

MOTORCRAFT MODEL 7200 VV 2-BARREL

CARBURETOR APPLICATION

Ford Motor Co.
Application

4.2L (255") V8

Federal E1AE-ACA

Calif. E1AE-KA

E1DE-AA

5.0L (302") V8

Federal E1AE-LA, SA

E1SE-EA

5.8L (351") V8

Federal E1VE-AA

Calif. E1AE-MA, VA, AGA

① - Ford basic part number is 9510.

Ford Carb. No. ①

CARBURETOR IDENTIFICATION

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

DESCRIPTION

Motorcraft model 7200 variable venturi carburetor differs from other standard type carburetors in that it has the ability to change the area of the venturi for varying engine speed and load conditions. This is accomplished by dual venturi valves controlled by engine vacuum and throttle position. Depending upon engine speed and load conditions, the position of the venturi valves moving in and out of the air stream determine the air flow to the 2 carburetor throats. The venturi valves are connected to 2 tapered main metering rods which ride in the main metering jets, varying the amount of fuel flow through the carburetor.

Systems on the 7200 carburetor include a fuel inlet, main metering, control vacuum, cold enrichment, accelerator pump system and an all electric dual-stage choke. The 7200 carburetor is equipped with a "Feedback" control system. This system works in conjunction with an on-board electronic engine control computer. The air bleed feedback system uses a stepper motor to regulate bleed air admitted into main metering system. This provides a more precise metering of the air/fuel ratio as dictated by the computer through a series of sensors.

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 SERVICE PROCEDURES.

IDLE MIXTURE

See appropriate article in TUNE-UP SERVICE PROCEDURES.

COLD (FAST) IDLE RPM

See appropriate article in TUNE-UP SERVICE PROCEDURES.

ACCELERATOR PUMP LEVER LASH

1) Make sure 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.

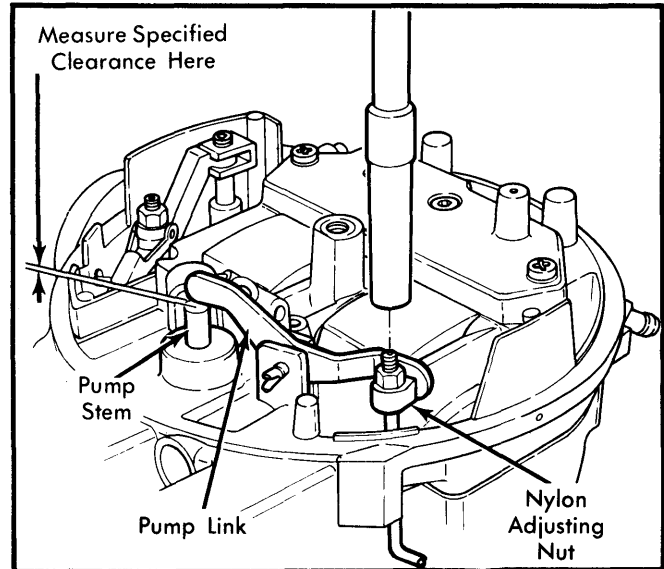


Fig. 1 Adjusting Accelerator Pump Lever Lash

FLOAT LEVEL

1) With upper body and gasket removed, turn upper body assembly upside down. See Fig. 2.

2) Construct a gauge (as shown in Fig. 2.) to specified float level setting. Using gauge, measure distance from cast surface of upper body to bottom of float.

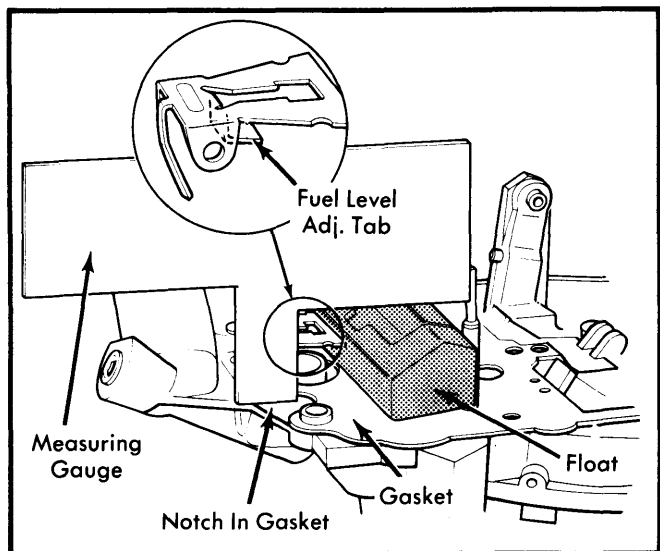


Fig. 2 Adjusting Float Level

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3) To adjust, bend adjustment tab on float arm away from inlet needle to decrease setting and toward inlet needle to increase setting.

