	.....	2	5NR	Index	.960"	1.00"
D9BE-AFA	.010"	1 3/64"	1 15/32"	.125"	.230"	3	.....	.....	2	5NR	Index	.960"	1.00"
D9DE-HB	.010"	1 3/64"	1 15/32"	.125"	.230"	3	.....	.....	1	5NR	Index	.960"	1.00"
D9ZE-AZB	.010"	1 3/64"	1 15/32"	.125"	.230"	3	.....	.....	2	5NR	Index	.960"	1.00"
D9ZE-BEA	.010"	1 3/64"	1 15/32"	.125"	.230"	3	.....	.....	2	5NR	Index	.960"	1.00"
D9ZE-LC	.010"	1 3/64"	1 15/32"	.125"	.230"	2	.....	.....	2	1NR	Index	.400"	.750"
D94E-AB	.010"	1 3/64"	1 15/32"	.125"	.230"	4	.....	.....	3	1NR	Index	.960"	1.00"
D94E-EB	.010"	1 3/64"	1 15/32"	.125"	.230"	3	.....	.....	2	5NR	Index	.960"	1.00"
D94E-FA	.010"	1 3/64"	1 15/32"	.125"	.230"	3	.....	.....	2	5NR	Index	.960"	1.00"
D94E-GA	.010"	1 3/64"	1 15/32"	.125"	.230"	3	.....	.....	2	5NR	Index	.960"	1.00"
D94E-JA	.010"	1 3/64"	1 15/32"	.125"	.230"	3	.....	.....	2	5NR	Index	.960"	1.00"
7200 Models													
D9AE-ACA	.020"	1 3/64"	1 15/32"	.125"	.250"	.....	.240"	.350"	3	1NR	Inex	.750"	1.00"
D9ME-AA	.020"	1 3/64"	1 15/32"	.125"	.250"	.....	.240"	.350"	3	1NR	Index	.750"	1.00"

1975-79 FUEL SYSTEMS
Motorcraft 2700 & 7200 VV 2-Barrel (Cont.)

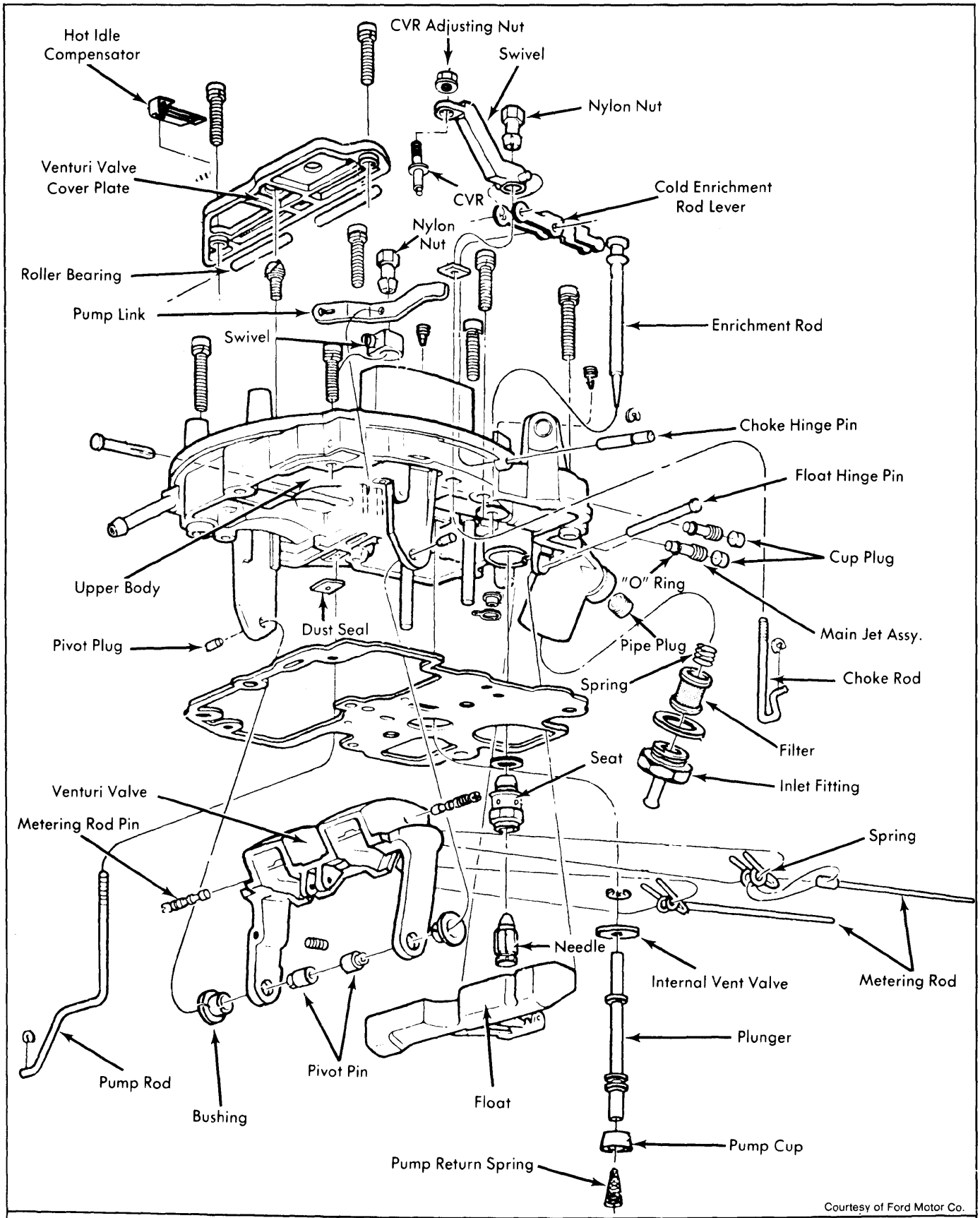

Fig. 14: Exploded View of 2700 & 7200 VV Carburetor Upper Body