SECTION C

ROCHESTER 2GV CARBURETOR

CONTENTS

DIVISION I SPECIFICATIONS AND ADJUSTMENTS

64-12 ROCHESTER 2GV CARBURETOR CALIBRATIONS

NOTE: All carburetors have a colored metal tag with a two letter code for identification.

	350 Eng. Man. Trans.	350 Eng. Auto. Trans.	350 Eng. Auto. Trans. CAL
Paint Color	Gold	Black	White
Model Designation	2GV	2GV	2GV
Number of Barrels	2	2	2
Code Letters			
Part Number	7040143	7040142	7040446
Throttle Bore	1-11/16"	1-11/16"	1-11/16"
Small Venturi	1/8"	1/8"	1/8"
Large Venturi	1-1/4"	1-1/4"	1-1/4"
Main Metering Jet			
Production	.061"-60°	.060"-60°	.059"-60°
High Altitude	.060"-60°	.060"-60°	.060"-60°

NOTE: No Changes are Required For Altitude.

Idle Tube Restriction	#67	#67	#67
Idle Needle Hole	#50	#52	#52
Spark Holes	.045" x .125"	.045" x .125"	.045" x .125"
Pump Discharge Holes	2-#62	2-#67	2-#67
Choke Coil Letters	BB	BB	BB
Fast Idle Cam Number	7023988	7038179	7038179
Dome Vent	2-#67	2-#67	2-#67
Cluster Top Bleed	2-#58	2-#58	2-#58

64-13 ROCHESTER 2GV CARBURETOR ADJUSTMENTS

Float Level Adjustment	15/32"	15/32"	15/32"
Float Drop Adjustment	1-7/8"	1-7/8"	1-7/8"
Pump Rod Adjustment	1-15/32"	1-13/32"	1-13/32"
Choke Rod Adjustment	.100"	.080"	.080"
Choke Unloader Adjustment	.200"	.180"	.180"
Idle Speed (On Car)	700	600 In D.	600 In D.
Vacuum Break Adjustment (Primary)	.190"	.150"	.150"
Vacuum Break Adjustment (Secondary)		.140"	.140"
Choke Coil Rod Adjustment	Gage Slot	Gage Slot	Gage Slot

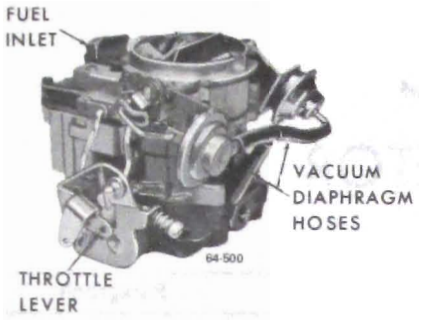

Figure 64-13 - Rochester 2GV Carburetor Assembly

DIVISION II

DESCRIPTION AND OPERATION

64-14 DESCRIPTION AND OPERATION OF ROCHESTER 2-BARREL CARBURETOR

a. General Description

The Rochester Model 2GV carburetor is of the side bowl design. While not interchangeable, the carburetors used on automatic and standard transmission cars are basically the same, and the description and service operations are identical. The only difference is in some of the internal calibrations. The carburetor float bowl is located forward of the main bores of the carburetor. The carburetor is compact in design in that all of the fuel metering is centrally located. See Figure 64-13.

This carburetor uses a calibrated cluster design, which places in a removable assembly, the main well tubes, idle tubes, mixture passages, air bleeds and pump jets. This cluster can easily be removed for cleaning and inspection purposes. The venturi cluster fits on a flat portion of the carburetor bowl in front of the main venturi with a gasket underneath. The idle and main well tubes are permanently installed in the cluster body by means of a precision pressed fit and, therefore, cannot be serviced separately. The main nozzles and idle tubes are suspended in the fuel in the main wells of the float bowl.

The main metering jets are of the fixed type. Metering cal ibration is accomplished through a system of calibrated air bleeds which give the correct air/fuel mixtures throughout all operational ranges.

The Rochester Model 2GV carburetor employs the use of a vacuum operated power system for extra power when needed. Power mixtures are regulated by drop in engine manifold vacuum regardless of the degree of throttle opening. Thereby, additional fuel can be supplied for power mixtures according to the engine demands.

The pump system has a new type, vented pump plunger. The pump cup is of a synthetic material with an expander spring located between the cup and the plunger head. This insures proper seating of the plunger cup at all times. The pump well is vented through the pump plunger head by a channel between the rubber cup and the plastic pump plunger head.

The carburetor is internally vented through a large tube which leads from beneath the carburetor air cleaner inside the air horn bore to the float bowl.

Adjustments have been made as simple as possible. They consist of idle, float level, float drop, pump, choke, choke rod, choke unloader, pump rod, choke coil rod, vacuum break adjustments.

Incorporated in the Rochester Model 2GV carburetor are six basic systems. They are Float, Low Speed, Main Metering, Power, Accelerating and Choke systems. The following explanation and illustrations show that each system operates to provide efficient carburetion through all operating conditions.

b. Operation of Float System

The float system controls the level of the fuel in the carburetor fuel bowl. Fuel level is very important because it must be maintained to give proper metering through all operating ranges.

Fuel entering the carburetor must first pass through the inlet filter, by the inlet needle seat, than past the float needle, into the float bowl; flow continues until the fuel level raises the float to a position where it closes the float valve. As fuel is used from the carburetor bowl the float drops, moving the float needle off its seat and replenishing the fuel in the bowl, thereby keeping the fuel level constant. See Figure 64-14.

A float tang located at the rear of the float arm between the float hangers prevents the float assembly from moving too far downward, but allows the float assembly to move down far enough for maximum fuel flow into the carburetor bowl. A float needle pull clip connecting the float arm to the needle valve keeps the needle from sticking closed in the seat, which may be caused by dirt or gum formation.

The fuel bowl is internally vented by a tube which leads from inside the air horn bore to the top of the fuel in the float bowl. The carburetor is internally balanced through the internal vent because the same pressure causing air to flow will be acting upon the top of the fuel in the float bowl, causing fuel to flow.

c. Operation of Idle (Low Speed) System

During engine idle operation, air flow through the carburetor venturi is very low and is not great enough to cause fuel to flow from the main discharge nozzles. Therefore, the idle system is used to provide the proper mixture ratios required during idle and low speed operation of the engine.

The idle system consists of the idle tubes, idle passages, idle air bleeds, idle adjustment needles, off-idle

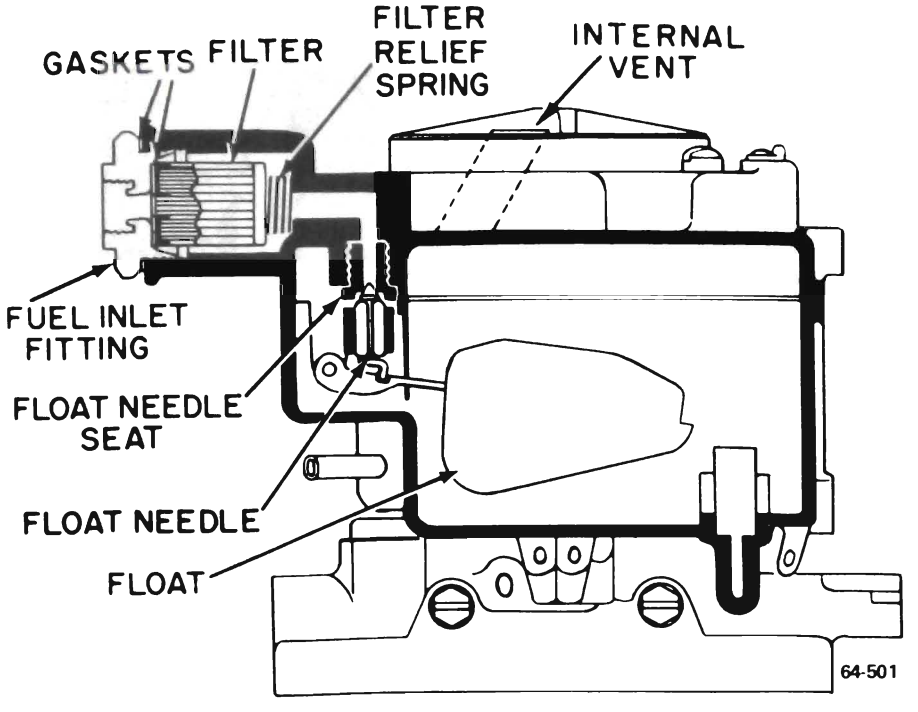

Figure 64-14 - Float System

discharge slots and the idle adjusting needle holes.