FLOAT DROP

1) With upper body and gasket removed, hold upper body in upright position and allow float to hang. See Fig. 3.

2) Construct a gauge (as shown in Fig. 3.) to specified float drop setting. Using gauge, measure distance from cast surface of upper body to bottom of float.

3) To adjust, bend float lever stop tab on float arm away from hinge pin to increase setting and toward hinge pin to decrease setting.

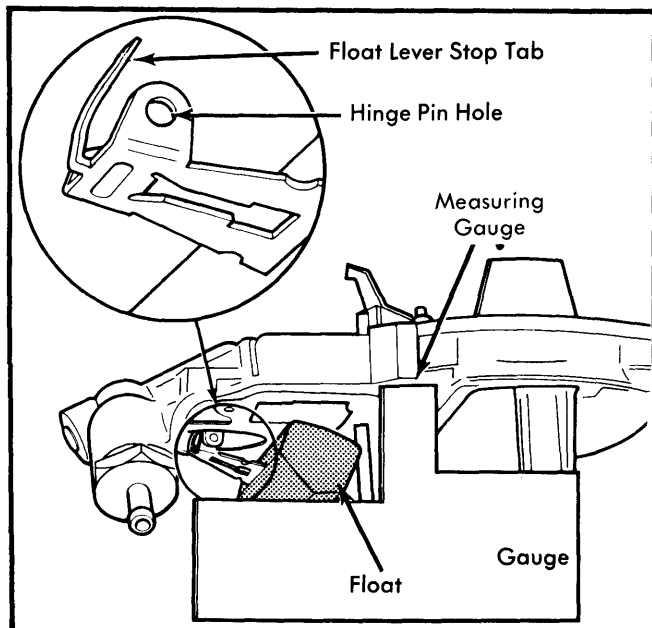


Fig. 3 Adjusting Float Drop

COLD ENRICHMENT METERING ROD

Checking Procedure - 1) Remove carburetor from vehicle. Perform steps 1) and 2) of Automatic Choke adjustment procedure. Position dial indicator on carburetor with indicator stem on top surface of enrichment rod.

2) Install choke weight (T77L-9848-A7 or equivalent) on choke bimetal lever. Install stator cap (T77L-9848-A or equivalent) and rotate stator cap to index. Dial indicator reading should be within the "CER 75°F Run" specification.

3) Rotate thermostat lever clockwise until CER travel stop screw is bottomed on upper body. Dial indicator reading should be within the "CER 0°F Start" specification.

NOTE - Do not remove dial indicator or reset to zero during checking procedure.

4) Push down on control vacuum regulator rod until it bottoms against seat. Dial indicator reading should be within the "Control Vacuum Regulator" specification. If any 1 of these 3 settings is out of specification, reset to specifications following Setting Procedure.

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.

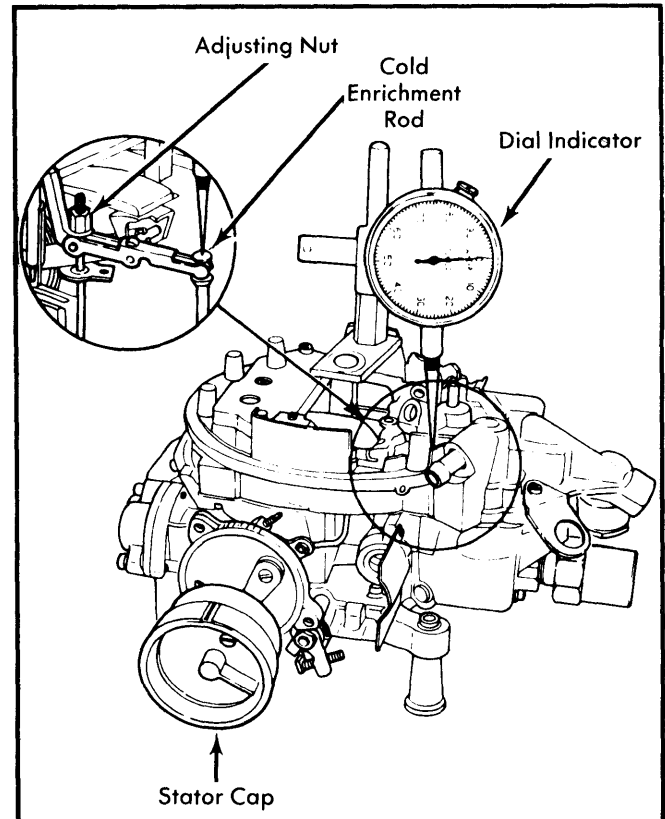


Fig. 4 Adjusting Cold Enrichment Metering Rod

Setting Procedure - 1) Turn CER adjusting nut counter-clockwise until nut disengages from choke control rod. Remove CER lever "E" clip and hinge pin. Remove CER lever, control vacuum regulator adjusting swivel and adjusting nut as an assembly.

