1974-79 FUEL SYSTEMS
Motorcraft 2700 VV 2-Barrel Carburetors

Ford Motor Co.: 1977-78 Capri (2800 cc Calif.)

CARBURETOR IDENTIFICATION

1977-78 CARBURETOR IDENTIFICATION NUMBERS

Application	Man. Trans.	Auto. Trans.
All Models	77TF-NA	77TF-MA

DESCRIPTION

Motorcraft 2700 VV (Variable Venturi) carburetor is different than all other Motorcraft units in that it has the ability to change the area of its venturi for varying demands of the engine. This assembly uses a dual-element venturi valve that moves in and out of air stream flowing into 2 carburetor throats.

Valve is controlled by throttle position and engine vacuum. Carburetor has fuel inlet, main metering, control vacuum, cranking and cold enrichment, idle trim and accelerator pump systems and is externally vented to a carbon canister. Auxiliary systems such as idle, pullover and power systems are not needed or used.

ADJUSTMENTS

IDLE SPEED & MIXTURE

See appropriate TUNE-UP PROCEDURES article.

COLD (FAST) IDLE RPM

See appropriate TUNE-UP PROCEDURES article.

ACCELERATOR PUMP (INTERNAL VENT)

With curb idle speed properly adjusted, insert .010" feeler gauge between pump operating link and pump stem. Slight drag should be felt when gauge is removed. If adjustment is necessary, turn nylon adjusting nut until correct clearance is obtained. *See Fig. 1.*

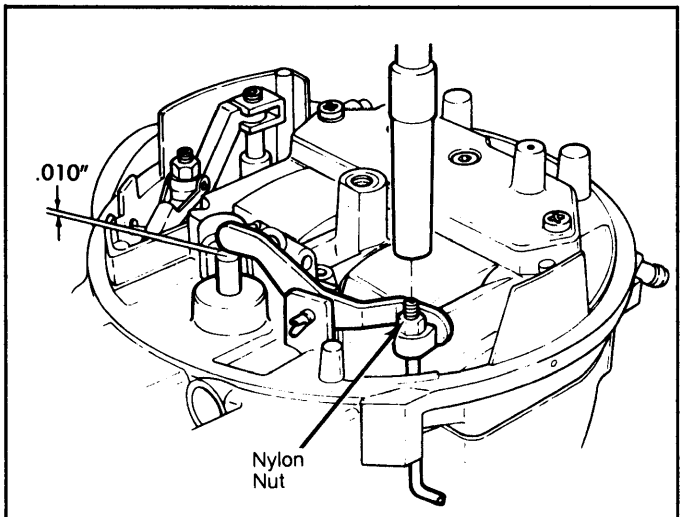

Fig. 1: Accelerator Pump (Internal Vent) Adjustment

FLOAT LEVEL

1) Remove upper carburetor body assembly and old gasket. Install new gasket prior to making adjustment. Invert upper body assembly and place gauge on cast surface of upper body. DO NOT rest gauge on gasket. *See Fig. 2.*

2) Measure distance from cast surface to float bottom. Bend float lever away from fuel inlet needle to decrease setting and toward to increase. Float pontoon should be parallel with gasket. Check float drop adjustment.

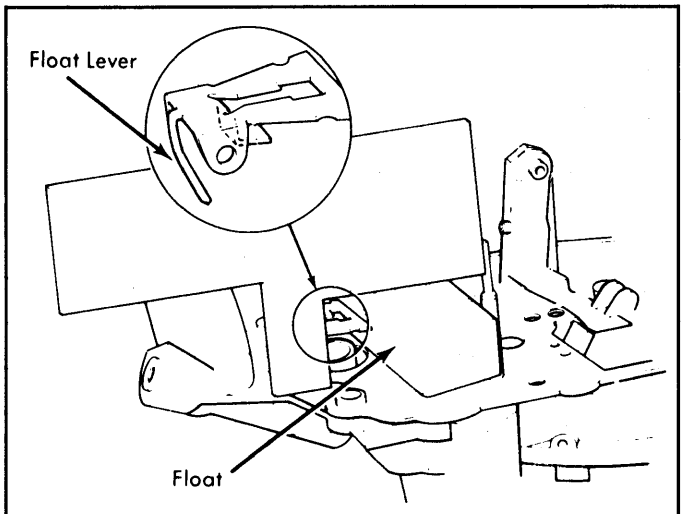

Fig. 2: Float Level Adjustment

FLOAT DROP

Hold upper body in upright position and place gauge against cast surface of upper body (not on gasket). Measure distance between cast surface and float bottom. To adjust, bend stop tab on float lever toward hinge pin to decrease setting and away to increase. *See Fig. 3.*

