ROCHESTER MV SINGLE BARREL

ROCHESTER MV

CHEVROLET DIVISION	Man. Trans.	Auto. Trans.
140" 4 Cyl. Vega (Without A/C)		
California	7043323	7043324
Non-California	7043023	7043024
140" 4 Cyl. Vega (With A/C)		
California	7043333	7043334
Non-California	7043033	7043034
250" 6 Cyl.	7043017	7043014
OLDSMOBILE		
250" 6 Cyl.	7043017	7043014
PONTIAC		
250" 6 Cyl.	7043017	7043014

CARBURETOR IDENTIFICATION

Carburetor part number is stamped on a vertical section of the float bowl, next to the fuel inlet nut. When float bowl assembly is being replaced, manufacturers instructions, contained in service package, must be followed so that part number is transferred to the new float bowl.

DESCRIPTION

Single barrel downdraft carburetor with automatic choke. A power enrichment system is utilized to provide good performance during moderate and heavy accelerations and at higher engine speeds. Idle system incorporates a hot idle compensator on automatic transmission models. Vacuum diaphragm unit is now mounted externally on air horn and connects to the thermostatic coil lever thru a connecting link. The automatic choke coil is manifold mounted and connected to the choke valve shaft by a rod. Carburetor has internally balanced venting thru a vent hole in air horn, leading from the float bowl into the bore beneath the air cleaner. A pressure relief valve system is incorporated in air horn and vents vapors externally during hot engine operation. An electrically operated idle stop solenoid is attached to the float bowl (on 6 cylinder models) and replaces the normal idle speed screw. This solenoid works in conjunction with the Combination Emission Control Valve (CEC). Curb idle speed is adjusted with the idle stop solenoid. A tube has been added in air horn for Exhaust Gas Recirculation. Six cylinder models have a new manifold to carburetor mounting gasket, with non-metallic bushings added at each bolt hole location, to improve hold-down retention.

Chevrolet Vega – Carburetor has been modified, from the above description, for use on the Chevrolet Vega, with the following differences:

1) Overall height is reduced. Main metering system is controlled by a main well air bleed and fixed orifice jet, instead of a metering rod and jet.

2) Power piston is eliminated. A venturi velocity power enrichment system is used to enrich air-fuel mixture during moderate to heavy accelerations and at higher engine speeds.

3) California models use a swivel on top of the automatic choke thermostatic coil rod and this swivel will be adjusted rather than bending the rod.

4) Float bowl casting is revised in the pump well area to provide increased clearance for hold-down stud nut. A thin lip pump cup is also used on Vega carburetors for improved cup to wall contact during cold weather operation.

5) Vega carburetors continue to use the vacuum diaphragm unit mounted on the air horn.

Calibration Screw – Installed in channel at bottom of float bowl and controls fuel flow thru a by-pass channel past metering jet. This screw is factory adjusted to refine air-fuel mixture ratios, and screw must not be removed or setting disturbed in the field.

Cranking Enrichment Valve – Located in air horn, controls by-pass 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 cold starting. *Valve is not removable and does not require adjustment.*

Idle Stop Solenoid (Except Chevrolet Vega) – An electrically operated idle stop solenoid has been added to the carburetor float bowl and replaces the normal idle speed screw, thus controlling curb idle engine speed. This solenoid is used in conjunction with the Combination Emission Control Valve (CEC). *See Adjustments.*

Idle Stop Solenoid (Chevrolet Vega) – An idle stop solenoid and bracket, attached to carburetor mounting stud is used to control curb idle speed on Vega Models. This solenoid is electrically controlled thru the ignition switch and when the ignition switch is turned off, the solenoid is de-energized, allowing carburetor throttle valve to close further. This prevents engine overrunning (dieseling) when ignition switch is turned off. Curb idle speed is adjusted by turning the plunger screw on the solenoid, with the solenoid energized. The low curb idle speed is adjusted with the idle stop screw on carburetor bowl. *See Adjustments.*

C.E.C. Valve (6 Cylinder Engines) – The Combination Emission Control Valve (C.E.C.) is now used in conjunction with the idle stop solenoid. This valve, when energized thru the transmission, acts as a throttle stop by increasing idle speed during high gear operation, which helps in controlling overrun emissions during deceleration. The C.E.C. Valve also provides full spark vacuum advance during high gear operation and is de-energized in the lower gears and at idle for retarded spark timing. *NOTE – Normal (curb) idle speed is obtained with the electrically operated idle stop solenoid, not the C.E.C. Valve.*