NOTE - Adjusting nuts are filled with epoxy sealer after final adjustment is made by manufacturer. To adjust, new parts must be installed. Also, choke control rod has undercut groove designed to break at 10 INCH. lbs. torque. If rod breaks during setting procedure, new rod must be installed.

2) Install new CER lever, control vacuum regulator adjusting swivel and adjusting nut. Tighten CER adjusting nut to lower and locate into position. Connect lever to control vacuum regulator adjusting swivel and install hinge pin and "E" clip.

3) Install choke weight (T77L-9848-A7 or equivalent) on choke bimetal lever. Install stator cap (T77L-9848-A or equivalent) and rotate stator cap to index. Turn CER adjustment nut until dial indicator reading is within the "CER 75°F Run" specification. See Fig. 4.

4) Rotate thermostat lever clockwise until CER travel stop screw is bottomed on upper body. Turn CER travel stop screw until dial indicator reading is within the "CER 0° F Start" specification. See Fig. 5.

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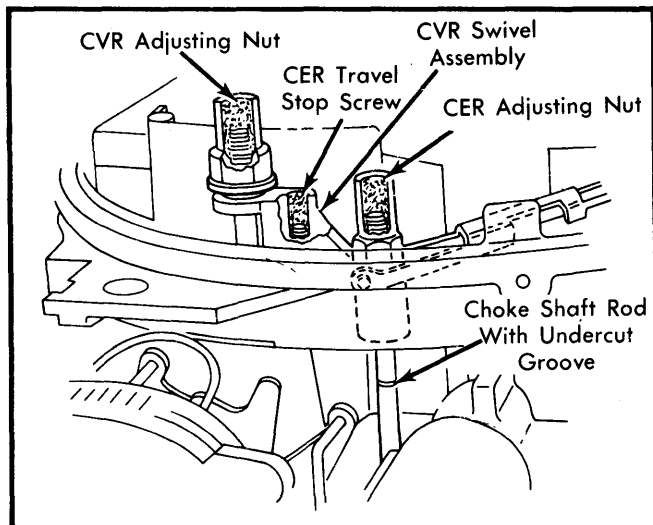


Fig. 5 Adjusting Control Vacuum Regulator Swivel Assembly

5) Push down on control vacuum regulator rod until it bottoms against seat. Position a $\frac{3}{8}$ " wrench over the control vacuum rod adjusting nut to prevent from turning.

6) Using a $\frac{3}{32}$ " Allen wrench, turn the control vacuum rod counterclockwise to increase travel and clockwise to decrease travel. When adjustments are complete, apply epoxy sealer to adjusting nuts and stop screw. See Fig. 6.

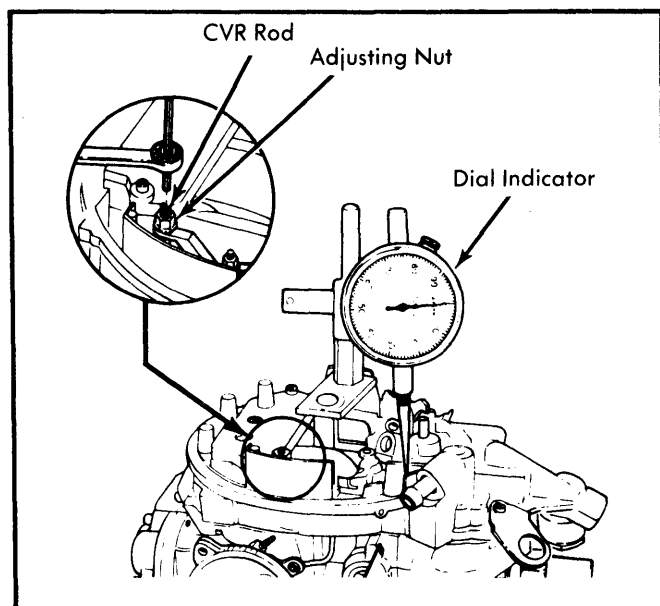


Fig. 6 Adjusting Control Vacuum Regulator

NOTE — If these were the only adjustments necessary, install choke cover, performing steps 3) and 4) of Automatic Choke adjustment procedure. Remove tools and reinstall carburetor on vehicle. If not, proceed as follows:

7) Depress choke control diaphragm by pushing in on choke diaphragm rod (do not push on fast idle intermediate lever) until diaphragm bottoms on diaphragm cover adjusting screw. See Fig. 7.

8) Rotate thermostat lever clockwise until choke shaft lever pin touches fast idle intermediate lever. Dial indicator reading should be within the "CER 0°F Run" specification.

