1982 Rochester Carburetors

ROCHESTER E4MC & E4ME 4-BARREL

CARBURETOR APPLICATION

GENERAL MOTORS
(BUICK, CADILLAC, CHEVROLET,
GMC CABALLERO, OLDSMOBILE & PONTIAC)

Application	Rochester Carb. No. Man. Trans.	Auto. Trans.
3.8L (231") Turbo VIN 3 V6 (E4ME)		
Nationwide		17082244
4.1L (252") VIN 4 V6 (E4ME)		
Nationwide	17082245, 247	17082246, 248
5.0L (305") VIN H V8 (E4ME)		
Nationwide		
Without A/C	17082203	17082202
With A/C	17082207	17082204
5.0L (307") VIN Y V8 (E4MC)		
Nationwide		17082253

CARBURETOR IDENTIFICATION

The Rochester carburetor number is stamped on vertical section of float bowl, near the secondary throttle. If float bowl is replaced, follow manufacturer's instructions contained in service package to ensure part number is transferred to new float bowl.

The E4MC and E4ME Quadrajet carburetors are used nationwide with the Computer Command Control (CCC) system. The first letter "E" indicates the carburetor is a part of the CCC system. The final letter, if "E", indicates the carburetor is equipped with an electric choke; if "C", a hot air choke.

DESCRIPTION

The E4MC and E4ME carburetors are of a 2-stage, downdraft design. The primary side has a triple venturi system. The secondary side is composed of 2 large throttle bores, using the air valve principle, in which fuel is metered in direct proportion to the amount of air passing through the secondary throttle bores. A baffle is attached to the secondary side of the air horn, above the main well bleed tubes. This deflects incoming air to improve secondary nozzle operation on heavy acceleration.

The E4MC carburetor uses a float bowl-mounted heated air choke assembly; the E4ME, an electrically-actuated choke assembly. All E4MC and most E4ME models have 2 vacuum break diaphragm assemblies, the front and rear, while some E4ME models have only the front vacuum break assembly.

Both carburetors have 6 basic systems. These include the float, idle, main metering (part throttle), power, pump and choke systems. Both the E4MC and E4ME models are used in conjunction with the Computer Command Control (CCC) System. The carburetors are equipped with an electrically-actuated mixture control solenoid mounted in the float bowl. Fuel metering is controlled by stepped metering rods that operate in removable jets.

Both models include tamper-resistant factory settings of the mixture control solenoid, rich stop, lean stop, idle air bleed valve, TPS, ILC, ISC, ISS and idle mixture screws. No attempt should be made to adjust these except during major overhaul or replacement of air horn, float bowl or throttle body. Both electric and hot air chokes have riveted covers which must not be removed except for major overhaul.

The 5.0L (VIN Y) engine is equipped with an Idle Load Compensator (ILC) attached to the fuel bowl. The ILC adjusts curb idle speed by sensing changes in manifold vacuum (engine load). To prevent the ILC from reacting too quickly to vacuum changes, a Differential Vacuum Delay Valve (DVDV) is installed between the ILC and vacuum source. The DVDV delays operation of the ILC until vacuum change is constant. All other engines may be equipped with an Idle Speed Control (ISC) on the fuel bowl. Controlled by the ECM, the ISC controls normal curb idle speed and acts as a dashpot on deceleration and throttle closing. On vehicles without ILC or ISC, but with air conditioning, an Idle Speed Solenoid (ISS) maintains a specific idle speed during A/C operation.

TESTING

ELECTRIC CHOKE

NOTE – *This test should be performed when air temperature is 60-80°F (15-27°C).*

1) Allow choke to cool to permit full closing of choke blade when throttle is opened slightly. Start engine and time the interval required for choke blade to reach full open position. (Start timing when engine starts). If choke blade does not fully open within 3½ minutes, proceed with test.

2) With engine running, check voltage at choke heater connection. If voltage is about 12-15 volts, replace electric choke unit. If voltage is low or zero, check all wires and connections and repair as required. Power for choke unit is through the oil pressure switch. Ensure switch circuitry is good.

3) If procedure in step **2)** does not correct the problem, replace oil pressure switch.

HOT AIR CHOKE

1) Start and warm engine to normal operating temperature. Ensure choke valve fully opens. If valve does not fully open, check choke housing and hot air inlet to determine if sufficient heat is reaching choke coil.

NOTE – *Choke housing and hot air inlet can become quite hot.*

2) If choke housing and/or hot air inlet are cool, check for loss of vacuum to choke housing, restricted heat inlet in choke housing, restricted hot air inlet pipe or hose and restricted manifold choke heat stove passages. Repair or replace as required.

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DIFFERENTIAL VACUUM DELAY VALVE

1) Using a "T" fitting, connect a vacuum gauge in vacuum line from valve to ILC. Connect a vacuum pump to port 1 of valve. Apply 17.8 in. Hg vacuum to port 1 and observe gauge. Gauge should read 16.9 in. Hg vacuum within 6-9 seconds. *See Fig. 1.*

2) Remove vacuum gauge and "T" fitting. Connect vacuum pump to port 2 and leave port 1 open. Air should flow through valve when .5 in. Hg vacuum is applied.

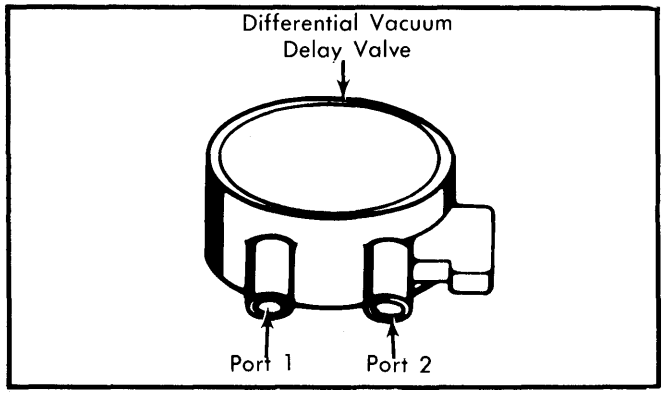

Fig. 1 Location and Identification of Ports on Differential Vacuum Delay Valve

IDLE SPEED SOLENOID (MODELS WITHOUT ISC)

1) Turn ignition on but do not start engine. Turn A/C on. Open throttle to extend solenoid. Close throttle. Disconnect electrical lead at solenoid. Solenoid plunger should drop away from throttle lever.

2) Connect electrical lead to solenoid. Plunger should extend and contact throttle lever. Solenoid may not be strong enough to open throttle, but plunger should move.

3) If plunger does not respond as described, insert test lamp (1893 bulb or smaller) between solenoid feed wire and ground. If lamp glows, replace solenoid. If lamp does not glow, locate and repair open circuit in solenoid feed wire.

ADJUSTMENTS

HOT (SLOW) IDLE RPM

See appropriate article in TUNE-UP SERVICE PROCEDURES.

IDLE MIXTURE

See appropriate article in TUNE-UP SERVICE PROCEDURES.

COLD (FAST) IDLE RPM

See appropriate article in TUNE-UP SERVICE PROCEDURES.

