1975-79 FUEL SYSTEMS
Rochester 2SE 2-Barrel Carburetor

1979 General Motors

CARBURETOR APPLICATION

ROCHESTER 2SE CARBURETOR NUMBERS

Application	Man. Trans.	Auto Trans.
250"		
Federal		
C & G Series	17059641	17069640
K Series	17059643	17059640
California		
C10 & G10	17059765	17069764
C20, G20 & G30	17059767	17059741

CARBURETOR IDENTIFICATION

The Rochester 2SE carburetor number is stamped vertically on the float bowl, next to vacuum tube. If float bowl is replaced, follow manufacturer's instructions contained in service package to transfer part number to new float bowl.

CARBURETOR DESCRIPTION

The Rochester 2SE carburetor is a 2-stage, 2-barrel downdraft carburetor. The primary stage consists of a triple venturi with a small bore. The secondary stage has a larger bore and is equipped with an air valve with a single tapered metering rod. Carburetor is equipped with an integral, electronically-activated choke, 2 choke vacuum break diaphragms, and an idle speed solenoid.

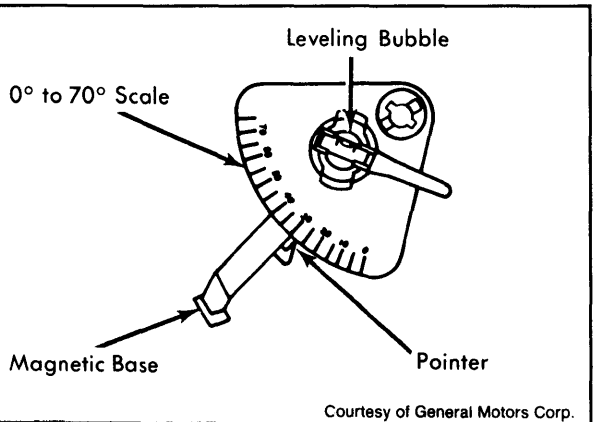
ADJUSTMENTS

CHOKE VALVE ANGLE GAUGE

Some carburetor adjustments must be performed using Choke Valve Angle Gauge (J-26701). While preparations and actual adjustments may vary with each individual adjustment, the procedure for using the angle gauge to check the choke valve angle remains the same. Use the following procedure to perform adjustments requiring the use of the choke angle gauge. *See Fig. 1.*

1) Rotate degree scale on angle gauge so that zero (0) mark is opposite pointer. With choke valve closed, place angle gauge magnet squarely on choke valve. Rotate leveling bubble on angle gauge until it is centered.

2) Rotate degree scale until specified degree mark is opposite pointer. Perform individual adjustments requiring the use of angle gauge. If bubble is centered, adjustment is correct. If not, adjust carburetor.



Courtesy of General Motors Corp.

Fig. 1: Choke Valve Angle Gauge

HOT (SLOW) IDLE RPM

See appropriate article in TUNE-UP PROCEDURES section.

IDLE MIXTURE

See appropriate article in TUNE-UP PROCEDURES section.

COLD (FAST) IDLE RPM

1) This is a preliminary adjustment only. This adjustment ensures that other adjustments are made with fast idle speed approximately correct. Final cold (fast) idle RPM adjustment must be made with carburetor installed on engine. See appropriate article in TUNE-UP PROCEDURES section.

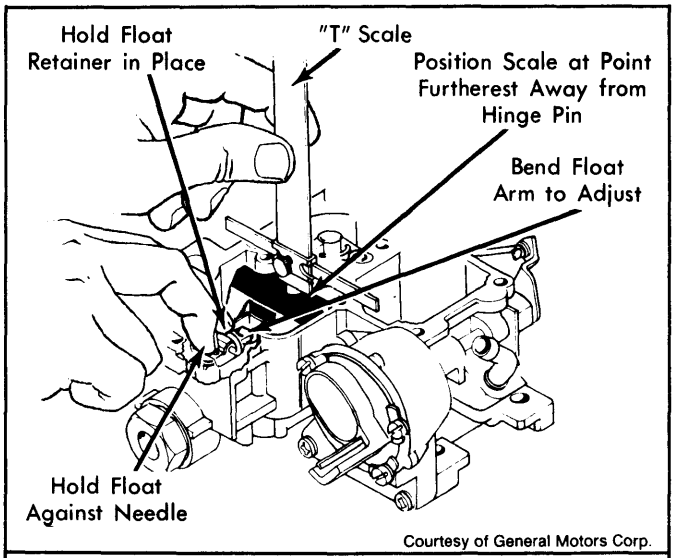
2) Place fast idle speed screw on highest step of fast idle cam. Back off fast idle speed screw until throttle valves are completely closed. Now turn fast idle speed screw in until it just touches high step of fast idle cam, then turn fast idle speed screw in an additional 2 turns.