In idle speed position, each throttle valve is slightly open, allowing a small amount of air to pass between the wall of the carburetor bore and the edge of the throttle valve. Since there is not enough air flow for venturi action, the fuel is made to flow by the application of vacuum (low pressure) directly through the idle system to the fuel in the carburetor bowl. See Figure 64-15.

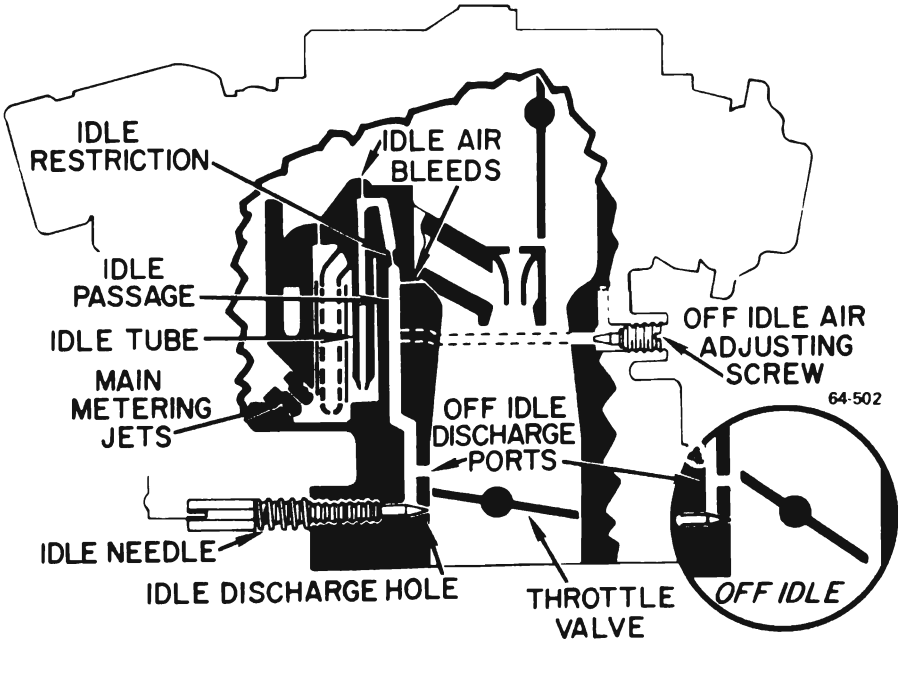

Figure 64-15 - Idle (Low Speed) System

Fuel from the float bowl passes through each main metering jet into the main well where it is metered by the orifice at the lower end of the idle tube. It then passes up the idle tube and is mixed with air at the top of the idle tube by two calibrated idle air bleeds. The air/fuel mixture then passes down through a calibrated restriction into a vertical passage past a third idle bleed to the idle port located just above each closed throttle valve. Here the mixture is again bled with air and then moves down to the idle needle hole where it combines with air bypassing the slightly open throttle valve. The idle mixture needle controls the amount of fuel mixture which enters the carburetor bore at curb idle position of the throttle valve. The size of the idle needle orifices is made small enough to limit richness in the idle and off-idle ranges.

As the throttle valve is opened further, more and more of the port is exposed to manifold vacuum. This port supplies additional fuel mixture for off-idle engine requirements. Better fuel control is achieved by an off-idle adjustment which is made at the factory. The adjusting screw is then sealed at the factory, because this adjustment cannot be made in the field.

d. Operation of Main Metering (High Speed) System

As the throttle valve continues to open, the edge of the throttle valve is gradually moved away from the wall of the carburetor bore, reducing the vacuum so that the discharge of fuel mixture at the idle needle hole and off-idle port gradually diminishes.

With the increased throttle opening, there is increased velocity in the venturi system. This causes a drop in pressure in the large venturi which is increased many times in the small venturi. Since the low pressure (high

vacuum) is now in the small venturi, fuel will flow in the following manner:

Fuel from the float bowl passes through the main metering jets into the main well and rises in the main well tubes. The volume of the main wells is reduced with a removable plastic insert. This results in better fuel control in the off-idle and transfer range. Air entering the main well through the main well bleeds is mixed with fuel through calibrated holes in the main well tube. The mixture then moves up and out of the discharge nozzle into a channel where more air is added. The mixture travels down through the channel to the small venturi where it is delivered to the air stream and then to the intake manifold. See Figure 64-16.

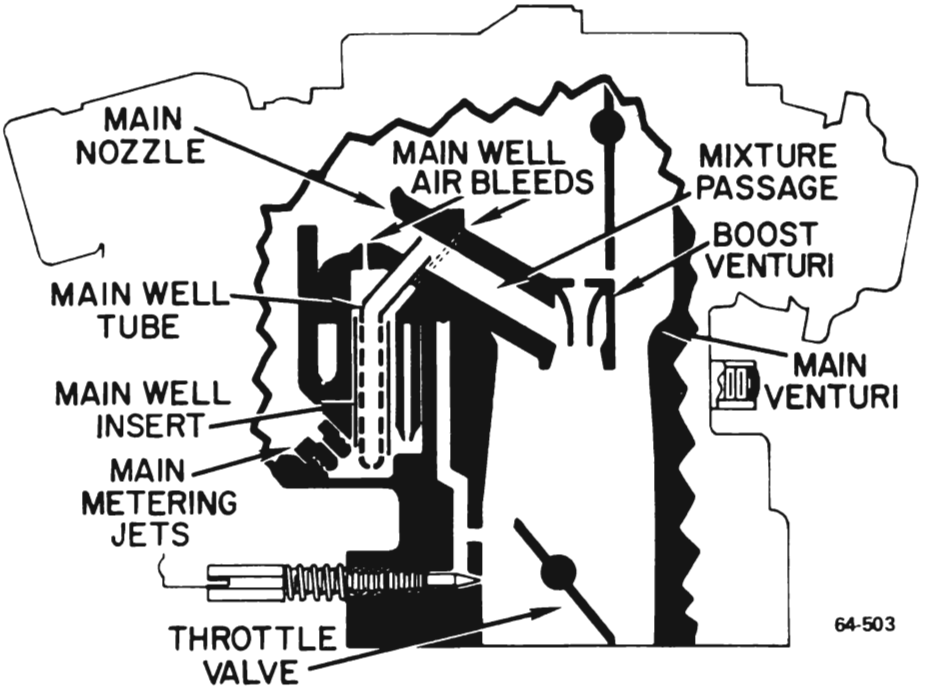

Figure 64-16 - Main Metering (High Speed) System

e. Operation of Power System

To achieve the proper mixtures required when more power is desired or for extreme high speed driving, a vacuum operated power piston in the air horn and a power valve located in the bottom of the float bowl are used. Through a connecting vacuum passage from the base of the carburetor to the power piston cylinder in the air horn, the power piston is exposed to manifold vacuum at all times. See Figure 64-17.