IDLE AIR BLEED VALVE

See appropriate article in TUNE-UP SERVICE PROCEDURES

IDLE LOAD COMPENSATOR (ILC), IDLE SPEED CONTROL (ISC) & IDLE SPEED CONTROL (ISS)

See appropriate article in TUNE-UP SERVICE PROCEDURES.

THROTTLE POSITION SENSOR (TPS)

See appropriate article in TUNE-UP SERVICE PROCEDURES.

► ANGLE GAUGE ADJUSTMENT TOOL

Manufacturer recommends that some carburetor adjustments be performed using a choke valve angle gauge (Kent-Moore tool no. J-26701). While preparations and actual adjustments may vary with 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 valve angle gauge.

1) Rotate degree scale on angle gauge so that 0° mark is opposite pointer.

2) With choke valve closed, place angle gauge magnet squarely on choke valve.

3) Rotate leveling bubble on angle gauge until it is centered.

4) Rotate degree scale until specified degree mark is opposite pointer.

5) Now perform individual adjustment preparations as outlined in the following carburetor adjustments requiring angle gauge. If bubble is centered, adjustment is correct. If not, adjust carburetor as outlined.

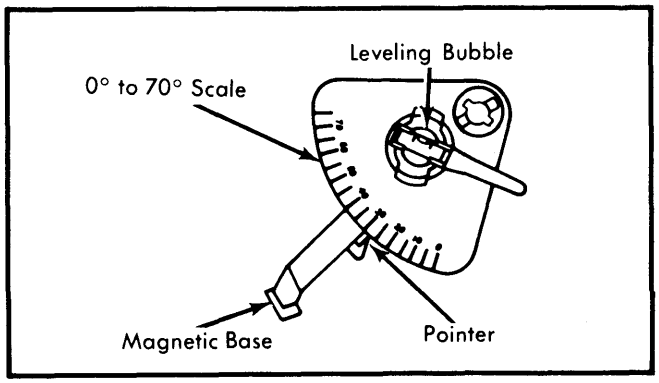

Fig. 2 Choke Valve Angle Gauge

FLOAT LEVEL

1) Remove air horn and gasket from float bowl. Hold float retainer firmly down. *See Fig. 3.*

2) Position a "T" measuring scale over toe of float at a point 3/16" from end of float at toe. Measure distance from float bowl casting to top of float.

3) Use the following procedure to adjust float level, if setting varies more than 1/16" from specified setting.

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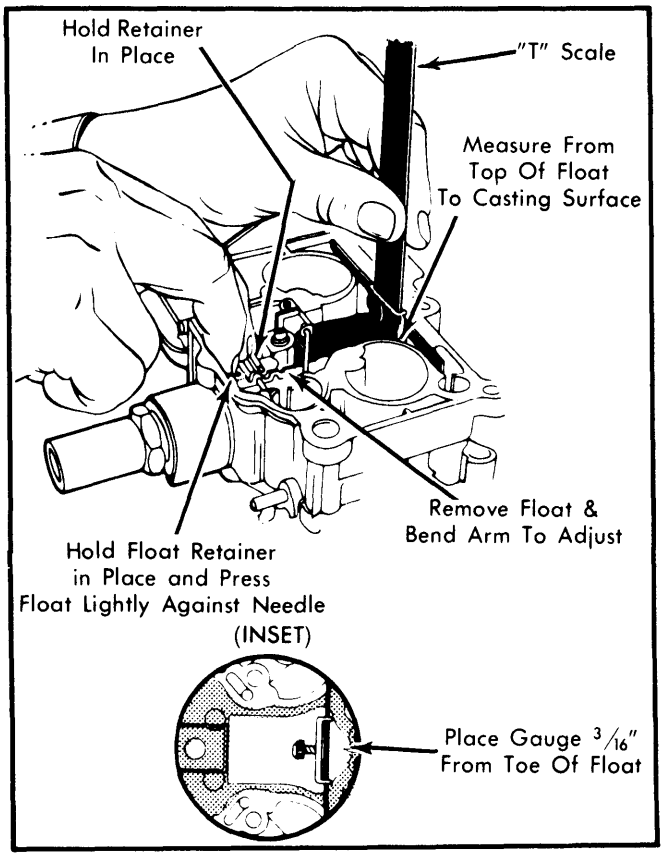

Fig. 3 Adjusting Float Level

Float Level Too High

a) Hold float retainer clip firmly in place.

b) Push down on center of float pontoon until correct float level setting is obtained.

Float Level Too Low

a) Lift out metering rods. Remove solenoid connector screws.

b) Turn lean mixture solenoid screw clockwise, counting and recording number of turns required to lightly seat screw in float bowl.

c) Turn screw counterclockwise and remove. Lift solenoid and connector from float bowl.

d) Remove float and bend arm up to adjust. Make sure float is correctly aligned after adjustment.

e) Reinstall components in reverse order that they were removed. Back out solenoid lean mixture screw number of turns noted in step **b)**.

ACCELERATOR PUMP ROD

No pump adjustment is required on carburetors for the Computer Command Control system.

CHOKE COIL LEVER

NOTE – *Choke coil cover uses rivets in place of retaining screws. If necessary to remove choke coil cover, refer to Disassembly and Reassembly procedures in this Section.*

1) Remove 3 choke cover retaining rivets, if necessary. Remove choke cover and coil from choke housing. Place fast idle cam follower on high step of fast idle cam. *See Fig. 4.*

2) Push up on thermostatic coil tang (counterclockwise) until choke valve is closed. Insert a .120" drill or pin gauge into hole in choke housing casting.

3) Lower edge of lever in choke housing should just touch drill or pin gauge. Bend choke rod at point shown to adjust. Be sure cam follower is on high step of fast idle cam. Install choke coil and cover, using choke cover retainer kit.

NOTE – *Electric choke units do not use a gasket between choke cover and choke housing.*

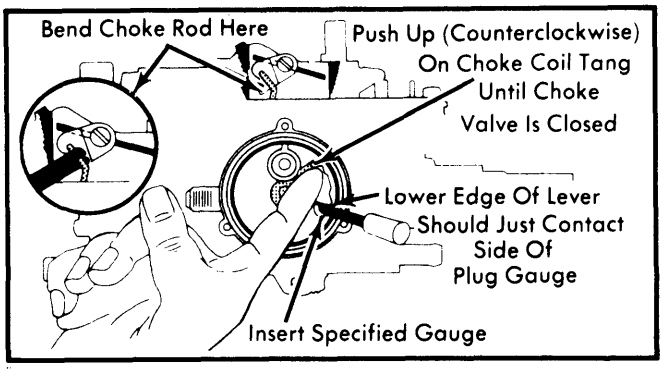

Fig. 4 Adjusting Choke Coil Lever

FAST IDLE ADJUSTMENT (BENCH SETTING)

NOTE – *This is a preliminary adjustment only. It is required to ensure that other adjustments are made with fast idle speed approximately correct. Final Cold (Fast) Idle Speed adjustment must be made with carburetor installed and engine running. See appropriate article in TUNE-UP Section.*

1) Place fast idle speed cam follower on high step of fast idle cam. Back off fast idle speed screw until screw does not contact cam follower.

