ROCHESTER MV CARBURETOR

CONTENTS

DESCRIPTION AND OPERATION

MODEL MV

The Model MV carburetor is a single bore downdraft carburetor using a triple venturi in conjunction with a plain tube nozzle.

Fuel flow through the main metering system is controlled by a mechanically and vacuum operated metering rod operating in a fixed orifice jet. The power enrichment system is used to provide good performance during moderate to heavy accelerations.

The idle system on automatic transmission models incorporate a hot idle compensator to maintain smooth engine idle during periods of extreme hot engine operation.

The Model MV carburetor has an automatic choke system. The vacuum diaphragm unit is mounted externally on the air horn. The choke coil is mounted on the manifold and is connected to the choke valve shaft by a rod.

An integral fuel inlet filter is mounted in the fuel bowl behind the fuel inlet nut to give maximum filtration of incoming fuel.

Other features of the Model MV include an aluminum throttle body, and a thick throttle body to bowl insulator gasket. The carburetor has internally balanced venting through a vent hole in the air horn, which leads from the bowl into the bore beneath the air cleaner.

The carburetor model identification is stamped on a vertical portion of the float bowl adjacent to the fuel inlet nut. If replacing the float bowl, follow the instructions contained in the service package to transfer the identification.

An electrically operated idle stop solenoid is used on all MV models. The solenoid mounts on the carburetor float bowl and replaces the normal carburetor idle stop screw. The curb idle speed setting is made by turning the electrically operated idle stop solenoid in the boss located on the carburetor bowl. See Figure 6E-0.

On 1974 Model MV Carburetors, the idle mixture screw and limiter is new. The new plastic limit cap permits limited mixture adjustment. Adjustments should be made only at the 24,000 mile point. See the TUNE-UP SECTION for the proper idle mixture adjustment procedure.

An Exhaust Gas Recirculation (E.G.R.) system is used on all 1974 applications to control oxides of nitrogen. The vacuum supply port necessary to operate the recirculation valve is located in the throttle

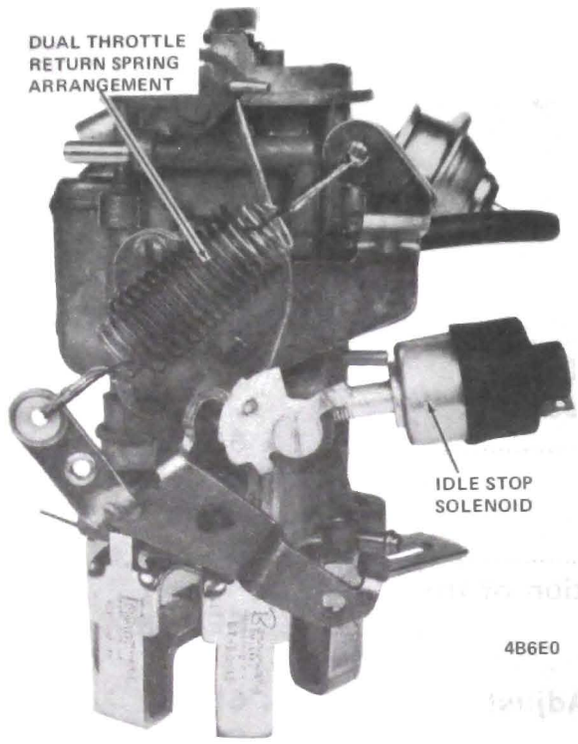


Figure 6E-0 Model MV Carburetor

body and connects through a channel to a tube which is located at the top of the air horn casting. See Idle System for port location and operation.

There are six basic systems of operation used. They are float, idle, main metering, power enrichment, accelerating pump, and choke.

Float System

The float system controls the amount and level of the fuel in the carburetor float bowl.

It is important as on all carburetors, that the float be set to the recommended specifications.

The float system is located adjacent to the main venturi. It consists of the following: A fuel inlet filter and pressure relief spring, a solid single plastic pontoon float, a needle and seat, and a float hinge pin.

The float system operates as follows: Fuel from the engine fuel pump is forced through the fuel inlet filter, then passes from the filter chamber up through the float needle seat and spills into the float bowl. As the float bowl fills with fuel, it lifts the float pontoon upward until the correct fuel level is reached in the bowl. At this point, the float arm forces the float needle against the float needle seat shutting off fuel flow. As fuel is used from the float bowl the float drops, allowing the float needle to move off its seat and more fuel to enter the float bowl. This cycle continues throughout engine operation, keeping a nearly constant fuel level in the float bowl. See Figure 6E-1.

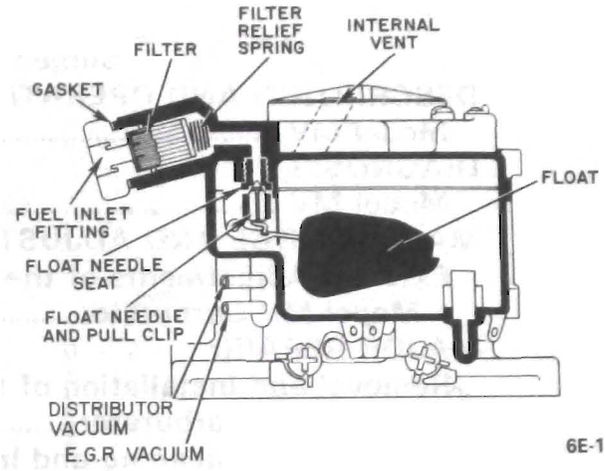


Figure 6E-1 Float System

Idle System

The purpose of the idle system is to control fuel mixture to the engine during idle and low speed operation.

The idle system consists of a removable idle tube, idle passages, idle channel restriction, idle air bleeds, slotted off-idle port, carbon canister purge port, exhaust gas recirculation (E.G.R.) ports and passages, idle mixture adjusting needle and cap, and the idle mixture discharge hole. See Figure 6E-2.

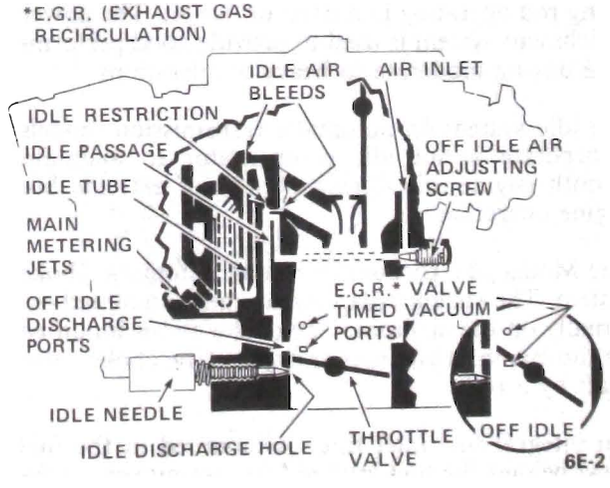


Figure 6E-2 Idle System

Off-Idle Operation

As the throttle valve is opened from curb idle, to increase engine speed, additional fuel is needed to combine the extra air entering the engine. This is accomplished by the slotted off-idle discharge port. As the throttle valve is opened, it passes the off-idle port, gradually exposing it to high engine vacuum below the throttle valve. The additional fuel from the off-idle port mixes with the increased air flow past the throttle valve to meet increased engine air and fuel demands.

The lower idle air bleed hole is used strictly as an air bleed during idle operation. It supplies additional air to the idle circuit for improved atomization and fuel control at low engine speeds. See Figure 6E-2.

The same air bleed is used as an additional fuel feed at higher engine speeds, to supplement main discharge nozzle fuel delivery, during operation of the main metering system.

The timed spark port has two tubes which supply vacuum during the off-idle and part throttle operation of the carburetor. See Figure 6E-2.

An exhaust gas recirculation (E.G.R.) system is used on all 1974 models to control oxides of nitrogen emissions. The E.G.R. valve is operated by a vacuum signal taken from the carburetor throttle body.

A vacuum supply tube installed in the carburetor air horn connects by a passage through the float bowl to the timed vertical port in the throttle body bore. This provides a vacuum signal to the E.G.R. valve in the off-idle and part throttle operation of the carburetor. See Figure 6E-2.

Hot Idle Compensator (Only Used on Automatic Transmission Models)

The hot idle compensator is located in a chamber on the float bowl casting. It is used on some models to off-set enrichening effects caused by changes in air density and fuel vapors generated during hot engine operation.

The compensator consists of a thermostatically controlled valve, a bi-metal strip which is heat sensitive, a valve holder and bracket. The valve closes off an air channel which leads from a hole inside the air horn bore to a point below the throttle valve where it exists into the throttle body bore.

