

Rochester Carburetors

1968-69 ROCHESTER 4MV 4-BARREL

1968 MODELS

BUICK	Rochester Carburetor No.	
	Synchro-mesh	Auto. Trans.
350" V8	7028245	7028244
400" V8 (Early)	7028243	7028242
400" V8 (Late)	7028247 ③	③ 7028246
430" V8 (Early)		7028240
430" V8 (Late)		③ 7028248

CADILLAC

Std. Models (No Air Cond.)	7028230
(With Air Cond.)	7028231
Limo. & Comm'l Chassis (Air Cond.)	7028231
Eldorado (No Air Cond.)	7028234
(With Air Cond.)	7028235

CHEVY II, CHEVELLE, CAMARO & CHEVROLET

327" 250 & 275 HP V8	7028213	7028212
327" 325 HP V8	7028229	
350" 295 HP V8	7028213	7028212
396" 325 HP V8 ①	7028211	7028210
396" 325 HP V8 ②	7028217	7028218
396" 350 HP V8	7028217	7028218
427" 385 HP V8	7028211	7028210

CORVETTE

327" 300 HP V8	7028207	7028208
327" 350 HP V8	7028219	
427" 390 HP V8	7028209	7028216

OLDSMOBILE

350" V8	7028250	7028250
400" & 455" (except Toronado)	7028251	7028251
455" V8 (Toronado)		7028252

PONTIAC

400" V8	7028263	7028262
400" H.O. V8	7028267	
428" V8	7028263	7028268
428" H.O. V8	7028267	7028268

TEMPEST

250" 6 Cyl.	7028261	7028260
350" V8	7028261	7028260
400" V8	7028263	7028268
400" H.O. V8	7028267	7028268
400" Ram Air V8	7028275	7028274
428" V8	7028263	
428" H.O. V8	7028267	

FIREBIRD

250" 6 Cyl.	7028261	7028260
350" V8	7028269	7028266
400" V8	7028265	7028264
400" H.O. V8	7028271	7028264
400" Ram Air V8	7028277	7028276

1969 MODELS

BUICK	Rochester Carburetor No.	
	Synchro-mesh	Auto. Trans.
350" V8	7029245	7029244
400" V8	7029243	7029242
430" V8 (Except Riviera)		7029240
(Riviera)		7029241

CADILLAC

Standard Models	7029230
With Air Cond.	7029231
Eldorado	7029232
With Air Cond.	7029233

CHEVY NOVA, CHEVELLE, CAMARO, CHEVROLET

350" 255 & 300 HP V8	7029203	7029202
396" 325 & 350 HP V8	7029215	7029204
	7029201	7029200
427" 335 & 390 HP V8	7029215	7029204
	7029201	7029200

CORVETTE

350" 300 HP V8	7029203	7029202
350 HP V8	7029207	
427" 390 HP V8	7029215	7029204
	7029201	7029200

OLDSMOBILE

350" 310 HP V8	7029250	7029250
325 HP V8	7029255	
400" (Except 442)	7029251	7029251
(442 Std.)	7029253	
(442 W30 Opt. ①)	7029254	7029254
455" (Except Toronado)		7029251
(Toronado)		7029252

PONTIAC

400" V8	7029263	7029268
428" V8 (Except Bonneville)	7029263	7029268
(Bonneville)		7029262

TEMPEST, & FIREBIRD

250" 6 Cyl.	7029261	7029260
350" V8	7029263	7029268
400" V8 (Except Ram Air)	7029263	7029268
(Ram Air)	7029273	7029270

① - Chevrolet & Chevelle.

② - Camaro only.

③ - See "Changes, Cautions, Corrections" below.

① - Hood External Cold Air Intake

1968-69 ROCHESTER 4MV 4-BARREL (Continued)

► CHANGES, CAUTIONS, CORRECTIONS

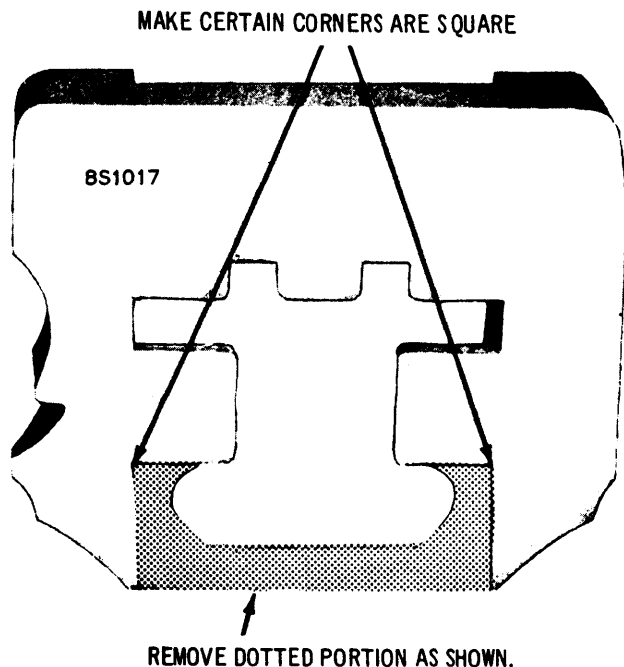
► **1968 BUICK 400" & 430" V8 ENGINES FAILING TO START WHEN COLD CORRECTION & PRODUCTION CHANGE:** A new float needle and seat and a larger float assembly are being utilized to prevent float needle from sticking. This correction has been incorporated at the factory in these new carburetors:

Engine	Early No.	Late No.
430" V8	7028240	7028248
400" V8 Synchro-mesh	7028243	7028247
400" V8 Auto. Trans.	7028242	7028246

Some early models may have been modified previously. A dab of yellow paint on left side of throttle body rearward of secondary throttle shaft will indicate this. **NOTE** - In case above modifications not in effect, check carburetor as follows:

1) Remove Air Cleaner COVER and observe if fuel is discharged from accelerator pump circuit while operating throttle.

2) If no fuel discharges from pump nozzle, it is possible that float needle is sticking in its seat. To check this, disconnect fuel line at carburetor, hold end of a rubber hose against fuel inlet, and blow by mouth through other end of hose. **CAUTION** - Do not use air hose as pressure may damage carburetor. If air flow not free through inlet, check for a restriction caused by a plugged filter or ice. If there is no restriction from these causes, needle valve must be stuck. **CAUTION** - DO NOT crank engine with fuel line disconnected.



FLOAT BOWL INSERT MODIFICATION

3) If there is a sticking needle valve, replace needle, seat and float with following parts: Needle and Seat Part No. 7023897, and (enlarged) Float Part No. 7033752. See OVERHAUL for needle and seat installation procedure.

4) Install enlarged float according to procedure in OVERHAUL and adjust it to 7/32" height according to procedure in ADJUSTMENT. Remove dotted portion of float bowl insert with diagonal cutters as shown below. When modification completed place dab of paint as explained above.

5) If above procedure did not correct problem check fuel pump pressure and output.

► **1968 BUICK 400" & 430" V8 ENGINES STALLING AFTER STARTING CORRECTION:** Correct this condition by changing Vacuum Break Setting to .180" (was .200"). See ADJUSTMENT for procedure. **NOTE** - This change made in production on carburetors with change letter "A" (400" V8 Engines), "B" (430" V8 Engines).

► **1968 BUICK 400" & 430" AUTO. TRANS. CAR TIP-IN HESITATION CORRECTION (With Rochester 4MV 7028242 & 7028240 Carbs.):** Correct this complaint by following the procedure below in the order indicated:

1) Check Distributor Dwell, Ignition Timing, and carburetor Idle Speed & Mixture and Fast Idle setting.

2) **CAUTION** - Do not make this change when cars operated at elevations above 4000 feet in extremely hot weather. On all 400" engine carburetors and 430" engine carburetors before Change Letter "A" (see Note below), move accelerating pump rod to inner hole of pump lever and adjust pump rod for 9/32" setting (see ADJUSTMENT).