During idle and part throttle operation, the relatively high vacuum holds the power piston up against spring tension and the power valve remains closed.

Increase in engine load lowers the manifold vacuum. When it has dropped sufficiently, the power piston spring overcomes the upward vacuum pull and the power piston moves downward, opening the power valve to allow additional fuel to flow through calibrated restrictions into the main well.

As the engine load decreases, the resulting higher vacuum overcomes the spring tension on the power piston, and raises the power piston closing the power valve.

A two-stage power valve is used. In the first stage, fuel is metered by the valve itself. This stage is used for light power loads. On heavy power loads the valve is fully opened to the second stage, and in this location the power valve allows the fuel to be metered by the power restriction in the fuel channel located in the bottom of the fuel bowl.

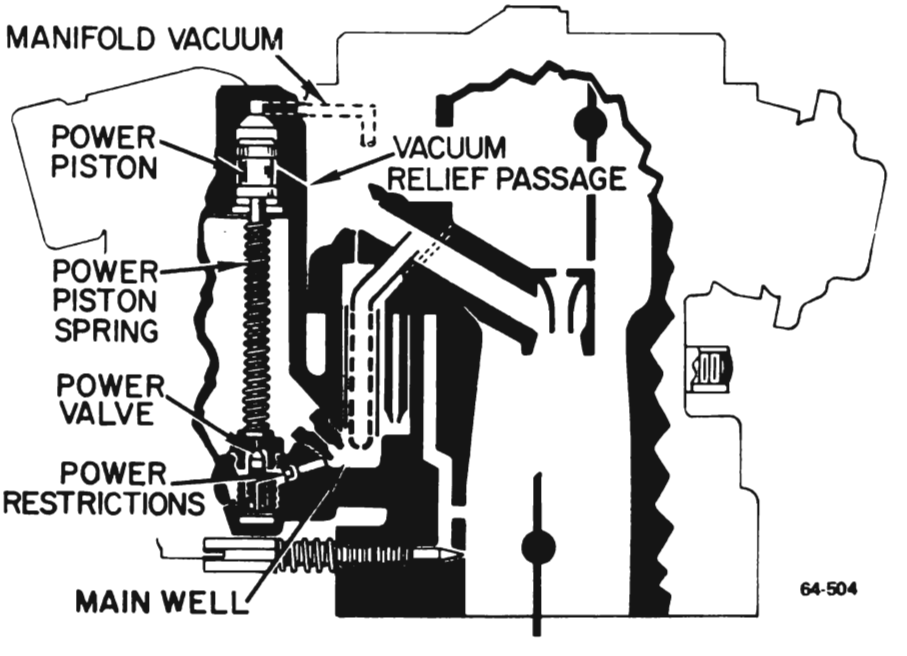

Figure 64-17 - Power System

It will be noted that the power piston cavity in the carburetor air horn is connected to the main air flow passage by a vacuum relief passage. It is the purpose of this passage to prevent the transfer of vacuum acting on the piston from acting also on the top of the fuel in the float bowl. Any leakage of air past the upper grooves of the piston will be compensated for by this relief passage and will not affect carburetor metering.

f. Operation of Accelerating System

When the throttle valve is opened rapidly, air flow and manifold vacuum change almost instantaneously, while the heavier fuel tends to lag behind causing a momentary leanness. The accelerator pump provides the fuel necessary for smooth operation on rapid acceleration.

Fuel for acceleration is supplied by a double-spring loaded pump plunger. The top and bottom springs combine to move the plunger so that a smooth, sustained charge of fuel is delivered for acceleration.

Fuel is drawn into the pump well through the inlet ball check on the intake stroke of the pump plunger (upward stroke). See Figure 64-18.

Downward motion of the pump plunger seats the inlet ball check and forces the fuel through the discharge passage where it unseats the pump discharge ball and then passes on through to the pump jets where it sprays into the venturi.

The expander spring located behind the pump cup insures good contact between the lip of the pump cup and the pump well at all times. When the pump is not in operation, the pump cup unseats from the plunger head and acts as a vent for the pump well. If vapors form in the pump well during hot operation, they are vented between the head and pump cup out into the float bowl. Without this vent, vapor pressure in the pump well might force fuel from the pump system into the engine manifold causing hard starting when the engine is hot.

The pump discharge ball check in the accelerator pump passage prevents any pullover or discharge of fuel from the pump nozzles when the accelerator pump is inoperative.

g. Operation of Choke System

The Model 2GV choke system consists of a choke valve located in the carburetor air horn, two vacuum break diaphragm units, fast idle cam, choke linkage and a thermostatic coil which is located on the engine manifold. See Figure 64-19. The thermostatic coil is connected to the choke valve by a rod. The choke operation is controlled by a combination of intake manifold vacuum, the off-set choke valve, and temperature.

The thermostatic coil located on the engine manifold is calibrated to hold the choke valve closed when the engine is cold. While starting the engine, air velocity against the off-set choke valve causes the valve to open slightly, against the torque of the thermostatic coil. When the engine starts, manifold vacuum increases. Two vacuum diaphragm units connected by linkage to the choke valve shaft open the choke valve a pre-determined amount against choke coil tension, so that the fuel mixture will be lean enough and the engine will run without stalling.

As mentioned, two vacuum break diaphragm units are used for refined fuel mixture blending during this period. The initial or primary vacuum break diaphragm opens the choke valve to a point where the engine will run without loading or stalling. As the engine manifold is wetted and friction in the engine decreases, the secondary vacuum break unit which has a delayed action, gradually opens the choke valve a little further to prevent loading.

The primary vacuum break unit located on the throttle lever side operates the same as on previous units. The secondary vacuum break unit located at the opposite end of the choke shaft has a delayed action created by an internal check valve which has a very small bleed orifice. This delays the movement of the vacuum diaphragm a few seconds until the engine will run at slightly leaner mixtures.

Included in the secondary vacuum break unit is a spring loaded plunger. The purpose of the spring loaded plunger is to off-set choke thermostatic coil tension and balance greater opening of the choke valve with tension of the choke coil. This enables further refinement of the fuel mixtures during the warm up period because the choke coil, which senses engine temperature, will allow the choke valve to open gradually against the spring tension in the diaphragm plunger head.

As the engine continues to warm up, the choke coil continues to relax its tension until the choke valve is fully opened and the engine can now run at normal fuel mixtures.

To provide correct engine speeds during warm up, a fast idle cam is used to run the engine at slightly higher speeds than idle to prevent stalling. This is accomplished by graduated steps on the fast idle cam. During engine starting, the idle speed screw is on the highest step of the cam which holds the throttle valve open further than at normal idle. As the engine warms up and the choke valve begins to move open, the idle speed screw drops to lower steps on the cam and gradually lowers engine speed until the engine is thoroughly warm, at which point the engine will run at normal idle speed. The fast idle cam follows rotation of the choke valve. When the choke valve is fully open, the fast idle cam drops so that the idle screw rests on the low step which is normal idle speed position.

