

## 1970 ROCHESTER M & MV 1-BARREL

### MODEL M (MANUAL CHOKE)

	Rochester Carburetor No.	
	Synchro-mesh	Auto. Trans.
<b>CHEVY NOVA</b> 153" 4 Cyl. Engine .....	7040008	7040008

### MODEL MV (AUTOMATIC CHOKE)

#### BUICK

250" 6 Cyl. Engine .....	7040017	7040014
With Air Cond .....	7040015	

#### CHEVROLET DIVISION

230" & 250" 6 Cyl .....	7040017	7040014
With Air Cond .....	7040015	

#### OLDSMOBILE

250" 6 Cyl. Engine .....	7040017	7040014
With Air Cond .....	7040015	

#### PONTIAC

250" 6 Cyl. Engine .....	7040017	7040014
With Air Cond .....	7040015	

### CARBURETOR IDENTIFICATION

Rochester carburetor part number is stamped on fuel bowl. Carburetors may be color coded for identification.

### DESCRIPTION

New "Monojet" single barrel downdraft carburetor with manual choke (M) or automatic choke (MV). Carburetors have throttle operated metering rod with vacuum operated power piston control (throttle drive rod engages slot in power piston so piston can lift rod up in jet for full power operation). Pressure relief valve is located at top of carburetor air horn. A hot idle compensator valve is located under cover on throttle lever side of carburetor. Automatic choke carburetors have diaphragm type vacuum break assembly located under cover on side of air horn and linked directly to choke valve. Automatic choke is separate well type mounted in manifold and linked to choke valve lever by adjustable rod.

**Calibration Screw** - This screw is installed in channel at bottom of float bowl and controls fuel flow through a bypass channel past metering rod jet. This is a factory adjustment to refine air-fuel mixture ratios and screw must not be removed or setting disturbed in the field. **CAUTION** - Tampering with this setting will require replacement of fuel bowl or complete carburetor.

**Cranking Enrichment Valve** - Located in air horn and controls bypass passage from fuel bowl. Valve is depressed by choke valve (when choke closed for cold starting) and discharges additional fuel below choke valve to assist in cold starting. Valve closes as soon as choke valve begins to open. Valve is not removable and does not require adjustment.

**Idle Stop Solenoid** - Consists of a solenoid controlled throttle stopscrew mechanism connected in ignition circuit which controls idle speed with engine running. When ignition turned off, solenoid allows throttle valves to close further as determined by conventional throttle stopscrew setting. Carburetors with idle stop solenoid require special idle speed adjustment. See *Adjustment*.

### ADJUSTMENT

If initial adjustment required to warm up engine, set idle mixture screw 2 turns out (Buick), 3 turns out (Chevrolet), 5 turns out (Oldsmobile and Pontiac), from a lightly seated position. On cars with idle stop solenoid, check solenoid position as follows:

**Idle Stop Solenoid Position** - First set carburetor idle speed to specifications using throttle stopscrew, then close throttle against throttle stopscrew (OFF fast idle cam). Energize solenoid and turn plunger out 2 turns from fully bottomed position (13/16" to 15/16" from head of screw to solenoid body for Oldsmobile). Install solenoid so plunger just touches carburetor lever and terminal is positioned 30° outboard to clear air cleaner. Turn throttle stopscrew 1 turn counterclockwise so it will not contact lever during slow idle adjustment, then proceed with this adjustment for the car model.

### CARBURETOR ADJUSTMENT SPECIFICATIONS

Rochester Carb. No.	Idle Speed (Engine RPM)		Float Level Setting	Metering Rod Setting	Fast Idle (Off Eng.)	Choke Rod Setting	Vacuum Break Setting	Unloader Setting	Auto. Choke Setting
	Hot ①	Fast ②							
7040008	750 ③	2400	¼"	.070"	.100"	.200"	.260"	.350"	④
7040014	600	⑤	¼"	.070"	.100"	.170"	.200"	.350"	④
7040015	750	900	¼"	.070"	.100"	.190"	.230"	.350"	④
7040017	750	⑥	¼"	.070"	.100"	.190"	.230"	.350"	④

① - Auto. Trans. in Drive, Air Cond. OFF. On Chevrolet Division models, disconnect "FUEL TANK" line from vapor canister. On Pontiac models, remove fuel filler cap.

② - Cam follower on HIGH step of fast idle cam. On Chevrolet Division models, disconnect electrical lead to Transmission Controlled Spark (TCS).