2) Turn fast idle screw in until it just touches lever. Turn screw in an additional 3 turns. *See Fig. 5.*

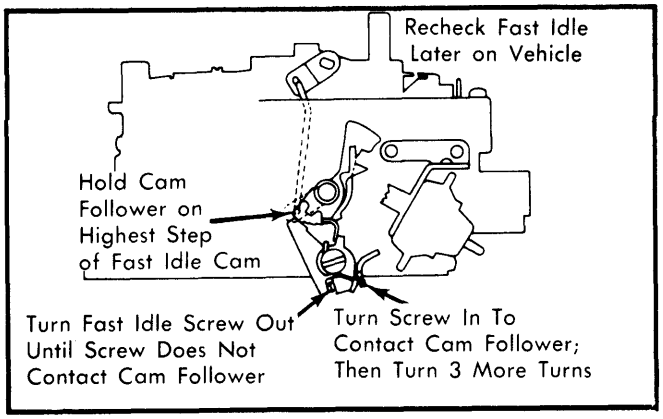

Fig. 5 Fast Idle Bench Adjustment

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CHOKE ROD (FAST IDLE CAM)

NOTE – *Fast idle adjustment (bench setting) and choke coil lever must be adjusted first. This adjustment is performed using choke angle gauge, see procedure at beginning of adjustment.*

CAUTION – *Do not remove rivets and choke cover to perform this adjustment. Use rubber band on vacuum break lever tang to hold choke valve closed.*

1) Place fast idle speed cam follower on second step of fast idle cam against shoulder of highest step. See *Fig. 6*.

2) Close choke by pushing up on choke coil lever or vacuum break lever tang. Hold choke closed with a rubber band.

3) Bubble on choke angle gauge should be centered with specified angle mark opposite pointer.

4) To adjust, bend tang on fast idle cam until bubble of choke valve angle gauge is centered.

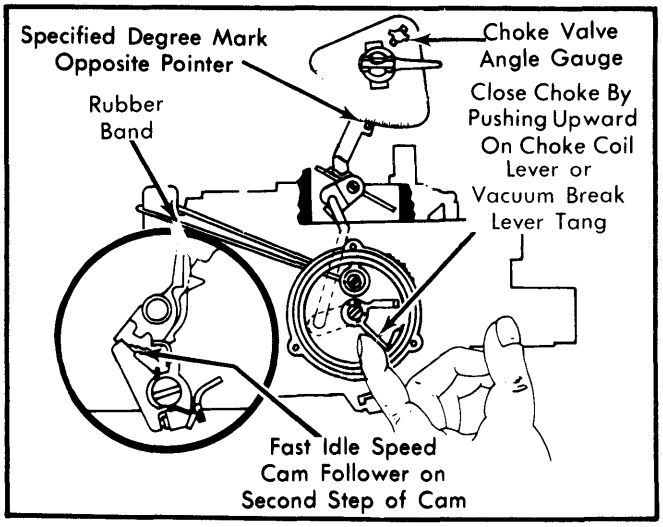

Fig. 6 Adjusting Choke Rod (Fast Idle Cam)

AIR VALVE ROD – FRONT

1) Using an outside vacuum source, seat primary (front) vacuum break diaphragm. Plug purge bleed hole (if equipped) with masking tape. Hole is located in end of diaphragm. See *Fig. 7*.

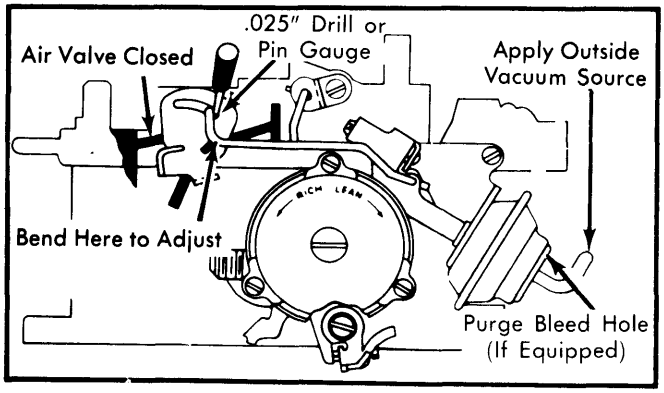

Fig. 7 Adjusting Air Valve Rod – Front

2) Make sure air valve is completely closed. Measure clearance between rod and end of slot in lever. Clearance can be checked using a specified drill or pin gauge.

3) Bend rod at point shown to adjust clearance in slot to .025". Remove tape and reconnect vacuum hose to diaphragm.

PRIMARY (FRONT) VACUUM BREAK

NOTE – *Choke coil lever and fast idle bench adjustment must be correct before performing this adjustment. Adjustment is performed using a choke valve angle gauge. See procedure at beginning of Adjustments.*

CAUTION – *Do not remove rivets and choke cover to perform this adjustment. Use rubber band on vacuum break lever tang to hold choke valve closed.*

1) Using an ouside vacuum source of at least 15 in. Hg, seat primary (front) vacuum break diaphragm. See *Fig. 8*.

NOTE – *On delay models with air bleed, remove rubber cover from filter element and plug small bleed hole in vacuum tube with tape. Remove tape after completing adjustment. Also, be sure leaf bucking spring (if equipped) is seated against lever.*

2) Close choke by pushing up on choke coil lever or vacuum break lever tang. Ensure bucking spring (if equipped) is compressed. Hold choke closed with rubber band.

3) Bubble on angle gauge should be centered with specified degree mark opposite pointer.

4) To adjust, turn vacuum break adjustment screw until bubble of choke valve angle gauge is centered.

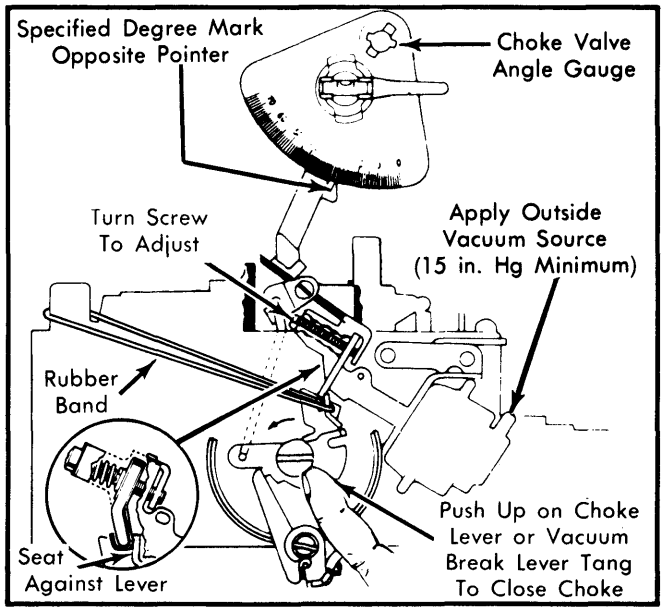

Fig. 8 Adjusting Primary (Front) Vacuum Break

SECONDARY (REAR) VACUUM BREAK

NOTE – *Choke coil lever and fast idle bench adjustment must be correct before performing this adjustment. Adjustment is performed using a choke valve angle gauge. See procedure at beginning of Adjustments.*

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CAUTION – *Do not remove rivets and choke cover to perform this adjustment. Use rubber band on vacuum break lever tang to hold choke valve closed.*

NOTE – *Do not attempt to adjust rear vacuum break by bending link, which is of a new non-bendable design.*

1) On delay models with air bleed, plug end cover using an accelerator pump plunger cap. Using an outside vacuum source of at least 15 in. Hg, seat vacuum diaphragm. See *Fig. 9*.