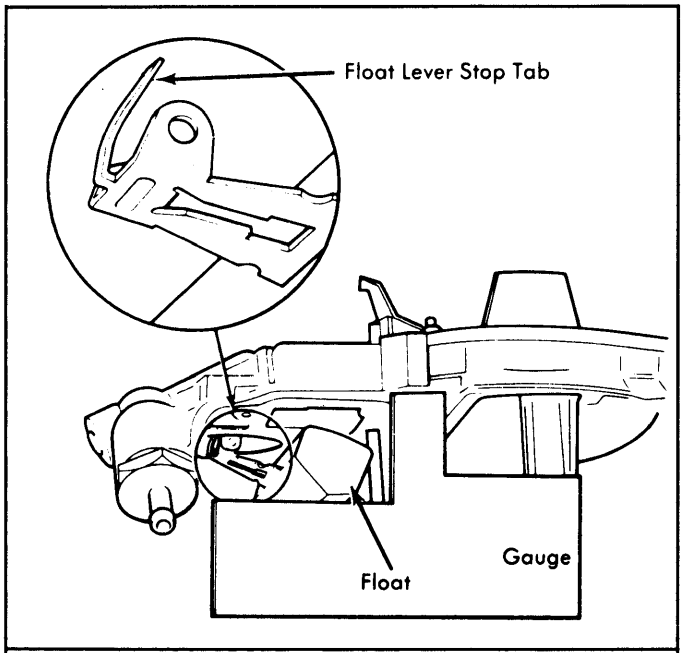

Fig. 3: Float Drop Adjustment

HIGH CAM SPEED POSITIONER

1) With high cam speed positioner in corner of correct cam step, place fast idle lever in corner of high cam speed positioner. Firmly hold throttle in closed position.

2) With diaphragm cover removed, turn diaphragm assembly clockwise until bottomed on casting. Now rotate diaphragm counterclockwise 1/2 to 1 1/2 turns until vacuum port is aligned with diaphragm hole. Install diaphragm cover. *See Fig. 4.*

1974-79 FUEL SYSTEMS
Motorcraft 2700 VV 2-Barrel Carburetors (Cont.)

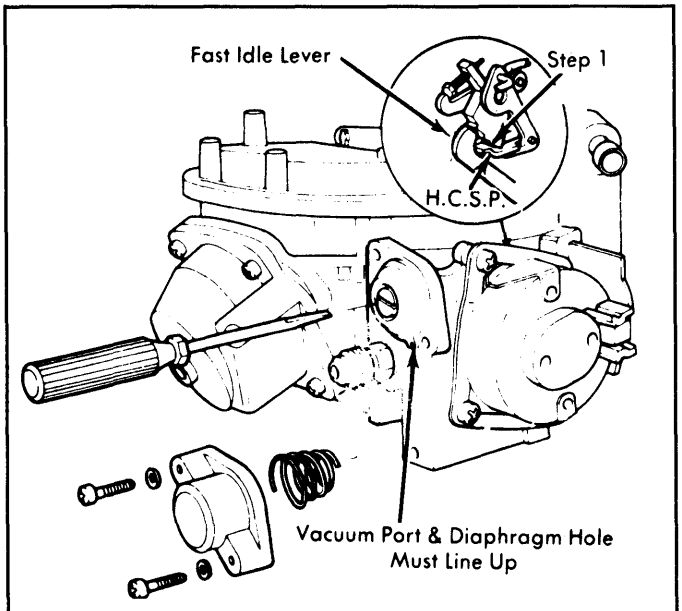

Fig. 4: High Cam Speed Positioner Adjustment

COLD ENRICHMENT ROD

1) Remove choke cap. With Stator Cap Adjuster (T77L-9848-A) installed, ensure cold enrichment rod is seated. Mount dial indicator with tip on top surface of enrichment rod and zero indicator.
2) Remove stator cap adjuster and reinstall to index position. Dial indicator should read .12-.13" (3.0-3.3 mm). To adjust, turn nut clockwise to increase height or counterclockwise to decrease. Put on choke cap and set to proper position. *See Fig. 5.*