FLOAT LEVEL

1) Remove air horn and gasket from float bowl. Hold float retainer firmly down while lightly pushing float down against needle. *See Fig. 2.*

2) Position a "T" scale over large toe of float at point furthest away from float hinge pin. Measure distance from float bowl casting to float.

3) To adjust, remove float and bend float arm. Use care in removing float as some models may be equipped with a float stabilizer spring. Check to make sure float is correctly aligned after adjustment.



Courtesy of General Motors Corp.

Fig. 2: Adjusting Float Level

ACCELERATOR PUMP

NOTE: Accelerator pump adjustment should not be changed from original factory setting. Adjustment should only be made if specified setting is changed. Pump lever is manufactured from hardened steel, making it difficult to bend. Pump arm should not be removed to make adjustment unless absolutely necessary.

1) Close throttle valves completely. Make sure fast idle speed screw is off fast idle cam. Using a "T" scale, measure accelerator pump specified distance from cast surface of air horn to top of pump stem. *See Fig. 3.*

2) To adjust, remove pump lever screw and washer. Remove pump lever by rotating lever and removing from pump rod. Secure lever in a vise and bend end of lever at small segment.

3) Install pump lever washer and retaining screw. Recheck pump adjustment and, when correct, tighten retaining screw. Open and close throttle and check for free linkage movement and pump lever alignment.

1975-79 FUEL SYSTEMS
Rochester 2SE 2-Barrel Carburetor (Cont.)

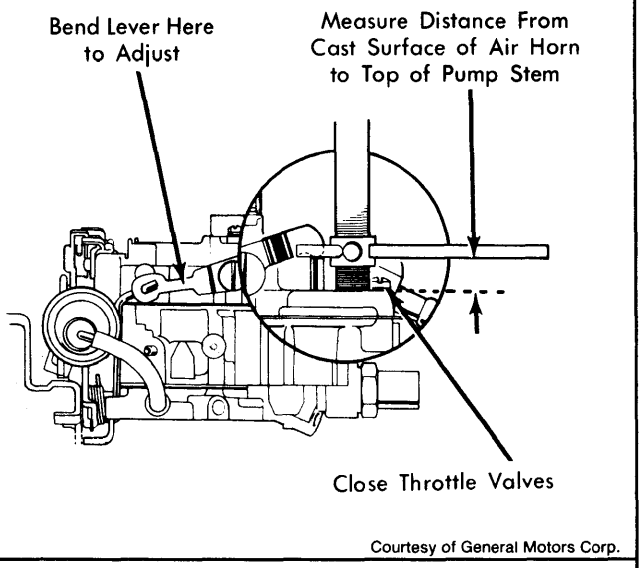


Fig. 3: Adjusting Accelerator Pump

CHOKE COIL LEVER

1) Remove choke thermostatic cover from choke housing. Place fast idle screw on high step of fast idle cam. *See Fig. 4*. Push in on intermediate choke lever until choke valve is fully closed.
2) Insert a specified drill or pin gauge in hole provided in choke housing. Choke lever inside housing should just touch drill or pin gauge. To adjust, bend intermediate choke rod. Reinstall choke cover and adjust.

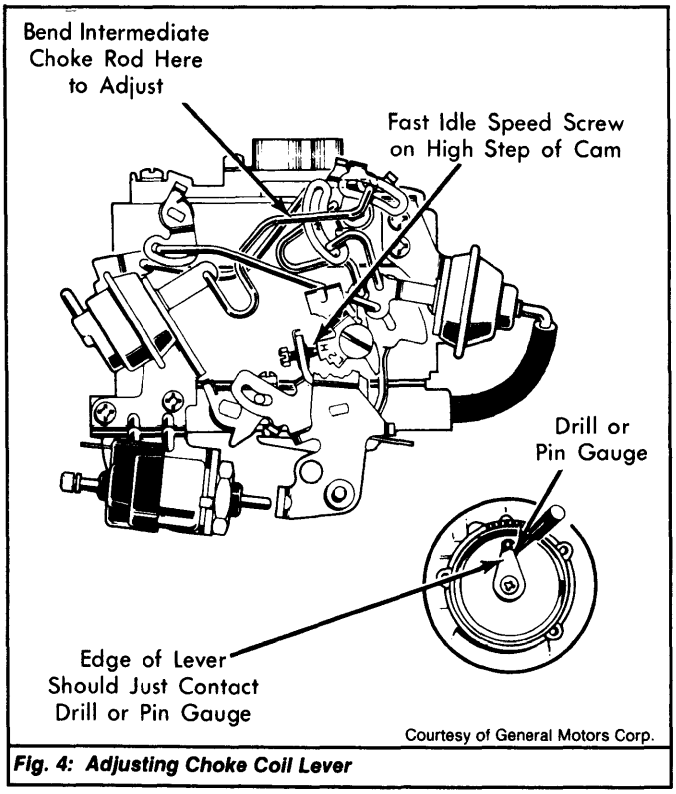


Fig. 4: Adjusting Choke Coil Lever

CHOKE ROD (FAST IDLE CAM)