2) Close choke valve by pushing up on choke coil lever or vacuum break lever tang. Hold in position with a rubber band. Make sure bucking spring on diaphragm plunger (if equipped) is compressed and seated.

3) Bubble on choke valve angle gauge should be centered with specified degree mark opposite pointer.

4) To adjust, turn rear vacuum break adjustment screw until bubble on choke valve angle gauge is centered. Remove plunger cap after adjustment.

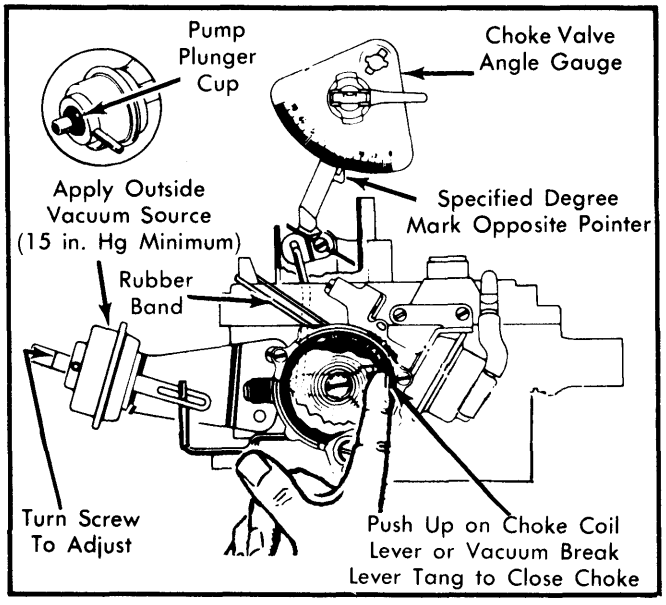

Fig. 9 Adjusting Secondary (Rear) Vacuum Break

AIR VALVE SPRING

1) Use hex wrench to loosen lock screw. Turn tension adjusting screw counterclockwise until air valve opens part way.

2) Turn tension adjusting screw clockwise until air valve just closes. Then turn adjusting screw clockwise specified number of turns. See *Fig. 10*.

3) Hold adjusting screw and tighten lock screw.

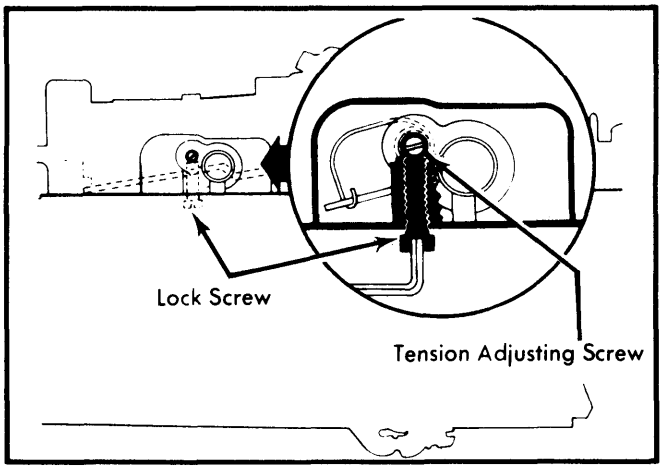

Fig. 10 Adjusting Air Valve Spring

AUTOMATIC CHOKE

NOTE – *Automatic choke is non-adjustable. If removal of choke cover is necessary to perform other adjustments, refer to Overhaul, Disassembly and Reassembly, in this Section for complete information on removal of choke coil cover rivets. Only remove choke cover if major overhaul is required or if choke cover requires replacement.*

1) Remove 3 choke cover retaining rivets. Position fast idle cam follower on high step of fast idle cam.

2) Rotate cover to align notch with retainer tab. Install rivets from choke cover retainer kit.

CHOKE UNLOADER

NOTE – *Choke coil lever and fast idle bench adjustment must be correct before performing this adjustment. Adjustment is performed using a choke valve angle gauge. See procedure at beginning of Adjustments.*

CAUTION – *Do not remove rivets and choke cover to perform this adjustment. Use rubber band on vacuum break lever tang to hold choke valve closed.*

1) If removed, install choke thermostatic cover and coil assembly on housing, using special rivets in service kit. Hold throttle valves wide open. See *Fig. 11*.

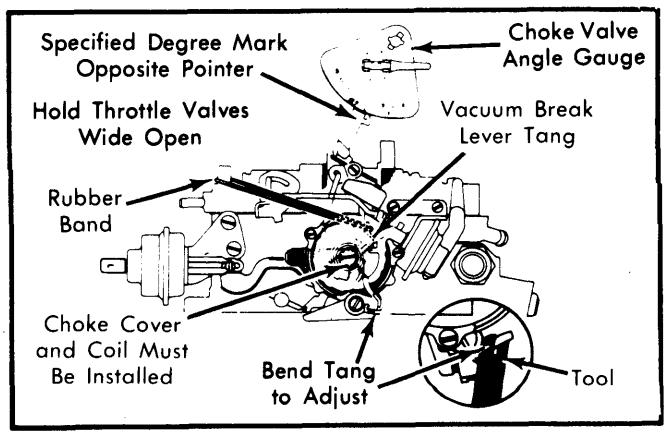

Fig. 11 Adjusting Choke Unloader

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2) Close choke valve by pushing up on vacuum break lever tang. Hold in position with rubber band.

3) Bubble on choke valve angle gauge should be centered with specified degree mark opposite pointer.

4) To adjust, bend choke unloader tang on fast idle lever until bubble is centered. Then remove gauge.

SECONDARY THROTTLE VALVE LOCKOUT

Lockout Lever Side Clearance – **1)** Hold choke valve and throttle valves completely closed. *See Fig. 12.*

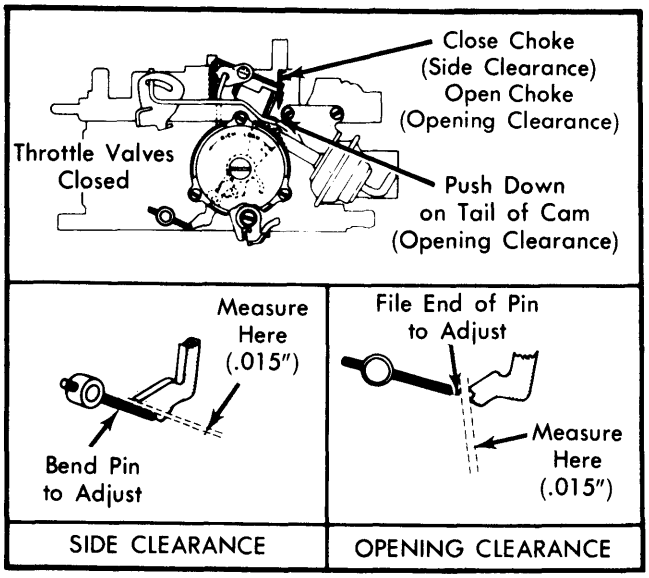

Fig. 12 Adjusting Secondary Throttle Valve Lockout

2) Measure secondary throttle valve lockout specified side clearance between pin and lockout lever.