A mechanical choke unloader is

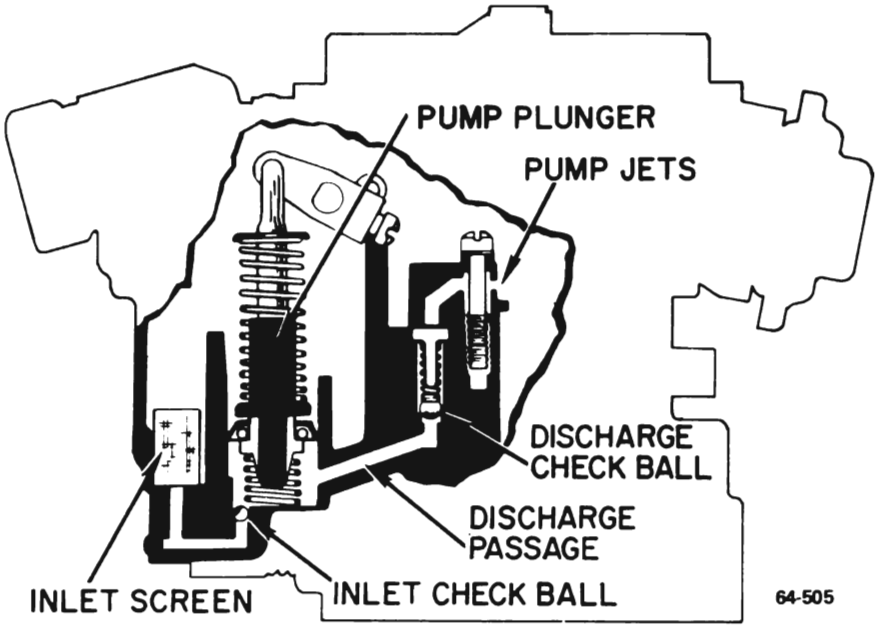

Figure 64-18 · Accelerating Pump System

provided to allow the driver to open the choke valve mechanically during the cold starting period, should the engine become flooded. When the accelerator pedal is depressed, a tang on the throttle lever pushes on the tail of the fast idle cam and forces the choke valve slightly open to allow extra air into the engine to lean the fuel mixtures so the engine will start.

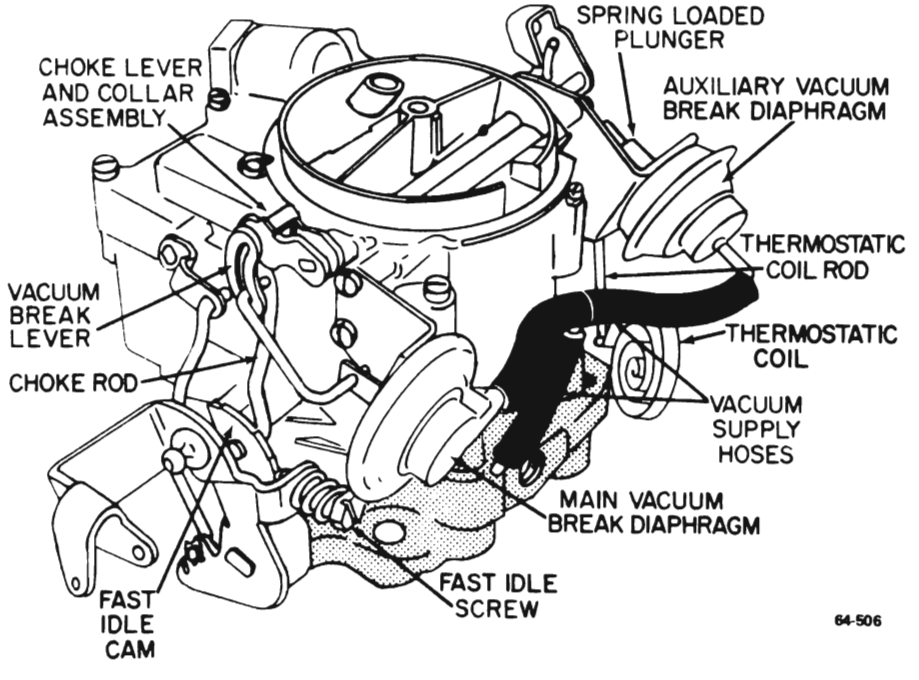

Figure 64-19 · Choke System

To prevent stalling during the warm-up period, it is necessary to run the engine at a slightly higher idle speed than for a warm engine. This is accomplished by steps on the fast idle cam. The fast idle cam is in turn linked to the choke val e shaft ve by the choke rod, choke trip lever and choke lever and collar assembly. This holds the throttle valves open sufficiently during the warm-up period to give increased idle RPM until the choke valve moves to the fully open position and the engine is thoroughly warmed up.

DIVISION III

SERVICE PROCEDURES

64-15 DISASSEMBLY, CLEANING AND INSPECTION OF ROCHESTER 2-BARREL CARBURETOR

a. Choke Disassembly and Removal of Air Horn

1. Mount carburetor on a proper mounting fixture such as J-5923.

2. Remove fuel inlet fitting, gasket, fuel filter, and filter spring.

3. Remove pump rod by removing lower retaining clip and rotating pump rod until lug on upper end of rod passes through upper pump lever.

4. Remove fast idle cam attaching screw. Then remove fast idle cam and rod assembly by rotating until lug on upper end of choke rod passes through slot in the upper choke lever and collar assembly.

5. Remove vacuum break diaphragm hoses from both vacuum breaks units and from vacuum tube at throttle body.

6. Remove primary vacuum break diaphragm (throttle lever side) by removing two attaching screws. Vacuum break rod can now be removed

from lever at end of choke shaft by rotating the rod until the end slides out of slot in lever and lug on other end of rod out of slot in end of diaphragm plunger shaft.

7. Remove secondary vacuum break unit (choke coil side) by first removing lever from end of choke shaft. Then remove lever from the diaphragm plunger rod and rod from diaphragm plunger shaft. Then remove two bracket attaching screws and remove diaphragm and bracket assembly from air horn.

8. Remove eight air horn attaching screws and carefully remove air horn assembly from fuel bowl by lifting gently upward.

b. Disassembly of Air Horn

1. Place air horn assembly inverted on bench. Remove float hinge pin and lift float assembly from cover. Remove float needle from the float arm. Remove float needle seat and fibre gasket.

2. Remove air horn gasket.

3. Remove power piston by depressing shaft and allowing spring to snap repeatedly, thus forcing the power piston retaining washer from casting.

NOTE: *If heavy staking is encountered, remove staking from around power piston retaining washer.*

4. Remove retainer on the end of pump plunger shaft, then remove pump assembly from pump inner arm. Remove pump lever and shaft assembly by loosening set screw on inner arm and removing outer lever and shaft.

NOTE: *A plastic washer is used between the outer pump lever and air horn casting on the pump shaft. This should be removed from the pump shaft and not immersed in carburetor cleaner.*

5. Remove two choke valve retaining screws, then remove choke valve from choke shaft. Remove choke shaft from air horn, then choke lever and collar assembly can be removed from choke shaft.

Note position of the choke lever in relation to the choke trip lever on the end of the choke shaft for ease in reassembly.

c. Disassembly of Float Bowl

1. Remove pump plunger return spring from pump well. Remove small aluminum check ball from the bottom of pump well by inverting bowl and shaking into hand. Remove pump inlet screen from bottom of fuel bowl.

2. Remove main metering jets.

3. Remove power valve and fibre gasket.

4. Remove three venturi cluster attaching screws and remove cluster and gasket. Center cluster screw has smooth shank and fibre gasket for sealing the accelerator pump fuel by-pass.

5. Remove plastic main well inserts.

6. Using a pair of long nosed pliers, remove pump discharge ball spring "T" shaped retainer. Then remove pump discharge spring and steel discharge ball.