NOTE: Cold (fast) idle RPM and choke coil lever adjustments must be adjusted first. This adjustment is performed using choke angle gauge. See CHOKE VALVE ANGLE GAUGE in this article.

1) Place fast idle speed screw on second step of fast idle cam, against shoulder of highest step. *See Fig. 5*. Close choke valve by pushing on intermediate choke lever. Push vacuum break lever toward open choke until lever is against rear tang on choke lever.
3) Bubble on choke angle gauge should be centered with specified degree mark opposite pointer. To adjust, bend fast idle cam rod until bubble of choke valve angle gauge is centered.

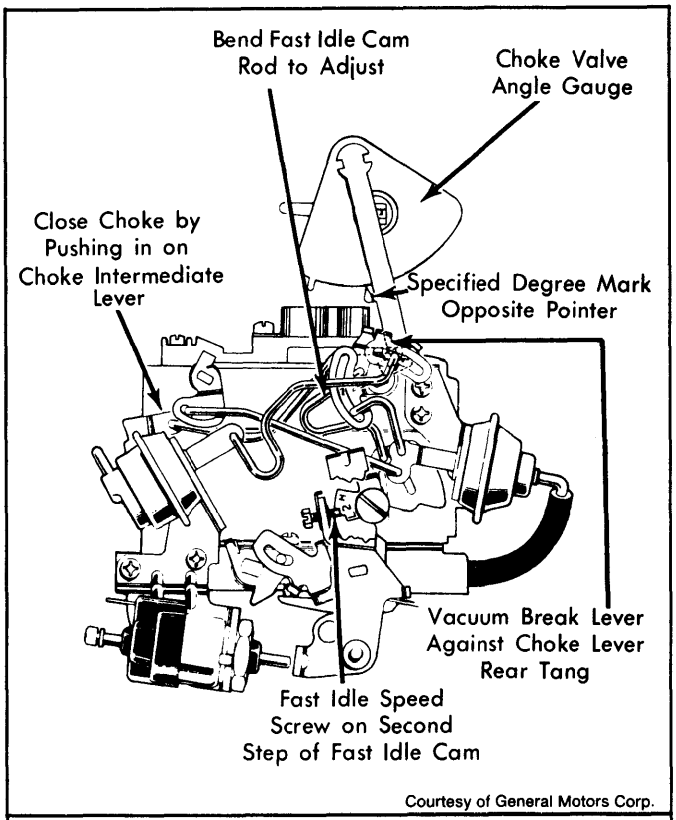


Fig. 5: Adjusting Choke Rod (Fast Idle Cam)

AIR VALVE ROD

1) Using an outside vacuum source of at least 15 in. Hg, seat primary choke vacuum break diaphragm plunger. Completely close air valve. *See Fig. 6*.

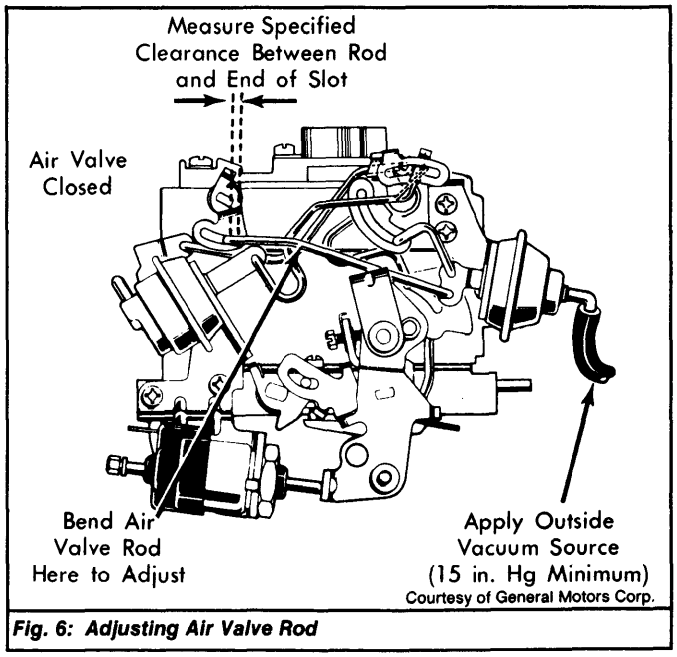


Fig. 6: Adjusting Air Valve Rod

2) Measure air valve rod clearance between rod and end of slot in air vlave lever. measurement can be checked using a drill or pin gauge of specified size. To adjust, bend air valve rod.