③ - Set Auto. Trans. at 650 RPM.

④ - One rod diameter above hole in choke valve lever. See text.

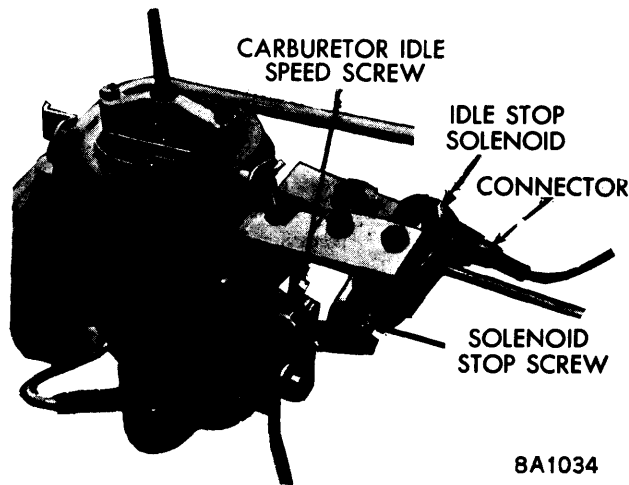
⑤ - Set as follows:

**Buick** - 650 RPM.  
**Chevrolet & Pontiac** - 2400 RPM.  
**Oldsmobile** - 900 RPM.

⑥ - Set as follows:

**Chevrolet & Pontiac** - 2400 RPM.  
**Oldsmobile** - 750 RPM.

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## IDLE STOP SOLENOID INSTALLATION (TYPICAL)

## Idle Speed &amp; Mixture

Engine must be idling at normal operating temperature with choke valve wide open and fast idle tang not contacting fast idle cam. With Auto. Trans. in Drive, Air Conditioner OFF, idle stop solenoid energized (normal running condition), and Idle Compensator Valve closed, adjust each model as directed below. **NOTE** - Hot idle compensator valve can be blocked by inserting pencil in passage in air horn (**CAUTION** - pencil must be removed after adjustment completed).

**Buick** - **NOTE** - If vehicle equipped with Automatic Level Control, air compressor must not be operating when making adjustments.

Adjust solenoid plunger screw to specified RPM, then stop engine. Turn mixture screw in until seated lightly, then back out 4 full turns. Disconnect and plug distributor vacuum line. Start engine, set ignition timing. Re-adjust **solenoid screw** to 630 RPM (auto. transmission) or 830 RPM (manual transmission). Turn mixture screw in to obtain specified idle speed, connect distributor vacuum line. De-energize solenoid by disconnecting wire. Adjust carburetor throttle stop screw to obtain 400 RPM (all transmissions). **Do Not** change mixture or solenoid screw adjustments. Connect solenoid wire, accelerate engine slightly (allowing solenoid plunger to extend) and recheck for correct normal idle speed.

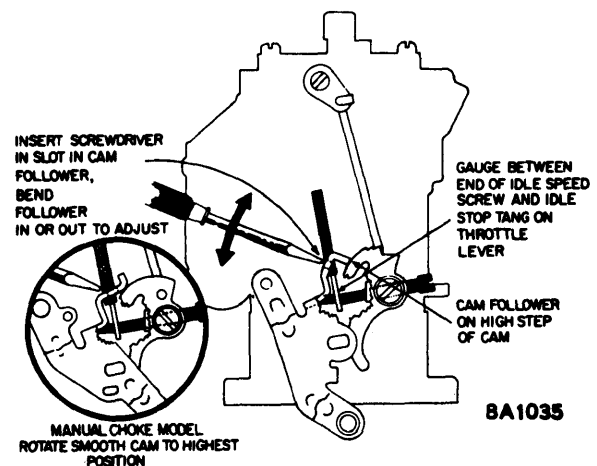
**Chevrolet** - If equipped with "Evaporative Emission Control", disconnect "Fuel Tank" line from vapor canister. Disconnect and plug distributor vacuum line. Turn mixture screw in until it lightly contacts seat, then back screw out 4 full turns. Adjust **solenoid screw** to obtain 830 RPM (manual transmission) or 630 RPM (auto. transmission), then turn mixture screw in to obtain 750 RPM (manual transmission) or 600 RPM (auto. transmission). Disconnect solenoid electrically, set carburetor idle speed screw to obtain 400 RPM. Reconnect distributor vacuum line, "Fuel Tank" line, and solenoid wire.