430" Engine Carburetor Note - On 7028240 carburetors after Change Letter "A" (see CARBURETOR IDENTIFICATION), new primary nozzles were used and specified pump setting is 13/32" with pump rod in outer hole. DO NOT reposition pump rod or change setting on these carburetors.

3) After changing pump rod setting to 9/32", adjust Vent Valve to new setting of 3/8" (See ADJUSTMENTS).

4) In severe cases where complaint not corrected by above procedure, raise the fuel level by changing Float Level setting to 3/8" (see ADJUSTMENT). **CAUTION** - Do not increase fuel level beyond this 3/8" float level setting which could cause main nozzles to supply fuel at idle speed and make it impossible to secure a smooth idle adjustment.

► **1968 CADILLAC COLD ENGINE STUMBLE OR STALL ON ACCELERATION CORRECTION:** A possible correction for a car that will stumble or even stall when accelerating with choke on may be to lengthen carburetor choke rod to 2 rod diameters past gauging notch or index mark. This adjusts choke 2 notches richer.

► **1968 PONTIAC 400" V8 ENGINES IRREGULAR EXHAUST NOISE AND ROUGH IDLE ON 2-SPEED AUTOMATIC TRANSMISSIONS CORRECTION (Auto. Trans. Cars Before 10/10/67):** Production change listed below for these engines will eliminate this complaint on later cars. Re-work vacuum system and change idle speed setting as follows:

1968-69 ROCHESTER 4MV 4-BARREL (Continued)

1) Remove yellow-strip hose from carburetor port to TVS and vacuum hose from TVS to retard port on distributor vacuum unit and discard these hoses (do not remove steel hose fittings from TVS). Cap these 2 fittings using No. 9781338 Caps or connect tubes with short piece of discarded hose to exclude foreign particles from TVS. Cap the open port on carburetor with same type cap but DO NOT cap port on distributor vacuum unit. Check and adjust ignition timing.

2) Set idle speed to revised increased RPM: **Solenoid Active Idle Speed in Drive** - 650 RPM (was 600 RPM).

► **1968 PONTIAC 400" V8 ENGINES SPARK RETARD & IDLE SPEED PRODUCTION CHANGE (Engines with Auto-Trans. Only):** At approximately 10/10/67 following changes were made to improve idle and reduce exhaust noise:

1) Vacuum hoses from carburetor ports below throttle valves to TVS and from TVS to retard side of distributor vacuum unit were eliminated (this eliminated timing retard action at idle).

2) Engine idle speed was increased as follows: **Solenoid Active Idle Speed in Drive** - 650 RPM (was 600 RPM).

► **"C.C.S." & "A.I.R." ENGINES NOTE:** These engines have special exhaust emission controls as follows: **All Engines** - Specially calibrated distributors and carburetors, closed positive crankcase ventilation system, and related control units. **C.C.S. Engines** - Have "thermo air cleaner" with vacuum powered, thermostatically controlled, air cleaner air intake for control of carburetor air temperature. **A.I.R. Engines** - Have an air pump for air injection in engine at exhaust valve ports.

CARBURETOR IDENTIFICATION

Rochester carburetor number, change letter, and two-letter production code are stamped vertically on side of boss on main body directly above secondary throttle lever. Single letter following carburetor number ("A" etc.) is the change letter indicating production changes, final two letters are a factory production code.

DESCRIPTION

Four barrel downdraft carburetors with large secondary bores incorporating an air valve which controls secondary metering rods (primary metering rods controlled by power piston). Carburetors are same design as previous models except for relocated hot idle compensator valve (1968), (thermostatic valve replaces hot idle compensator on some models) and idle air bypass system (1969).

Adjustable Part Throttle Feature - New power piston and primary metering rod assembly. Piston has pressed-in pin which protrudes through float bowl and gasket to contact adjustable link in throttle body and metering rods have different taper (identified by "B" stamped after diameter on rod). Adjusting screw is located in recess in front center of throttle body and screw hole is sealed with a welch plug. *This adjustment is made at factory and no attempt should be made to change setting or made adjustment in the field.*

Idle Stop Solenoid - Used on some carburetors only. This unit 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 *Adjustments*.

Idle Air By-Pass - Used on Chevrolet (all Models) and on Buick (Riveria only). A fixed idle air by-pass system is used to supplement the idle air passing by the slightly open throttle valves. The purpose of the idle air by-pass is to reduce the amount of air going through the carburetor bores and still maintain sufficient air for the correct idle speed. **NOTE** - *This is a fixed idle air by-pass and the idle speed is adjusted in the usual manner.*

ADJUSTMENT

If initial adjustment required to warm up engine, set each idle mixture screw as follows: 2 turns out (1968 Buick, Chevrolet, Oldsmobile), 4 turns out (1968 Cadillac), 6 turns out (1968 Pontiac, Tempest, Firebird), 1½ turns out (1969 Cadillac), 2 turns out (1969 Buick & Oldsmobile), 3 turns out (1969 Chevrolet), 5 turns out (1969 Pontiac, Tempest, Firebird), from a lightly seated position.

Idle Speed & Mixture

Engine must be at normal operating temperature with choke valve wide open and fast idle inoperative. With Auto. Trans. in Drive, Air Conditioner OFF (except as noted), and Hot Idle Compensator Valve closed (depress button on side of carburetor body or depress valve itself) adjust each model as follows:

Buick - **NOTE** - *Air cleaner must remain in place while making idle speed and mixture adjustments. Make sure Automatic Level Control system (on cars so equipped) does not operate as it will upset engine idle calibrations. Feel compressor with hand to make sure it is off. Disconnect vacuum hose AT DISTRIBUTOR and PLUG hose (to prevent vacuum switch operation causing distributor advance). Adjust throttle stopscrew for correct hot engine idle RPM (see Specifications), adjust both idle mixture screws, (one at a time) for highest engine RPM, then re-adjust throttle stopscrew for 20 RPM higher than specified idle speed, finally turn each idle mixture screw in (to lean mixture) until engine speed drops off exactly 10 RPM (20 RPM for both screws) so that engine speed is at specified RPM.*

Cadillac - Disconnect vacuum advance hose at distributor and plug hose, disconnect parking brake vacuum hose at the vacuum release cylinder and plug hose (**CAUTION** - *Hose must be disconnected at this point to include calibrated leakage in remainder of system*). Remove air cleaner and on Auto. Trans. cars place in neutral. Adjust throttle stop screw for specified hot engine idle speed (see Specifications). Adjust one idle mixture screw at a time for turning screw in until maximum engine RPM is obtained and continue to turn screw in until engine speed drops off 20 RPM (lean speed fall off), finally turn screw out exactly 1½ turns (1968), 1 turn (1969). After both idle mixture screws adjusted in this manner, check idle speed and readjust as necessary, then repeat idle mixture screw adjustment. Install air cleaner and recheck idle speed. If idle speed within specifications, repeat idle speed and idle mixture adjustment.