PRIMARY VACUUM BREAK

NOTE: This adjustment is performed using choke valve angle gauge. See CHOKE VALVE ANGLE GAUGE in this article.

1) Using an outside vacuum source of at least 15 in. Hg, seat primary vacuum break diaphragm. Close choke valve by pushing in on intermediate choke lever. *See Fig. 7.*
2) Bubble on choke valve angle gauge should be centered with specified degree mark opposite pointer. To adjust, bend primary vacuum break rod until bubble is centered.

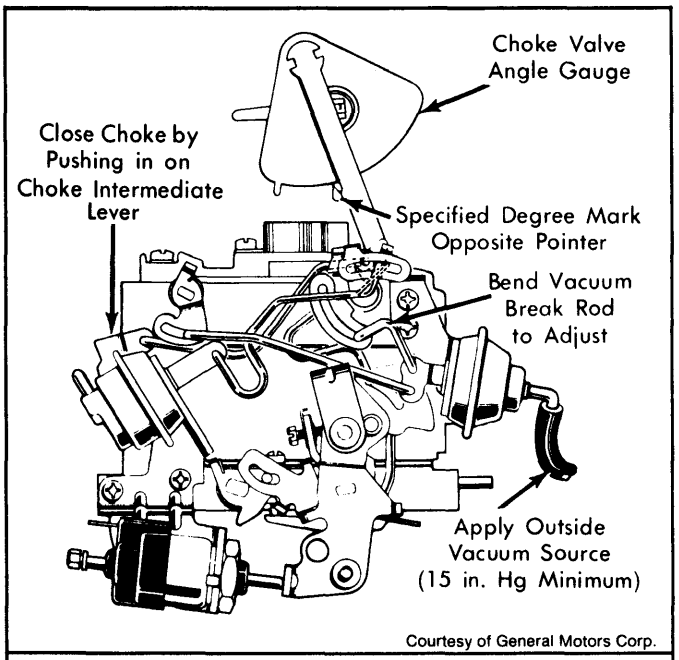


Fig. 7: Adjusting Primary Vacuum Break

SECONDARY VACUUM BREAK

NOTE: This adjustment is performed using choke valve angle gauge. See CHOKE VALVE ANGLE GAUGE in this article.

1) Using an outside vacuum source of at least 15 in. Hg, seat vacuum secondary vacuum break diaphragm. Close choke valve by pushing in on intermediate choke lever. *See Fig. 8.*
2) Make sure bucking spring on diaphragm plunger (if equipped) is compressed and seated. Bubble on choke valve angle gauge should be centered with specified degree mark opposite pointer. To adjust, bend primary vacuum break rod until bubble is centered.

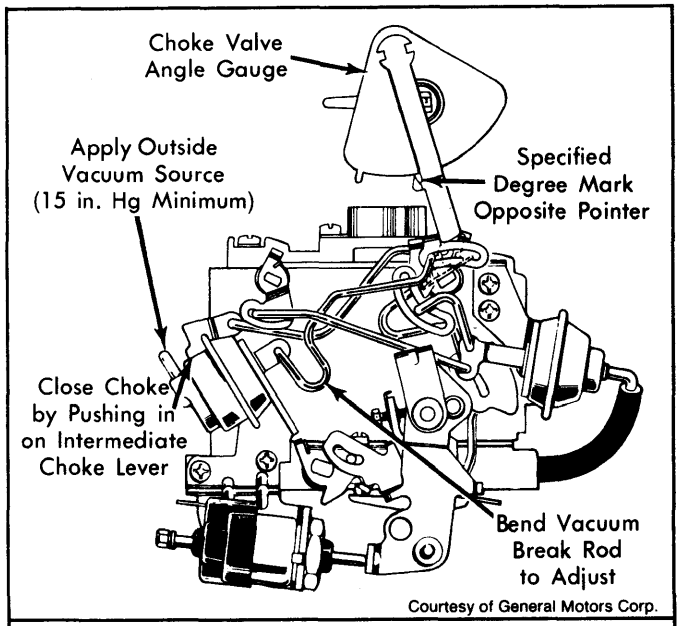


Fig. 8: Adjusting Secondary Vacuum Break

AUTOMATIC CHOKE

Loosen 3 choke cover retaining screws. Position fast idle speed screw on high step of fast idle cam. Rotate cover to align reference mark on cover with specified graduation on housing. Tighten choke cover screws.