Normally the compensator valve is held closed by tension of the bi-metal strip and engine vacuum. At a pre-determined temperature when extra air is needed to off-set the enrichening effects of fuel vapors, the bi-metal strip bends and unseats the compensator valve. This allows enough air to be drawn into the engine manifold to off-set the richer mixtures and maintain a smooth engine idle. When the engine cools and the extra air is not needed, the bi-metal strip closes the valve and operation returns to normal.

The compensator valve assembly is held in place by the dust cover over the valve chamber. A seal is used between the compensator valve and float bowl casting.

In order to insure proper idle adjustment when the engine is hot, the compensator valve must be closed. To check this, plug the compensator inlet hole inside the air horn bore (wooden pencil can be used). If no drop in engine RPM is noted on a tachometer, the valve is closed. If the valve is open, leave plug in hole when adjusting idle or cool engine down to a point where the valve automatically closes, for proper idle adjustment. See Figure 6E-2.

> **CAUTION:** *Always remove plug used in the compensator inlet hole after completing idle adjustment, otherwise, the compensator will not operate.*

Main Metering System

The main metering system supplies fuel to the engine from off-idle to wide open throttle operation.

The main metering system consists of a main metering jet, a mechanical and vacuum operated metering rod, a main fuel well, main well air bleeds, fuel discharge nozzle, and triple venturi. See Figure 6E-3.

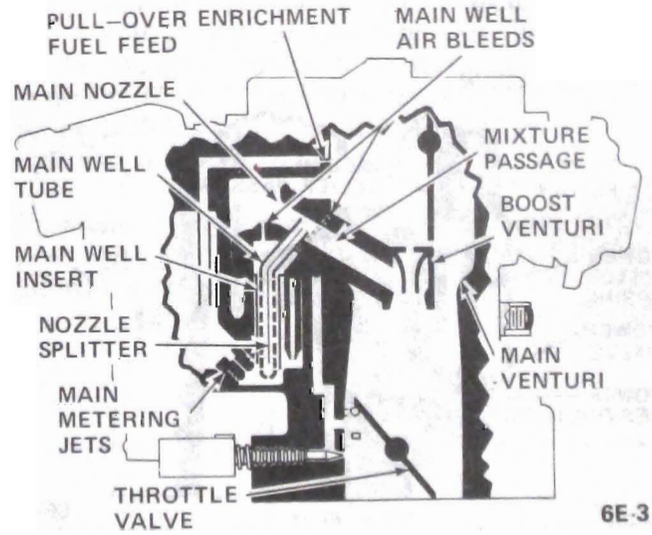


Figure 6E-3 Main Metering System

An initial metering rod adjustment is required to set the depth of the rod in the main metering jet. See Adjustment section for procedure and specifications.

> **NOTE:** *There is a supplementary fuel feed passage in the bottom of the fuel bowl adja-*

cent to the main metering jet. Fuel is picked up from the float bowl and passes through a calibrated hole, past a calibration screw and on into the same fuel passage which leads from the main metering jet to the main fuel well. The calibration screw is factory adjusted and should not be re-adjusted in the field.

If the adjustment is tampered with, it will affect exhaust emissions and will require complete float bowl or unit replacement.

Power Enrichment System

The vacuum operated enrichment system is used to slightly enrichen mixture ratios during moderate to heavy loads, to increase engine power. The necessary enrichment is obtained by movement of the spring loaded vacuum piston which senses changes in manifold vacuum.

During part throttle and cruising ranges, manifold vacuum is sufficient to hold the power piston down against spring tension. The upper part of the groove in the power piston is held down against the top side of the drive rod. This places the main metering rod lower in the jet for maximum economy. On moderate to heavy accelerations, manifold vacuum drops and the power piston spring pushes the power piston up so that the lower end of the slot in the power piston strikes the bottom side of the drive rod. This moves the tapered metering rod slightly upward and out of the main metering jet. This allows more fuel to flow through the jet, enrichening the fuel mixture slightly. See Figure 6E-4.

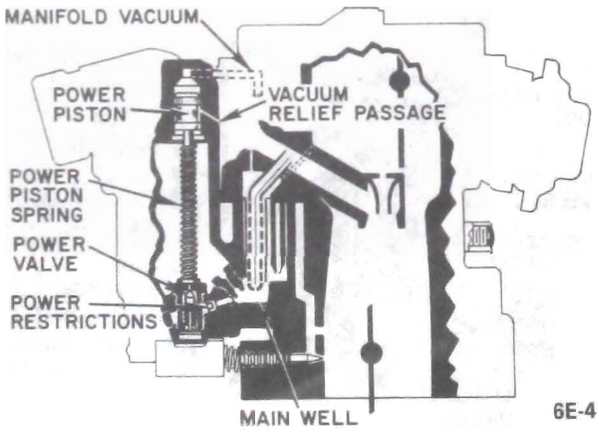


Figure 6E-4 Power Enrichment System

Accelerating Pump System

Extra fuel for smooth, quick acceleration is supplied by the pump system. The accelerating pump is located at the side of the main fuel bowl adjacent to the venturi area. It consists of a spring loaded pump plunger and pump return spring operating in a fuel well. The pump plunger is connected by linkage directly to a lever on the throttle shaft.

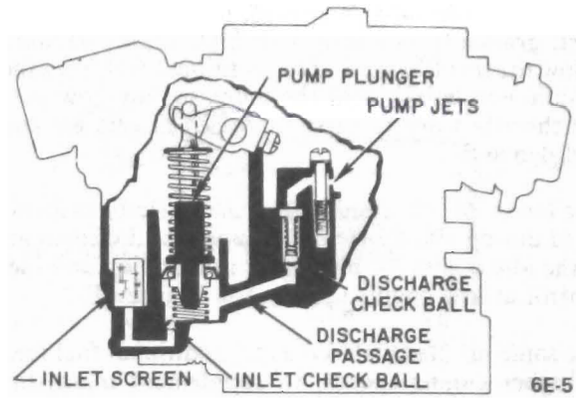


Figure 6E-5 Pump System

Choke System

The purpose of the choke system is to provide a richer mixture for cold engine starting and operation. Richer than normal mixtures are required because vaporized fuel has a tendency to condense on cold engine parts. This occurs on the inside area of the intake manifold and cylinder heads, thereby, decreasing the amount of combustible mixture available in the engine cylinders.

The Model MV carburetor is equipped with a fully automatic choke control. The thermostatic coil is mounted on the engine manifold and is connected by a rod to the lever on the end of the choke valve shaft. The vacuum break unit is diaphragm operated and is externally mounted on the air horn casting.

The choke system operates as follows: When the engine is cold, prior to starting, depressing the accelerator pedal to the floor allows tension from the thermostatic coil to close the choke valve and also rotates the fast idle cam so the high step is in line with the fast idle cam follower on the throttle lever. As the throttle is released, the fast idle cam follower comes to rest on the highest step of the cam, thus providing enough throttle valve opening to keep the engine running after cold start. During cranking, engine vacuum below the choke valve pulls fuel from the carburetor circuits. This provides adequate enrichment for good cold starts.

When the engine starts, manifold vacuum is transmitted through a vacuum channel to the vacuum break diaphragm unit mounted on the air horn cast-

ing. This moves the diaphragm plunger inward until it strikes the cover which in turn, opens the choke valve to a point where the engine will run without loading or stalling. This is called the vacuum break position. A choke closing assist spring is used on the vacuum break diaphragm plunger stem. The spring assists in closing the choke valve, along with tension from the thermostatic coil, for improved cold starting. The choke closing assist spring only exerts pressure on the vacuum break link to assist in closing the choke valve during engine starting. When the engine starts and the choke vacuum diaphragm seats, the closing spring hits a stop on the plunger stem and no longer exerts pressure on the vacuum break link.

As the engine warms up, the thermostatic coil is heated and gradually relaxes its spring tension so that air velocity through the air horn can continue to open the choke valve. This continues until the engine is warm. At this point the choke coil tension is completely relaxed and the choke valve is wide open.

The fast idle cam has graduated steps so that the fast idle speed is lowered gradually during the engine warm up. The fast idle cam follows rotation of the off set choke valve. When the choke valve is completely open and the engine is warm, the cam follower on the throttle lever will be off the steps of the fast idle cam. At this point, the idle stop solenoid controls curb engine idle speed.

An unloader mechanism is provided should the engine become flooded during the starting period. The choke unloader partially opens the closed choke valve to allow increased air flow through the carburetor to lean out the overly rich mixtures. This is accomplished by depressing the accelerator to the floor so that wide open throttle is obtained. When this is done, a tang on the throttle lever contacts the fast idle cam and forces the choke valve partially open. The extra air leans out the fuel mixture enough so that the engine will start. See Figure 6E-6.