7. Invert carburetor and remove three throttle body to bowl attaching screws. Remove throttle body and throttle body to bowl gasket.

d. Disassembly of Throttle Body

1. Remove idle mixture adjusting needles and springs.

No further disassembly of the throttle body is needed. The throttle valves should never be removed as the idle holes are drilled in direct relation to the location of the throttle valves and shaft. Removal of the throttle valves will upset this location. The throttle body assembly is only serviced as a complete unit with throttle valves intact.

e. Cleaning and Inspection

Dirt gum, water or carbon contamination in or , on the exterior moving parts of a carburetor are often responsible for unsatisfactory performance. For this reason, efficient carburetion depends upon careful cleaning and inspection while servicing.

1. Thoroughly clean carburetor castings and metal parts in carburetor cleaning solvent.

CAUTION: *Pump plunger or any fibre or rubber parts should never be immersed in carburetor cleaner. Wash pump plunger in clean solvent.*

2. Blow out all passages in the castings with compressed air and blow off all parts until they are dry. Make sure all jets and passages are clean. Do not use wires for cleaning fuel passages or air bleeds.

3. Check all parts for wear. If wear is noted, defective parts must be replaced. Note especially the following:

(a) Check float needle and seat for wear. If wear is noted, the assembly must be replaced.

(b) Check float hinge pin for wear and float for dents or distortion.

(c) Check throttle and choke shaft bores for wear and out of round.

(d) Inspect idle mixture adjusting needles for burrs or grooves. Such a condition requires replacement.

(e) Inspect pump plunger cup; replace if damaged worn, or hard.

(f) Inspect pump well in bowl for wear or scoring.

4. Check filter for dirt or lint. If dirty, replace.

5. If for any reason, parts have become loose or damaged in the cluster casting, the cluster assembly must be replaced.

6. It is recommended that new gaskets be used whenever the carburetor is disassembled or overhauled.

64-16 ASSEMBLY OF ROCHESTER 2-BARREL CARBURETOR

a. Assembly of Throttle Body

1. Screw idle mixture adjusting needles and springs into the throttle body until finger tight. Back out screw two turns as a preliminary idle adjustment.

CAUTION: *Do not force idle needle against its seat or damage may result.*

2. Invert float bowl assembly and place the new throttle body gasket on bowl. Install throttle body on bowl using three screws and lock washers. Tighten securely.

b. Assembly of Float Bowl

1. Drop steel pump discharge check ball into discharge hole. Install pump discharge spring and "T" shaped retainer, staking retainer in place.

NOTE: *Top of retainer must be flush with flat of bowl casting.*

2. Install two main well inserts. Install venturi cluster with gasket. Install venturi cluster screws and tighten evenly and securely. Make sure center screw is fitte with fibre gasket and special smooth d shank screw is used.

3. Install two main metering jets, power valve gasket and power valve.

4. Install small aluminum inlet check ball in pump inlet in the bottom of pump well; insert pump return spring and center in well by pressing downward with finger.

5. Install pump inlet screen in the bottom of float bowl.

c. Assembly of Air Horn

1. Install choke lever and collar onto choke shaft. Tang on choke lever faces away from air horn and is on top of vacuum break lever.

2. Install choke shaft and lever assembly into air horn. Choke rod hole in the choke lever faces fuel inlet side of carburetor.

3. Install choke valve in choke shaft so that letters "RP" will face upward in finished carburetor. Install two new choke valve attaching screws but do not tighten securely until choke valve is centered. Center choke valve on choke shaft by holding choke valve tightly closed; then slide choke shaft in to obtain approximately .020 clearance between choke vacuum break lever and choke lever and collar assembly. Tighten choke valve screws securely and stake lightly in place. Choke valve will be perfectly free in all positions when installed correctly.

4. Install plastic washer over pump shaft and slide against outer lever. Install outer pump lever and shaft assembly into air horn with lever pointing towards choke shaft. Install inner pump arm with plunger hole inward and tighten set screw securely.

5. Attach pump plunger assembly to the inner pump arm with pump shaft off set pointing inward and install retainer.

6 Install float needle seat and gasket in air horn. . Tighten needle seat securely, using a wide bladed screwdriver.

7. Install power piston into vacuum cavity. Lightly stake piston retainer washer in place. Piston should travel freely in cavity.

8. Install air horn gasket on air horn, fitting gasket over guide pin.

9. Attach float needle to float. Carefully position float and insert float hinge pin. Drop tang on rear of float arm should point downward toward air horn.

NOTE: *A fuel inlet baffle is used which surrounds the float needle seat. Make sure that the hinge pin slides through the holes provided in the baffle and also that the baffle is not distorted so that the float arm does not bind in any position.*

10. Install fuel inlet fitting, gasket, fuel filter, and relief spring.

11. *Float level adjustment*

With air horn assembly inverted,

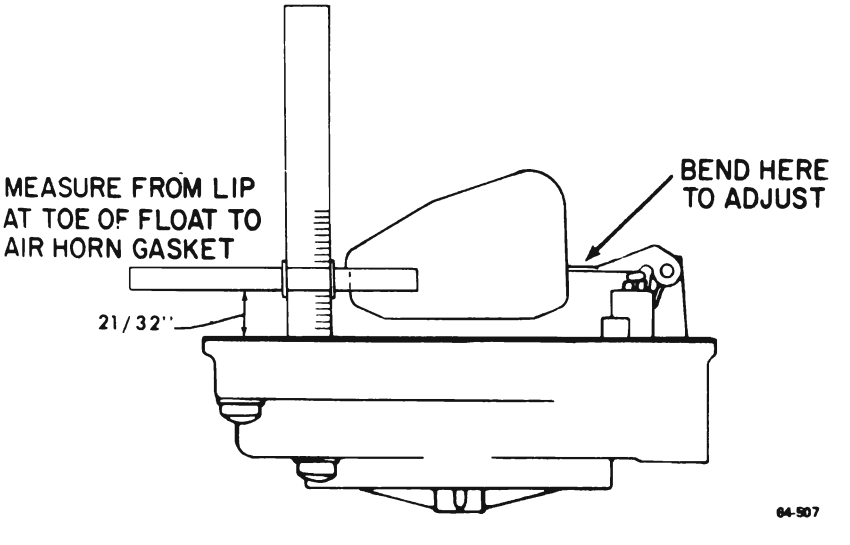

Figure 64-20 - Float Level Adjustment

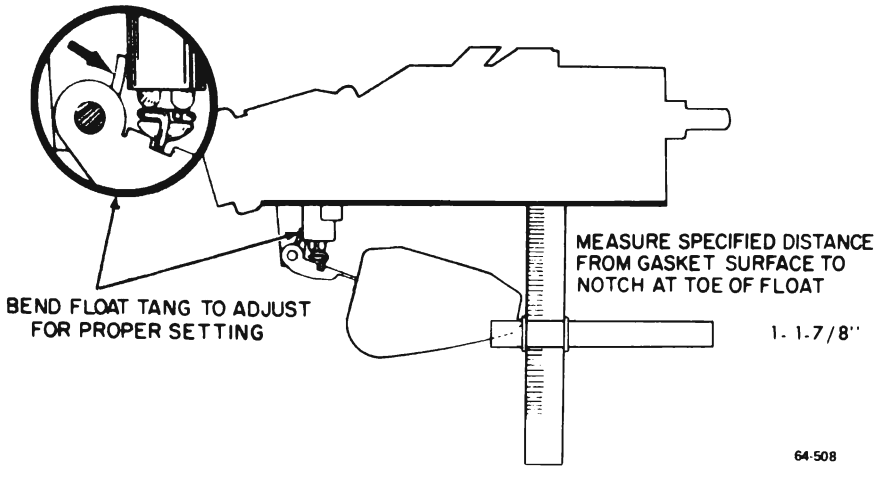

Figure 64-21 - Float Drop Adjustment

measure distance from air horn gasket to lip at toe of float, as shown. Bend float arm as required to obtain 21/32 inch measurement. See Figure 64-20.