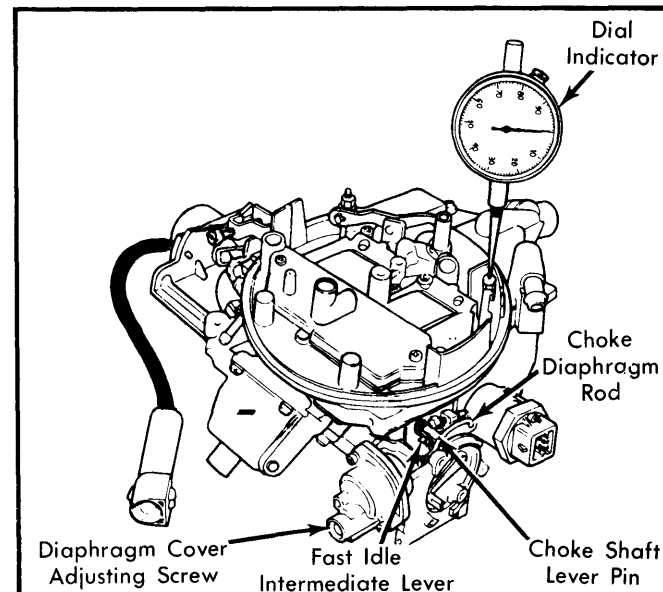


Fig. 7 Adjusting Choke Control Diaphragm (At CER 0°F Run Position)

9) To adjust, remove lead ball covering choke control diaphragm cover adjusting screw. Turn adjusting screw clockwise to increase height and counterclockwise to decrease height. Install a new lead ball over adjusting screw.

10) Center punch choke control diaphragm cover retaining screw heads. Align a $\frac{1}{4}$ " drill on screw head and drill only enough to remove screw head. Repeat for remaining screw head. Remove choke control diaphragm cover and spring.

11) Remove remaining portion of retaining screws from choke control diaphragm housing using small pliers. Manually seat choke control diaphragm assembly in direction of fast idle cam. See Fig. 8.

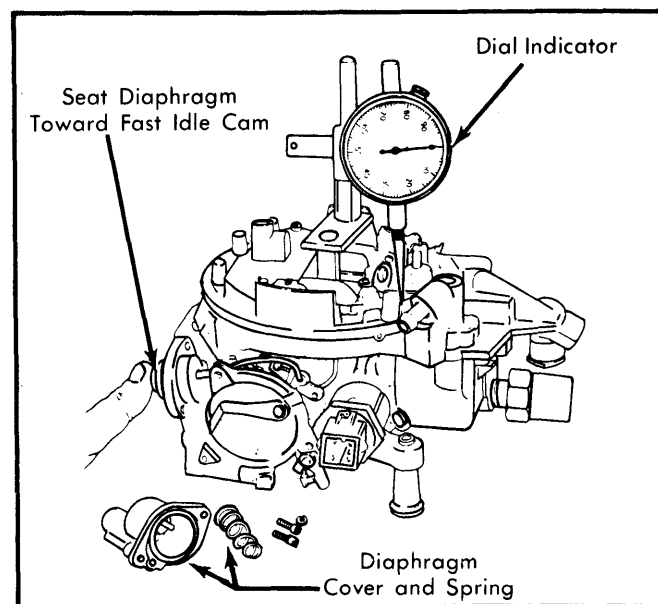


Fig. 8 Adjusting Choke Control Diaphragm (At CER 75°F Start Position)

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12) With dial indicator installed, reading should be within the "CER 75°F Start" specification. To adjust, rotate choke diaphragm assembly clockwise to decrease reading and counterclockwise to increase reading. Install choke control diaphragm spring and cover using new breakaway screws.

FAST IDLE CAM

Standard Procedure – 1) Before making adjustment, perform steps 1) and 2) of Automatic Choke adjustment procedure. Then, position fast idle lever on specified step of fast idle cam. Highest step is considered 1st step. Hold throttle closed with a rubber band to secure fast idle cam in position. See Fig. 9.

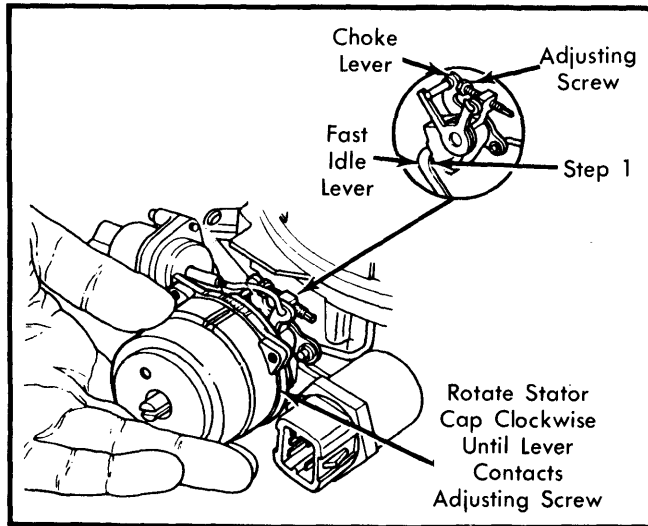


Fig. 9 Adjusting Fast Idle Cam

2) Install stator cap T77L-9848-A (or equivalent) in place of choke cover. Rotate stator cap clockwise until fast idle speed screw contacts lever.