1968-69 ROCHESTER 4MV 4-BARREL (Continued)

CARBURETOR ADJUSTMENT SPECIFICATIONS							
Rochester Carb. No.	Slow Idle Speed (Engine RPM) ①		Fast Idle Speed (Eng. RPM) ⑦	Float Level Setting ⑧	Pump Rod Setting	Idle Vent Setting	Air Valve Dashpot Setting
	Synchro-mesh	Auto. Trans.					
7028207	700 ③	.....	2200	9/32"	1/4"	3/8"	.015"
7028208	.....	600 ③	2200	9/32"	1/4"	3/8"	.015"
7028209	1000	.....	2200	3/16"	9/32"	3/8"	.015"
7028210	.....	600 ③	2200	3/16"	9/32"	3/8"	.015"
7028211	700 ③	.....	2200	3/16"	9/32"	3/8"	.015"
7028212	.....	600 ③	2200	9/32"	1/4"	3/8"	.015"
7028213	700 ②	.....	2200	9/32"	1/4"	3/8"	.015"
7028216	.....	600 ③	2200	3/16"	9/32"	3/8"	.015"
7028217	700 ③	.....	2200	3/16"	9/32"	3/8"	.015"
7028218	.....	600 ③	2200	3/16"	9/32"	3/8"	.015"
7028219	750 ②	.....	2200	9/32"	1/4"	3/8"	.015"
7028229	750 ②	.....	2200	9/32"	1/4"	3/8"	.015"
7028230	.....	550 ④	1900-1950 ⑤	1/4"	11/32" ⑥	.....	.030"
7028231	.....	550 ④	1900-1950 ⑤	1/4"	11/32" ⑥	.....	.030"
7028234	.....	550 ④	1900-1950 ⑤	11/32"	11/32" ⑥	.....	.030"
7028235	.....	550 ④	1900-1950 ⑤	11/32"	11/32" ⑥	.....	.030"
7028240	.....	550 ③	⑬	7/16"	13/32" ⑥	1/2"	.030"
7028241	.....	.....	.....	.....	.....	.....	.....
7028242	.....	600 ③	⑬	3/8"	9/32" ⑧	1/2"	.030"
7028243	700 ③	.....	⑬	7/16"	13/32" ⑥	1/2"	.030"
7028244	.....	550 ③	⑬	5/16"	13/32" ⑥	1/2"	.030"
7028245	700 ③	.....	⑬	5/16"	13/32" ⑥	1/2"	.030"
7028250	675 ③	575 ③	700 ⑥	1/4"	5/16"	.....	.030"
7028251	⑩	575 ③	700 ⑥ ⑭	1/4"	5/16"	.....	.030"
7028252	.....	575 ③	700 ⑥ ⑮	1/4"	5/16"	.....	.030"
7028260	.....	⑪	2800	5/16"	9/32"	3/8"	.030"
7028261	⑪	.....	2600	5/16"	9/32"	3/8"	.030"
7028262	.....	650 ⑫ ⑰	2500	1/4"	9/32"	3/8"	.030"
7028263	850 ⑫	.....	2500	1/4"	9/32"	3/8"	.030"
7028264	.....	650 ⑫	2500	1/4"	9/32"	3/8"	.030"
7028265	850 ⑫	.....	2500	1/4"	9/32"	3/8"	.030"
7028266	.....	650 ⑫	2500	1/4"	9/32"	3/8"	.030"
7028267	850 ⑫	.....	2500	1/4"	9/32"	3/8"	.030"
7028268	.....	650 ⑫	2500	1/4"	9/32"	3/8"	.030"
7028269	850 ⑫	.....	2500	1/4"	9/32"	3/8"	.030"
7028271	850 ⑫	.....	2500	1/4"	9/32"	3/8"	.030"
7028274	.....	650 ⑫	2500	1/4"	9/32"	3/8"	.030"
7028275	1000 ⑫	.....	2500	1/4"	9/32"	3/8"	.030"
7028276	.....	650 ⑫	2500	1/4"	9/32"	3/8"	.030"
7028277	1000 ⑫	.....	2500	1/4"	9/32"	3/8"	.030"

- ① - Auto. Trans. in Drive, Air Cond. ON (except as noted).
- ② - Air Conditioner ON (327" & 350" V8 Engines).
- ③ - Air Conditioner OFF.
- ④ - Transmission in Neutral, Air Cond. OFF.
- ⑤ - Cam follower on high step of fast idle cam, Transmission in Neutral, Air Cond. OFF.

- ⑥ - Cam follower on LOW step of fast idle cam.
- ⑦ - Cam follower on HIGH step of fast idle cam.
- ⑧ - Pump rod in INNER hole of pump lever (except as noted).
- ⑨ - Pump rod in OUTER hole of pump lever.
- ⑩ - 725 RPM (400" Eng.), 675 RPM (455" Eng.) with Air Cond. OFF.

Rochester Carburetors

1968-69 ROCHESTER 4MV 4-BARREL (Continued)

CARBURETOR ADJUSTMENT SPECIFICATIONS							
Rochester Carb. No.	Choke Rod Setting	Secondary Metering Rod	Vacuum Break Setting	Unloader Setting	Air Valve Lockout	Secondary Throttle Lockout	Auto. Choke Setting
7028207	.100"	27/32"	.245"	.300"	.....	.015"	Ⓢ
7028208	.100"	27/32"	.180-.200"	.260"	.....	.015"	Ⓢ
7028209	.100"	27/32"	.245"	.300"	.....	.015"	Ⓢ
7028210	.100"	27/32"	.180-.200"	.300"	.....	.015"	Ⓢ
7028211	.100"	27/32"	.245"	.300"	.....	.015"	Ⓢ
7028212	.100"	27/32"	.180-.200"	.260"	.....	.015"	Ⓢ
7028213	.100"	27/32"	.245"	.300"	.....	.015"	Ⓢ
7028216	.100"	27/32"	.180-.200"	.300"	.....	.015"	Ⓢ
7028217	.100"	27/32"	.245"	.300"	.....	.015"	Ⓢ
7028218	.100"	27/32"	.180-.200"	.300"	.....	.015"	Ⓢ
7028219	.110"	27/32"	.245"	.300"	.....	.015"	Ⓢ
7028229	.110"	27/32"	.245"	.300"	.....	.015"	Ⓢ
7028230	.090"	55/64"	.185"	.300"	.030"	.....	Center ⑬
7028231	.090"	55/64"	.185"	.300"	.030"	.....	Center ⑬
7028234	.090"	55/64"	.185"	.300"	.030"	.....	Center ⑬
7028235	.090"	55/64"	.185"	.300"	.030"	.....	Center ⑬
7028240	.130"	53/64"	.180" ⑳	.325"	.045"	.....	Notch ⑬
7028241	.....	.....	.....	.....	.....	.....	.....
7028242	.130"	53/64"	.180" ⑳	.325"	.045"	.....	Notch ⑬
7028243	.140"	53/64"	.215"	.325"	.....	.015"	Notch ⑬
7028244	.130"	53/64"	.200"	.325"	.045"	.....	Notch ⑬
7028245	.130"	53/64"	.215"	.325"	.....	.015"	Notch ⑬
7028250	.140"	7/8"	.180"	.200"	.020"	.....	Center ⑬
7028251	.140"	7/8"	.180"	.200"	.020"	.....	Center ⑬
7028252	.140"	7/8"	.180"	.200"	.020"	.....	Center ⑬
7028260	.085"	53/64"	.245"	.300"	.015"	.....	Notch ⑬
7028261	.085"	53/64"	.245"	.300"	.015"	.....	Center ⑬
7028262	.100"	53/64"	.230"	.300"	.015"	.....	Center ⑬
7028263	.100"	53/64"	.245"	.300"	.015"	.....	Center ⑬
7028264	.100"	53/64"	.230"	.300"	.015"	.....	Center ⑬
7028265	.100"	53/64"	.245"	.300"	.015"	.....	Center ⑬
7028266	.100"	53/64"	.230"	.300"	.015"	.....	Center ⑬
7028267	.100"	53/64"	.245"	.300"	.015"	.....	Center ⑬
7028268	.100"	53/64"	.230"	.300"	.015"	.....	Center ⑬
7028269	.100"	53/64"	.245"	.300"	.015"	.....	Center ⑬
7028271	.100"	53/64"	.245"	.300"	.015"	.....	Center ⑬
7028274	.100"	53/64"	.230"	.300"	.015"	.....	Center ⑬
7028275	.100"	53/64"	.245"	.300"	.015"	.....	Center ⑬
7028276	.100"	53/64"	.230"	.300"	.015"	.....	Center ⑬
7028277	.100"	53/64"	.245"	.300"	.015"	.....	Center ⑬

⑰ - Special procedure required (see text).

⑱ - With idle solenoid stop energized (see text for throttle stopscrew adjustment).