CHOKE UNLOADER

NOTE: This adjustment is performed using choke valve angle gauge. See CHOKE VALVE ANGLE GAUGE in this article.

1) Ensure automatic choke is properly adjusted. Hold throttle valve wide open. If engine is warm, close choke valve by poushing in on choke intermediate lever. Hold choke valve in position with a rubber band.
2) Bubble on choke valve angle gauge should be centered with specified degree mark opposite pointer. To adjust, bend choke unloader tang on throttle lever until bubble is centered. *See Fig. 9.*

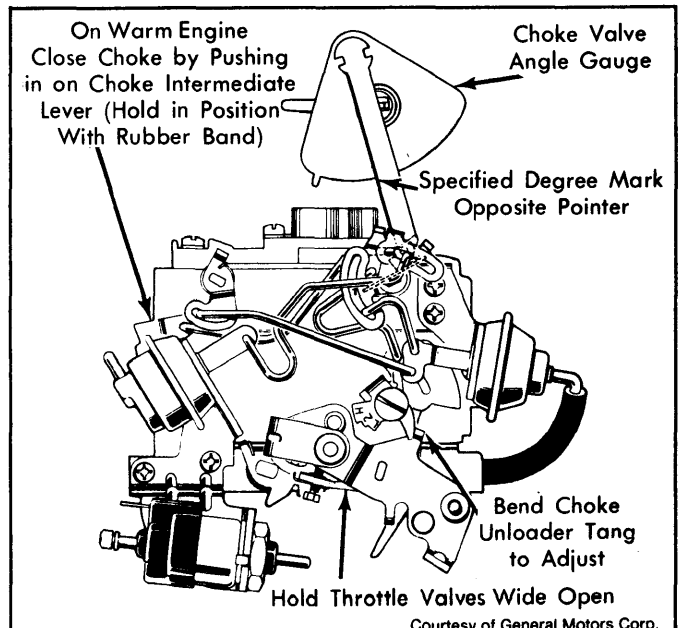


Fig. 9: Adjusting Choke Unloader

1975-79 FUEL SYSTEMS
Rochester 2SE 2-Barrel Carburetor (Cont.)

SECONDARY THROTTLE LOCKOUT

1) Hold choke valve wide open by pushing down on intermediate choke lever. *See Fig. 10.* Open throttle lever until end of secondary actuating lever is opposite toe of lockout lever.
2) Measure specified clearance between end of actuating lever and toe of lockout lever. Measurement can be checked using a drill or pin gauge of specified size. To adjust, bend lockout lever tang contacting fast idle cam.

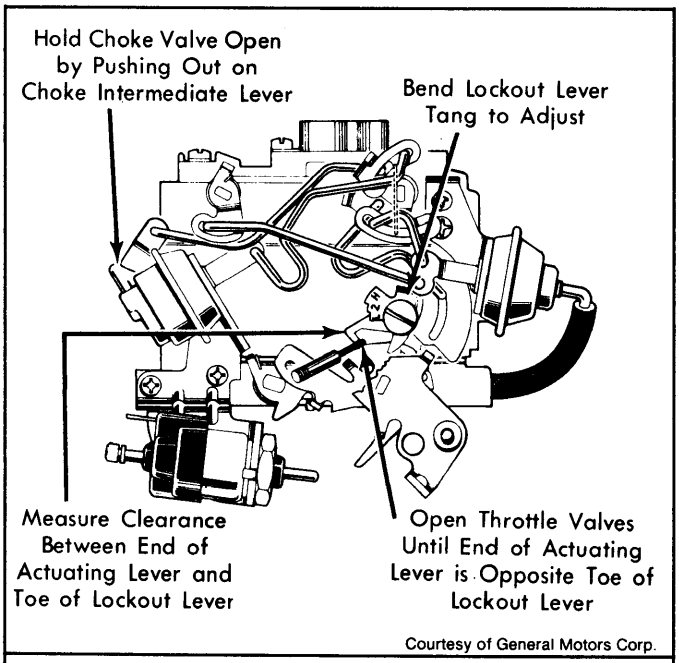


Fig. 10: Adjusting Secondary Throttle Lockout

OVERHAUL

CARBURETOR

Disassembly - 1) Place carburetor on stand to prevent damaging throttle valves. Bend back tabs on idle speed solenoid lock washer. Carefully remove large solenoid retaining nut. Remove idle speed solenoid and washer from bracket.
2) Remove accelerator pump lever retaining screw from air horn. *See Fig. 11.* Rotate pump lever to remove from pump rod. Remove vacuum hose from primary vacuum break diaphragm.
3) Remove primary vacuum break diaphragm bracket screws. Rotate bracket and diaphragm assembly to disengage rods from vacuum break lever and air valve lever.