3) Specified clearance is .015". To adjust, bend pin.

Lockout Lever Opening Clearance – **1)** Push down on tail of fast idle cam and open choke valve completely.

2) Measure secondary throttle valve lockout specified opening clearance between end of pin and toe of lockout lever.

3) Specified clearance is .015". To adjust, file end of lockout pin. Make sure all burrs are removed.

SECONDARY CLOSING LINKAGE

1) Engine idle speed must be correctly adjusted. Hold choke valve wide open and make sure fast idle cam follower is off fast idle cam steps. *See Fig. 13.*

2) Make sure secondary closing lever is against tang. Measure specified clearance between secondary throttle link and slot in secondary throttle lever.

3) Specified clearance is .020". To adjust bend tang.

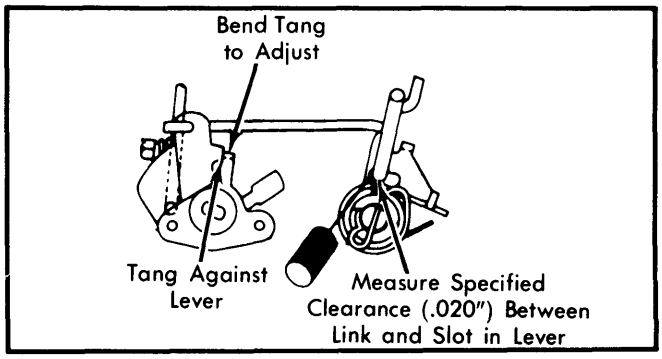

Fig. 13 Adjusting Secondary Throttle Closing Linkage

SECONDARY OPENING LINKAGE

1) Open primary throttle valves until secondary throttle link just contacts tang on secondary throttle lever. *See Fig. 14.*

2) Link should be centered in slot of secondary throttle lever. To adjust, bend tang on secondary throttle lever.

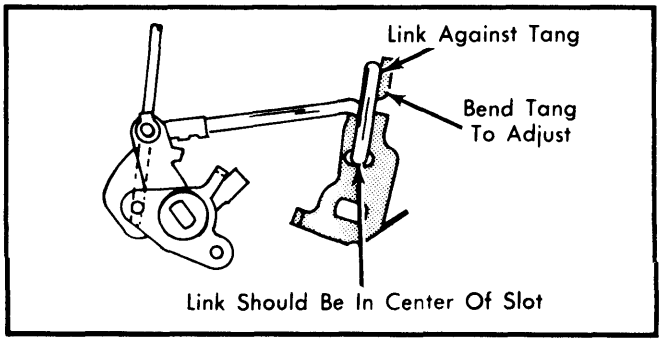

Fig. 14 Adjusting Secondary Throttle Opening Linkage

MIXTURE CONTROL SOLENOID

1) Solenoid operation can be checked on vehicle using external float level gauge tool (J-9789-130). Some material must be removed from the side of the tool to allow for clearance in air horn.

2) Remove air cleaner and gasket. Insert gauge in "D" shaped vent hole in casting next to Idle Air Bleed Valve plug. Make sure gauge moves freely in hole.

3) Press down on gauge and release. With gauge released (solenoid up position), read inch mark on gauge that lines up with top of air horn casting and record reading.

4) Lightly press down on gauge until it bottoms (solenoid down position). Read inch mark that lines up with air horn casting.

5) Subtract solenoid up position from solenoid down position. Difference is total solenoid travel. Travel should be $\frac{3}{32}$-$\frac{5}{32}$" ($\frac{1}{8}$" preferred). If correct, proceed to Idle Air Bleed Valve Adjustment in appropriate Tune-Up Service Procedure Article.

6) To adjust, remove air horn. Turn mixture control solenoid screw clockwise. Record number of turns required to lightly bottom screw in float bowl.

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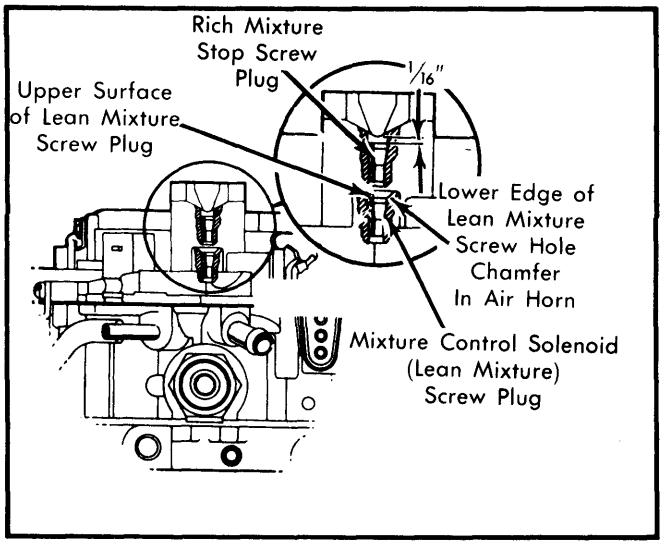

Fig. 15 Installing Lean and Rich Mixture Stop Screws in Air Horn

7) If number of turns is not 2½-3½, solenoid travel is incorrect. Adjust screw to 3 turns from bottom. Invert air horn and using a small punch, drive mixture control solenoid screw plug out of air horn from bottom side. Discard plug.

8) Reinstall air horn and new gasket on float bowl and temporarily secure with 2 screws. Recheck solenoid plunger travel (3/32-5/32"). If travel is correct, complete assembly of air horn and proceed to step **11)**.

9) If solenoid travel is incorrect, remove and invert air horn assembly. Using suitable tool (J-28696-4), remove rich mixture stop screw from bottom side of air horn. Then, drive screw plug out of air horn from bottom side. Discard plug. Reinstall rich mixture stop screw in air horn until screw is lightly bottomed.

10) Reinstall air horn and gasket on float bowl. Insert gauge in vent hole. Using suitable tool (J-28696), turn stop screw clockwise until total solenoid plunger travel is 1/8".

11) After solenoid travel is correctly set, install new plugs supplied in service kit. Install mixture solenoid screw plug (hollow end down) into hole in raised boss of air horn casting. Using a small punch, drive plug into air horn until upper surface of plug is even with lower edge of hole chamfer. See *Fig. 15*.

NOTE – *Plug must be installed to retain the setting of the mixture control solenoid stop screw in float bowl and to prevent escape of fuel vapors.*

12) If removed, install plug (hollow end down) in air horn over rich mixture stop screw (located next to idle air bleed valve cover). Using a small punch, drive new plug into place until it is approximately 1/16" below the surface of air horn casting.

NOTE – *Plug must be installed to retain setting of rich mixture stop screw.*

OVERHAUL

DISASSEMBLY

NOTE – *Before performing any service on carburetor, it is essential that carburetor be placed on a holding fixture (J-9789-118) to prevent damage to throttle valves.*

Air Horn – 1) Remove ILC, ISC or ISS attaching screws, bracket and assembly. Remove upper choke lever from end of choke shaft by removing retaining screw. Rotate upper choke lever to remove choke rod from slot in lever. Remove choke rod from lower lever inside float bowl casting.