NOTE: *All choke adjustments can be performed on the car. With the exception of the idle speed and mixture adjustments, all adjustments are included in the adjustment procedure sections.*

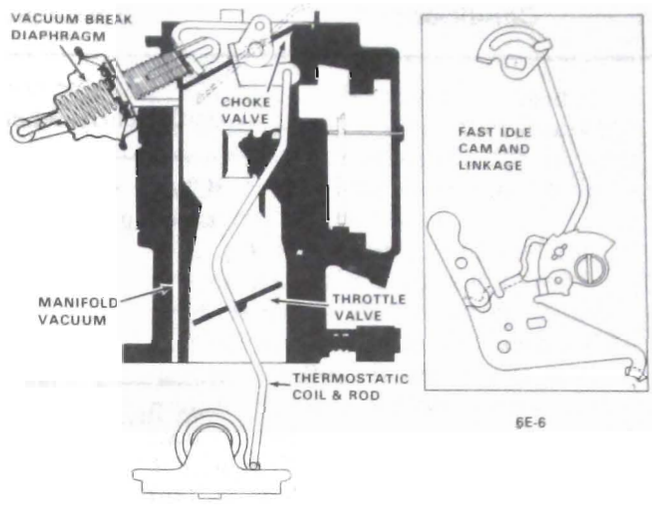


Figure 6E-6 Choke System

DIAGNOSIS

MODEL MV

NOTE: *These problems can be caused by many things other than carburetor. Check the following engine tune-up items before proceeding with carburetor items.*

Engine compression, spark plugs, ignition point gap and condition, ignition timing, fuel pump pressure and volume, plugged fuel filters or fuel lines and intake manifold for vacuum leaks. Make sure all emission control parts are installed and operating properly. This includes all emission systems solenoids and hoses where used.

Problems of roughness, slight hesitation, surge or poor fuel economy should not be diagnosed before an allowable engine break in period.

MV - SINGLE BARREL

Condition	Possible Cause	Correction
Engine cranks (turns over) will not start or starts hard when cold.	Improper starting procedure used.	Check with the customer to determine if proper starting procedure is used, as outlined in the owner's manual.
	No fuel in gas tank.	Add fuel. Check fuel gauge for proper operation.

Condition	Possible Cause	Correction
	Choke valve not closing sufficiently when cold.	Adjust the choke thermostatic coil.
	Choke valve or linkage binding or sticking.	Realign the choke valve or linkage as necessary. If caused by dirt and gum, clean with automatic choke cleaner. Do not oil choke linkage. If parts are replaced, check adjustments.
	No fuel in carburetor.	1. Remove fuel line at carburetor. Connect hose to fuel line and run into metal container. Remove the high tension coil wire from center tower on distributor cap and ground. Crank over engine-if there is no fuel discharge from the fuel line, check for kinked or bent blow out with air hose, reconnect line and check again for fuel discharge. If none, replace fuel pump. Check pump for adequate flow, as outlined in service manual. 2. If fuel supply is o.k., check the following: a. Inspect fuel filters. If plugged replace. b. If filters are o.k., remove air horn and check for a bind in the float mechanism or a sticking float needle. If o.k., adjust float as specified.
	Engine Flooded. NOTE: To check for flooding, remove the air cleaner, with the engine off, and look into the carburetor bores. Fuel will be dripping off nozzles and/or carburetor will be very wet.	Check to determine if customer is using proper carburetor unloading procedure. Depress the accelerator to the floor and check the carburetor to determine if the choke valve is opening. If not, adjust the throttle linkage and unloader, as specified.
	Carburetor flooding.	NOTE: Before removing the carburetor air horn, use the following procedure which may eliminate the flooding. 1. Remove the fuel line at the carburetor and plug. Crank and run the engine until the fuel bowl runs dry. Turn off the engine and connect fuel line. Then restart and run engine. This will usually flush dirt past the carburetor float needle and seat.

Condition	Possible Cause	Correction
		2. If dirt is in fuel system, clean the system and replace fuel filters as necessary. If excessive dirt is found, remove the carburetor unit. Disassemble and clean. 3. Check float needle and seat for proper seal. If a needle and seat tester is not available, apply mouth suction to the needle seat with needle installed. If the needle is malfunctioning, replace with a factory matched set. 4. Check float for being loaded with fuel, bent float hanger or binds in the float arm. NOTE: A solid float can be checked for fuel absorption by lightly squeezing between fingers. If wetness appears on surface or float feels heavy (check with known good float), replace the float assembly. 5. Adjust float.
Engine starts and stalls.	Engine does not have enough fast idle speed when cold.	Check and re-set the fast idle setting and fast idle cam.
	Choke vacuum break unit is not adjusted to specification or unit is malfunctioning.	1. Adjust vacuum break to specification. 2. If adjusted O.K., check the vacuum break for proper operation as follows: On the externally mounted vacuum break unit, connect a piece of hose to the nipple on the vacuum break unit and apply suction by mouth or use Tool J-23417 to apply vacuum. Plunger should move inward and hold vacuum. If not, replace the unit. On the integral vacuum break unit remove cover and visually check diaphragm and vacuum channel. If diaphragm is leaking, replace. NOTE: Always check the fast idle cam adjustment before adjusting vacuum break unit.
	Choke coil rod out of adjustment.	Adjust choke coil rod.
	Choke valve and/or linkage sticking or binding.	1. Clean and align choke valve and linkage. Replace if necessary. 2. Re-adjust if part replacement is necessary.

Condition	Possible Cause	Correction
	Idle speed setting. on decal in engine compartment.	Adjust idle speed to specifications
	Not enough fuel in carburetor.	1. Check fuel pump pressure and volume. 2. Check for partially plugged fuel inlet filter. Replace if dirty. 3. Remove air horn and check float adjustments.
	Carburetor flooding. NOTE: Check by using procedure outlined under carburetor flooding.	1. Check float needle and seat for proper seal. If a needle and seat tester is not available, mouth suction can be applied to the needle seat with needle installed. If needle is malfunctioning, replace with a factory matched set. 2. Check float for being loaded with fuel, bent float hanger or binds in the float arm. NOTE: A solid float can be checked for fuel absorption by lightly squeezing between fingers. If wetness appears on surface or float feels heavy (check with known good float, replace the float assembly. 3. Check float adjustments. 4. If excessive dirt is found in the carburetor, clean the fuel system and carburetor. Replace fuel filters as necessary.
Engine idles, rough and stalls.	Idle speed setting.	Re-set idle speed per instructions on decal in engine compartment.
	Manifold vacuum hoses disconnected or improperly installed.	Check all vacuum hoses leading into the manifold or carburetor base for leaks or being disconnected. Install or replace as necessary.
	Carburetor loose on intake manifold.	Torque carburetor to manifold bolts (15 lb. ft.).
	Intake manifold is loose or gaskets are malfunctioning.	Using a pressure oil can, spray light oil or kerosene around manifold legs and carburetor base. If engine RPM changes, tighten or replace the manifold gaskets or carburetor base gaskets as necessary.
	Hot idle compensator not operating (where used).	Normally the hot idle compensator should be closed when engine is running cold and open when engine is hot (approx. 140°F. at comp.) replace if malfunctioning.

Condition	Possible Cause	Correction
	Carburetor flooding. NOTE: Check by using procedure outlined under "carburetor flooding".	1. Remove air horn and check float adjustment. 2. Check float needle and seat for proper seal. If a needle and seat tester is not available, mouth suction can be applied to the needle seat with needle installed. If the needle is malfunctioning, replace with a factory matched set. 3. Check float for being loaded with fuel, bent float hanger or binds in the float arm. NOTE: A solid float can be checked for fuel absorption by lightly squeezing between fingers. If wetness appears on surface or float feels heavy (check with known good float), replace the float assembly. 4. If excessive dirt is found in the carburetor, clean the fuel system and carburetor. Replace fuel filters as necessary.
Engine hesitates on acceleration.	Malfunctioning accelerator pump system. NOTE: A quick check of the pump system can be made as follows: With the engine off, remove air cleaner and look into the carburetor bores and observe pump stream, while briskly opening throttle valve. A full stream of fuel should emit from pump jet and strike near the center of the venturi area.	1. Remove air horn and check pump cup. If cracked, scored or distorted, replace the pump plunger. 2. Check the pump discharge ball for proper seating and location. The pump discharge ball is located in a cavity next to the pump well. To check for proper seating, remove air horn and gasket and fill cavity with fuel. No "leak down" should occur. Restake and replace check ball if leaking. Make sure discharge ball, spring, and retainer are properly installed.
	Dirt in pump passages or pump jet.	Clean and blow out with compressed air.
	Fuel level	Check for sticking float needle or binding float. Free up or replace parts as necessary. Check and reset float level to specification.
	Leaking air horn to float bowl gasket.	Torque air horn to float bowl using proper tightening procedure.
	Carburetor loose on manifold.	Torque carburetor to manifold bolts, (15 lb. ft.).
No power on heavy acceleration or at high speed.	Carburetor throttle valve not going wide open. (Check by pushing accelerator to floor).	Adjust throttle linkage to obtain wide open throttle in carburetor.