12. *Float drop adjustment*

With air horn assembly held upright, measure distance from gasket to notch at toe of float as shown. Bend float tang as required to obtain a 1-7/8 inch measurement. See Figure 64-21.

13. Carefully place air horn assembly on float bowl, making certain that the pump plunger is properly positioned in the pump well. Lower the cover gently, straight down, then install air horn to float bowl attaching screws. Tighten evenly and securely.

NOTE: *Longer air horn screw goes in top of pump housing.*

14. Install primary vacuum break assembly onto throttle lever side of air horn. Rotate end of vacuum break rod so that it slides into slot in vacuum break lever on the end of the choke shaft. The other end of the vacuum break rod will slide into the vacuum diaphragm plunger lever by aligning lug on rod with slot in plunger shaft. Attach vacuum break assembly to the air horn casting with two attaching screws. Tighten securely.

15. Install choke rod into choke lever and fast idle cam. Install fast idle cam screw and tighten securely. See Figure 64-23 for proper installation.

16. Install accelerator pump rod in pump lever and in throttle lever and install retainers.

17. Install secondary vacuum break lever on end of choke shaft with retaining screw. Tighten securely.

NOTE: *Slot in lever hangs downward when choke valve is open when installed correctly.*

18. Install secondary vacuum break assembly onto air horn using two attaching screws and actuating rod in slots in the vacuum break lever and vacuum diaphragm plunger shaft. Loop on secondary vacuum break rod hangs downward. Tighten vacuum break attaching screw securely.

19. Install vacuum hoses to primary and secondary vacuum break diaphragms. Then connect vacuum hose

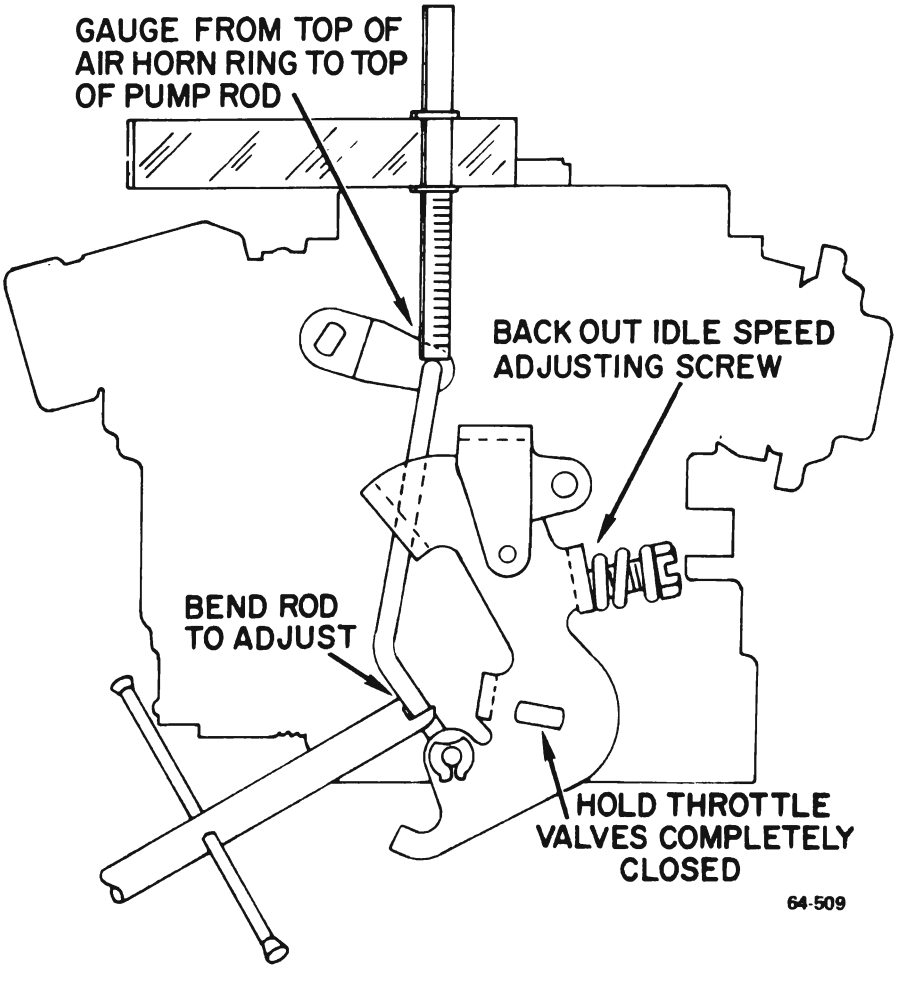

Figure 64-22 - Pump Rod Adjustment

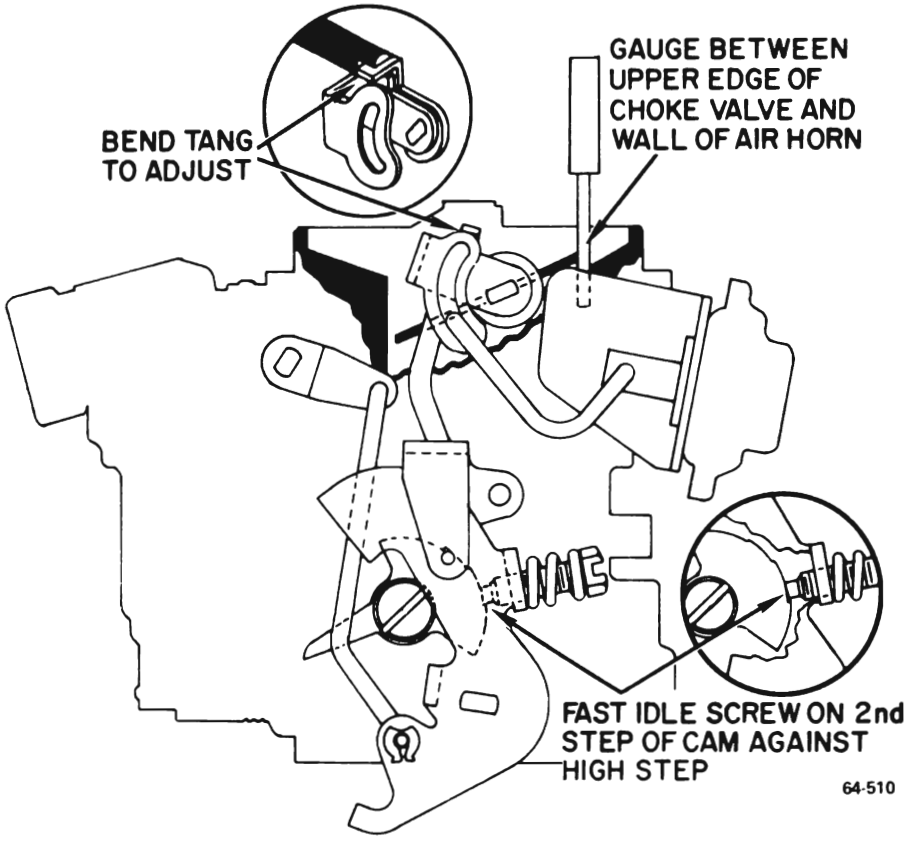

Figure 64-23 - Choke Rod Adjustment

pump rod as requried to obtain the specified setting using Tool J-4552. See Figure 64-22.

b. Choke Rod Adjustment

Place idle speed adjusting screw in normal idle position, which is normally one to two turns in after contact with the lowest step of the fast idle cam. After initial idle screw adjustment, place the screw on the second step of the fast idle cam against the shoulder of the high step. With the choke held towards the closed position, measure the distance between the upper edge of the choke valve and inside air horn wall with the specified plug gauge. Bend the tang on choke lever, as shown, to adjust. See Figure 64- 23.

c. Primary Vacuum Break Adjustment

Seat primary vacuum break diaphragm plunger with Special Tool J-23417, Carburetor Vacuum Break Actuator. Rotate choke valve from tee to tube on throttle body casting. NOTE: The longer section of vacuum hose goes towards the auxiliary vacuum break diaphragm assembly.