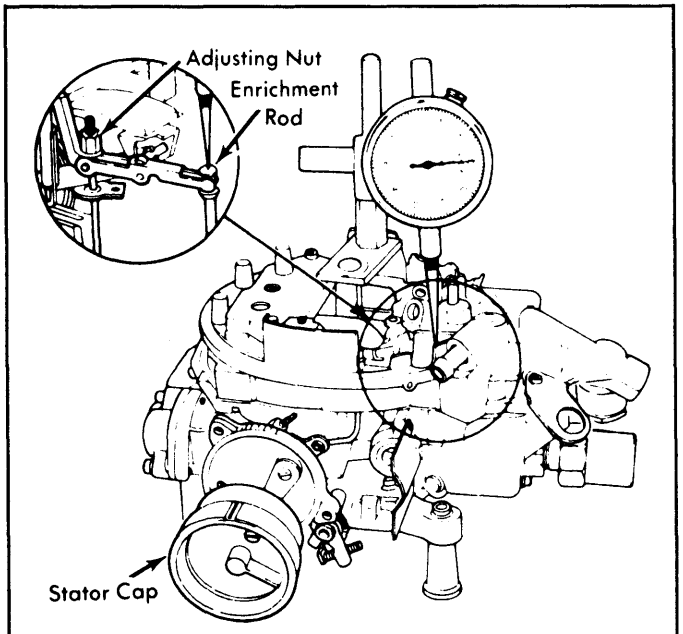

Fig. 5: Cold Enrichment Rod Adjustment

CONTROL VACUUM

1) With tachometer installed, start engine and ensure idle is set to specification. Use an Allen wrench to turn venturi valve adjusting screw clockwise to close valve.
2) Connect vacuum gauge to vacuum tap on venturi valve cover. With engine at operating temperature, at curb idle, turn venturi by-pass adjusting screw (Allen screw) to reach specified vacuum setting. *See Fig. 6.*

NOTE: Throttle must be cycled while adjusting control vacuum to obtain proper vacuum drop. Check and/or reset curb idle.

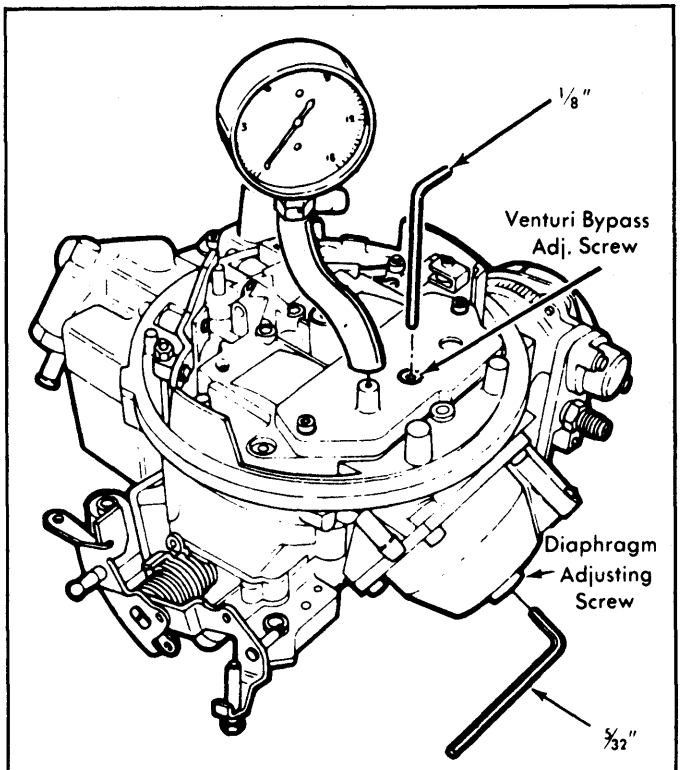

Fig. 6: Control Vacuum Adjustment

CONTROL VACUUM REGULATOR (CVR)

NOTE: Cold enrichment rod adjustment must be properly set prior to making this adjustment.