⑲ - 20 RPM higher than hot idle speed with cam for lower on low step of fast idle cam (Auto. Trans. in Drive).

⑳ - On 442 with W-30 Air Induction Option, set at 900 RPM (Synchro-mesh), 1300 RPM (Auto. Trans.).

㉑ - On Toronado with W-30 Air Induction Option, set at 1300 RPM.

㉒ - Use indicated notch as gauging point (see text).

㉓ - interference fit of choke rod (see text).

㉔ - Revised specifications. See "Changes, Cautions, Corrections".

1968-69 ROCHESTER 4MV 4-BARREL (Continued)

CARBURETOR ADJUSTMENT SPECIFICATIONS							
Rochester Carb. No.	Slow Idle Speed (Engine RPM) ①		Fast Idle Speed ⑦ (Eng. RPM)	Float Level Setting	Pump Rod ⑧ Setting	Idle Vent Setting	Air Valve Dashpot Setting
	Synchro-mesh	Auto. Trans.					
7029200	.....	600 ②	2400	1/4"	5/16"	3/8"	.015"
7029201	800 ②	.....	2400	1/4"	5/16"	3/8"	.015"
7029202	.....	600 ③	2400	7/32"	5/16"	3/8"	.015"
7029203	700 ③	.....	2400	7/32"	5/16"	3/8"	.015"
7029204	.....	600 ②	2400	1/4"	5/16"	3/8"	.015"
7029207	750 ③	.....	2400	3/16"	5/16"	3/8"	.015"
7029215	800 ②	.....	2400	1/4"	5/16"	3/8"	.015"
7029230	.....	550 ④	1900-1950 ⑤	1/4"	11/32" ⑥	.....	.030"
7029231	.....	550 ④	1900-1950 ⑤	1/4"	11/32" ⑥	.....	.030"
7029232	.....	550 ④	1900-1950 ⑤	3/8"	11/32" ⑥	.....	.030"
7029234	.....	550 ④	1900-1950 ⑤	3/8"	11/32" ⑥	.....	.030"
7029240	.....	550	620 ⑥	3/8"	13/32" ⑥	1/2"	.030"
7029241	.....	550	620 ⑥	5/16"	13/32" ⑥	1/2"	.030"
7029242	.....	600	620 ⑥	3/8"	13/32" ⑥	1/2"	.030"
7029243	700	.....	720 ⑥	3/8"	13/32" ⑥	1/2"	.030"
7029244	.....	600	620 ⑥	5/16"	13/32" ⑥	1/2"	.030"
7029245	700	.....	720 ⑥	5/16"	13/32" ⑥	1/2"	.030"
7029250	675 ③	575 ③	700 ③	1/4"	5/16"	.....	.030"
7029251	750 ③	575 ③	700 ③	1/4"	5/16"	.....	.030"
7029252	.....	575 ③	700 ③	1/4"	5/16"	.....	.030"
7029253	750 ③	.....	750 ③	1/4"	5/16"	.....	.030"
7029254	800-850 ③	600-650 ⑩	⑩	1/4"	3/8" ⑨	.....	.030"
7029255	800-850 ③	.....	900 ③	1/4"	5/16"	.....	.030"
7029260	.....	⑪	2600	3/16"	9/32"	3/8"	.030"
7029261	⑪	.....	2800	3/16"	9/32"	3/8"	.030"
7029262	.....	650 ③	2300	9/32"	9/32"	3/8"	.030"
7029263	1000 ③	.....	2300	9/32"	9/32"	3/8"	.030"
7029268	.....	650 ③	2300	9/32"	9/32"	3/8"	.030"
7029270	.....	650 ⑫	2800	9/32"	1/4"	3/8"	.030"
7029273	1000 ⑫	.....	2800	9/32"	1/4"	3/8"	.030"

① - Auto. Trans. in Drive, Air Cond. ON (except as noted).

② - Air Cond. OFF (except 427" 390 HP Engine with Air Cond. ON).

③ - Air Conditioner OFF.

④ - Transmission in Neutral, Air Cond. OFF.

⑤ - Cam follower on high step of fast idle cam, Transmission in Neutral, Air Cond. OFF.

⑥ - Cam follower on LOW step of fast idle cam.

⑦ - Cam follower on HIGH step of fast idle cam, Auto. Trans. in DRIVE and Air Cond. ON (except as noted).

⑧ - Pump rod in INNER hole of pump lever (except as noted).

⑨ - Pump rod in OUTER hole of pump lever.

⑩ - Set with Air Cond. OFF, then check idle speed in Neutral and reduce speed to 950 RPM if above this RPM.

⑪ - Special procedure required (see text).

⑫ - With idle stop solenoid energized (see text for throttle stopscrew adjustment).

⑬ - Cam follower on LOW step of fast idle cam, Auto. Trans. in PARK and Air Cond. OFF.

⑭ - 1000 RPM (Synchro-mesh), 1400 RPM (Auto. Trans.), Auto. Trans. in PARK and Air Cond. OFF.

Chevrolet - With engine running at operating temperature, air cleaner installed, and choke valve wide open. On air cond. cars turn air cond. OFF (except on 427" 390 & 400 HP Corvette engines turn air cond. ON). Adjust throttle stopscrew for specified hot engine idle RPM (see Specifications). Adjust one idle mixture screw at a time for highest steady idle speed, readjust idle speed to specifications, then turn idle mixture screw in until engine speed

decreases 20 RPM (lean roll point), finally turn screw out exactly 1/4 turn. After both idle mixture screws adjusted in this, check idle speed and readjust if necessary.

CORVETTE (1968) 427" V8 ENGINE WITH SYNCHRO-MESH & AIR CONDITIONING NOTE - 1) Turn Air Conditioner ON and leave Air Cleaner on. Adjust idle stop solenoid stopscrew to give 1,000 RPM, then adjust each

Rochester Carburetors

1968-69 ROCHESTER 4MV 4-BARREL (Continued)

CARBURETOR ADJUSTMENT SPECIFICATIONS							
Rochester Carb. No.	Choke Rod Setting	Secondary Metering Rod	Vacuum Break Setting	Unloader Setting	Air Valve Lockout	Secondary Throttle Lockout	Auto. Choke Setting
7029200	.100"	27/32"	.160"	.450"	.....	.015"	ⓐ
7029201	.100"	27/32"	.245"	.450"	.....	.015"	ⓐ
7029202	.100"	27/32"	.180"	.450"	.....	.015"	ⓐ
7029203	.100"	27/32"	.245"	.450"	.....	.015"	ⓐ
7029204	.100"	27/32"	.180"	.450"	.....	.015"	ⓐ
7029207	.100"	27/32"	.245"	.450"	.....	.015"	ⓐ
7029215	.100"	27/32"	.245"	.450"	.....	.015"	ⓐ
7029230	.090"	55/64"	.230"	.300"	.030"	.....	Center ⓑ
7029231	.090"	55/64"	.230"	.300"	.030"	.....	Center ⓑ
7029232	.090"	55/64"	.230"	.300"	.030"	.....	Center ⓑ
7029233	.090"	55/64"	.230"	.300"	.030"	.....	Center ⓑ
7029240	.130"	53/64"	.180"	.325"	.045"	.....	ⓑ
7029241	.130"	53/64"	.180"	.325"	.045"	.....	ⓑ
7029242	.130"	53/64"	.180"	.325"	.045"	.....	ⓑ
7029243	.140"	53/64"	.215"	.325"	.....	.015"	ⓑ
7029244	.130"	53/64"	.190"	.325"	.045"	.....	ⓑ
7029245	.130"	53/64"	.215"	.325"	.....	.015"	ⓑ
7029250	.140"	7/8"	.180"	.200"	.020"	.....	ⓑ
7029251	.140"	7/8"	.180"	.200"	.020"	.....	ⓑ
7029252	.140"	7/8"	.180"	.200"	.020"	.....	ⓑ
7029253	.140"	7/8"	.230"	.200"	.020"	.....	ⓑ
7029254	.120"	7/8"	.300"	.200"	.020"	.....	ⓑ
7029255	.090"	7/8"	.275"	.200"	.020"	.....	ⓑ
7029260	.100"	53/64"	.....	.300"	.015"	.....	ⓑ
7029261	.100"	53/64"	.150"	.300"	.015"	.....	ⓑ
7029262	.100"	53/64"	.180"	.300"	.015"	.....	ⓑ
7029263	.100"	53/64"	.245"	.300"	.015"	.....	ⓑ
7029268	.100"	53/64"	.245"	.300"	.015"	.....	ⓑ
7029270	.100"	53/64"	.245"	.300"	.015"	.....	ⓑ
7029273	.100"	53/64"	.245"	.300"	.015"	.....	ⓑ

ⓐ - Use indicated notch as gauging point (see text).