Condition	Possible Cause	Correction
	Dirty or plugged fuel filters.	Replace with a new filter element.
	Power system not operating.	Check power piston for free up and down movement. If power piston is sticking, check power piston and cavity for dirt, or scores, Check power piston spring for distortion. Clean or replace as necessary.
	Metering rod not adjusted to specification.	Adjust metering rod.
	Float level too low.	1. Check and reset float level to specification.
	Float not dropping far enough into float bowl.	Check for binding float hanger and for proper float alignment in float bowl.
	Main metering jet or metering rod dirty, plugged or incorrect part.	1. If the main metering jets are plugged or dirty and excessive dirt is in the fuel bowl. The carburetor should be completely disassembled and cleaned. 2. Check the jet or rod for being the correct part. Consult the parts list for proper usage. The last two digits stamped on the jet face are the same as the last two digits of the part number. The metering jet and rod can be identified using chart.
Engine starts hard when hot.	Choke valve not opening completely.	1. Check for binding choke valve and/or linkage. Clean and free-up or replace parts as necessary. Do not oil choke linkage. 2. Check and adjust choke thermostatic coil.
	Engine flooded-Carburetor flooding.	See procedure under "Engine cranks, will not start".
	No fuel in carburetor.	1. Check fuel pump. Run pressure and volume test. 2. Check float needle for sticking in seat, or binding float.
	Leaking float bowl.	Fill bowl with fuel and look for leaks.

Condition	Possible Cause	Correction
Engine runs uneven or surges	Fuel restriction.	Check all hoses and fuel lines for bends, kinks or leaks. Straighten and secure in position. Check all fuel filters. If plugged or dirty - replace.
	Dirt or water in fuel system.	Clean fuel tank and lines. Remove and clean carburetor.
	Fuel level.	Adjust float. Check for free float and float needle valve operation.
	Main metering rod not adjusted to specification.	Remove carburetor air horn and gasket. Adjust metering rod.
	Metering rod bent or incorrect part. Main metering jet inoperative, loose or incorrect part.	Replace as necessary. See Identification chart.
	Power system in carburetor not functioning properly. Power valve or piston sticking in down position.	Free up or replace as necessary.
	Vacuum leakage.	It is absolutely necessary that all vacuum hoses and gaskets are properly installed, with no air leaks. The carburetor and manifold should be evenly tightened to specified torque.
Poor fuel economy.	Engine needs complete tune-up.	Check engine compression. Examine spark plugs, (if dirty or improperly gapped, clean and re-gap or replace). Check ignition point dwell, condition, readjust ignition points if necessary and check and reset ignition timing. Clean or replace air cleaner element if dirty. Check for restricted exhaust system and intake manifold for leakage. Make sure all vacuum hoses are connected correctly. Make sure T.C.S. valve is operating properly.
	Choke valve not fully opening.	1. Clean choke and free up linkage. 2. Check choke coil for proper adjustment. Reset to specifications.
	Fuel leaks.	Check fuel tank, fuel lines and fuel pump for any fuel leakage.

Condition	Possible Cause	Correction
	Main metering rod not adjusted to specification.	Remove carburetor air horn and gasket. Adjust metering rod.
	Metering rod bent or incorrect part. Main metering jet inoperative, loose or incorrect part.	Replace as necessary. See identification chart.
	Power system in carburetor not functioning properly. Power valve or piston sticking in up position.	Free up or replace as necessary.
	High fuel level in carburetor or carburetor flooding.	1. Check for dirt in the needle and seat. Test using suction by mouth or needle seat tester. If defective, replace needle and seat assembly with factory matched set. 2. Check for loaded float. 3. Re-set carburetor float to specifications. 4. If excessive dirt is present in the carburetor bowl, the carburetor should be cleaned.
	Fuel being pulled from accelerator system into venturi through pump jet.	Run engine at RPM where nozzle is feeding fuel. Observe pump jet. If fuel is feeding from jet, check pump discharge ball for proper seating by filling cavity above ball with fuel to level of casting. No "leak down" should occur with discharge ball in place. Re-stake or replace leaking check ball, malfunctioning spring, or retainer.
	Air bleeds or fuel passages in carburetor dirty or plugged.	Clean carburetor or overhaul as necessary.

MAINTENANCE AND ADJUSTMENTS

MODEL MV CARBURETOR

The following external adjustments must be performed in this sequence.

Fast Idle Adjustment

1. Adjust curb idle speed with idle stop solenoid.

2. Place cam follower tang on throttle lever on high step of fast idle cam.

3. Bend cam follower tang in or out to adjust. See Figure 6E-7.

CAUTION: *Support throttle lever when bending fast idle tang.*

NOTE: *Fast idle speed setting should be made according to specifications listed on the under hood tune-up label or service manual using a properly calibrated tachometer.*