1) Turn choke cap 1/2 turn in rich direction (clockwise) from index and cycle throttle to set fast idle speed cam. Press lightly on control vacuum regulator rod and note any down travel. If present, rod is not correctly seated and requires adjustment.
2) To do so, turn screw counterclockwise until some down travel is felt and proceed with adjustment. Rotate ontrol vacuum regulator rod clockwise until adjusting nut just begins to rise. Recheck down travel on rod.
3) If any spring-back is evident, rod is not fully seated. Turn adjusting screw clockwise in 1/4 turn increments until spring-back is cancelled. Reset choke cap. *See Fig. 7.*

VENTURI VALVE LIMITER

1) Remove venturi valve cover and roller bearings. Take out expansion plug at rear of the main body on throttle side of carburetor. Center punch until loose. With Allen wrench, remove venturi valve wide open throttle stop screw. Block throttle plates wide open.
2) While applying light closing pressure on venturi valve, measure gap between valve and air horn wall. Move valve to wide open position and insert Allen wrench in hole from which stop screw was removed. Turn limiter adjusting screw clockwise to increase gap and counterclockwise to decrease.
3) With Allen wrench removed, apply closing pressure to valve and recheck gap. Install venturi valve Wide Open Throttle (WOT) stop screw and turn clockwise until it touches valve. *See Fig. 8.*
4) Press valve to wide open position and check gap between air horn wall and valve. Turn stop screw until gap is correct. Install new expansion plug in access hole. Install venturi valve cover and roller bearings. Replace carburetor on vehicle.

1974-79 FUEL SYSTEMS
Motorcraft 2700 VV 2-Barrel Carburetors (Cont.)