NOTE – *Remove rod by holding lower lever outward with small screwdriver and twisting rod counterclockwise.*

2) Remove vacuum hose from front vacuum break unit and note location for reassembly reference. Remove secondary metering rods by removing small screw in top of metering rod hanger. Lift up on metering rod hanger until secondary metering rods are clear of air horn. Metering rods may be disassembled from hanger by rotating ends out of holes in end of hanger.

3) Using a drift punch, drive pump lever pivot pin (roll pin) inward until pin is against air cleaner locating boss on air horn casting. Disconnect pump rod from pump lever. Remove 11 air horn-to-float bowl screws. Remove 2 countersunk screws located near venturi. Remove secondary air baffle deflector (if equipped) from beneath 2 center air horn screws. Remove air horn from float bowl by lifting straight up. Air horn gasket should remain on float bowl.

NOTE – *Use care not to damage mixture control solenoid connector, TPS adjustment lever, and small tubes protruding from air horn. Do not attempt to remove small tubes.*

4) Remove primary (front) vacuum break diaphragm. Remove air valve rod from vacuum break and air valve lever. Using fingers only, remove TPS plunger by pushing plunger up through air horn seal. If air horn is removed, lean mixture screw plug must be removed from air horn. Drive plug out from bottom side. Discard plug.

5) Remove TPS seal by inverting air horn and remove staking from around seal retainer with a small screwdriver. Remove and discard retainer and seal. Use care removing retainer and seal to prevent damage to air horn casting.

6) Further disassembly of air horn assembly is not required for cleaning purposes. Choke valve and choke valve screws, air valve and air valve shaft should not be removed. Instructions for replacing the air valve closing spring and plastic cam are included in service kit. The air horn has an idle air bleed valve which is preset and sealed at the factory. The idle air bleed valve should not be removed unless "System Performance Check" of Computer Command Control system indicates need for adjustment or repair.

NOTE – *Air horn assembly, with idle air bleed valve installed, should be cleaned only in low volatile cleaning solvent. Do not*

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place air horn (with idle air bleed valve) in carburetor cleaner. No tamper-resistant plug should be removed during normal carburetor cleaning and servicing unless carburetor or mixture control solenoid has been diagnosed as cause of poor engine performance.

7) If necessary to replace idle air bleed valve or disassemble air horn for immersion in carburetor cleaner, drill off rivet heads of bleed valve cover with a .110" (No. 35) drill. Drive remainder of rivet out of tower with drift and small hammer. Lift out cover over valve and remove remaining rivet pieces from inside tower.

8) Remove and discard cover. Check for letter identification on top of idle air bleed valve. See *Fig. 16*. After identifying valve, use correct procedure as follows to remove valve:

- **No Letter On Valve** – Turn valve counterclockwise and remove from air horn.
- **Letter On Valve** – Turn valve clockwise until lightly seated in air horn, counting and recording number of turns for reassembly reference. Turn valve counterclockwise and remove from air horn.

NOTE – *A missing air valve cover indicates that idle air bleed valve setting has been changed from original factory setting.*

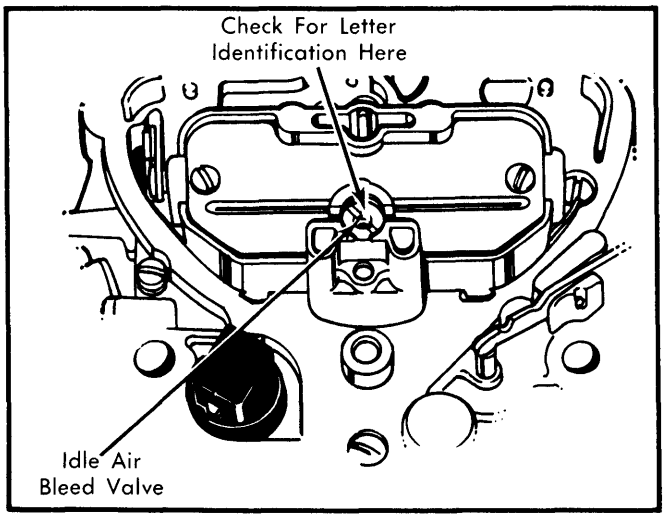

Fig. 16 Location of Idle Air Bleed Valve and Identification Letter

9) Remove and discard "O" ring seals from air bleed valve. Air bleed valve is serviced as a complete assembly only. Remove rich mixture stop screw and plug as previously described.

Float Bowl – 1) Remove solenoid metering rod plunger by lifting straight upward. Remove rubber seal from around mixture control solenoid connector. Remove air horn gasket by lifting out of dowel locating pins. Discard gasket.

2) Remove pump plunger and spring from pump well. Remove staking holding TPS in bowl. To do so, protect gasket surface by laying a flat piece of metal across casting. Using a small screwdriver, lightly depress and hold TPS down against spring tension. Carefully remove staking from around TPS by prying upward with a small chisel against the metal piece (not bowl casting).

3) Push up from bottom on electrical connector and remove TPS and connector assembly from bowl. Use care not to damage sensor during removal. Remove plastic filler block from float valve. Carefully remove each metering rod from metering jet. Make sure return spring is removed with each rod. Remove return spring by sliding it off metering rod.

4) Remove screws connecting solenoid connector to float bowl. Using adjusting tool (J-28696) on upper end of mixture control solenoid screw, count number of clockwise turns required to lightly seat screw. Record number for later reassembly. Then, turn screw counterclockwise to remove it from fuel bowl. Carefully lift solenoid and connector assembly from bowl.

NOTE – *Do not remove plunger return spring or connector from solenoid body. Solenoid and connector are serviced as an assembly.*

5) Remove plastic insert from solenoid connector cavity in float bowl. Remove solenoid screw tension spring (next to float hanger clip). Remove float assembly and needle valve by lifting straight up. Remove needle valve seat and gasket.

6) Remove large mixture control solenoid tension spring from boss on bottom of float bowl located between metering jets. Remove metering jets (if necessary).

NOTE – *Do not attempt to remove secondary metering jets (metering orifice plates). Secondary jets are permanent and if damaged, float bowl must be replaced.*

7) Remove accelerator pump discharge check ball retainer and check ball. Remove accelerator pump well baffle (if necessary).

8) If equipped, remove rear vacuum break hose and retaining screws. Rotate vacuum break to remove vacuum break link from slot in plunger head. Do not remove non-adjustable vacuum break link until after removal of choke assembly from float bowl.

9) Align a .159" (No. 21) drill on choke cover retaining rivets and drill only enough to remove rivet head. Using a drift and hammer, drive remainder of rivets out of choke housing. Remove 3 retainers, choke cover gasket (hot air type chokes) and choke cover from choke housing.

NOTE – *Do not remove baffle plate from beneath thermostatic coil on choke cover of hot air type chokes.*

10) Remove retaining screw and washer from inside choke housing. Slide choke housing from float bowl. On hot air type chokes, remove plastic tube seal from vacuum inlet boss of choke housing. If equipped, remove rear vacuum break link from intermediate choke lever.

11) Remove secondary throttle valve lockout lever from float bowl. Remove choke coil lever retaining screw from end of intermediate choke shaft and remove lever. Slide intermediate choke shaft from choke housing. Remove fast idle cam from intermediate choke shaft. On hot air type chokes, remove and discard cup seal inside choke housing shaft hole.