NOTE: It is not necessary to disconnect vacuum break or air valve rod(s) from primary or secondary vacuum break diaphragm plunger. If replacing rod(s), remove retaining clip(s) and remove rod(s). Save plastic bushing(s) for reassembly.

4) Remove idle speed solenoid/secondary vacuum break bracket screws. Rotate bracket to disconnect rod from secondary vacuum break lever. Remove and discard retaining clip from rod at choke intermediate lever. Remov echoke rod and plastic bushing from lever.
5) Remove hot idle compensator valve screws. Remove valve and seal from air horn. Discard seal. Hot idle compensator valve removal is necessary to gain access to short air horn-to-bowl attaching screw.
6) Remove all air horn-to-float bowl screws and lock washers. Remove vent stack and screen assembly. Rotate fast idle cam up as far as possible. Rotate air horn and tilt to disengage fast idle cam rod from slot in fast idle cam.
7) Disconnect fast idle cam rod from choke lever by aligning tang on rod with slot in lever. Lift off air horn assembly. Air valve and choke valve attaching screws are staked in place and is not removable.

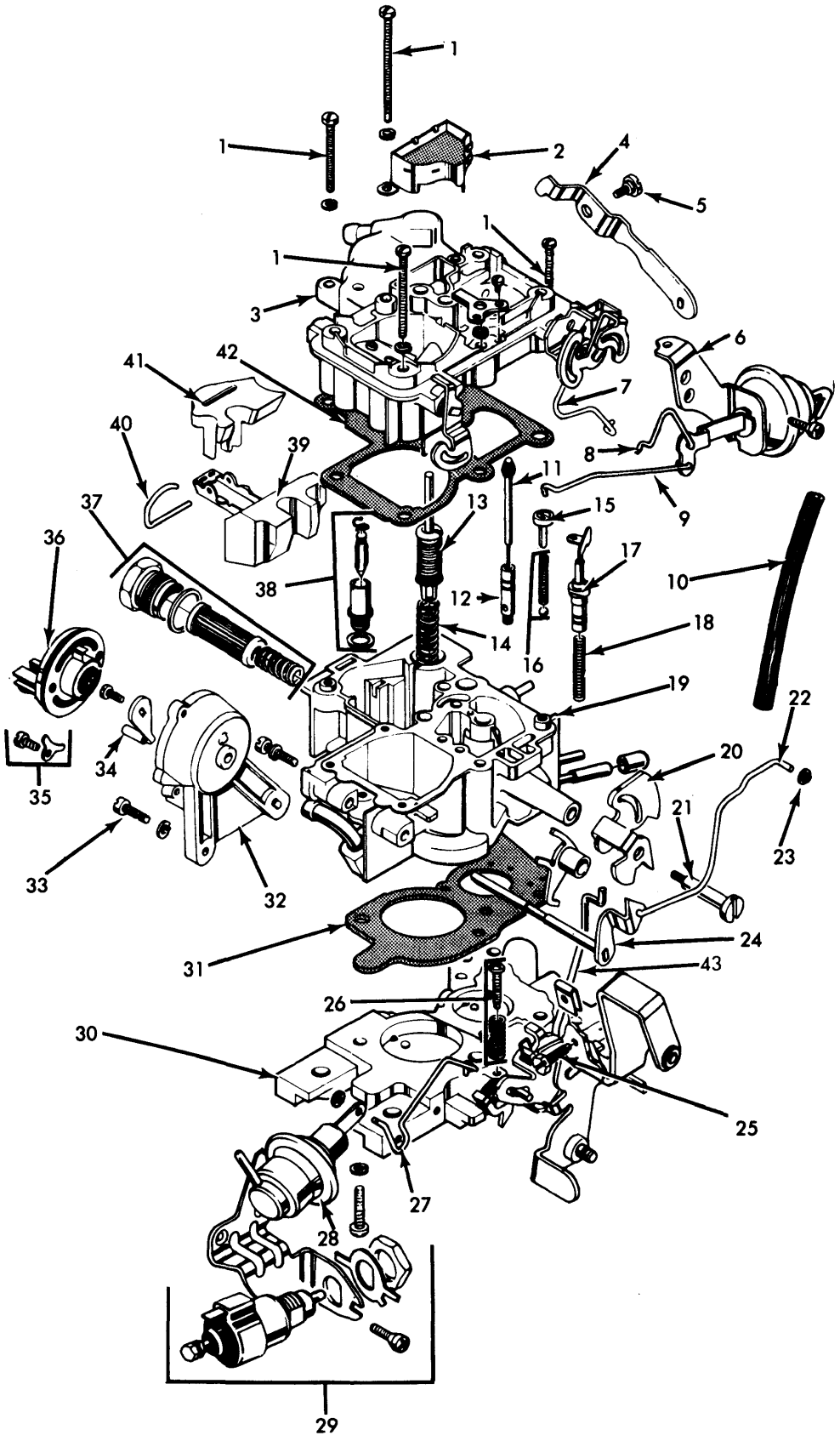
NOTE: New service replacement air horn assembly includes secondary metering rod and air valve assemblies with preset factory adjustments. No attempt should be made to change air valve settings.