3) 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.

4) Adjust choke cover to specified setting. When adjustment is completed, perform steps 3) and 4) of Automatic Choke adjustment procedure to complete this adjustment.

Alternate Procedure – 1) Leave dial indicator installed. Zero dial indicator and install choke weight (T77L-9848-A7 or equivalent) on choke bimetal lever.

2) Install stator cap (T77L-9848-A or equivalent) and rotate stator cap to index to set cold enrichment rod to the "CER 75°F Run" specification.

3) Hold throttle slightly open to allow free linkage movement. Position fast idle cam lever on specified step of fast idle cam. Rotate choke bimetal lever until choke shaft lever contacts fast idle cam screw.

4) Dial indicator reading should be as specified. To adjust, turn adjusting screw clockwise to increase reading and counterclockwise to decrease reading.

NOTE – Turning adjusting screw in clockwise direction turns cam in counterclockwise direction.

5) When adjustment is completed, perform steps 3) and 4) of Automatic Choke adjustment procedure to complete this adjustment.

AUTOMATIC CHOKE

1) Center punch choke cover retaining screw heads. Align a 1/4" drill on screw head and drill only enough to remove screw head. Repeat for remaining 2 screw heads. Remove choke cover by inserting sharp, flat chisel between choke cover gasket layers.

2) Remove remaining portion of retaining screws from choke housing using small pliers. Carefully clean epoxy and gasket from choke cover and housing using gasket scraper.

NOTE – Remove choke cover carefully. Choke cover and gasket are sealed to housing with epoxy sealer.

3) Apply 1/2" bead of epoxy sealer to each side of choke cover gasket adjacent to the 3 screw bosses. Install gasket and choke cover using new breakaway screws.

4) Rotate cover assembly in "Rich" or "Lean" direction to align reference mark on choke cover with specified scale graduation on housing. Tighten each breakaway screw until head of screw breaks off.

NOTE – Ensure that bimetal spring tab is engaged in slotted choke shaft lever.

SOLENOID BOWL VENT VALVE TEST

1) Remove air cleaner, then turn ignition on and off. A "click" should be heard if solenoid is operating properly.

2) If not, disconnect electrical lead, and connect a voltmeter between lead and ground. Turn ignition on and check for battery voltage. If not present, repair wiring as required.

3) If 12 volts are present at lead connector, check valve for binding and/or plugged condition. Repair as required. If valve is not binding and/or plugged, replace solenoid valve assembly. Reinstall air cleaner.

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.

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5) Remove Allen wrench. Apply light closing pressure on venturi valve and recheck specified clearance between valve and air horn wall.

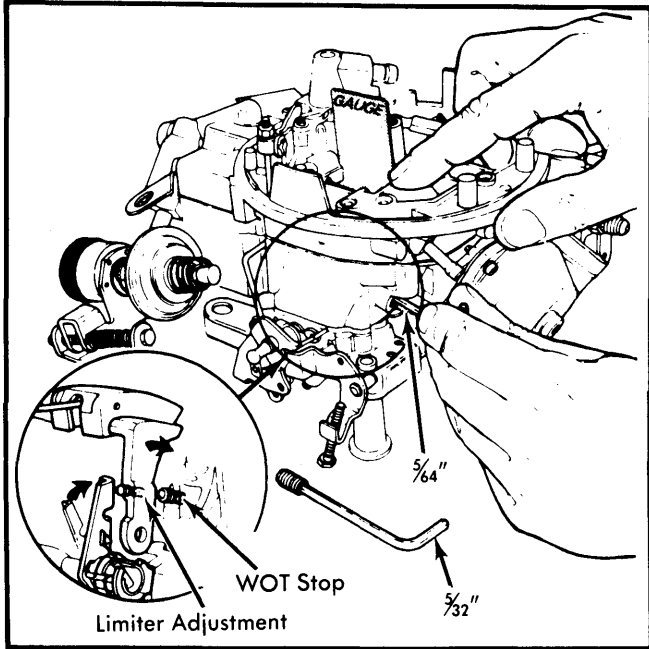


Fig. 10 Adjusting Venturi Valve Limiter

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.

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

OVERHAUL

DISASSEMBLY

Upper Body — 1) Mount carburetor in a suitable holding fixture. Remove fuel inlet fitting, filter, gasket and spring. Remove clip from accelerator pump and choke control rods. Disconnect rods.

2) Remove air cleaner stud. Remove 7 screws and remove upper body. Note position of 2 long screws. Remove float hinge pin and float assembly. Remove upper body gasket.