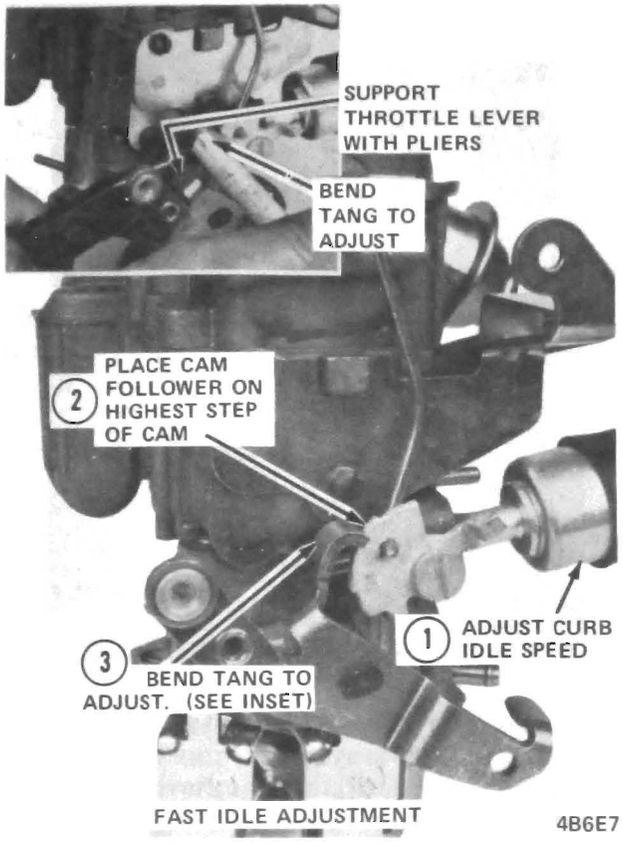


Figure 6E-7 Fast Idle Adjustment

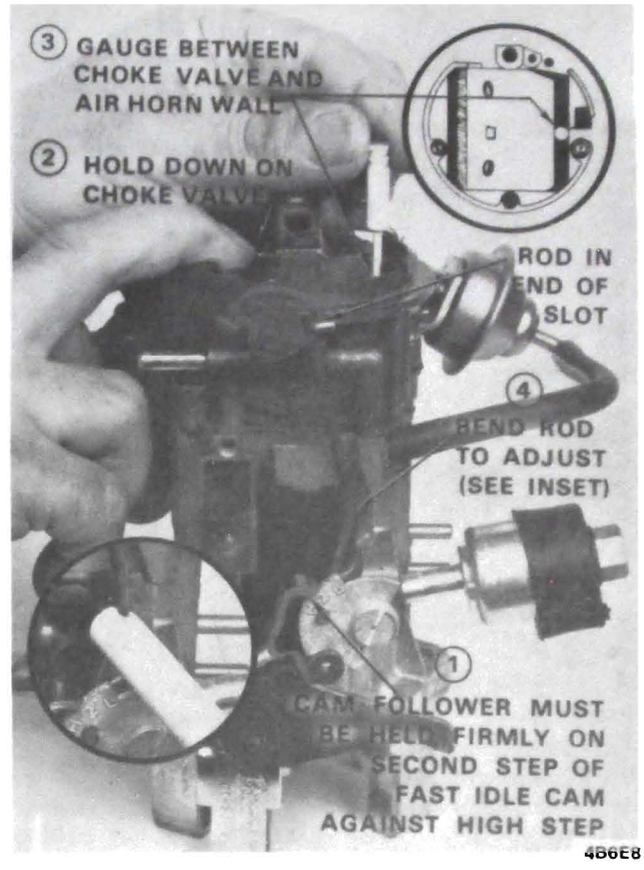


Figure 6E-8 Choke Rod Adjustment

Choke Rod Adjustment

1. Place and hold firmly cam follower on second step of fast idle cam against shoulder of high step of cam.

2. Hold down choke valve and guage between choke valve and air horn wall.

3. Bend choke rod to obtain specified clearance. See Figure 6E-8.

Vacuum Break Adjustment

1. Using an outside vacuum source seat the vacuum break diaphragm.

2. Place specified guage between lower edge of choke valve and lower air horn wall.

3. Bend rod to adjust. See Figure 6E-9.

Choke Unloader Adjustment

1. Hold down on choke valve and hold throttle wide open.

2. Gauge between choke valve and air horn wall.

3. Bend unloader rod to obtain specified clearance. See Figure 6E-10.

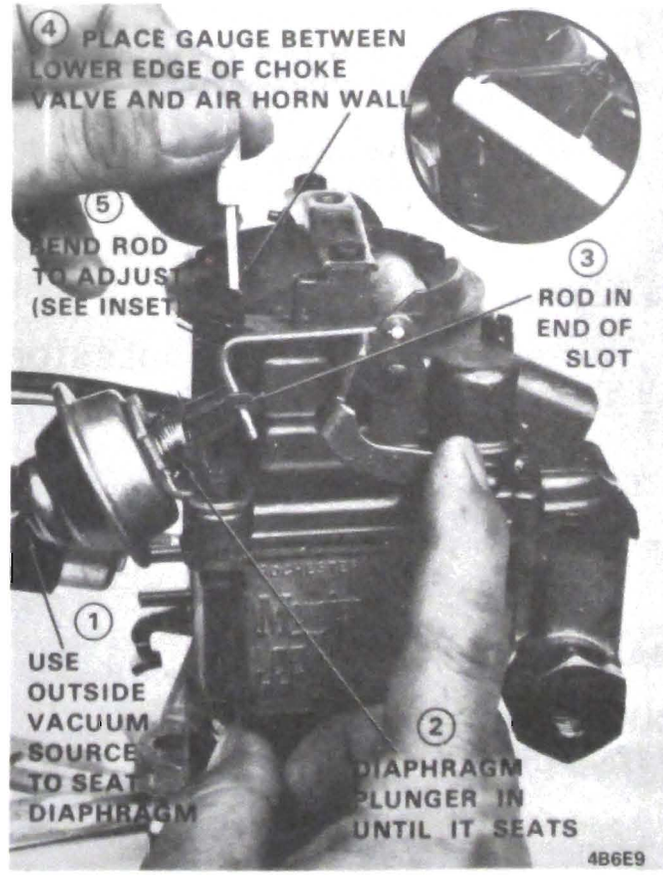


Figure 6E-9 Vacuum Break Adjustment.

Figure 6E-10 Choke Unloader Adjustment

Choke Coil Rod Adjustment

1. Disconnect choke coil rod.

2. Hold choke valve completely closed, and push down on choke coil rod till it bottoms.

3. Top of rod should be even with bottom of hole, bend choke coil rod as necessary to obtain this position. See Figure 6E-11.

Idle Stop Solenoid Adjustment

1. To set curb idle speed turn complete IDLE STOP SOLENOID ASSEMBLY to obtain specified RPM'S. (Solenoid Energized)

2. To set low idle (solenoid NOT energized) turn 1/8" hex screw (Allen screw) to obtain specified RPM's.

MAJOR REPAIR

IDLE STOP SOLENOID REMOVAL AND INSTALLATION

Removal

1. Remove the electrically operated idle stop solenoid from the float bowl casting by screwing outward.

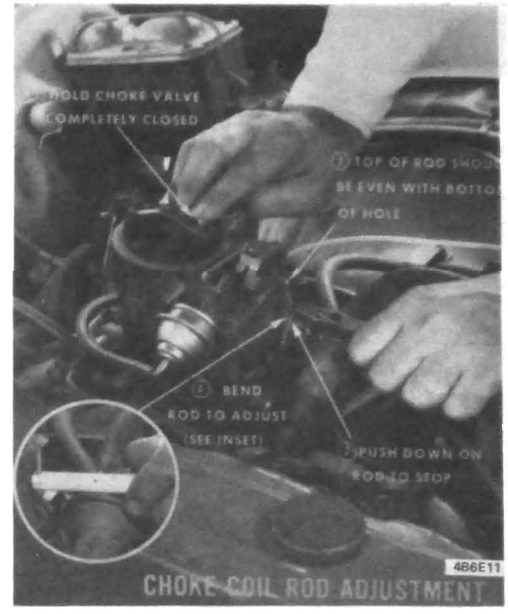


Figure 6E-11 Choke Coil Rod Adjustment

CAUTION: *Do not immerse the idle stop solenoid in any type of carburetor cleaner.*

Air Horn Removal

1. Remove fast idle cam from boss on float bowl by removing attaching screw. Then remove fast idle cam from choke rod and choke rod from upper choke lever. Note position of rod and cam for ease in reassembly.

2. Remove vacuum hose from choke vacuum break diaphragm unit and tube on carburetor. Remove six air horn to float bowl attaching screws (three long and three short screws).

3. Remove vacuum break diaphragm unit from the air horn casting. Then, disconnect vacuum break diaphragm link from diaphragm plunger and the thermostatic coil lever.

4. Remove air horn by lifting straight up, invert and place on clean bench. Air horn to float bowl gasket can remain on bowl for removal later.

Air Horn Disassembly

1. If desired, the choke valve and choke shaft can be removed from the air horn by first removing the thermostatic coil lever from the end of choke shaft by removing attaching screw.

Remove the two choke valve attaching screws; then remove the choke valve and choke shaft from air horn.

NOTE: *The choke valve screws are held in place by staking so it will be necessary to file off staking for removal of screws.*

2. No further disassembly of the air horn is necessary. The pressure relief valve need not be removed from the top of air horn for cleaning purposes.

Float Bowl Disassembly

1. Remove air horn to float bowl gasket. Gasket is slit next to metering rod lever so that it can be slid over lever for ease in removal.

2. Remove float from float bowl by lifting upward on float hinge pin. Remove hinge pin from float arm.

3. Remove float needle, then remove float needle seat and gasket.

4. Remove fuel inlet nut and gasket, then remove filter element and pressure relief spring.

5. Using long nosed pliers, remove "T" pump discharge guide. Pump discharge spring and ball may be removed by inverting bowl.

6. The idle tube can be removed at same time by inverting bowl.

7. To remove accelerating pump plunger and power piston - metering rod assemblies, remove actuating lever on throttle shaft by removing attaching screw in end of shaft.

8. Hold the power piston down in float bowl, then remove power piston drive link by sliding out of hole in power piston plunger rod. The power piston - metering rod can now be removed from float bowl.

NOTE: *The metering rod can be removed from holder on power piston by pushing downward on end of rod against spring tension, then slide narrow neck of rod out of slot on rod holder.*

9. Remove power piston spring from power piston cavity.

10. Remove power piston drive link from throttle actuating lever by aligning lip on rod and notch in lever.

11. Remove actuating lever from accelerator pump drive link in same manner. Note position of actuating lever for ease in reassembly.

12. Hold the pump plunger down in bowl cavity and remove drive link from pump plunger shaft by rotating link until lip on link aligns with slot in plunger shaft.

13. Remove pump plunger from float bowl.

14. Remove pump return spring from pump well.

15. Remove main metering jet from bottom of float bowl.

16. Remove two screws from hot idle compensator cover (automatic transmission only.) Then remove cover, hot idle compensator and seal from recess in bowl beneath compensator.

No further disassembly of the float bowl is required.

THROTTLE BODY

Removal and Disassembly

1. Invert carburetor bowl on bench and remove two throttle body to bowl attaching screws. Throttle body and insulator gasket may now be removed.

2. No further disassembly of the throttle body is necessary unless the idle mixture needle is damaged or the idle channels need cleaning. If necessary to remove the idle mixture needle, destroy plastic limiter cap.

NOTE: *Due to the close tolerance fit of the throttle valve in the bore of the throttle body, do not remove the throttle valve or shaft.*

Cleaning and Inspection

The carburetor should be cleaned in a cold immersion type cleaner.