**Oldsmobile** - **NOTE** - Idle mixture screw has been preset at factory. Adjust only if rough idle or stalling occurs and after vehicle has been checked for vacuum leaks. Remove air cleaner, disconnecting vacuum hose at base of carburetor. Plug fitting. Disconnect vacuum hose at distributor. Plug hose. Stop engine, turn off A/C. Turn mixture screw in until lightly seated, then back out screw 4 full turns. Start engine and turn solenoid slow idle adjusting screw to obtain 830 RPM (manual transmission) or 630 RPM (auto. transmission). Turn mixture screw in to obtain 750 RPM (manual transmission) or 600 RPM (auto. transmission). Disconnect solenoid electrically and adjust throttle stop screw to obtain 400 RPM (all transmissions). **NOTE** - Do not readjust idle mixture screw. Replace air cleaner, reconnect hoses and solenoid wire.

**Pontiac** - **NOTE** - On California cars remove fuel tank filler cap before making idle speed and mixture adjustments. Replace after adjustment. Back out mixture screw 3-5 turns and adjust carburetor idle speed screw to obtain 830 RPM (Synchro-mesh) or 630 RPM (Auto. Trans.). Turn mixture screw in to obtain 750 RPM (Synchro-mesh) or 600 RPM (Auto. Trans.). De-energize solenoid and adjust carburetor idle speed screw to obtain 400 RPM (All Trans.). **NOTE** - Do not readjust solenoid or mixture screws. Re-energize solenoid.

Fast Idle Speed  
(On Engine)

**NOTE** - On Chevrolet Division models, adjustment must be set with electrical lead to Transmission Controlled Spark (TCS) solenoid disconnected and transmission in "NEUTRAL". After idle speed and mixture adjustment completed and with engine idling at normal operating temperature, position fast idle cam follower on correct step of fast idle cam and bend tang toward or away from cam for correct fast idle speed (see Specifications).



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## FAST IDLE SPEED ADJUSTMENT (OFF ENGINE)

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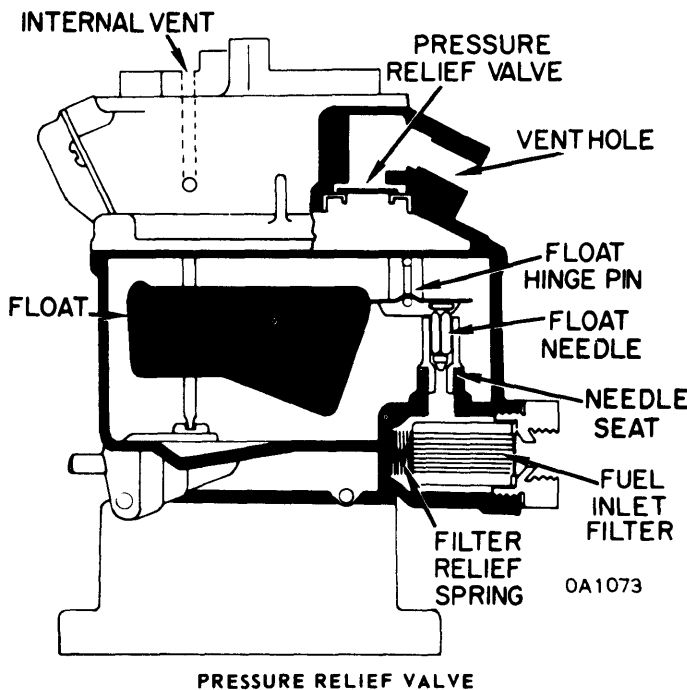
### Fast Idle Speed (Off Engine)

**Automatic Choke Carburetors (Stepped Cam) - NOTE -** Make initial idle speed setting by turning throttle stop-screw in 1/2 turns from closed throttle valve position (setting must be rechecked when carburetor installed on engine). Position fast idle cam follower on highest step of cam, hold cam follower against cam and check clearance between end of throttle stop-screw and idle stop-tang on throttle lever. If clearance not correct (see Specifications), adjust by bending cam follower toward or away from fast idle cam.

**Manual Choke Carburetors (Smooth Contour Cam) -** Adjust in same manner as automatic choke carburetors except rotate fast idle cam clockwise to farthest up position.