ROCHESTER E4MC & E4ME 4-BARREL (Cont.)

1. Air Horn Assembly
2. Air Horn Gasket
3. Pump Actuating Lever
4. Pump Lever Hinge Pin
5. Long Air Horn Screws (2)
6. Short Air Horn Screws
7. Air Horn Countersunk Screws (2)
8. Solenoid Connector-to-Air Horn Gasket
9. Secondary Metering Rods (2)
10. Secondary Metering Rod Holder and Screw
11. Secondary Air Baffle
12. Idle Air Bleed Valve
13. Thick "O" Ring
14. Thin "O" Ring
15. TPS Actuator Plunger
16. TPS Plunger Seal
17. TPS Seal Retainer
18. TPS Adjusting Screw
19. TPS Screw Plug
20. Pump Plunger Seal
21. Pump Seal Retainer
22. Solenoid Plunger Rich Stop Screw
23. Plunger Rich Stop Screw Plug
24. Solenoid Lean Mixture Adjusting Screw Plug
25. Front (Primary) Vacuum Break
26. Vacuum Break Attaching Screws
27. Vacuum Hose
28. Air Valve Rod
29. Upper Choke Rod Lever
30. Choke Lever Screw
31. Choke Rod
32. Lower Choke Rod Lever
33. Intermediate Choke Shaft Seal
34. Secondary Lockout Lever
35. Rear (Secondary) Vacuum Break Link
36. Intermediate Choke Shaft and Lever
37. Fast Idle Cam
38. Hot Air Choke Housing-to-Bowl Seal
39. Choke Housing
40. Choke Housing-to-Bowl Screw
41. Hot Air Choke Intermediate Choke Shaft Seal
42. Choke Coil Lever
43. Choke Coil Lever Screw
44. Hot Air Choke Thermostatic Cover Gasket
45. Hot Air Choke Cover and Coil Assembly
46. Electric Choke Cover and Coil Assembly
47. Rivet Service Kit
48. Rear Vacuum Break
49. Rear Vacuum Break Screws
50. Float Bowl Assembly
51. Primary Metering Jets (2)
52. Pump Discharge Ball
53. Pump Discharge Ball Retainer
54. Pump Well Baffle
55. Needle and Seat Assembly
56. Float Assembly
57. Float Assembly Hinge Pin
58. Primary Metering Rods (2)
59. Primary Metering Rod Springs
60. Float Bowl Insert
61. Bowl Cavity Insert
62. Connector Attaching Screw
63. Mixture Control Solenoid and Plunger Assembly
64. Solenoid Tension Spring
65. Solenoid Lean Mixture Adjusting Screw
66. Solenoid Adj. Screw Spring
67. Pump Return Spring
68. Pump Assembly
69. Pump Link
70. Secondary Bore Baffle
71. Throttle Position Sensor (TPS)
72. TPS Tension Spring
73. Fuel Inlet Filter Nut
74. Filter Nut Gasket
75. Fuel Inlet Filter
76. Fuel Filter Spring
77. Idle Stop Screw
78. Idle Stop Screw Spring
79. Idle Speed Solenoid (If Equipped)
80. Throttle Return Spring Bracket
81. Idle Load Compensator (ILC) (If Equipped)
82. Idle Speed Control (ISC) (If Equipped)
83. Attaching Screws
84. Throttle Body Assembly
85. Throttle Body Gasket
86. Throttle Body Screws
87. Idle Needle and Springs (2)
88. Fast Idle Adjusting Screw
89. Fast Idle Screw Spring
90. Vacuum Hose "T"
91. Flange Gasket

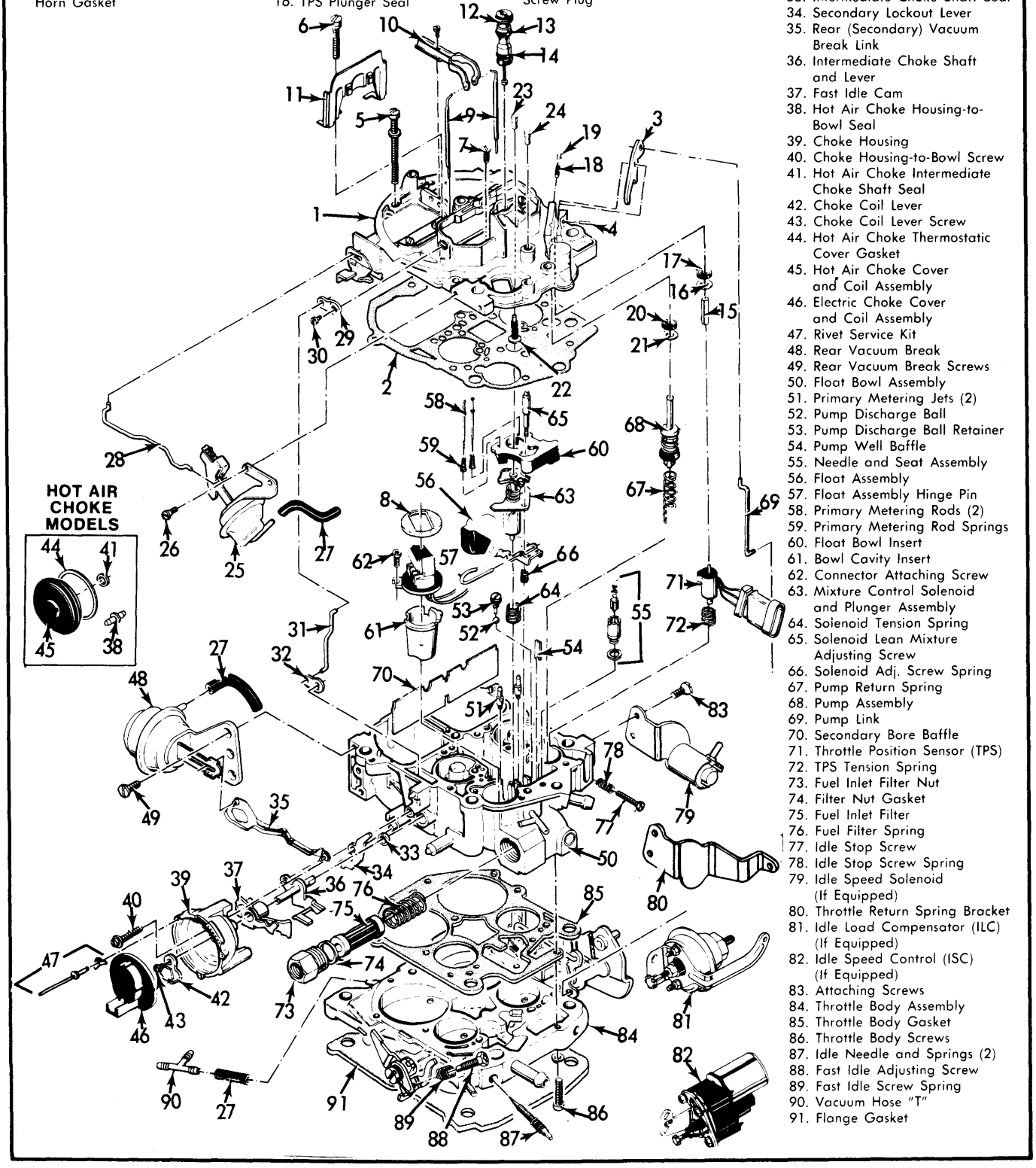

Fig. 17 Exploded View of Rochester Model E4MC and E4ME 4-Barrel Carburetors

ROCHESTER E4MC & E4ME 4-BARREL (Cont.)