3) Remove 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) Disconnect choke rod. Remove retainer and carefully lift out dust seal. Remove choke hinge pin. Remove cold enrichment rod nut, lever, swivel, control vacuum regulator and adjusting nut as an assembly.

NOTE — Disassembly of cold enrichment rod assembly is only required if parts replacement is necessary.

5) Slide cold enrichment rod from casting and seal. Remove venturi valve cover plate and roller bearings. Drive air bypass plug out of venturi valve cover. Remove venturi air bypass screw.

6) Using a suitable plug removal tool (T77P-9928A or equivalent), press tapered plugs out of venturi valve pivot pins. Push out pivot pins.

7) Slide venturi valve to rear to remove. Remove pivot pin bushings. Remove metering rod pivot pins (on outer side of venturi valve), metering rods and springs.

NOTE — Mark or identify the rods as to choke or throttle side of carburetor.

8) Using jet plug removal tool (T77L-9533-B or equivalent), remove main jet plugs recessed in upper body casting.

NOTE — The main metering jet setting is important to the overall performance of the carburetor. Use the following step to remove the main metering jets.

9) Using a suitable jet wrench (T77L-9533A or equivalent), turn each metering jet clockwise counting number of turns required to seat them in bottom of casting. Record number of turns to nearest 1/4 turn. Now turn jet assemblies counterclockwise to remove. Remove "O" rings. Mark or identify main metering jets as to choke or throttle side.

10) Remove accelerator pump plunger assembly. Remove internal vent valve from plunger stem. Remove accelerator pump cup and spring.

11) Remove venturi valve limiter adjusting screw from throttle side of venturi valve. If necessary for cleaning, remove 1/8" pipe plug in fuel inlet casting boss.

Main Body — 1) Remove venturi valve diaphragm cover, spring guide and spring. Carefully loosen diaphragm and slide out of main body. Remove diaphragm adjusting screw by center punching until loose.

2) Remove venturi valve diaphragm adjusting screw. Remove venturi valve limiter stop screw plug by center punching until loose. Remove venturi valve limiter stop screw.

3) Remove "Feedback" stepper motor using a 1 5/8" socket. Remove gasket pintle valve and pintle spring. Turn main body upside down and catch check ball and weight as they fall out. Remove 5 throttle body screws. Remove throttle body and gasket.

Throttle Body — 1) Remove any throttle return control device and bracket. Disconnect kickdown spring.

2) Center punch choke cover retaining screw heads. Align a 1/4" drill on screw head and drill only enough to remove screw head. Repeat for remaining 2 screw heads. Remove choke cover by inserting sharp, flat chisel between choke cover gasket layers.

3) Remove retaining ring, choke cover and gasket. Remove remaining portion of retaining screws from choke housing using small pliers.

4) Remove choke thermostatic lever screw and remove lever. Slide choke shaft and lever assembly out of casting and remove fast idle cam.

5) Remove the fast idle intermediate lever. Center punch choke control diaphragm cover retaining screw heads. Align a 1/4" drill on screw head and drill only enough to remove screw head.

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6) Repeat for remaining screw head. Remove choke control diaphragm cover and spring. Remove choke control diaphragm and rod. Disconnect rod from diaphragm.

7) If necessary to remove choke housing bushing, file off staking from around bushing. Carefully press bushing out while supporting casting.

8) Remove choke heat tube fitting. Remove off idle (TSP) adjusting screw. Remove throttle shaft retaining nut. Remove fast idle adjusting lever, fast idle lever and adjusting screw.

9) If it is necessary to remove throttle valves, scribe alignment mark along shaft and identify the throttle valves as to choke side or throttle side.

10) Throttle valve screws are staked in place. Staking must be removed before removing screws. Remove screws and throttle valves. To remove throttle shaft, it will be necessary to drive limiter lever stop pin down until it is flush with shaft.

11) Slide throttle shaft out of casting. Remove transmission kickdown adjustment screw. Remove venturi valve limiter lever and bushing.

REASSEMBLY

Throttle Body – 1) Support throttle shaft assembly and drive out venturi valve limiter stop pin. Discard pin. Position venturi valve limiter assembly in throttle body and slide throttle shaft into place.

2) Place throttle valves in correct position (noted during disassembly). Install new screws and tighten until just snug. Close throttle and tap plates to center. Tighten throttle plate screws and stake into position.

3) Drive venturi valve limiter stop pin into shaft. Leave $\frac{1}{8}$ " of pin exposed. Install fast idle lever, adjusting lever and fast idle screw. Install throttle shaft nut and tighten.

4) Install off idle (TSP) adjusting screw. Install choke heat tube fitting. Install choke shaft bushing in housing. Support housing when installing bushing. Stake into position.