### Pressure Relief Valve

Located at top of carburetor air horn. Valve allows fuel vapors which may form in float bowl during hot engine idle and hot "soak" to be vented outside, so they will not be drawn into engine manifold.

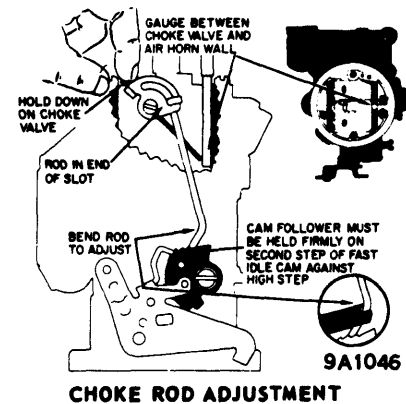


### Choke Rod

Fast idle adjustment must be made first. Adjust as follows:

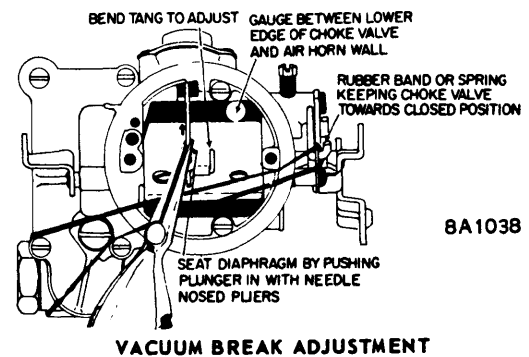
**Automatic Choke Carburetors (Stepped Cam) -** Position fast idle cam follower on second step of fast idle cam and against shoulder of high step, close choke valve as far as possible with light pressure on high side of choke valve. Choke rod must be in end of slot in choke lever as shown. Measure clearance between lower edge of choke valve and air horn wall at center of valve. If clearance not correct (See Specifications), adjust by bending choke rod at lower angle as required.

**Manual Choke Carburetors (Smooth Contour Cam) -** Adjust in same manner as automatic choke carburetors, except align index mark on cam with contact point of cam follower.



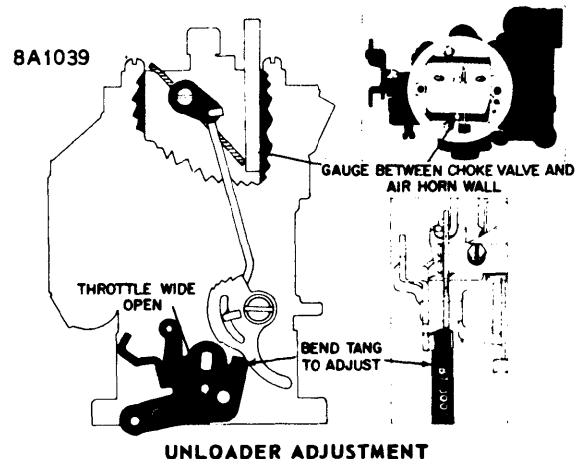
### Vacuum Break (Automatic Choke Carburetors)

Open throttle valve so that cam follower clears highest step of fast idle cam; fully close choke valve (valve can be held closed with rubber band - see illustration), press inward on vacuum break plunger rod until diaphragm seated. Measure clearance between lower edge of choke valve and air horn wall using specified gauge. If clearance not correct (see Specifications), adjust by bending vacuum break lever on choke valve as required.



### Unloader

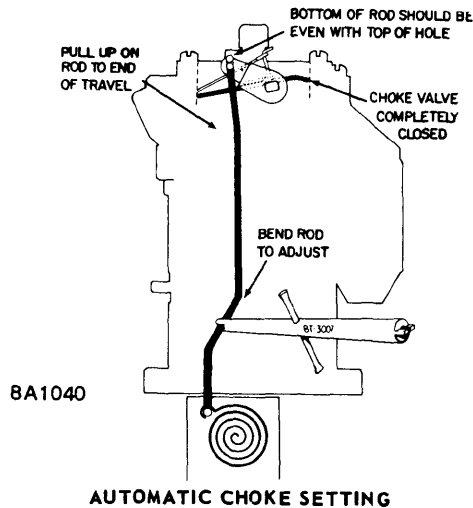
Hold choke valve closed with light pressure on choke coil lever, rotate throttle lever to wide open throttle position. Check clearance between lower edge of choke valve at center and air horn wall. If clearance not correct (see Specifications), adjust by bending unloader tang on throttle lever as required.