12) Remove intermediate choke shaft cup seal from float bowl insert. Do not remove insert. Invert float bowl to remove lower choke lever from bowl cavity. Remove fuel inlet nut, gasket and filter. Remove 3 throttle body-to-float bowl screws and throttle body.

Throttle Bowl – 1) Remove accelerator pump rod from throttle lever by rotating rod until tang aligns with slot in lever.

NOTE – *Further disassembly of throttle body is not required for normal cleaning. Throttle valve screws are permanently staked in position. Throttle body is serviced as complete assembly. Do not remove mixture screw plugs unless diagnosis indicates the carburetor is cause of poor engine performance or idle mixture needles or throttle body must be replaced. If necessary to remove plugs, continue as follows:*

2) Turn throttle body over, and position on a holding fixture with manifold side up. Make 2 parallel cuts in throttle body using a small hacksaw, cutting on each side of idle mixture needle plug. Cuts should reach down to steel plug, but no more than 1/8" beyond locator points. Distance between saw marks will depend upon size of punch used.

3) Place a flat punch at a point near ends of saw marks. Hold punch at 45° angle and drive it into throttle body until casting breaks away, exposing steel plug.

4) Hold center punch vertically and drive it into steel plug. Then hold punch at 45° angle and drive plug out of casting. Repeat process for remaining mixture needle. When removing or installing needles, refer to idle mixture adjustment in Tune-Up Service Procedures Section.

NOTE – *Hardened steel plug will shatter. It is not necessary to remove plug completely. Remove just enough pieces to allow idle mixture adjusting tool (J-29030) to be used to remove mixture screws and springs.*

CLEANING & INSPECTION

NOTE – *If idle air bleed valve is not removed on E4ME/E4MC model carburetors, clean air horn in a low-volatile solvent only. DO NOT place in carburetor cleaner. Damage to "O" rings on idle air bleed valve will result.*

- Use a regular carburetor cleaning solution. Soak components long enough to thoroughly clean all surfaces and passages of foreign matter.
- Do not soak any components containing rubber, leather or plastic. Particularly do not soak air horn with bleed valve installed, electric choke, idle speed solenoid, idle speed control or idle load compensator, TPS, thermostatic choke cover and coil, vacuum break diaphragms, pump plunger and other such parts.
- Remove any residue after cleaning by rinsing components in a suitable solvent.
- Blow out all passages with dry compressed air.

REASSEMBLY

NOTE – *Use new gaskets and seals. Make sure that new gaskets fit correctly and that all holes and slots are punched through and correctly located.*

Reassemble carburetor in reverse order of disassembly, noting the following:

1) The intermediate choke shaft lever and fast idle cam are assembled correctly when tang and lever are below fast idle cam.

2) When installing float and retaining pin, insert with end of loop of pin facing pump well. Fuel inlet needle pull clip should be over edge of flat on float arm. Do not hook clip into holes in float arm.

3) When installing mixture control solenoid, make sure pin on end of solenoid aligns with hole in raised boss at bottom of float bowl.

4) When installing mixture control solenoid screw, turn it in clockwise until it lightly seats. Back screw off the number of turns recorded during disassembly.

NOTE – *Do not force mixture control solenoid screw to bottom, as screw or seat could be damaged.*

5) When installing idle air bleed valve (if removed), turn valve clockwise until it is lightly seated. On valves without identification letter, back screw out 2 turns. On valves with identification letter, back screw out number of turns recorded during disassembly. Final adjustments must be made on vehicle.

NOTE – *If choke thermostatic cover and coil assembly was removed, it will be necessary to install a new service rivet kit.*

6) Place fast idle screw on high step of fast idle cam. Install choke coil cover if removed, aligning notch in cover with tab on cover retainer (supplied in service kit). Be sure coil tang engages pick-up lever. Install blind rivets.

NOTE – *On E4ME models, ground contact for electric choke is provided by metal plate located at rear of choke cover assembly. Do not install choke cover gasket between electric choke and housing.*

7) Install air horn screws and tighten evenly, securely and in sequence shown in *Fig. 18*.

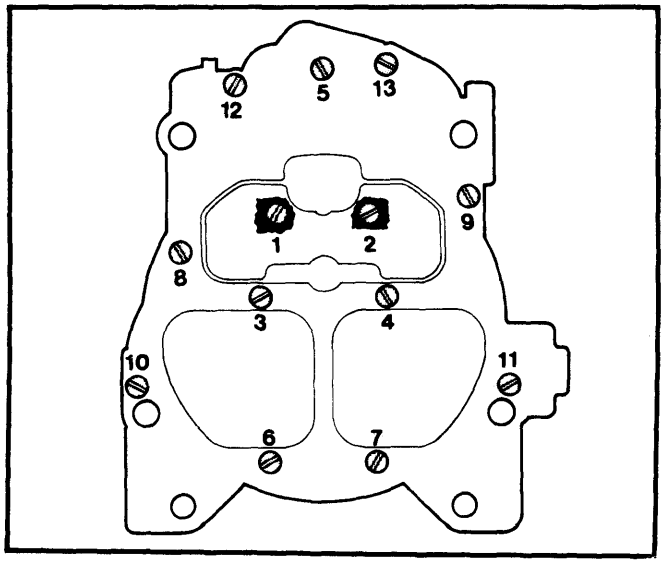

Fig. 18 Air Horn Screw Tightening Sequence

ROCHESTER E4MC & E4ME 4-BARREL (Cont.)

CARBURETOR ADJUSTMENT SPECIFICATIONS

Application	Float Level Setting	Accelerator Pump		Choke Coil Lever Setting	Choke Rod Setting	Air Valve Rod Setting	Vacuum Break		Air Valve Spring Setting①	Choke Unloader Setting
		Stem Setting	Hole Setting				Primary Setting	Secondary Setting		
E4MC										
17082253	7/16"	TR	TR	.120"	14°	.025"	27°	41°	1/2	35°
E4ME										
17082202	11/32"	TR	TR	.120"	20°	.025"	27°	.....	7/8	38°
17082203	11/32"	TR	TR	.120"	38°	.025"	27°	.....	7/8	38°
17082204	11/32"	TR	TR	.120"	20°	.025"	27°	.....	7/8	38°
17082207	11/32"	TR	TR	.120"	38°	.025"	27°	.....	7/8	38°
17082244	9/32"	TR	TR	.120"	24.5°	.025"	21°	16°	9/16	32°
17082245	3/8"	TR	TR	.120"	24.5°	.025"	26°	26°	5/8	32°
17082246	3/8"	TR	TR	.120"	24.5°	.025"	26°	26°	5/8	32°
17082247	3/8"	TR	TR	.120"	18°	.025"	26°	26°	5/8	32°
17082248	13/32"	TR	TR	.120"	18°	.025"	26°	26°	5/8	32°

TR – Tamper Resistant
① – Specification is number of turns.