1. Thoroughly clean carburetor castings and metal parts in an approved carburetor cleaner.

CAUTION: *Any electrical parts, rubber parts, plastic parts, diaphragms, or pump plungers, should not be immersed in carburetor cleaner. However, the air horn, which has the plastic pressure relief valve, will withstand normal cleaning. Make sure the cleaner is thoroughly removed from valve cavity.*

2. Blow out all passages in castings with compressed air. Do not pass drills through jets or passages.

3. Inspect idle mixture needle for damage.

4. Examine float needle and seat assembly for wear. Install a new factory matched set if worn.

5. Inspect upper and lower casting sealing surfaces for damage.

6. Inspect holes in levers for excessive wear or out-of-round condition. If levers or rods are worn, they should be replaced.

7. Examine fast idle cam for excessive wear or damage. If worn, replace.

8. Check throttle and choke levers and valves for binds and other damage.

9. Check all springs for distortion or loss in tension, replace if necessary.

Throttle Body Assembly

1. If removed, install idle mixture needle and spring until lightly seated. Back out four turns as a preliminary idle adjustment.

2. Invert float bowl and install new throttle body to bowl insulator gasket, making sure all holes in gasket align with holes in float bowl.

3. Install throttle body on bowl gasket so that all holes in throttle body are aligned with holes in gasket.

4. Install two throttle body to bowl attaching screws. Tighten evenly and securely (12-15 ft. lbs.)

The throttle body to bowl screws do not use lock washers as they have an interference fit designed into the thread for holding proper torque.

Float Bowl Assembly

1. Install the electrically operated idle stop solenoid. Screw inward until plunger contacts tang on throttle lever with throttle valve closed. (Screw inward (1) more turn for preliminary adjustment.)

2. (Automatic tranmission models) Install round seal into recess in hot idle compensator cavity in float bowl, then install hot idle compensator.

3. Install hot idle compensator cover, retaining with two attaching screws. Tighten securely.

4. Install main metering jet into bottom of float bowl. Tighten securely.

5. Install float needle seat and gasket.

6. Install idle tube flush with bowl casting.

7. Install pump discharge ball, spring and "T" retainer into pump discharge hole.

8. Push down on pump discharge "T" until flush with bowl casting.

9. Install fuel filter spring, filter, inlet nut and gasket.

10. Install accelerator pump return spring into bottom of pump well. Press downward on spring until seated in cavity.

11. Install power piston return spring into piston cavity in the bowl.

12. Install power piston drive rod (right angle end) into slot in the power piston.

13. Install power piston, and drive rod assembly into the float bowl. End of drive rod must enter hole in bowl. Metering rod can be installed after float adjustment.

14. Install pump plunger assembly into pump well with actuating lever protruding through bottom of bowl casting. Push downward on pump lever and install pump assembly drive link into slot at lower end of pump shaft. Ends of drive link point inward toward carburetor bore. Tabs on ends of drive link retain link to pump shaft.

15. Install lower end of pump drive link into actuating lever which fits on the end of the throttle shaft.

16. Install curved power piston actuating link into throttle actuating lever. Lower end of link protrudes outward away from throttle bore and has a tab which retains the link to the actuator lever.

17. Before fastening power piston and pump actuator lever to end of throttle shaft, hold power piston assembly down and slide upper end of curved power piston actuating link into end of power piston drive rod.

18. Install lever on end of throttle shaft by aligning flats on lever with flats on shaft. Install lever retaining screw and tighten securely.

19. Install float needle valve into needle seat.

20. Install float hinge pin into float arm, then install float and hinge pin into float bowl.

21. Adjust float level and metering rod. See Figures 6E-13 and 6E-14.

After adjustment, install metering rod and tension spring assembly into slot in power piston lever, spring should be on top of lever for correct installation.

22. Install air horn gasket on float bowl by carefully sliding split portion of gasket over metering rod holder. Then align gasket with dowels provided on top of bowl casting and press gasket firmly in place.

Air Horn Assembly and Installation

1. Install choke shaft assembly and choke valve into

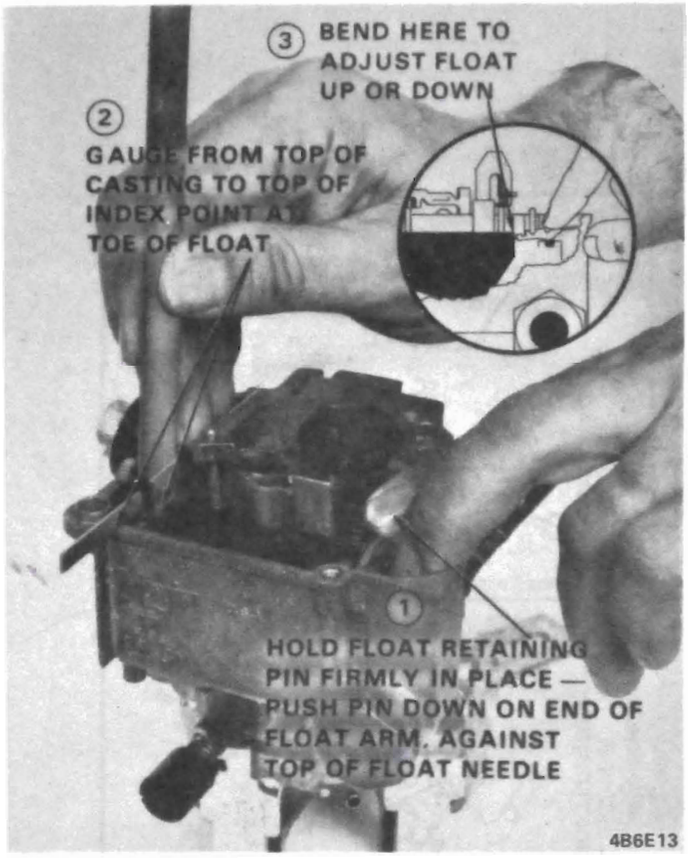


Figure 6E-13 Float Level Adjustment

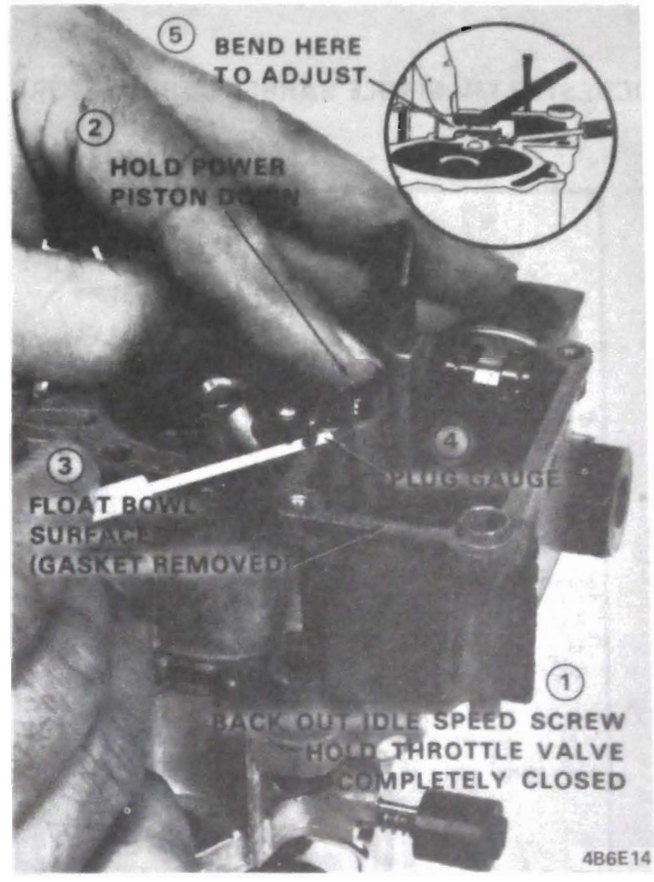


Figure 6E-14 Metering Rod Adjustment

air horn, if removed. Align choke valve, tighten two retaining screws and stake securely.

2. Install air horn to float bowl by lowering gently on to float bowl until seated. Install three long and three short air horn to float bowl attaching screws.

> **NOTE:** *Install the choke vacuum break diaphragm assembly under the two short air horn screws next to the thermostatic coil lever. Connect the choke vacuum break diaphragm link to diaphragm plunger and the thermostatic coil lever. Then install lever to the end of choke shaft using retaining screw. Tighten all screws securely.*

3. Install the choke vacuum break hose to the diaphragm on air horn and connect to vacuum tube on carburetor.

4. Assemble choke rod into the slot in the upper choke lever. End of rod points away from air horn casting when installed properly.