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## Automatic Choke

Disconnect choke coil rod at choke valve lever, hold choke valve closed, pull upward on rod to limit of travel. On all car models except Pontiac, bottom of rod end should be even with top of hole in choke lever (1 rod diameter interference fit). On Pontiac, rod end should fit freely in gauging notch on top of choke lever. Adjust by bending choke rod at existing bend (U-bend on Pontiac), connect rod. **CAUTION - Choke rod end must engage choke lever freely without bind.**

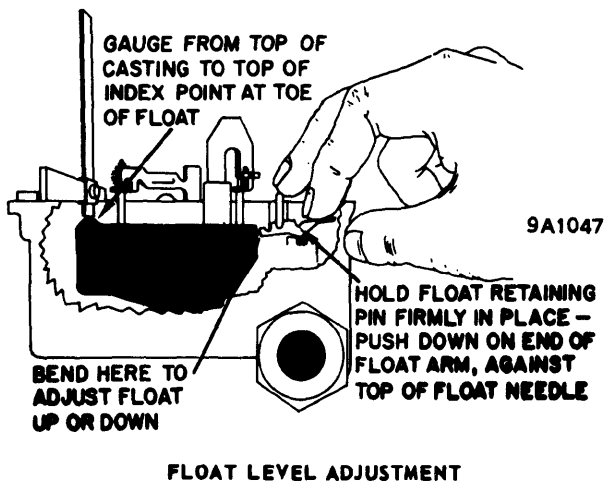


## Manual Choke

Push choke knob in instrument panel in to within 1/8" of panel, loosen choke cable clamp at carburetor bracket and adjust cable in clip until choke valve is wide open, tighten cable clamp. Check choke operation to ensure that knob gives full closed and wide open choke valve positions.

## Float Level (Off Engine)

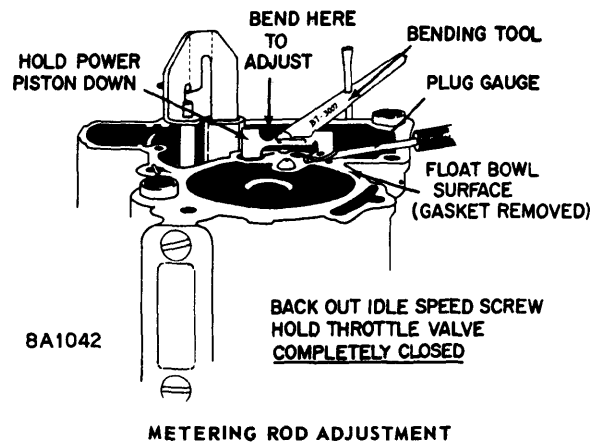
With air horn and bowl cover and bowl cover gasket removed, hold float retaining pin firmly in place and push



down on float arm at outer end against top of float needle. At a point 1/16" in from end of flat surface at float toe (not on radius), or at index point, measure distance from top of float at toe, or index point, to float bowl gasket surface. If this distance not correct (See Specifications), adjust by bending float up or down at float arm junction.

## Metering Rod (Off Engine)

With air horn and bowl cover removed, remove metering rod by holding throttle valve wide open and pressing down on metering rod against spring tension and sliding rod out of slot in holder. Back out throttle stopscrew and rotate fast idle cam so that cam follower clears cam, hold throttle valve completely closed and press down on top of power piston so that it is held against its stop. Swing metering rod holder over flat surface of bowl casting adjacent to carburetor bore and use specified gauge to check clearance between lower surface of holder and bowl casting. Gauge should be a slide fit. If clearance not correct (see Specifications), adjust by carefully bending metering rod holder up or down as required. Reinstall metering rod and reassemble carburetor.