8) Remove air horn gasket. Remove pump plunger and pump spring from pump well. Remove plastic filler block from float valve. Remove float assembly and float valve, pulling up on retaining pin. Remove float needle seat and gasket.
9) Press down on power piston stem and allow it to snap up. Repeat this until procedure plastic retainer is dislodged and remove power piston and metering rod assembly.
10) Remove spring from power piston bore. If necessary to remove metering rod from hanger, compress spring on metering rod and align groove on rod with slot in holder. Care must be taken not to damage tip of metering rod.
11) Remove main metering jet using a screwdriver that fits tight in groove. Using a small slide hammer, remove plastic retainer holding pump discharge spring and check ball in place in float bowl. Discard retainer.
12) Remove 3 screws and retainer from choke cover. Remove choke cover and coil assembly. Remove screw from end of intermediate choke shaft in choke housing. Remove choke coil lever from shaft.
13) Slide intermediate choke shaft out of float bowl. Remove choke housing screws and remove choke housing. Remove fuel inlet nut, gasket, check valve/filter and spring.
14) Remove 4 screws securing throttle body to float bowl. Remove throttle body and insulator gasket. Hold throttle valves wide open. Disengage pump rod from throttle lever by rotating rod until tang on rod aligns with slot in lever.
15) Remove curb idle and fast idle speed screws and springs if necessary. Further disassembly of throttle body is not required. Throttle valve screws are permanently staked in position.

NOTE: Do not remove idle mixture screw plug unless it is necessary to replace mixture screw or cleaning and air pressure fails to clean idle mixture passages. If necessary to remove idle mixture screws, proceed as follows:

16) Invert throttle body and position on a holding fixture with manifold side up. Using a small hacksaw, make 2 small cuts, one on either side of mixture screw plug location. Position a small flat punch on throttle body between cuts.
17) Drive punch down and break out portion of throttle body between the 2 cuts. Hold punch at a 45 degree angle and drive out hardened steel plug. Plug will shatter when struck.
18) Remove loose pieces to allow the removal of idle mixture screw and spring. Turn idle mixture screw in carefully, counting turns needed to seat screw. Record number to be used in reassembly, then remove mixture screw.
Cleaning & Inspection - 1) Use a regular carburetor cleaning solution. Soak components long enough to thoroughly clean all surfaces and passages of foreign matter.
2) DO NOT soak any components containing rubber, leather or plastic. Remove any residue after cleaning by rinsing components Blow out all passages with dry compressed air.
Reassembly - 1) To reassemble, reverse disassembly procedure. Use new gaskets and seals. Make sure new gaskets fit correctly and all holes are punched through and properly located.
2) Install fuel inlet needle pull clip over edge of flat on float arm facing float. Do not hook clip in holes in float arm. After throttle body is installed on float bowl, make sure secondary lockout tang is in correct position to engage secondary lockout lever.
3) Install new accelerator pump discharge check ball and spring plastic retainer. Insert end of retainer in spring and place in position in float bowl. Lightly tap retainer into position until it is flush in float bowl.

1975-79 FUEL SYSTEMS
Rochester 2SE 2-Barrel Carburetor (Cont.)