64-17 EXTERNAL ADJUSTMENT OF ROCHESTER 2-BARREL CARBURETOR

All adjustments on the carburetor, except for float adjustments, are made externally. For float level and drop adjustments, see Steps 11 and 12.

a. Pump Rod Adjustment

Back out idle stop screw and completely close throttle valve in bore. Place pump gage across top of carburetor air horn ring, as shown, with leg of gage pointing downwards towards to of pump rod. p Lower edge of gage leg should just touch the top of the pump rod. Bend the

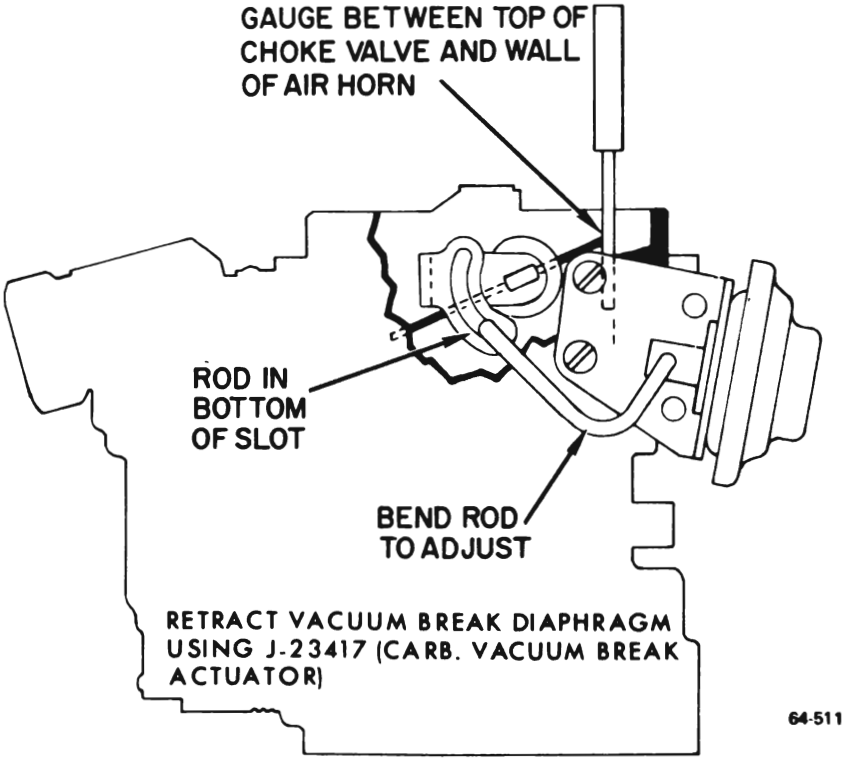

Figure 64-24 - Primary Vacuum Break Adjustment

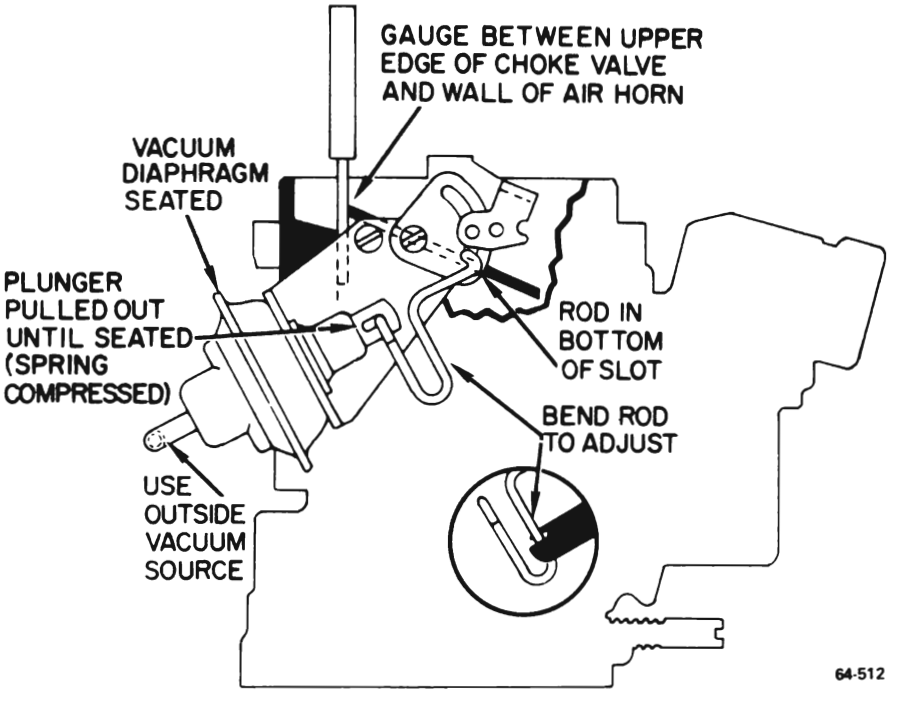

Figure 64-25 · Secondary Vacuum Break Adjustment

towards the closed position so that the vacuum break rod is at the bottom of the slot in the choke shaft lever, place the proper gauge between the upper edge of the choke valve and inside wall of the air horn bore. To adjust, bend the vacuum break rod so that the gauge will just fit between the edge of valve and bore. See Figure 64-24.

d. Secondary Vacuum Break Adjustment

Fully seat the secondary vacuum break diaphragm plunger using J-23417, Carburetor Vacuum Break Actuator. It will take approximately eight seconds for diaphragm to retract. With the secondary vacuum break diaphragm in the fully seated position, push the choke valve towards the closed position until the spring loaded diaphragm plunger is fully extended. With the choke valve held in this position, measure the distance between the upper edge of choke valve and inside air horn wall. Dimension should be as specified, if not, bend the vacuum break link at the point shown to adjust. See Figure 64-25.

CAUTION: *Care should be used when compressing the diaphragm plunger spring so that the force used in closing the choke valve does not pull the vacuum diaphragm off its seat.*

d. Choke Unloader Adjustment

With the throttle valves held wide open, choke valve should be opened enough to admit end of gauge between upper edge of choke valve and inner air horn wall. Bend unloader tang on the throttle lever to obtain the correct measurement. See Figure 64-26.