ADJUSTMENT

Idle Speed & Mixture

► *NOTE – Carburetors are equipped with locked mixture screws. These screws should not be tampered with, since permissible exhaust emissions levels may be altered. When carburetor overhaul or rework is performed (throttle body, fuel bowl, jets, etc.), certain rigid procedures are required to readjust idle mixtures. See "General Motors Tune-Up" in Exhaust Emission Manual.*

All Except Chevrolet Vega – Set idle speed with engine at normal operating temperature, air cleaner installed, choke open, air conditioner OFF, parking brake applied, fuel vapor tank hose disconnected from canister and plugged, distributor

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CARBURETOR ADJUSTMENT SPECIFICATIONS

Rochester Car. No.	Idle Speed (Engine RPM)		Float Level Setting	Metering Rod Setting	Fast Idle (Off Engine)	Choke Rod Setting	Vacuum Break Setting	Unloader Setting	Auto. Choke Setting
	Hot ①	Fast ②							
7043014	600/450	2400④	1/4"	.080"	.....	.245"	.300"	.500"	⑤
7043017	700/450	2400④	1/4"	.080"	.....	.275"	.350"	.500"	⑤
7043023	1000/700	2000	.06"	.....	.....	.110"	.140"	.375"	⑤
7043024	750/550	2200	.06"	.....	.....	.085"	.120"	.375"	⑤
7043033	1000/700	2000	.06"	.....	.....	.110"	.140"	.375"	⑤
7043034	800/550	2200	.06"	.....	.....	.085"	.120"	.375"	⑤
7043323	1000/700	2000	.06"	.....	.....	.110"	.140"	.375"	⑤
7043324	750/550	2200	.06"	.....	.....	.085"	.120"	.375"	⑤
7043333	1000/750	2000	.06"	.....	.....	.110"	.140"	.375"	⑤
7043334	800/550	2200	.06"	.....	.....	.085"	.120"	.375"	⑤

① – With distributor vacuum hose connected.
② – Make all settings with engine running.
③ – Higher speed – solenoid energized.
Lower speed – solenoid de-energized.
④ – 1800 RPM on Chevrolet models. Oldsmobile models preset.
⑤ – Governed by choke coil rod adjustment. See *Adjustments*.

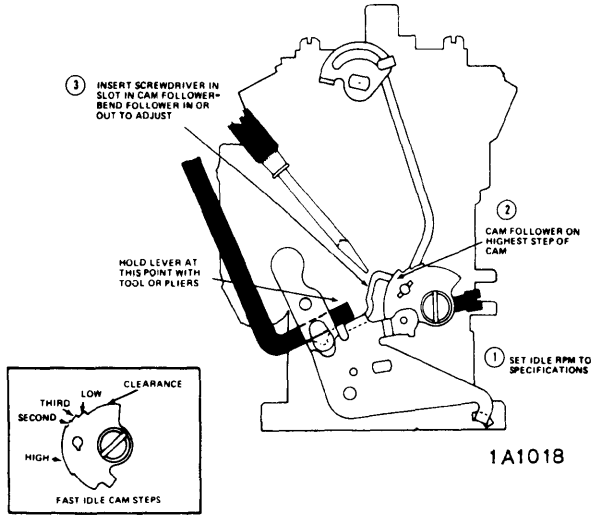
vacuum hose and EGR vacuum hose disconnected and plugged. Turn idle stop solenoid as necessary to obtain solenoid energized (higher) RPM. *NOTE – Do not turn solenoid more than one complete turn without disconnecting electrical wiring.* Now set low idle speed, with solenoid de-energized, using Allen head screw on end of solenoid to lower RPM. *CAUTION – Do not attempt to adjust idle using C.E.C. Valve as a decrease in engine braking may result.*

Chevrolet Vega – Set idle speed with engine at normal operating temperature, air cleaner installed, choke open, air conditioner OFF, parking brake applied, fuel tank vapor hose disconnected from canister, and distributor vacuum hose disconnected and plugged. Disconnect electrical connection at idle stop solenoid and adjust low idle speed screw to the lower RPM listed (solenoid de-energized). Then with dwell, timing and low idle again checked, reconnect solenoid wiring and open throttle momentarily, adjust solenoid plunger screw to the specified curb idle speed (higher) RPM listed.

Fast Idle Speed

NOTE – On Oldsmobile models, fast idle is preset at factory.