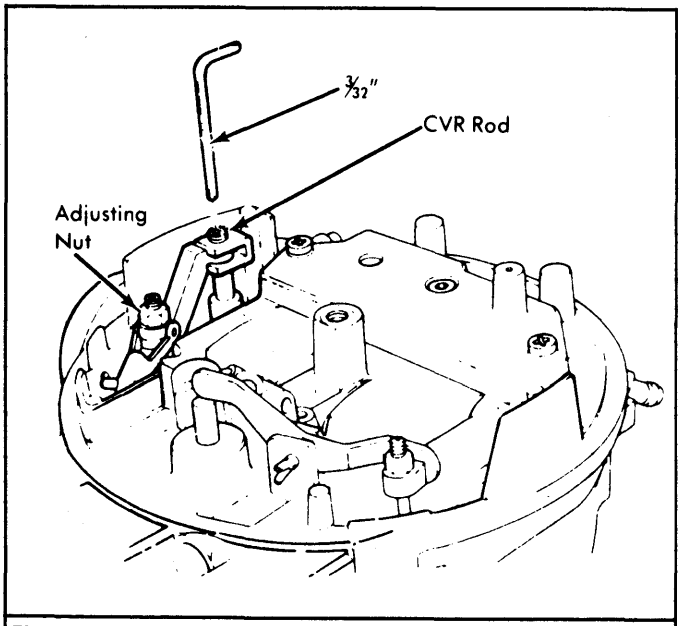

Fig. 7: Control Vacuum Regulator Adjustment

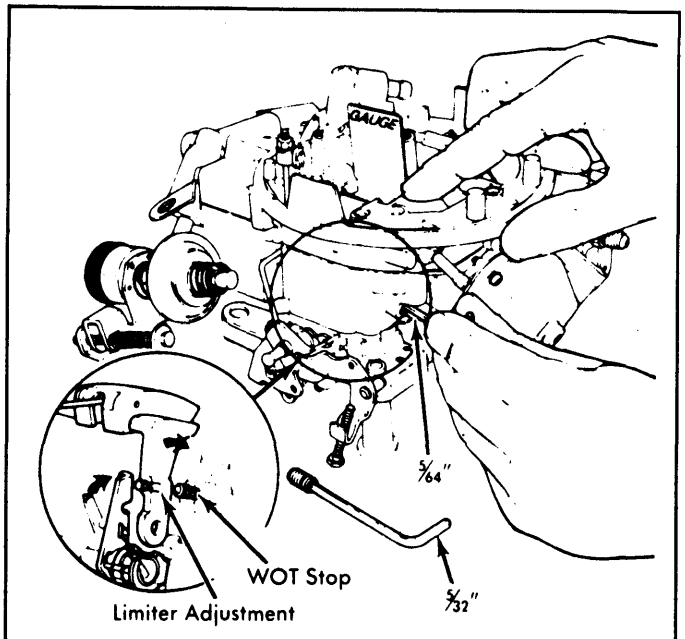

Fig. 8: Venturi Valve Limiter Adjustment

OVERHAUL

DISASSEMBLY

1) With carburetor mounted on a stand, remove fuel inlet fitting, filter, gasket and spring. *See Fig. 10.* Remove "E" rings on accelerator pump and choke control rods and unhook rods.

2) Remove air cleaner stud. Remove seven attaching screws and lift off upper body, noting position of two longer screws. Remove float hinge pin and float assembly.

3) Lift off float bowl gasket and take out fuel inlet valve, seat and gasket. Remove accelerator pump rod, dust seal, pump link retaining pin and link. Remove pump swivel and adjusting nut.

4) Unhook choke control rod. Carefully lift retainer and slide out dust seal. Remove choke hinge pin. Remove cold enrichment rod nut, lever, swivel, control vacuum regulator and adjusting nut as an assembly.

5) Slide cold enrichment rod from casting, and remove venturi valve cover plate and roller bearings. Remove venturi air by-pass screw. Using Remover (T77P-9928-A), press tapered plugs from venturi valve pivot pins.

6) Push out pivot pins and slide venturi valve rearward until free of casting. Remove pivot pin bushings and metering rod pivot pins (on outboard sides of venturi valves). Lift out metering rods and springs.

NOTE: Block venturi valve wide open while working on jets. Due to importance of main metering jet setting, following steps must be carefully adhered to.

7) Using Jet Plug Remover (T77L-9533-B), remove plugs recessed in upper body casting. With Jet Wrench (T77L-9553-A), turn each main jet clockwise, noting number of turns, until bottomed in casting. Record turns to nearest 1/4 turn. Rotate jet assembly counterclockwise to remove.

8) Remove "O" rings and identify throttle or choke side jets for assembly. Remove accelerator pump assembly and idle trim (mixture) screws. Remove venturi valve limiter adjusting screw from venturi valve (throttle side). If required for cleaning, remove 1/8" plug from fuel inlet boss.

9) From main body, remove starting enrichment solenoid and "O" ring seal. Remove valve diaphragm cover assembly, spring guide and spring. Loosen diaphragm and slide from main body. Remove diaphragm adjusting screw and valve wide open throttle stop screw. *See Fig. 9.*

10) Remove starting fuel control assembly only if there is evidence of damage. If necessary to remove, bend metal to expose discharge port. Using Jet Plug Remover (T77L-9533-B), extract control assembly.

11) Invert carburetor on clean surface (catch check ball and weight), and remove 5 throttle body retaining screws. Remove throttle body and gasket. Remove choke heat shield.