5) Install fast idle intermediate lever. Install fast idle cam. Install choke control diaphragm and rod and connect rod to lever.

6) Install choke shaft and lever assembly. Install choke thermostatic lever in position. Install and tighten lever retaining screws.

7) Install choke control diaphragm spring, cover and new breakaway cover screws. Apply $\frac{1}{2}$ " bead of epoxy sealer to each side of choke cover gasket adjacent to the 3 screw bosses. Install gasket, choke cover and retaining ring using new breakaway screws.

8) Install throttle control device and bracket in position.

Main Body – 1) Position throttle body gasket in position on main body. Assemble main body to throttle body. Install screws and tighten securely. Drop accelerator pump check ball and weight into position in main body.

NOTE – Do not install venturi valve limiter stop screw and plug at this time. They are installed after carburetor is assembled and venturi valve limiter is adjusted.

2) Slide venturi valve diaphragm into position. Install diaphragm spring, spring guide, cover and cover screws. Install venturi valve diaphragm adjustment screw (final adjustment is made on vehicle). Install pintle spring, gasket pintle valve and "Feedback" stepper motor.

Upper Body – 1) Install $\frac{1}{8}$ " pipe plug in fuel inlet boss. Install venturi valve limiter screw in venturi valve. Lubricate "O" rings with mild soapy solution and install "O" rings on main metering jets.

2) Using jet wrench used during disassembly, install main metering jets in correct holes. Turn jets clockwise until they are lightly seated in casting. Now turn each jet counterclockwise number of turns recorded during disassembly.

3) Drive main jet plugs into recesses in casting using plug driver tool (T77L-9533-C). Tap lightly on tool until plugs bottom in casting.

4) Install metering rods and springs in position noted during disassembly on venturi valve. Install metering rod pivot pins. Install venturi valve, carefully guiding metering rods into jets. If springs are correctly installed, metering rods will spring back up when depressed.

5) Install venturi valve bushings and pivot pins. Install tapered plugs in pivot pins using tool used to remove plugs during disassembly.

6) Install venturi air valve bypass screw. Turn clockwise 4 turns to allow clearance for cover plate. Install plug in venturi valve cover plate.

7) Install venturi valve cover plate roller bearings, gasket and cover plate. Install and tighten screws. Install accelerator pump swivel and adjusting nut into pump link.

8) Install accelerator pump link and retaining pin. Install accelerator pump operating rod and dust seal. Install fuel inlet valve seat gasket, seat and valve.

9) Install upper body gasket. Place float in position and install hinge pin. Install accelerator pump return spring, cup, plunger, internal vent valve and retainer. Place pump piston assembly in position in hole in upper body.

10) Install upper body on main body. Guide accelerator pump piston assembly into cavity in main body. Make sure venturi valve diaphragm stem engages venturi valve.

11) Install fuel filter spring, filter, inlet fitting gasket and inlet fitting. Install air cleaner stud. Install choke control rod dust seal. Tap seal gently to straighten retainer.

12) Slide cold enrichment rod into upper body. Assemble cold enrichment rod adjusting nut, lever, swivel, control vacuum regulator and adjusting nut. Install assembly on carburetor.