On Engine – *NOTE – On Chevrolet Division Models, make adjustment with transmission in Neutral; on Pontiac Models, make adjustment with synchro-mesh in Neutral, auto. trans. in Park. On Chevrolet Vega, adjustment is made with TCS electrical lead disconnected and full spark to distributor (pull connector off of vacuum solenoid located on left side of firewall for full advance). Also, on 6 cylinder models, pull lead off of temperature switch and ground it, to energize C.E.C. Valve (for vacuum advance).* After slow idle adjustment complete and with engine at normal operating temperature, fast idle cam follower on specified step of fast idle cam, insert screwdriver in slot in cam follower and bend follower as necessary to obtain specified RPM (see Specifications).



FAST IDLE ADJUSTMENT

Pressure Relief Valve

Located at top of carburetor air horn. Valve allows fuel vapors which form in float bowl during hot engine idle or "hot soak" to be vented externally so they will not be drawn into intake manifold. No adjustment required.

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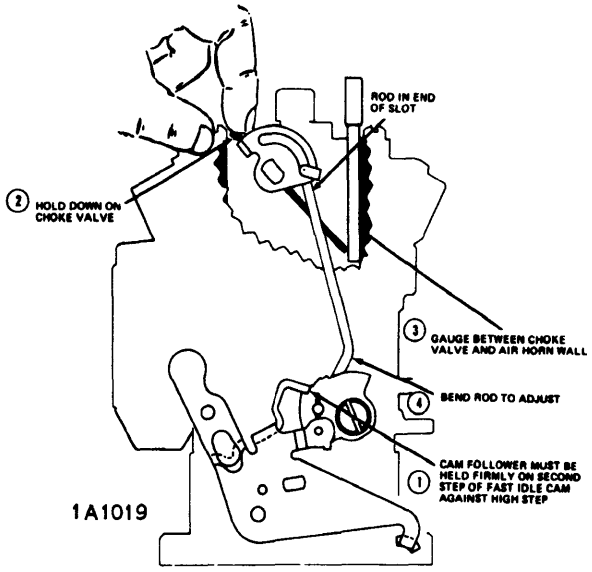
Choke Rod

NOTE – Fast idle adjustment must be made first.

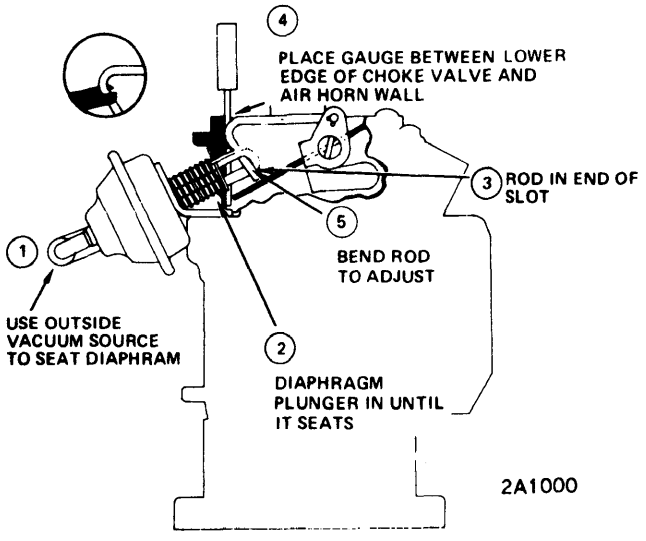
Place fast idle cam follower on 2nd step of fast idle cam and against shoulder of high step. Hold choke valve down with fingers and make certain choke rod is at lower end of slot in choke lever. Gauge clearance between choke valve and air horn wall (see Specifications). To adjust, bend choke rod at offset (shown in illustration).



CHOKE ROD ADJUSTMENT

Vacuum Break

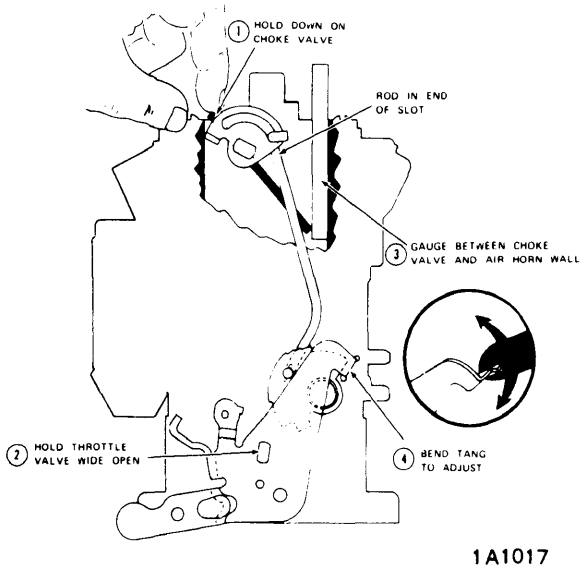
Using an outside vacuum source, apply vacuum to vacuum break diaphragm until plunger is fully seated, then with diaphragm in this position, push choke valve toward closed position. With choke valve closed, gauge clearance between lower edge of choke valve and air horn wall (see Specifications). To adjust, bend vacuum break rod at offset (shown in illustration).