ⓑ - Interference fit of choke rod (see text).

idle mixture adjusting screw for highest steady idle speed and readjust idle stop solenoid for specified idle speed. Turn each idle mixture screw in (to lean mixture) until engine speed drops off exactly 10 RPM (20 RPM for both screws) to the lean roll point. Finally turn both idle mixture screws out exactly ¼ turn. 2) Disconnect lead at idle stop solenoid (throttle lever will seat against regular stopscrew), adjust this stopscrew for engine idle speed of 500 RPM. Do not change setting of idle stop solenoid stopscrew or idle mixture screws.

Oldsmobile (except 400" Synchro-mesh or W-30 Option) - Disconnect air cleaner vacuum hose at intake manifold and plug fitting, remove cleaner. Disconnect vacuum hose at distributor and plug hose. Adjust throttle stopscrew and each idle mixture adjusting screw for best idle at specified hot engine idle speed (see Specifications), then turn each mixture screw in for 10-15 RPM drop in idle speed (total drop of 20-30 RPM for both screws), finally turn each idle

mixture screws out exactly ¼ turn (on 350" Engines with Outside Air Intake option, turn screws in until engine speed begins to drop off, then turn each screw out ½ turn). Recheck idle speed with air cleaner installed and vacuum hoses reconnected, repeat adjustments as necessary.

Oldsmobile - Remove air cleaner, disconnect air cleaner vacuum hose at intake manifold and plug manifold fitting. Disconnect vacuum hose at distributor and plug hose. On 1968 models adjust throttle stopscrew and each idle mixture adjusting screw for best idle at specified hot engine idle speed (see Specifications), then turn each mixture screw in for 10-15 RPM drop in idle speed (total of 20-30 RPM for both screws), finally turn each idle mixture screw out exactly ¼ turn. On 1969 models, back out each idle mixture screw 6 turns from fully closed position, then set throttle stopscrew to specified hot engine idle RPM (see Specifications). **CAUTION - Do not idle engine more than 5 minutes while making this adjustment.**

1968-69 ROCHESTER 4MV 4-BARREL (Continued)

Tempest & Firebird 6 Cyl. - 1) With idle mixture screws set 6 turns out and idle stop solenoid energized (regular running condition), adjust idle stop solenoid stopscrew for hot engine idle speed of 880 RPM (Synchro-mesh Cars), 610 RPM (Auto. Trans.).

2) With engine idling at above RPM and solenoid still energized, turn both idle mixture screws in evenly until idle speed is 850 RPM (Synchro-mesh Cars), 600 RPM (Auto. Trans. Cars). *Do not change setting of idle stop solenoid screw.*

3) Disconnect lead at idle stop solenoid (throttle lever will close to seat against regular stopscrew), adjust this stopscrew for idle speed of 600 RPM (Synchro-mesh Cars), 500 RPM (Auto. Trans. Cars). *Do not change setting of idle stop solenoid screw or idle mixture screws.*

Pontiac, Tempest, Firebird (except Ram Air) - With idle mixture screws set 6 turns out, adjust throttle stopscrew for specified hot engine idle speed (see Specifications), adjust both idle mixture screws evenly by turning screws in to lean mixture for best lean carburetor setting. Recheck idle speed. If necessary to readjust idle speed, repeat idle mixture adjustment.

Pontiac, Tempest, Firebird (Ram Air) - 1) With idle mixture screws 6 turns out and idle stop solenoid energized (running condition), adjust idle stop solenoid stopscrew for specified hot engine idle speed (see Specifications) and adjust both idle mixture adjusting screws by tuning screws in to lean mixture for best lean carburetor setting at specified idle speed.

2) Disconnect lead at idle stop solenoid to de-energize solenoid (throttle lever will seat against regular throttle stopscrew), adjust this stopscrew for idle speed of 650 RPM (all Synchro-mesh Cars), 500 RPM (all Auto. Trans. Cars). *Do not change setting of idle stop solenoid stopscrew or idle mixture adjusting screws.*

Fast Idle Speed (On Engine)

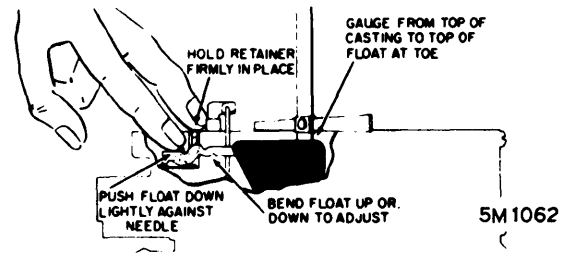
With engine at normal operating temperature (be sure choke valve fully open), position cam follower on correct step of fast idle cam as indicated in specifications, adjust fast idle screw for specified engine fast idle RPM (see Specifications).

Slow-Closing Throttle Dashpot & Idle Speed-Up Controls

See **CARBURETOR** on car model *Tune-Up* pages for adjustment of these units (when used).

Float Level

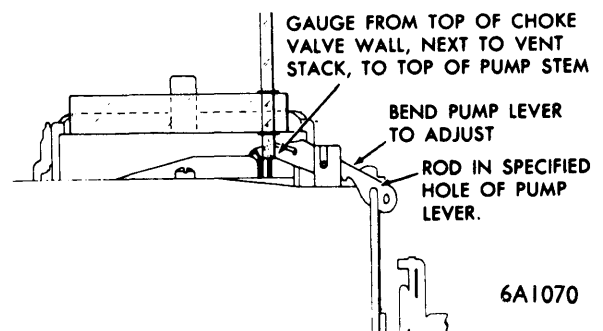
NOTE - This is an "Off-Car" adjustment. Measure from top of float bowl gasket surface with gasket removed to top of float at toe end with gauging point 1/16" back from toe radius. Make certain retaining pin is held firmly in place and tang of float is seated in float needle. Distance from float top to gasket surface of bowl should be as specified (see Specifications). Adjust by bending float up or down as necessary (see illustration).



FLOAT LEVEL ADJUSTMENT

Pump Rod

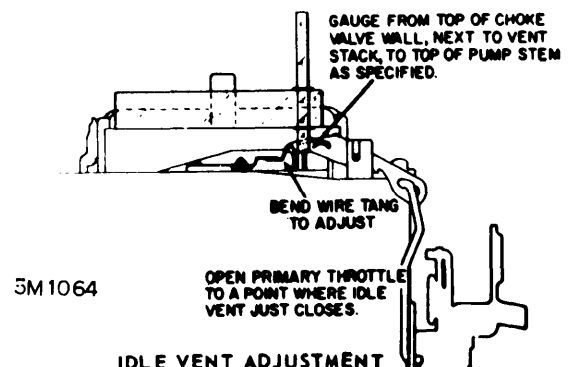
Make certain pump rod connected in correct hole of pump lever (see Specifications). With throttle valves completely closed, measure from top of choke valve wall (next to vent stack) to top of pump stem. Distance should be as specified in Specification table. Adjust by bending pump lever as follows: Wedge lever with a screwdriver, tighten a crescent wrench securely on lever and bend lever downward (if specification too small), bend lever upward (if specification too large). **CAUTION** - To make certain throttle valves are completely closed when checking pump rod, it is recommended that actuating link between primary and secondary throttle lever be disconnected for this check.