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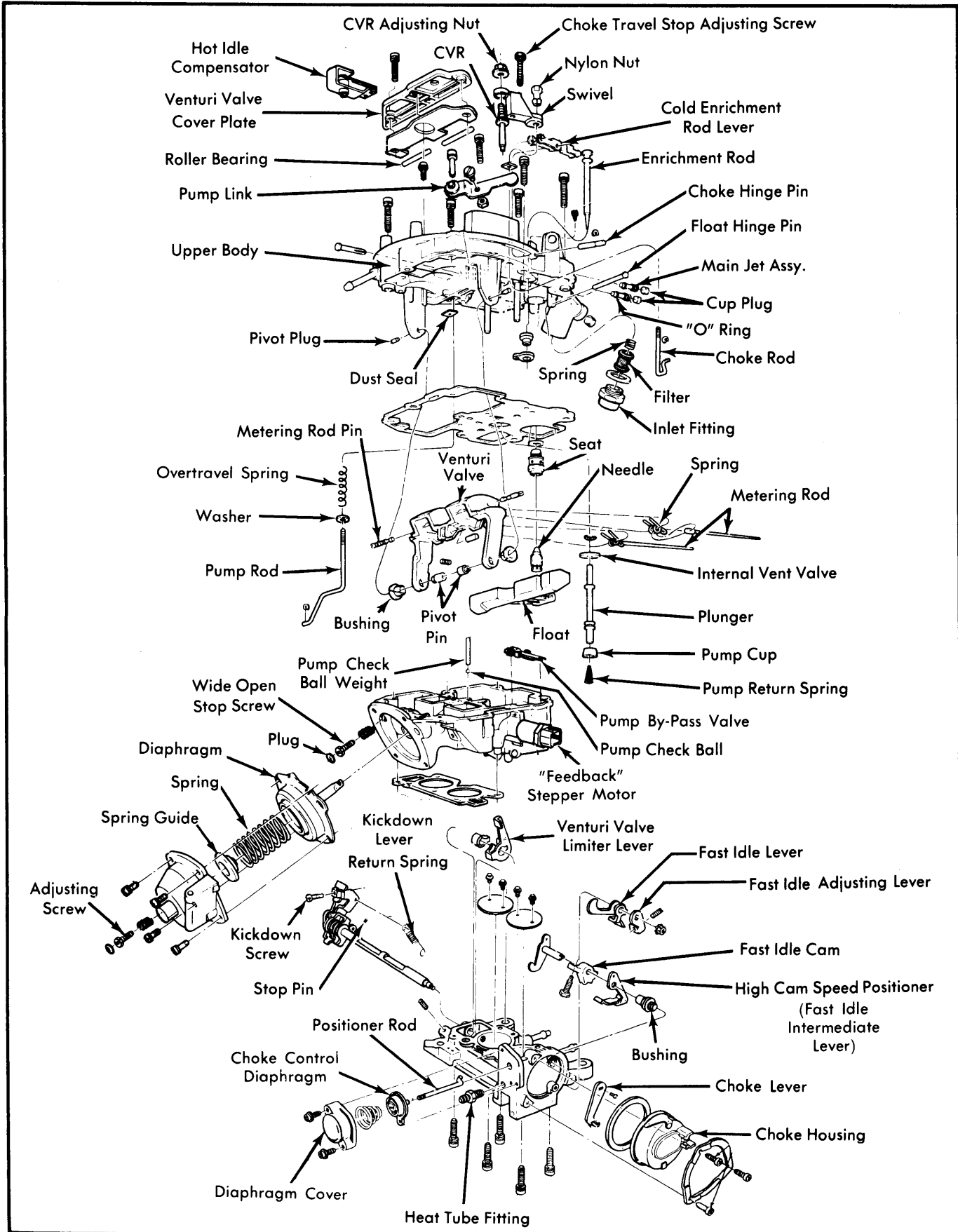


Fig. 11 Exploded View of Model 7200 VV Carburetor
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13) Install choke hinge pin and retaining clip. Install choke control rod.

14) Connect accelerator pump operating rod and choke control rod. Install retaining clips. Install venturi valve limiter stop screw.

NOTE — Perform Cold Enrichment Rod adjustment now.

NOTE — Perform Venturi Valve Limiter adjustment now.

CARBURETOR ADJUSTMENT SPECIFICATIONS														
Application	Accel. Pump Setting	Fuel Level Setting	Float Drop Setting	Cold Enrichment Rod Specifications				Control Vacuum Regulator Setting	Fast Idle Cam Cam			Venturi Limiter		
				0°F Start	0°F Run	75°F Start	75°F Run		Fast Idle Cam Setting		Choke Cover Setting	Maximum Open	Wide Open on Throttle	
Ford Motor Co.														
E1AE-KA	.010"⊙	1-3/64"	1-15/32"	.525"	.350"	.475"	.125"	.250"	1 Rich	3	Index	1.00"	.400"	
E1AE-LA	.010"⊙	1-3/64"	1-15/32"	.490"	.350"	.475"	.125"	.250"	.360"	2	1 Rich	1.00"	.750"	
E1AE-MA	.010"⊙	1-3/64"	1-15/32"	.490"	.350"	.475"	.125"	.250"	.360"	2	Index	1.00"	.400"	
E1AE-SA	.010"⊙	1-3/64"	1-15/32"	.490"	.350"	.475"	.125"	.250"	.360"	2	1 Rich	1.00"	.750"	
E1AE-VA	.010"⊙	1-3/64"	1-15/32"	.525"	.350"	.475"	.125"	.250"	.145"	3	Index	1.00"	.400"	
E1AE-ACA	.010"⊙	1-3/64"	1-15/32"	.490"	.350"	.445"	.125"	.250"	.360"	2	Index	1.00"	.500"	
E1AE-AGA	.010"⊙	1-3/64"	1-15/32"	.490"	.350"	.475"	.125"	.250"	.360"	2	Index	1.00"	.400"	
E1DE-AA	.010"⊙	1-3/64"	1-15/32"	.490"	.350"	.445"	.125"	.250"	.360"	2	Index	1.00"	.500"	
E1SE-EA	.010"⊙	1-3/64"	1-15/32"	.490"	.350"	.475"	.125"	.250"	.360"	2	Index	1.00"	.400"	
E1VE-AA	.010"⊙	1-3/64"	1-15/32"	.490"	.350"	.475"	.125"	.250"	.360"	2	Index	1.00"	.400"	

⊙ — Plus 1 turn counterclockwise.