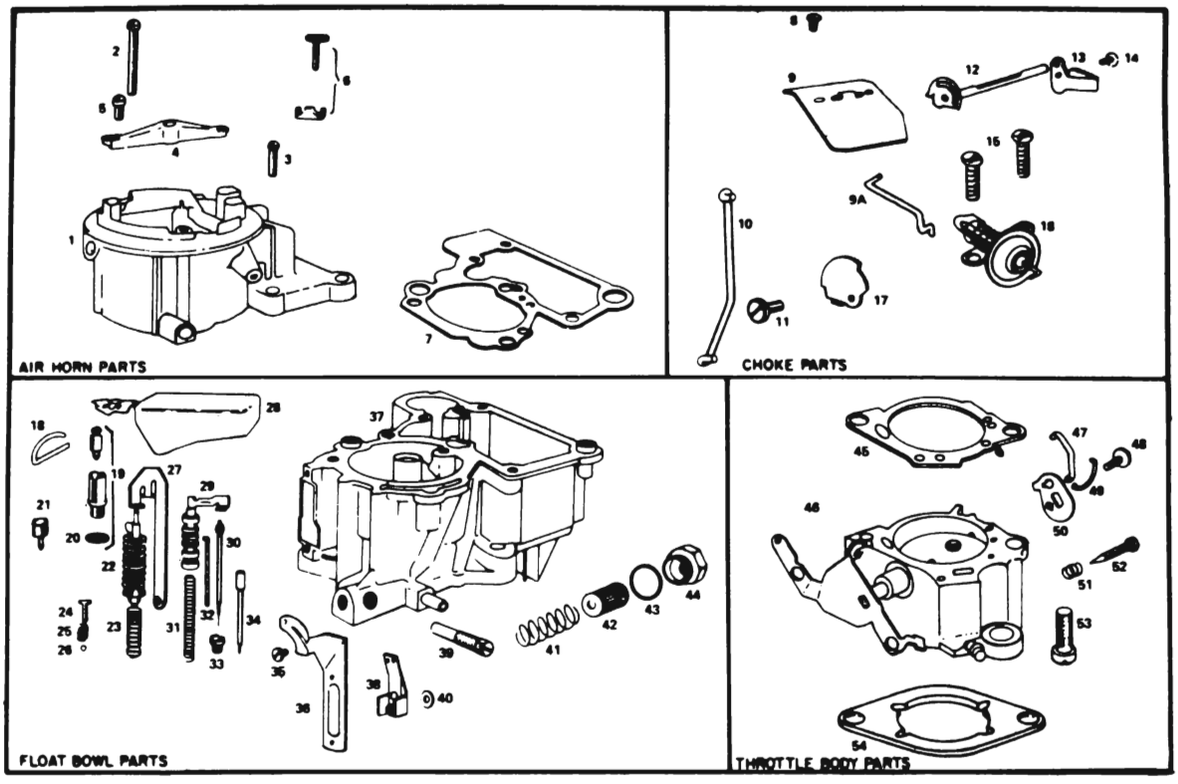
5. Install lower end of choke rod into fast idle cam. Steps on fast idle cam should face fast idle cam follower on throttle lever. Install fast idle cam to boss on float bowl with attaching screw. Tighten securely.

SPECIFICATIONS

MODEL MV CARBURETOR

	Auto. Trans.	Manual Trans.
Float Level Adj.	1/4"	1/4"
Metering Rod Adj.	.080	.080
Choke Rod Adj.	.245	.275
Vacuum Break Adj.	.300	.350
Unloader Rod Adj.	.500	.500
Choke Coil Rod Adj.	Top of Rod Even with Bottom of Hole	Top of Rod Even with Bottom of Hole
Idle Solenoid (On Car)		
Solenoid Connected	600 RPM	950 RPM
Solenoid Disconnected	450 RPM	450 RPM

ROCHESTER MV SINGLE BARREL CARBURETOR



Illus. No.					
1	Air Horn Assembly	19	Needle and Seat Assembly	37	Float Bowl Assembly
2	Screw—Air Horn (Long)	20	Gasket—Needle Seat	38	Idle Compensator Assembly
3	Screw—Air Horn (Short)	21	Power Valve	39	Screw—Slow Idle
4	Bracket—Air Cleaner Stud	22	Pump Assembly	40	Gasket—Idle Compensator
5	Screw—Bracket Attaching	23	Spring—Pump Return	41	Spring—Fuel Filter
6	Idle Vent Valve Kit	24	Guide—Pump Discharge	42	Filter—Fuel Inlet
7	Gasket—Air Horn	25	Spring—Pump Discharge	43	Gasket—Filter Nut
8	Screw—Choke Valve	26	Ball—Pump Discharge	44	Filter Nut—Fuel Inlet
9	Choke Valve	27	Lever-Pump Actuating	45	Gasket—Throttle Body
9A	Link—Vacuum Break	28	Float Assembly	46	Throttle Body Assembly
10	Choke Rod	29	Power Piston Assembly	47	Link—Pump Lever
11	Screw—Cam Attaching	30	Metering Rod & Spring Assembly	48	Screw—Lever Attaching
12	Choke Shaft and Lever	31	Spring—Power Piston	49	Link—Power Piston Rod
13	Choke Lever	32	Rod—Power Piston	50	Lever—Pump and Power Rods
14	Screw—Choke Lever	33	Jet—Main Metering (Standard)	51	Spring—Idle Needle
15	Screw—Vac. Break Bracket	33	Jet—Main Metering (Altitude)	52	Idle Needle & Limiter Kit
16	Vacuum Break Control Assembly	34	Idle Tube Assembly	53	Screw—Throttle Body
17	Cam—Fast Idle	35	Screw—Cover	54	Insulator—Flange
18	Hinge Pin—Float	36	Cover-Idle Compensator		

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Figure 6E-15 MV Carburetor Parts