PUMP ROD ADJUSTMENT

Idle Vent Adjustment (Except Thermostatic Type)

With pump rod adjustment completed, open primary throttle valves to a point where idle vent just closes (on 1968 Chevrolet, open until valve arm just contacts bi-metal strip adjacent to vent valve). Distance from top of choke valve wall next to vent stack to top of pump plunger stem should be as specified. Bend wire tang on pump lever to adjust (see illustration).



IDLE VENT ADJUSTMENT

1968-69 ROCHESTER 4MV 4-BARREL (Continued)

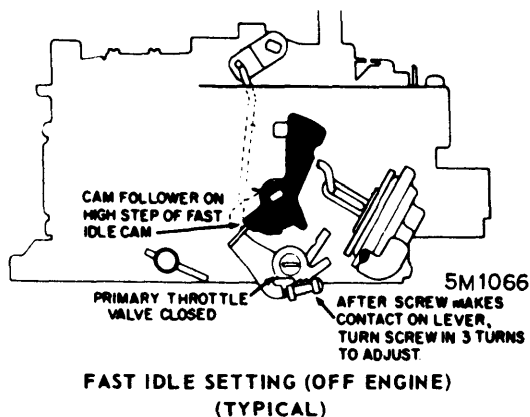
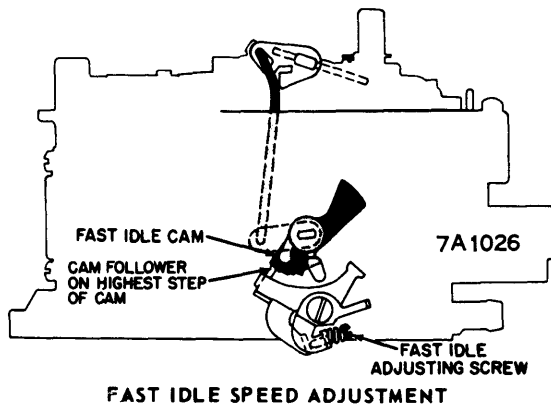
Idle Vent Adjustment (Thermostatic Type)

NOTE - During engine idle operation the bi-metal strip holds the vent valve on its seat (closed) at temperatures below 75°. With thermostatic valve closed, open primary throttle until the vent valve arm just contacts the bi-metal strip, next to vent valve. The distance from the top of the choke valve wall, next to the vent stack, to the top of the pump plunger stem, should be as specified. Bend wire tang on pump lever to adjust.

Fast Idle Setting (Off Engine)

With primary throttle valves completely closed and cam follower positioned on high step of fast idle cam, turn fast idle screw in until it makes contact with lever, then turn screw in an additional number of turns as listed below. See *Fast Idle Speed (On Engine)* for final adjustment.

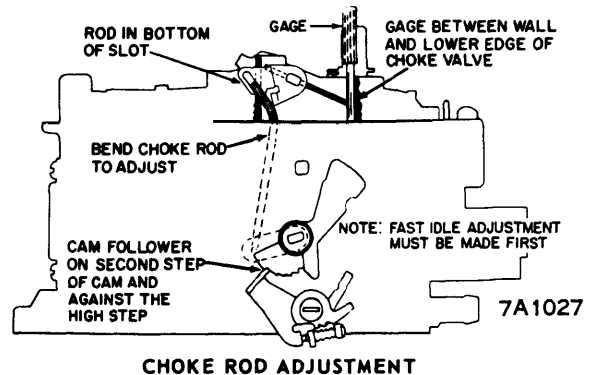
Car Model	Fast Idle Screw Setting	Screw Position
Cadillac		1½ turns
Chevrolet, Chevelle, Chevy Nova, Camaro		3½ turns
Pontiac, Tempest, Firebird		2 turns



Choke Rod

With fast idle adjustment completed and cam follower on second step of fast idle cam and against high step (see illustration), rotate choke valve toward closed position by pressing on vacuum break lever tang and pushing down on lower edge of choke valve to make certain that connector rod is at bottom of slot in choke valve lever. Measure clearance between lower edge of choke valve and air

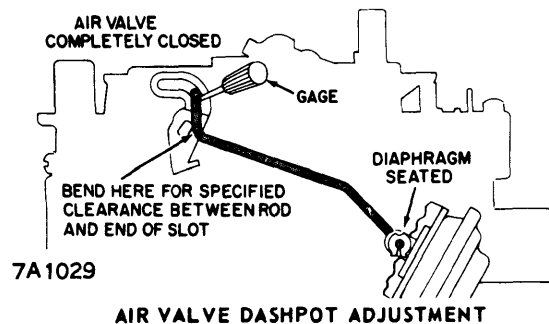
horn wall at choke lever end. If this clearance not correct (see Specifications), adjust by bending choke rod (see illustration).



Air Valve Dashpot

CAUTION - Air valve dashpot must be adjusted before checking and adjusting Vacuum Break.

NOTE - Air valve dashpot is same vacuum diaphragm unit used for Vacuum Break operation (below). With vacuum break diaphragm stem inward against its seat (see Vacuum Break adjustment below), and with air valve closed in its normal position, check clearance between connector rod and end of slot in air valve lever. If clearance not correct (see Specifications), adjust by bending connector rod at existing bend at air valve end (see illustration).



Vacuum Break

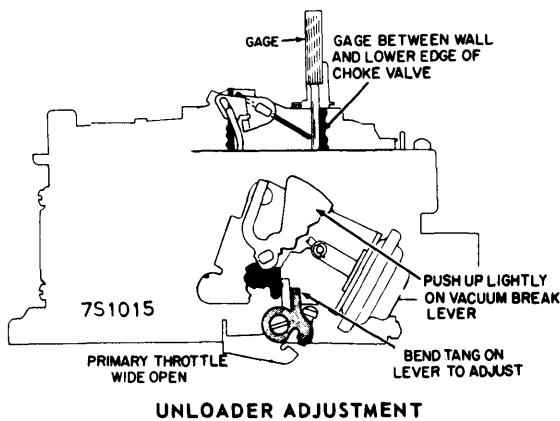
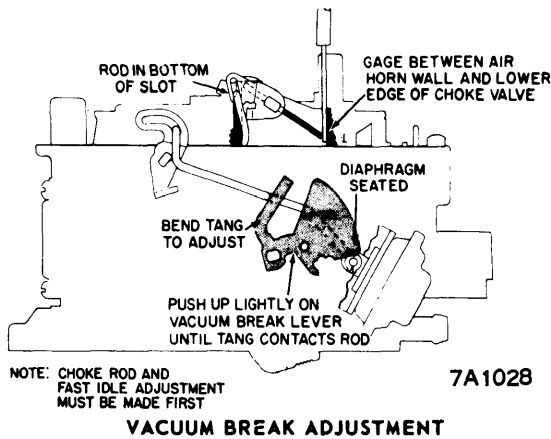
CAUTION - Adjust Air Valve Dashpot first, then adjust Vacuum Break as follows:

Hold vacuum break diaphragm stem inward against its seat (an outside vacuum source of at least 6" of Hg. connected to vacuum break diaphragm fitting can be used to hold stem depressed). Push up lightly on vacuum break lever until lever tang contacts vacuum break rod and move choke valve toward closed position so that choke rod is at bottom of slot in choke valve lever. Measure clearance between lower edge of choke valve and air horn wall at choke lever end. If this clearance not correct (see Specifications), adjust by bending vacuum break lever tang as required (see illustration).

Unloader

With choke valve held closed by a rubber band on vacuum break lever, open primary throttle to wide open position. With valves held open, dimension between lower edge of choke valve and air horn wall should be as specified in table. Bend tang on fast idle lever to adjust.