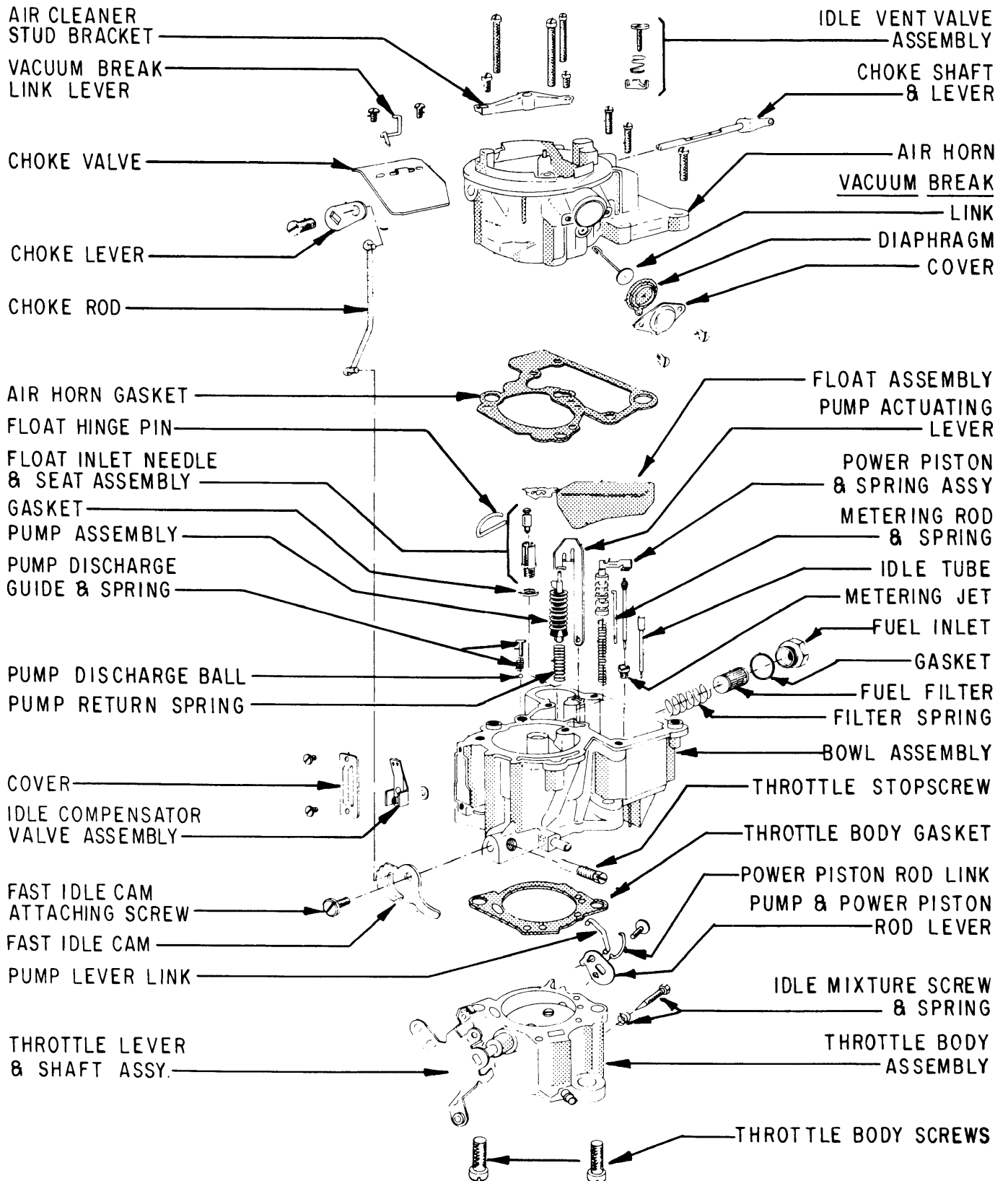
## OVERHAUL

## Disassembly

**NOTE - Disassembly procedures are identical for both Model M and Model MV carburetors, except Model M does not have an automatic choke.**

- 1) Remove choke lever from shaft, lever from rod, and rod from slot in fast idle cam. **NOTE - Remember position of rod in relation to levers for reassembly, then rotate rod to remove.**
- 2) Remove air horn attaching screws, remove air horn, invert, and remove air cleaner bridge. Remove vacuum break diaphragm cover screws, retainer, diaphragm and plunger rod by holding choke valve open, pushing upward on diaphragm rod until eyelet slides off wire lever on choke valve, and removing diaphragm plunger rod through hole in air horn.
- 3) If necessary for parts replacement, choke valve, vacuum break lever, and choke shaft can be removed by removing choke valve screws. **NOTE - Remove staking on screws by**

## 1970 ROCHESTER M & MV 1-BARREL (Cont.)



ROCHESTER M & MV CARBURETOR ASSEMBLY

## 1970 ROCHESTER M &amp; MV 1-BARREL (Cont.)

filing. Choke shaft may be damaged if staking is not removed. If necessary, remove idle vent valve by turning screw head out of plastic guide. **NOTE - Do not attempt to remove cranking enrichment valve.**

4) Remove float bowl gasket, lift up on float hinge pin to remove float assembly, and remove hinge pin from float arm.