NOTE: *It is advisable to check the choke unloader by depressing the accelerator pedal to insure full throttle valve opening of the carburetor.*

e. Choke Coil Rod Adjustment

To adjust, disconnect the upper end of choke coil rod from choke lever. With the choke valve completely closed, pull upward on the choke coil rod to the limit of its travel. The end of the rod should fit into gage notch in lever. To adjust, bend rod. See Figure 64-27. After adjustment is

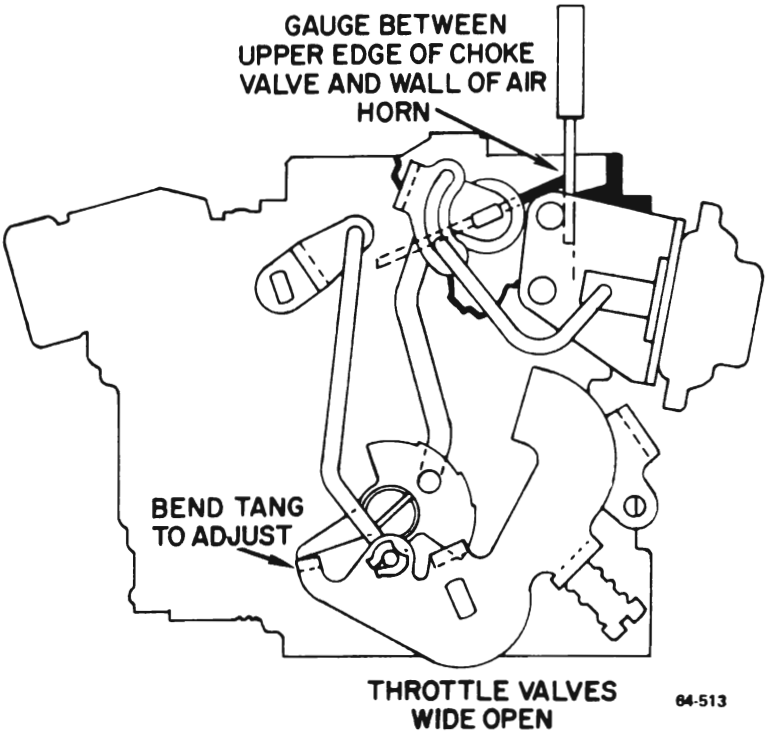

Figure 64-26 · Choke Unloader Adjustment

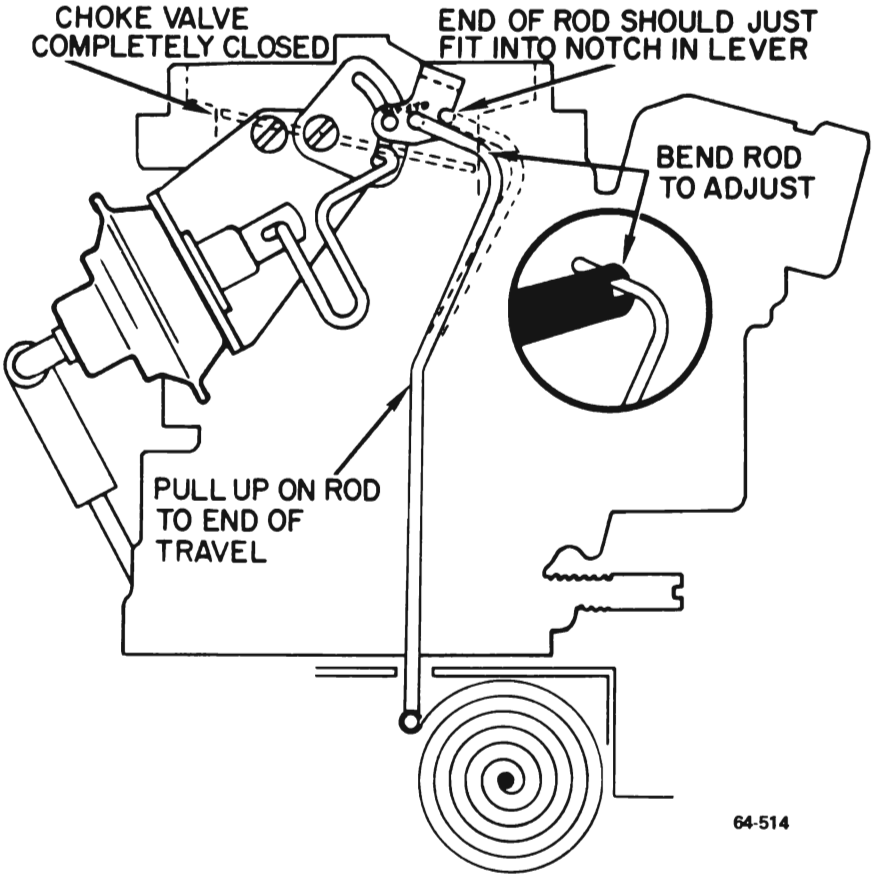

Figure 64-27 - Choke Coil Rod Adjustment

complete, install the rod end in the lever hole.

f. Slow Idle Adjustment

With engine at normal operating temperature, adjust idle mixture and speed exactly as described in paragraph 64-2.

g. Fast Idle Adjustment

A fast idle speed adjustment is not required because fast idle is controlled by the throttle stop screw. If the idle speed is correctly set and the choke rod properly adjusted, fast idle will be correct.

MODEL 2GV DIAGNOSIS CHART

CONDITION										CHECK POINTS
HARD STARTING–COLD	HARD STARTING–HOT	POOR OPERATION–DURING WARM UP	STUMBLE ON ACCELERATION	STALLING	ROUGH IDLE	ECONOMY	FLOODING	SURGE	LACK OF HIGH SPEED PERFORMANCE	**IMPORTANT** Before attempting carburetor diagnosis as outlined below, all other engine systems must be operating properly. Diagnosis of these systems (electrical, exhaust, mechanical, and in the case of fuel economy, odometer accuracy) is found in this Service Manual. The numbers 1, 2 and 3, under the CONDITION are the order of probability. The * indicates additional possibilities.
1	1					1				Driver Habits (Instruct Owner on Proper Procedures)
2		1				2				Check Choke Parts Stuck, Dirty, Bound-Up or Gummed-Up
*		*								Check Choke Coil Rod Adjustment
*		*								Check Choke Rod Adjustment
*		*								Check Choke Unloader Adjustment
3	*	*			*	*				Check Choke Setting
*			1							Check Accelerator Pump Rod Adjustment
*			2							Accelerator Pump Circuit Dirty, Plugged or Inoperative
				3						Check Throttle Return Check Adjustment
						*		*	*	Fuel Pump Pressure or Volume Not to Specification
			*	1	1	*		*		Check Slow Idle Adjustment
		2		*		*				Check Fast Idle Adjustment
						*		1	*	Metering Jets Loose, Plugged, Wrong Part
			*			3		*	2	Power Piston Sticking or Wrong Part
						*		*	3	Power Valve Sticking
	*					*		2	*	Venturi Cluster Loose, Dirty or Plugged
	*					*	*	*		Float Sticking
*	*				*	*	*			Float Bowl Porous, Cracked, Etc.
	2				*	*	*	*	*	Check Float Level Adjustment
*					*					Throttle Body to Float Bowl Screws Loose
	*					*	2	3		Needle & Seat Dirty, Sticking Loose
				2	2			*		Idle Passages Plugged, Dirty
			*			*				Power Piston Vacuum Passage Plugged
		3				*				Choke Heat Tube or Vacuum Passage Plugged
				*	*	*				Crankcase Vent Valve Plugged
								*	*	Fuel Filter in Gas Tank Plugged
							1	*	1	Fuel Filter in Carb. Plugged, By Passing Fuel
						*		*	*	Air Cleaner or Element Plugged or Dirty
								*	*	Hole in Fuel Pump Suction Line or Kinked Hose
									*	No Full Throttle Opening at Carburetor
	*	*	*			*				Check Heat Riser, Stuck Open or Closed
*		*	3							Accelerator Pump Inoperative
									*	Fuel Tank Vent Plugged
			*	*	*					Throttle Closing Solenoid Inoperative
*		*		*		*				Check Vacuum Break Adjustments

Figure 64-27A