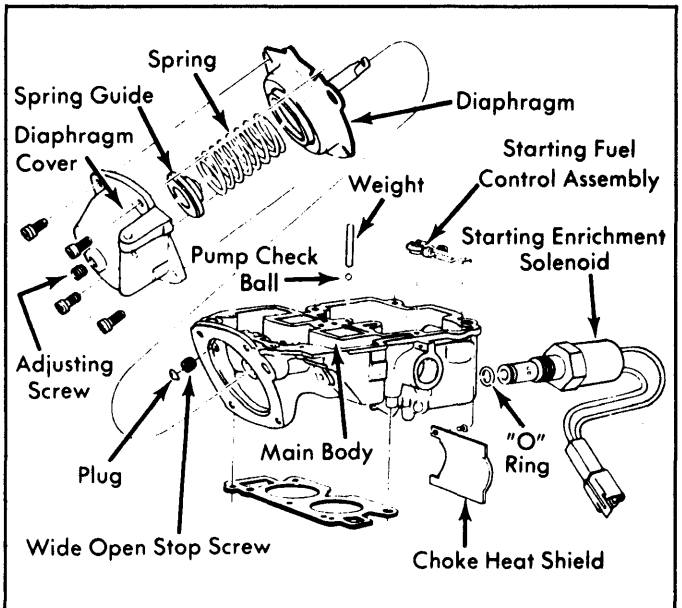

Fig. 9: Exploded View of Main Body

12) To disassemble throttle body, remove throttle return control, solenoid, dashpot and bracket. Remove choke housing. Remove choke thermostatic lever; slide choke shaft and lever assembly from casting and remove fast idle cam. Remove high cam speed positioner assembly, cover screws, cover, spring, diaphragm and rod. *See Fig. 11.*

13) Choke housing bushing is pressed in casting and staked. If replacement is needed, carefully press out bushing while supporting casting. File off staking prior to removal. Remove choke heat tube fitting, curb idle screw, throttle shaft nut, fast idle lever and adjusting screw.

1974-79 FUEL SYSTEMS
Motorcraft 2700 VV 2-Barrel Carburetors (Cont.)