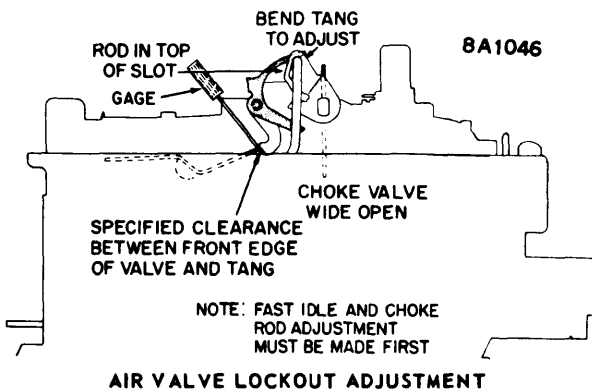
1968-69 ROCHESTER 4MV 4-BARREL (Continued)



Air Valve Lockout

NOTE - This adjustment not required on Buick Synchronesh and all Chevrolet cars (see Secondary Throttle Lockout). On Cadillac, be sure Fast Idle Setting (Off Engine) and Choke Rod Adjustment have been made first.

Opening Clearance - With choke valve wide open, apply sufficient force to vacuum break lever or thermostat tang to move choke rod to top of slot in choke lever, move air valve in direction of open valve, bend upper end of air valve lockout lever as required to obtain specified opening (see Specifications) between lockout tang and front edge of air valve.



Lockout Action - Rotate choke valve to its wide open stop by applying force to up side of valve and make certain choke rod is at bottom of slot in choke lever. Move air valve in direction of open valve. Air valve must be locked closed. If adjustment required, recheck opening clearance.

NOTE - On Cadillac, air valve will be limited to an 8° opening (wide open throttle with choke operating) in this lockout position.

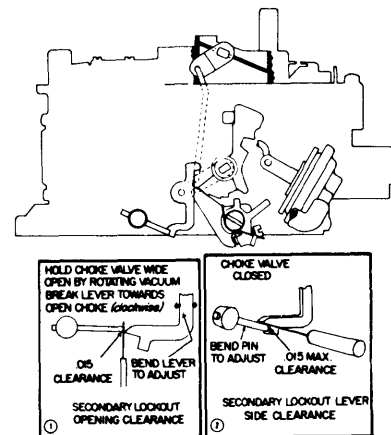
Secondary Throttle Lockout

NOTE - This adjustment required only on Buick Synchronesh and all Chevrolet cars (see Air Valve Lockout for other cars).

Secondary Lockout Clearance - With choke valve and both primary and secondary throttle valves fully closed, check clearance between lockout lever and lockout pin on secondary throttle shaft (see illustration). Lever should not contact pin and clearance must not exceed specified figure (see Specifications). Adjust by bending lockout pin as necessary.

Secondary Opening Adjustment - Holding choke valve and primary throttle valves wide open and secondary throttle valves closed, lockout pin should have a minimum of 75% contact on lockout lever. Adjust by bending lockout lever as required.

Secondary Lockout Pin Side Clearance - With choke valve and secondary throttle valve fully closed, bend lockout pin at point shown (see illustration) to maintain specified side clearance between side of lockout pin and lockout lever.



SECONDARY LOCKOUT ADJUSTMENT

Secondary Opening

This adjustment required to ensure proper opening of secondary throttle valves. Two types of linkage used which must be adjusted as follows:

2-Point Pick-up Linkage - Open primary throttle valves until actuating link just contacts tang on secondary throttle lever (see illustration). At this point, bottom of link should be centered in slot on secondary lever. Adjust by bending tang on secondary lever as required.

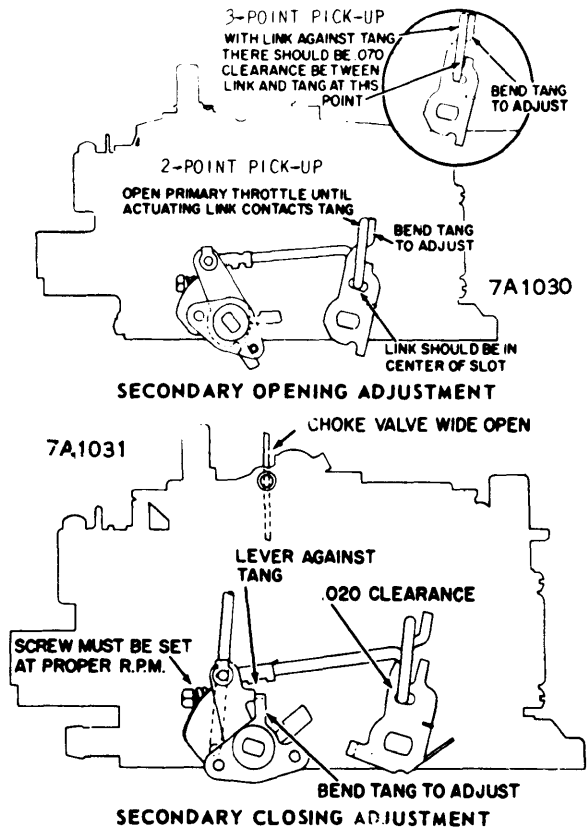
3-Point Pick-up Linkage - Open primary throttle valves until actuating link just contacts tang on secondary throttle lever (see insert in illustration). At this point, clearance between link and tang at point indicated in illustration should be .070" (all carburetors). Adjust by bending tang on secondary lever as required.

Secondary Closing

This adjustment required to ensure proper closing of secondary throttle valves. With primary throttle valves closed in correct curb idle position (see Idle Speed Adjustment) and with cam follower not contacting fast idle

1968-69 ROCHESTER 4MV 4-BARREL (Continued)

cam, check clearance between actuating link and front of slot in secondary lever when tang on Primary actuating lever is against pin (see Illustration). This clearance should be .020" (all carburetors). Adjust by bending tang on primary actuating lever as required.

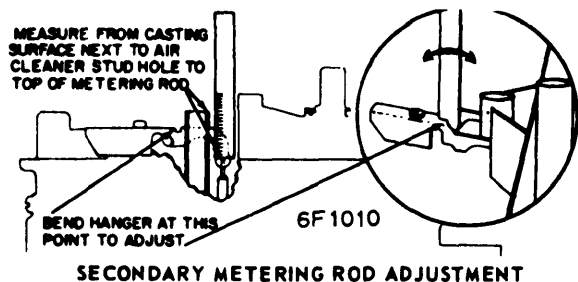


SECONDARY OPENING ADJUSTMENT

SECONDARY CLOSING ADJUSTMENT

Secondary Metering Rod

With air valve closed, check adjustment by measuring from top of each metering rod to top of air horn casting adjacent to air cleaner stud hole. If this dimension not correct (see Specification), adjust by bending metering rod hanger at point shown (see illustration). **CAUTION - Both metering rods must be adjusted evenly.**

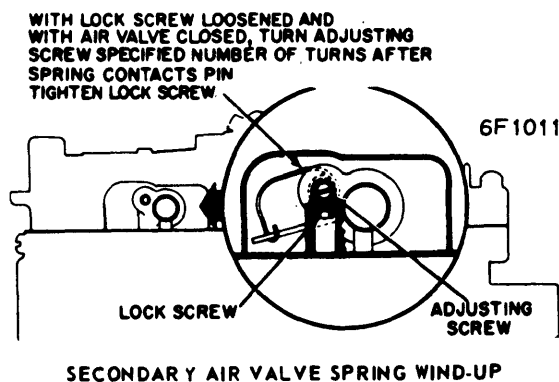


SECONDARY METERING ROD ADJUSTMENT

Secondary Air Valve Spring Wind-up

If adjustment required, use 1/16" Allen wrench to loosen lock screw, turn adjusting screw counterclockwise until all spring tension removed. Hold air valve closed and turn adjusting screw clockwise until torsion spring just contacts pin in shaft, then wind-up spring by continuing to turn adjusting screw clockwise the exact amount shown in table below. Hold adjusting screw in this position and tighten lock screw securely.