VACUUM BREAK ADJUSTMENT

Choke Unloader

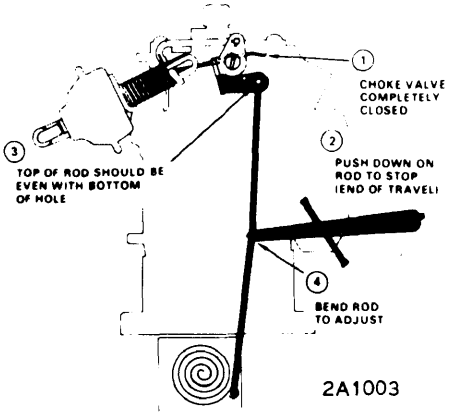
Hold choke valve towards "closed" position and rotate throttle lever to wide open position. Bend unloaded tang on throttle lever to obtain specified clearance (see Specifications) between lower edge of choke valve and air horn wall.



UNLOADER ADJUSTMENT

Choke Coil Rod

Except Chevrolet Vega – Hold choke valve completely closed. With thermostatic choke coil rod disconnected from upper lever, push downward on rod to end of travel. With rod in this full downward position, top of rod should be even with bottom of hole in lever. To adjust, bend rod at point shown in illustration.



CHECK COIL ROD ADJUSTMENT (EXCEPT CHEVROLET VEGA)

Chevrolet Vega – Hold choke valve completely open. With thermostatic choke coil rod disconnected from upper lever, push downward on rod to end of travel. With rod in this full downward position, top edge of rod should be even with bottom of hole in lever (except California applications). On

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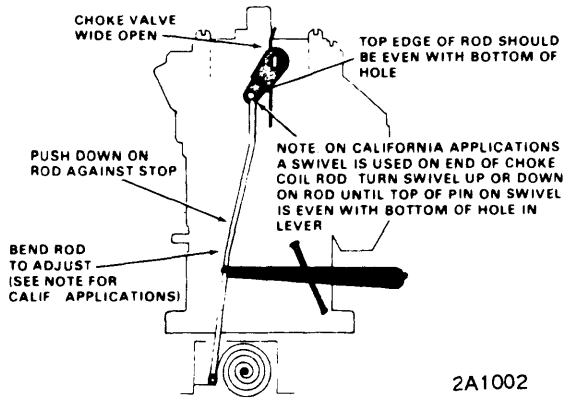
California models, when rod is in this full downward position, the top edge of the pin on the swivel should be even with the bottom of the hole in lever. To adjust, bend rod at point shown in illustration (non-California vehicles), or turn swivel up or down (California vehicles only).



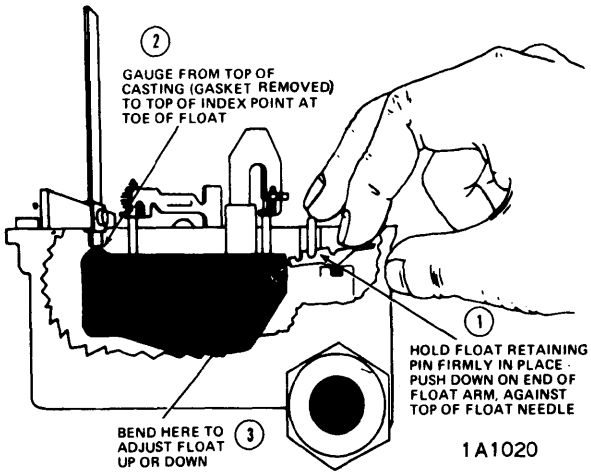
CHOKE COIL ROD ADJUSTMENT
(CHEVROLET VEGA)

Float Level

Hold float retaining pin firmly in place and push down on end of float arm, against top of float needle. Using a "T" gauge, measure distance from top of casting (with gasket removed) to the top of index point at toe of float. If measurement not as specified (see Specifications), adjust by bending float arm up or down at a point adjacent to the pontoon.