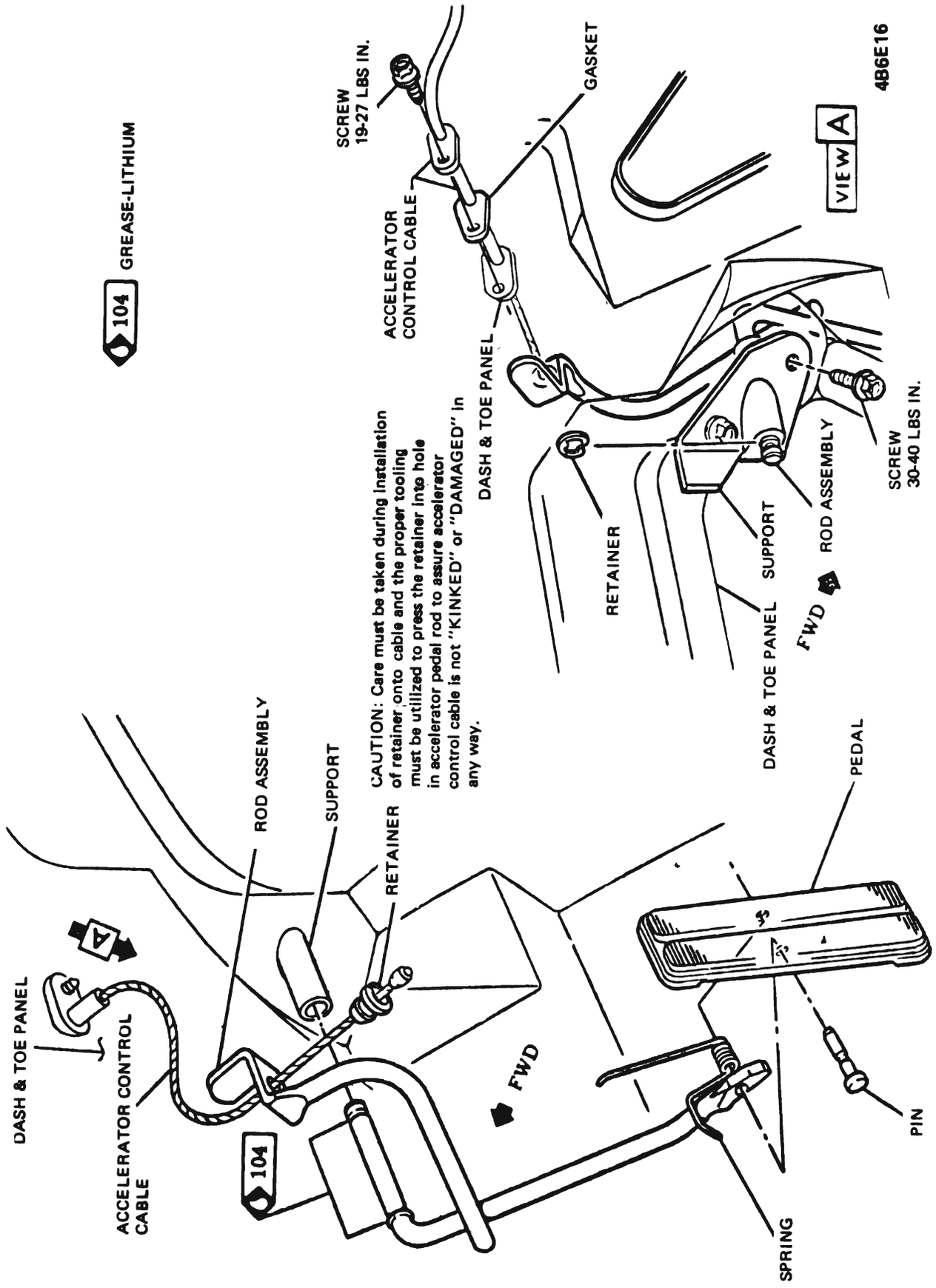

Figure 6E-16 Accelerator Pedal, Rod and Support

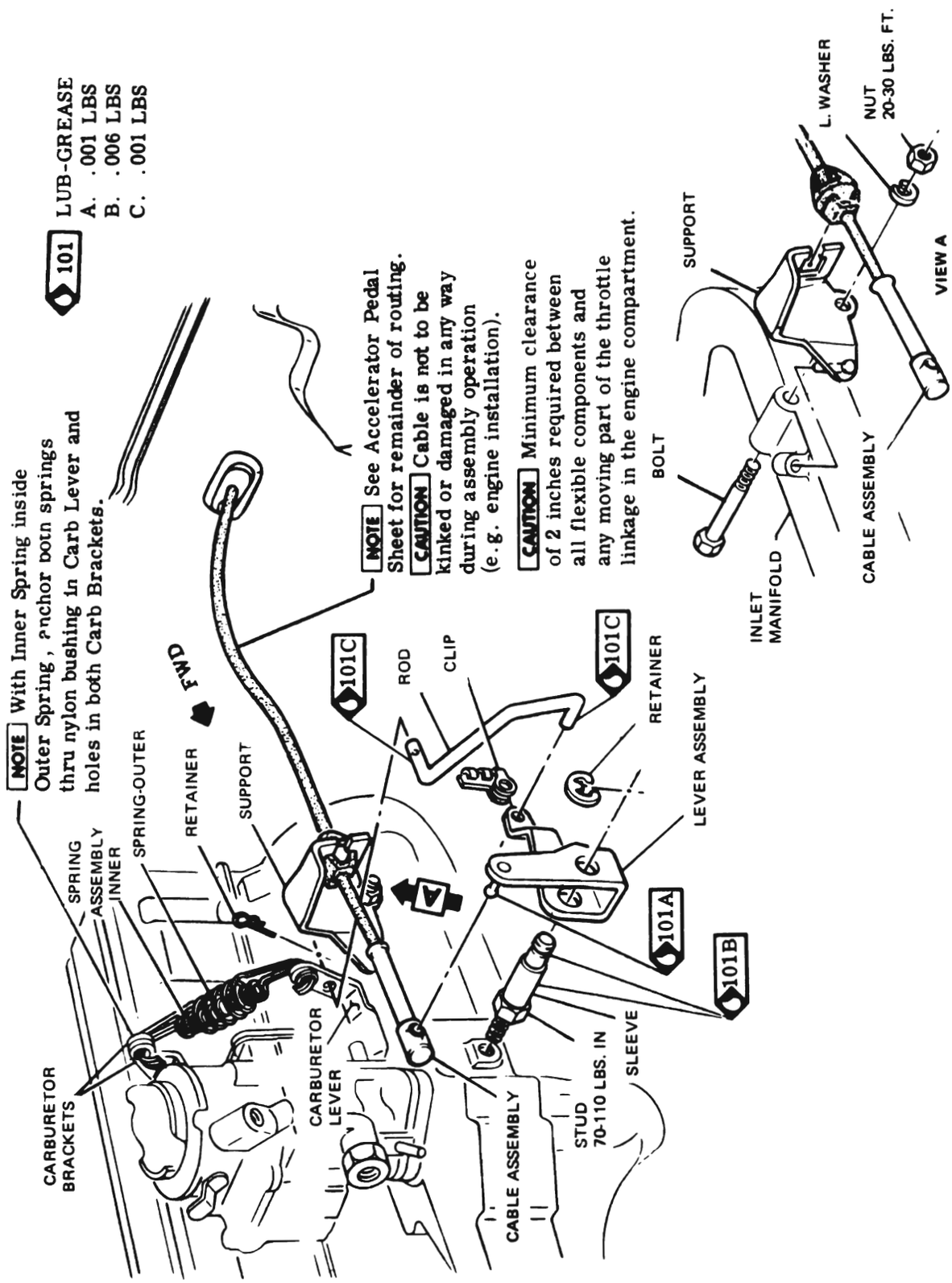

Figure 6E-17 Accelerator Controls Engine Compartment 250 Cu. In. Engine

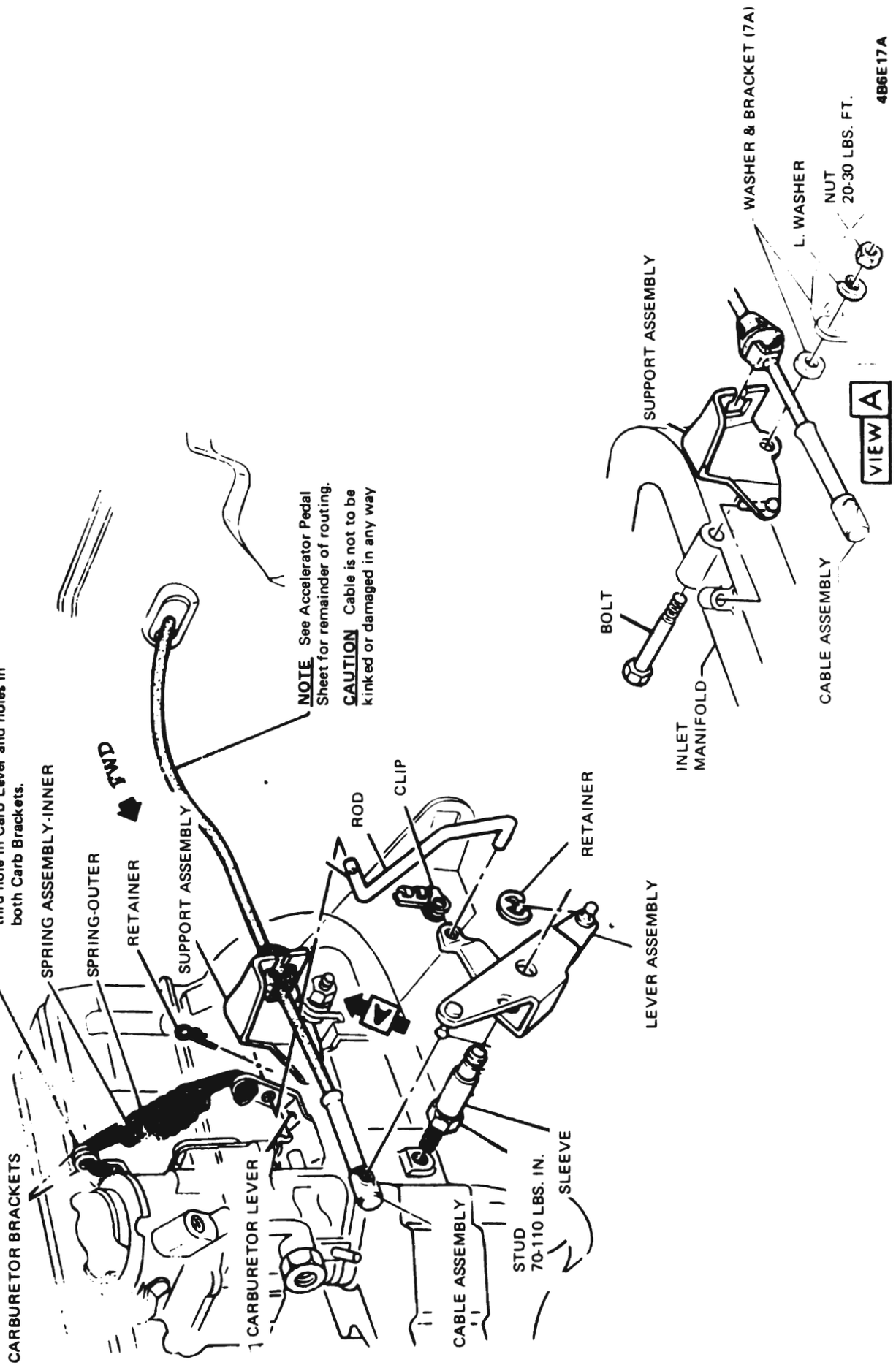

Figure 6E-17A Accelerator Controls Engine Compartment 250 Cu. In. Engine