Car Model	Air Valve Spring Setting Adjusting Screw Turns
Buick	1/2
Cadillac (1968)	1/2
(7029230, 31 Carbs.)	1/2
(7029232, 33 Carbs.)	7/16
Chevrolet (7028207, 8, 12, 13 Carbs.)	3/8
(7028209, 10, 11, 16, 17, 18, 19, 29 Carbs.)	7/8
(Except 7029202, 03 Carbs.)	13/16
(7029202, 03 Carbs.)	7/16
Oldsmobile (1968 350" Engine Carbs.)	1/2
(1968 400" & 450" Engine Carbs.)	3/4
(1969 except 7029250 Carb.)	3/4
(7029250 Carb.)	1/2
Pontiac, Tempest & Firebird	1/2



SECONDARY AIR VALVE SPRING WIND-UP

Automatic Choke Rod

Buick - With choke operating rod disconnected from choke lever, hold choke valve completely closed with upward pressure on lever, pull upward on choke operating rod to end of travel. End of rod should fit freely in gauging slot on edge of lever. Adjust rod length by bending at the rod loop. Connect rod in lever hole marked "STD".

Cadillac - Choke coil assembly must be removed from manifold to disengage connector rod from vacuum break lever for adjustment (temporarily install coil assembly with rod disconnected for gauging operation, then connect rod and reinstall coil assembly). Close choke valve completely by pressing upward on vacuum break lever. (on Cadillac make sure fast idle cam is in cold start position and vacuum break lever is in maximum upward position), pull choke connector rod upward to end of travel. At this point, rod end should fit freely in center notch on side of lever ("R" end of "L" notch). Adjust by bending rod at existing bend.

Chevrolet - With choke coil rod disconnected from vacuum break lever, close choke valve completely by pressing on vacuum break lever, press rod downward to end of travel. At this point, top of rod end should be even with bottom of hole in lever (one rod diameter interference fit). Adjust rod by bending at the offset (rod end must be square and enter lever hole freely).

All 1968 Engines except 427" 390 HP - Press rod downward to end of travel. At this point, top of rod end should be even with bottom of hole in lever (one rod diameter interference fit).

1968-69 ROCHESTER 4MV 4-BARREL (Continued)

427" 390 HP 1968 Engine Carburetor - Pull rod upward to end of travel. At this point, bottom of rod end should be even with top of hole in lever (one rod diameter interference fit).

Oldsmobile - Disconnect choke coil rod from vacuum break lever (remove choke housing attaching bolt to disconnect lever), close choke valve completely by pressing on vacuum break lever (fast idle cam follower should be on high step of fast idle cam), press down on connector rod until rod contacts stop in choke housing. At this point, rod end

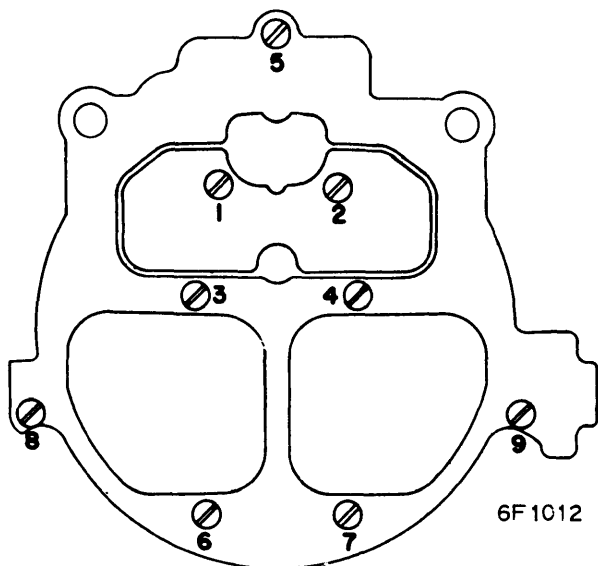
should fit freely in center notch on side of lever (between "R" and "L" notch). Adjust by bending rod at existing bend.

Pontiac, Tempest, Firebird - With choke coil rod disconnected from vacuum break lever, close choke valve completely by pressing upward on vacuum break lever, pull up on connector rod until rod contacts stop in choke housing. At this point, rod end should fit freely in center notch on upper side of lever. Adjust by bending rod at the offset.

OVERHAUL

Disassembly

Air Horn - Remove idle vent valve assembly. Disconnect choke rod from upper choke shaft lever and pump rod from pump lever. Remove clip from vacuum break rod and remove rod. Remove air horn-to-bowl attaching screws (2 screws are next to primary venturi), and remove air horn by lifting straight up. Air horn gasket should remain on bowl. **CAUTION** - Be careful not to bend two small main well air bleed tubes pressed into air horn. **DO NOT REMOVE**. Hold air valve wide open, then tilt and slide secondary metering rods from hanger. **NOTE** - Further disassembly of air horn is not required for cleaning. For parts replacement, take out choke valve screws, remove choke valve and slide choke shaft out, remove pump lever roll pin and remove pump lever. **CAUTION** - Air valves and air valve shaft are calibrated and must not be removed. If these parts damaged, replace air horn assembly.



AIR HORN SCREW TIGHTENING SEQUENCE

Float Bowl - Remove pump plunger from pump well. Remove air horn gasket from dowels on secondary side, then remove gasket from around power piston and primary metering rods. Remove pump return spring from pump well, plastic filler over float valve, and power piston and main metering rods (use needle nosed pliers to pull straight up on metering rod hanger directly over power piston). Remove power piston spring, disconnect tension spring from top of each metering rod, rotate rods and remove from hanger. Remove float assembly by pulling up slightly on retaining pin to remove pin, then slide float assembly toward front of bowl

to disengage needle pull clip. **NOTE** - Be careful not to distort pull clip. Remove float needle retainer and needle assembly with wide blade screwdriver. On all car models replace needle and seat as an assembly if necessary. Remove primary metering jets. **CAUTION** - Do not remove secondary metering discs. Remove pump discharge check ball retainer and check ball, remove baffle from secondary side of bowl. On 4MV Carburetors, remove vacuum hose from tube connection on bowl and from vacuum break assembly, remove retaining screw from choke assembly and remove assembly from float bowl (**NOTE** - If further disassembly of choke is necessary, remove clip from vacuum break link at vacuum break lever and remove rod, spread retaining ears on bracket next to vacuum break assembly and then remove the vacuum break assembly from the lever). Remove fast idle cam from the choke assembly.

Remove lower choke rod and actuating lever from inside of float bowl well. Remove hot idle compensator cover, then remove hot idle compensator and O-ring from float bowl. Remove fuel inlet filter nut, gasket, filter, and spring. Remove throttle body-to-bowl attaching screws, remove throttle body and insulator gasket.

Throttle Body - Remove pump rod from throttle lever by rotating rod out of primary throttle lever. Remove idle mixture screws and springs. **CAUTION** - Be careful not to damage secondary throttle valves. Further disassembly of throttle body is not required.

Cleaning & Inspection

CAUTION - No rubber parts, plastic parts, diaphragms, or pump plungers should be immersed in carburetor cleaner. However, the plastic cam on air valve shaft may be cleaned normally in carburetor cleaner. If air valve or cam are damaged, or air valve is binding, air horn assembly must be replaced. Blow out all passages with compressed air, inspect all parts for wear or damage, replace parts as necessary.

Reassembly

Reverse disassembly procedure using all new gaskets. When reassembling float bowl, be sure to adjust float level and make all other adjustments. See "Adjustment".

Vacuum Break Installation - If vacuum break diaphragm was removed from bracket, slide vacuum break diaphragm between retaining ears and bend ears down slightly to hold assembly securely. Install fast idle cam on vacuum break assembly.

Air Horn Installation - To prevent distortion of the air horn and binding of choke valve or air valve, tighten all air horn screws in correct sequence as shown in the illustration.