1. Air Horn Screw
2. Vent Stack
3. Air Horn
4. Accel. Pump Lever
5. Accel. Pump Lever Screw
6. Primary (Front) Vacuum Break Diaphragm
7. Fast Idle Cam Rod
8. Vacuum Break Rod
9. Air Valve Rod
10. Vacuum Break Hose
11. Primary Metering Rod
12. Primary Metering Jet
13. Accel. Pump
14. Accel. Pump Spring
15. Accel. Pump Discharge Guide
16. Accel. Pump Discharge Ball & Spring
17. Power Piston
18. Power Piston Spring
19. Float Bowl
20. Fast Idle Cam
21. Fast Idle Cam Screw
22. Intermediate Choke Rod
23. Rod Clip
24. Intermediate Choke Shaft
25. Fast Idle Cam Screw
26. Idle Speed Screw & Spring
27. Vacuum Break Rod
28. Secondary (Rear) Vacuum Break Diaphragm
29. Idle Solenoid & Bracket
30. Throttle Body
31. Throttle Body Gasket
32. Choke Housing
33. Choke Housing Screws
34. Choke Coil Lever Tang
35. Choke Coil Screw & Retainer
36. Choke Coil
37. Fuel Inlet Fitting & Filter
38. Float Needle & Seat Assy.
39. Float
40. Float Retainer
41. Float Bowl Insert
42. Air Horn Gasket
43. Accel. Pump Rod

Courtesy of General Motors Corp.

Fig. 11: Exploded View of Rochester 2SE 2-Barrel Carburetor

1975-79 FUEL SYSTEMS
Rochester 2SE 2-Barrel Carburetor (Cont.)

4) Make sure holes in fuel filter face toward fuel intlet fitting when filter is installed. Some linkage retaining clips are dished. Make sure portion of clip that bends outward is toward end of rod. Make sure clip makes full contact with rod.
5) Install air horn screws, noting location and type of screw for correct installation. Tighten screws evenly, securely and in proper sequence. *See Fig. 12.*

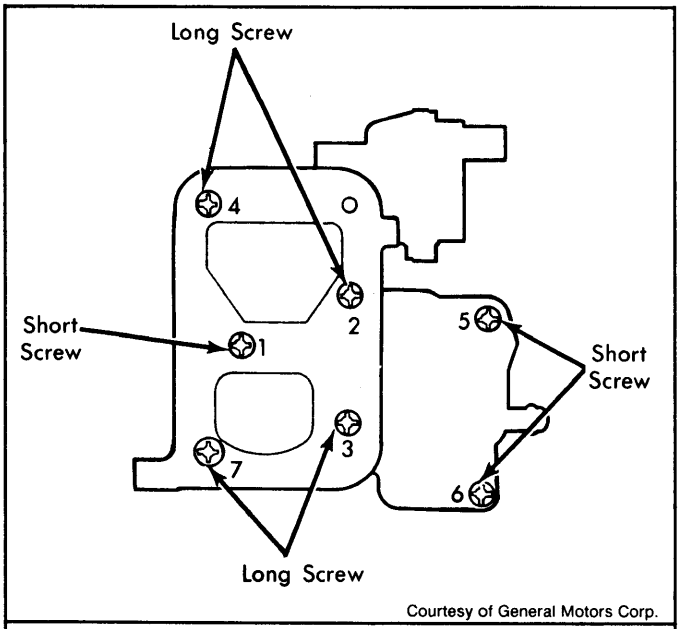


Fig. 12: Air Horn Screw Location & Tightening Sequence

1979 CARBURETOR ADJUSTMENT SPECIFICATIONS

Application	Float Level Setting	Accel. Pump Setting	Choke Coil Lever Setting	Choke Rod Setting ①	Air Valve Rod Setting	Vacuum Break		Auto. Choke Setting	Choke Unloader Setting ①	Secondary Lockout Setting
						Primary Setting ①	Secondary Setting ①			
17059640	1/8"	9/16"	.085"	17° (.090")	.040"	20° (.110")	37° (.234")	1 Lean	49° (.341")	.025"
17059641	1/8"	9/16"	.085"	17° (.090")	.040"	23.5° (.133")	37° (.234")	1 Lean	49° (.341")	.025"
17059643	1/8"	9/16"	.085"	17° (.090")	.040"	23.5° (.133")	37° (.234")	1 Lean	49° (.341")	.025"
17059740	1/8"	9/16"	.085"	17° (.090")	.040"	20° (.110")	37° (.234")	1 Lean	49° (.341")	.025"
17059741	1/8"	9/16"	.085"	17° (.090")	.040"	20° (.110")	37° (.234")	1 Lean	49° (.341")	.025"
17059764	1/8"	9/16"	.085"	17° (.090")	.040"	20° (.110")	37° (.234")	1 Lean	49° (.341")	.025"
17059765	1/8"	9/16"	.085"	17° (.090")	.040"	23.5° (.133")	37° (.234")	1 Lean	49° (.341")	.025"
17059767	1/8"	9/16"	.085"	17° (.090")	.040"	23.5° (.133")	37° (.234")	1 Lean	49° (.341")	.025"

① — Both angle degree and decimal equivalent given.