5) Remove float needle, then float needle seat and gasket. **CAUTION - To prevent damage to needle seat use a screwdriver which completely fills slot.** Remove fuel inlet nut, gasket, paper filter element, and pressure relief spring.

6) Use long nosed pliers to remove "T" pump discharge spring retainer. Pump discharge spring, ball, and idle tube can be removed by inverting bowl.

7) Remove actuating lever on throttle shaft, remove upper end of drive link from power piston rod (for Oldsmobile synchro-mesh carburetors, see Note below), then rotate drive link from keyhole in actuating lever. Rotate pump link to remove from actuating lever, then remove upper end of pump link by rotating from keyhole in pump slide. Both power piston and pump assembly should be held down in float bowl, when removing links, as they are spring loaded.

**Oldsmobile Synchro-mesh Carburetor Note -** On manual transmission models a compressed spring is used on the lower end of the power piston actuator rod. It is not necessary to remove rod from float bowl unless replacement is necessary. When removing power piston, push upward on actuator rod until slot in side of power piston is above bowl.

8) Lift power piston-metering rod assembly and drive rod from float bowl, remove power piston spring from cavity, and pump plunger assembly from float bowl. Remove pump return spring and main metering jet. Remove hot idle compensator cover, compensator and gasket, then remove idle adjustment screw and fast idle cam (if necessary).

9) Remove attaching screws to separate bowl and throttle body. Remove idle mixture needle and spring. **NOTE - Do not remove throttle valve or shaft. This is a close tolerance fit.**

### Cleaning & Inspection

All metal parts, including air horn with plastic vent valve guide and cranking enrichment valve, should be thoroughly cleaned in carburetor cleaning solvent. **NOTE - Make sure cleaning solvent is thoroughly removed from cranking enrichment valve cavity.** Do not immerse rubber parts, plastic parts, diaphragms, or pump plunger in carburetor cleaning solvent. Clean pump plunger in clean gasoline. Check all parts and casting passages for carbon deposits,

blow out all passages with compressed air. Inspect all parts for wear or damage and **REPLACE** filter element.

### Reassembly

Use all new gaskets. Reverse disassembly procedure and note the following:

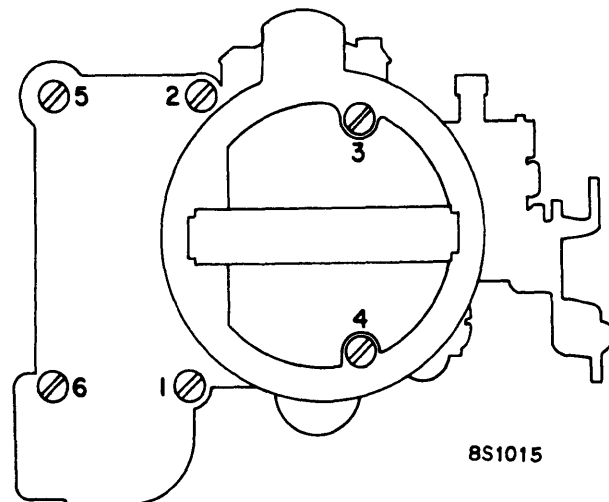
**Pump Plunger Installation -** Install with slide protruding through bottom of bowl casting. Push downward on pump slide and install pump drive link into hole in lower end of shaft. Ends of drive link point towards carburetor bore.

**Power Piston Installation -** Install power piston and pump actuating lever to lower end of link (projection on lever points downward). Install spring into cavity, then install end of power piston actuating rod into groove on side of power piston. Install power piston metering rod assembly and actuating rod into float bowl (metering rod entering jet orifice).

**NOTE - Check operation of entire drive mechanism, metering rod and accelerator pump to ensure free operation from closed to wide open throttle before installing air horn.**

**Choke Shaft Installation -** Install choke shaft, choke valve and vacuum break lever. Align choke valve, tighten retaining screws and stake to prevent loosening.

**Air Horn Installation -** Install by gently lowering onto float bowl until seated, install long and short attaching screws, and torque screws tightly using following tightening sequence (see illustration).



AIR HORN TIGHTENING SEQUENCE