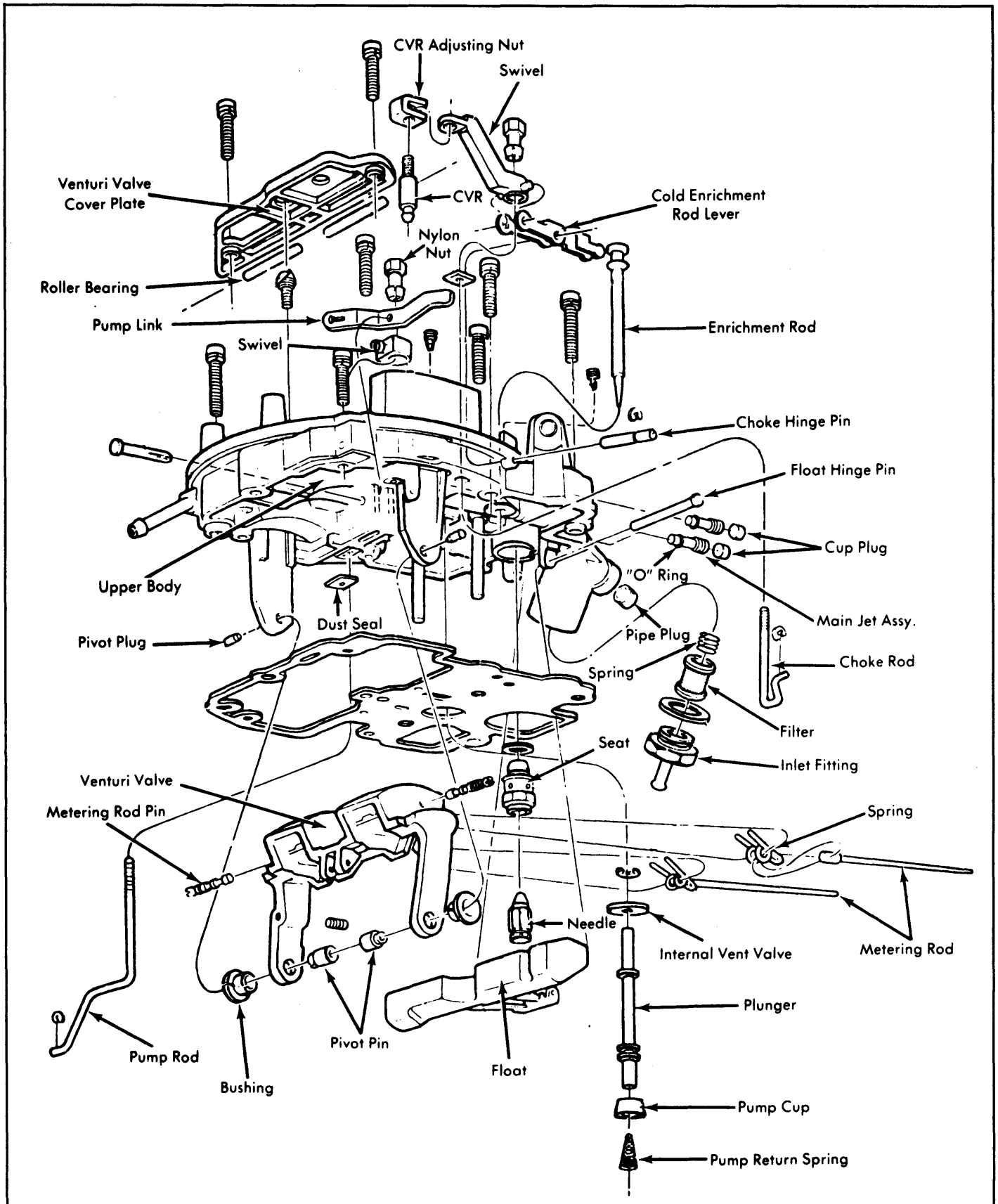

Fig. 10: Exploded View of Motorcraft 2700 Variable Venturi 2-Barrel Carburetor

1974-79 FUEL SYSTEMS
Motorcraft 2700 VV 2-Barrel Carburetors (Cont.)

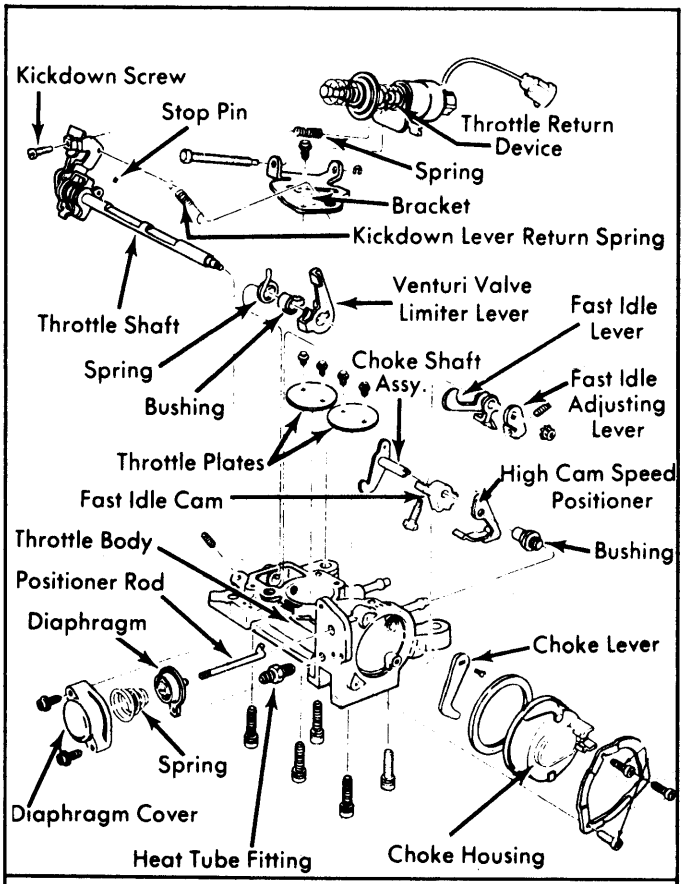

Fig. 11: Exploded View of Throttle Body

14) If removing throttle plates, scribe line along shaft and mark plates for proper assembly. Throttle plate screws are staked in position. Screw ends must be filled off before removal.

15) If removing throttle shaft assembly, drive limiter lever stop pin down until flush with shaft. Slide shaft assembly from casting (remove kickdown screw if necessary). Remove venturi valve limiter lever, bushing and spring (if equipped).

REASSEMBLY

To reassemble, reverse disassembly procedure. Adjust high cam speed positioner diaphragm before installing cover. Lubricate all "O" rings with mild solution of soapy water before installing. Ensure venturi valve diaphragm stem engages venturi valve when assembling upper body to main body.