Metering Rod (Except Chevrolet Vega)

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 idle stop solenoid 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 (see Specifications) between lower surface of holder and bowl casting. Gauge should be a slide fit. If clearance not correct, adjust by carefully bending metering rod holder up or down as required.

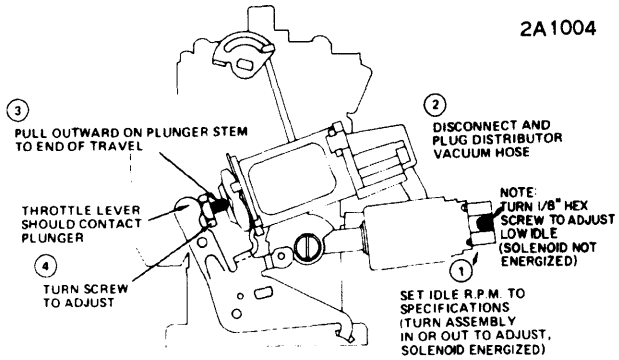


FLOAT LEVEL ADJUSTMENT

Combined Emission Control Valve (Except Chevrolet Vega)

NOTE – C.E.C. Valve is preset at factory and normally should not require adjustment. However, in the case of solenoid replacement, major carburetor overhaul, or throttle body replacement, the following procedure should be followed to adjust the C.E.C. Valve.

With low and slow idle set to specifications and engine OFF, pull outward on solenoid plunger stem to end of travel. Adjust solenoid plunger to just contact throttle lever.



C.E.C. VALVE ADJUSTMENT
(6 CYL. ONLY)

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OVERHAUL

Disassembly

1) If equipped with C.E.C. valve, remove vacuum hose from valve and timed spark tube, then bend back retaining tabs on lockwashers and remove large C.E.C. valve nut and remove valve from bracket. *NOTE – Do not remove C.E.C. valve bracket from float bowl unless replacement of bracket is necessary.* Remove electrically operated idle stop solenoid wire connector and unscrew solenoid from float bowl casting by turning solenoid body counterclockwise. *NOTE – Do not immerse C.E.C. valve assembly or idle stop solenoid in any type of carburetor cleaner.*

2) Remove fast idle cam attaching screw, remove cam from choke rod at lower end by rotating over squirt on rod and from upper lever by rotating rod out of slot. Remove air horn to float bowl attaching screws (6) and remove air horn by lifting straight up. Invert air horn and remove two vacuum break diaphragm cover screws and carefully remove diaphragm cover.

3) Hold choke valve open, push upward on eyelet on choke valve at a 45° angle until looped end of rod slides off wire lever attached to choke valve, then remove diaphragm plunger rod through hole in air horn. If necessary, choke valve, vacuum break lever, and choke shaft can be removed from air horn by removing thermostatic coil lever attaching screw, then removing thermostatic coil lever and two choke valve attaching screws; remove choke valve and shaft from air horn. *NOTE – Choke valve screws are held in place with Loc-tite, so it will be necessary to re-stake them after assembly.*

CAUTION – Do not remove air cleaner stud bridge as Loc-tite is used on attaching screws.

4) Remove air horn to float bowl gasket (gasket has slit next to metering rod lever). Remove float assembly from bowl by lifting upward on float hinge pin, then remove hinge pin from float arm and remove float needle from seat. Disconnect accelerator pump and power piston actuator lever from end of throttle shaft by removing lever attaching screw. Hold down on power piston while removing lever, power piston spring and metering rod assembly may now be removed from float bowl.

5) Remove lower end of power piston link from actuator lever by rotating until tang on rod slides out of notch in lever. Remove actuator lever from lower end of accelerator pump link in same manner. Push down on accelerator pump and remove actuator link by rotating until tang on rod is aligned with slot on pump plunger lever, remove link.

6) Remove pump assembly from float bowl, then remove pump return spring and power piston spring from float bowl. Remove "T" guide and pump discharge spring using needle nose pliers. Invert bowl and remove pump discharge ball and idle tube. Remove main metering jet from bottom of fuel bowl and remove float needle seat and gasket using suitable tool (BT-3007). Remove two screws from idle compensator cover, then remove cover, hot idle compensator and seal from recess in bowl.

7) The idle stop screw can now be removed. Remove fuel inlet nut and gasket, then remove filter and relief spring. Invert carburetor bowl and remove throttle body to bowl attaching screws, throttle body and insulator gasket. *NOTE – Due to close tolerance fit, do not remove valve or shaft.*

Cleaning & Inspection

Thoroughly clean carburetor castings and metal parts in a suitable solution, do not immerse rubber and plastic parts in cleaner. Blow out all passages with compressed air, do not use drills to clean jets or passages. Check float needle and seat assembly for wear, inspect upper and lower casting sealing surfaces for damage, inspect holes in levers for out of round condition, examine fast idle cam for wear or damage, check throttle and choke levers for binds or damage, and check all springs for distortion or tension loss; replace parts as necessary.

Reassembly

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).

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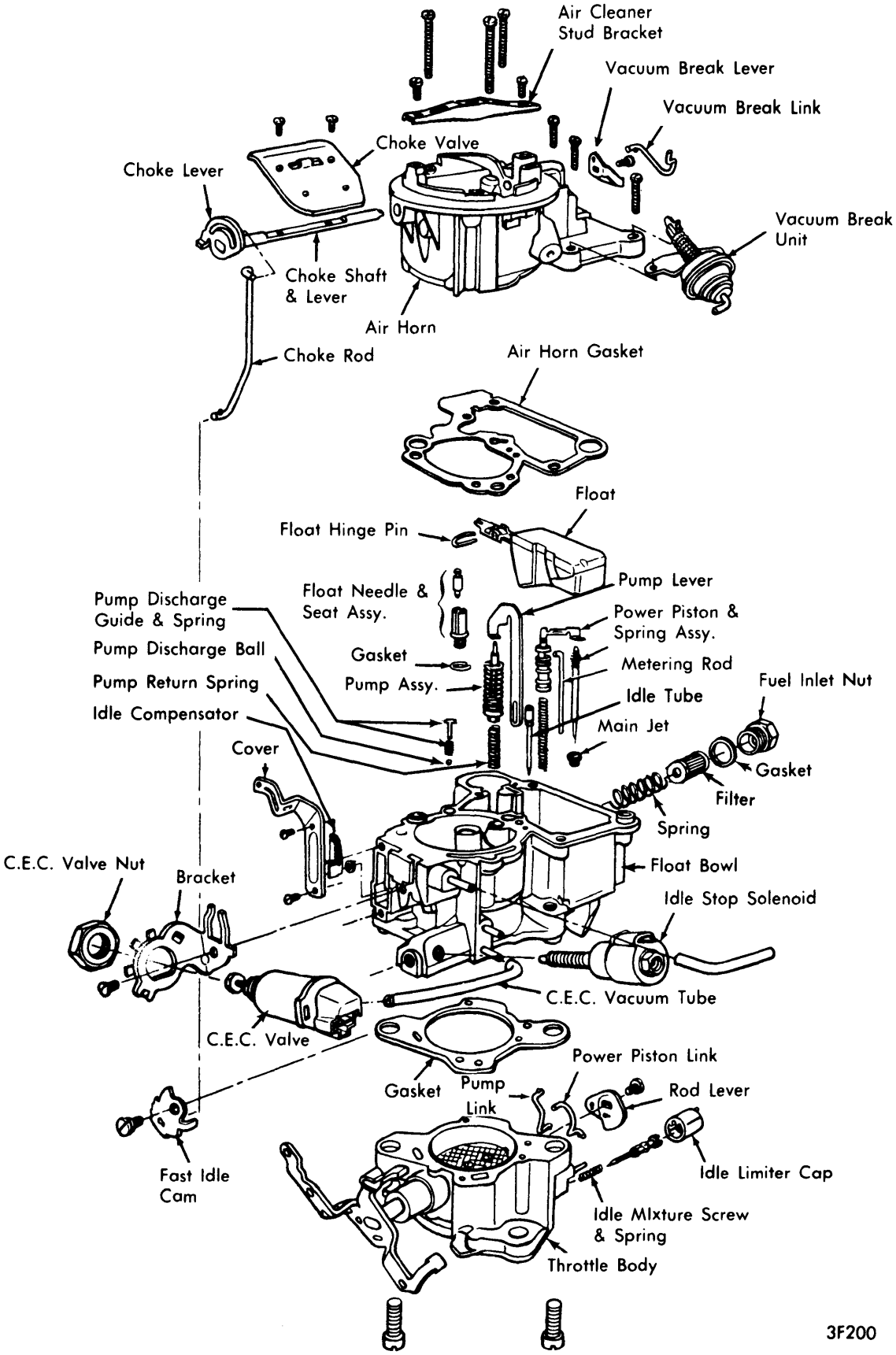

ROCHESTER MV CARBURETOR ASSEMBLY