IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all motor vehicles. The procedures recommended by Rochester Products Division of General Motors and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel or the possibility that improper service methods will be followed which may damage the vehicle or render it unsafe. It is also important to understand that these Cautions and Notices are not exhaustive. Rochester Products could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Rochester Products has not undertaken any such broad evaluation. Accordingly, anyone who uses a service procedure or tool which is not recommended by Rochester Products must first satisfy himself thoroughly that neither his safety nor vehicle safety will be jeopardized by the service method he selects.

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NOTE: USE THIS MANUAL PLUS SECTIONS 9D-9A & 9D-9S FOR COMPLETE SERVICE INSTRUCTIONS.

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MODEL E2SE CARBURETOR

The Model E2SE carburetor is a new two-barrel, two stage carburetor of downdraft design (See Figure 1 and 2).

To reduce overall weight, aluminum die castings are used for the air horn, float bowl, throttle body, mixture control solenoid, and choke housing.

All models use a heat insulator gasket between the throttle body and float bowl to reduce heat transfer to the float bowl.

The primary stage has a triple venturi with a small 35mm bore that results in good fuel control during idle and part throttle operation. The secondary stage has a large 46mm bore that provides sufficient air capacity for engine power requirements. An air valve is used in the secondary stage with a single tapered metering rod.

When used with the (C-4) system the Model E2SE carburetor includes special design features for optimum air/fuel mixture control during all ranges of engine operation. An electrically operated mixture control solenoid, mounted in the air horn, is used to control air and fuel metered to the idle and main metering systems of the carburetor. A plunger in the end of the solenoid is submerged in fuel in the fuel chamber of the float bowl. The plunger is controlled (or "pulsed") by an electrical output signal received from the Electronic Control Module (ECM). The ECM, responding to an electrical signal from the oxygen sensor in the exhaust, and other engine operating condition signals, energizes the solenoid to move the plunger down to the lean position or, de-energized, up to the rich position to control fuel delivery to the idle and main metering systems. When the plunger is in the down (lean) position, fuel metering is controlled by a factory adjusted lean mixture screw located in the float bowl. When the plunger is in the up (rich) position, additional fuel is metered to the main fuel well through the factory adjusted rich mixture screw located at the end of the fuel supply channel in the float bowl.

In addition, air metered to the idle system is controlled by the up and down movement of the mixture control solenoid plunger. The plunger increases or decreases air supplied to the idle system which is further metered by a factory adjusted idle air bleed screw.

The movement (or "cycling") of the solenoid plunger, up or down, occurs ten times per second thereby controlling fuel and air mixtures to achieve, as near as possible, ideal air/fuel mixture ratios.

In this way, exhaust gas mixture oxygen content (lean or rich) and other engine operating conditions, are constantly monitored by the (C-4) system and air/fuel mixtures adjusted accordingly for improved exhaust emissions and good engine performance.

In addition, on E2SE models for the V6 engine, a Throttle Position Sensor (T.P.S.) is used to electrically signal the Electronic Control Module (E.C.M.) various throttle position changes as they occur. As the throttle position is changed, a tang on the pump lever moves the T.P.S. plunger thereby changing the electrical signal to
the E.C.M.. The E.C.M. refers to stored memory and momentarily "holds" the last known air/fuel mixture ratio for good engine response during throttle changes.

L4 applications use an integral 1" pleated paper fuel filter, with check valve, mounted in the float bowl behind the fuel inlet nut to give good filtration of incoming fuel. V6 applications use an integral 2" pleated paper filter. The check valve on all applications is used to shut off fuel flow to the carburetor and prevent fuel leaks if a vehicle roll-over should occur.

The float chamber is located next to the primary and secondary bores. This feature assures adequate fuel supply to both carburetor bores during all normal vehicle maneuvers.

A single pontoon float, brass needle seat, and rubber tipped float valve with pull clip are used to control fuel level in the float chamber. The float chamber is internally vented through a vertical vent cavity in the air horn. Above this vent cavity is a removable vent stack assembly that has a small meshed screen as its top portion. This vent stack provides the correct height for the internal vent to the float chamber.

The Model E2SE float chamber also is externally vented through a tube (location F) in the air horn. A hose connects this tube directly to a vacuum operated vapor vent valve located in the vapor canister. When the engine is not running, the canister vapor vent valve is open allowing fuel vapors from the float chamber to pass into the canister where they are stored until normally purged. The venting of fuel vapors from the carburetor float bowl to the canister meets evaporative emission requirements and improves hot engine starting.

A hot idle compensator assembly (when used) is located in the air horn casting. The opening and closing of the hot idle compensator valve is controlled by a bi-metal strip that is calibrated to a specific temperature. When the valve opens, additional air is allowed to by-pass the throttle valves and enrichs the intake manifold to prevent rough idle during periods of hot engine operation.

The idle mixture needle is recessed in the throttle body casting and sealed with a hardened steel plug to discourage tampering with the factory adjusted mixture setting in the field which could upset exhaust emissions.

**NOTICE:** If mixture control adjustments are improperly set the C-4 system will not maintain precise control of carburetor air/fuel mixtures. Plugs are installed in the carburetor air horn, float bowl and over the idle mixture needle to seal the factory settings. Do not make any mixture adjustments unless the "System Performance Check" indicates the carburetor to be a possible cause of trouble. When replacing parts such as air horn float bowl or throttle body special factory recommended service procedures must be carefully followed.

The choke system of the E2SE carburetor for the L4 engine uses a single vacuum break unit that is mounted on the idle speed solenoid bracket located on the primary side of the carburetor. A dual vacuum break system is used on carburetor applications for the V6 engine, with the secondary vacuum break unit mounted on a bracket located on the secondary side of the carburetor. On all models, an electrically heated thermostatic choke coil is mounted in the choke housing located on the secondary side of the carburetor. Special rivets, and conventional retainers, are installed to retain the factory setting of the thermostatic choke coil in the housing. This tamper-resistant design discourages readjustment in the field. In addition, a special cut-out is notched in the choke cover which must be indexed with a raised boss cast in the cover mounting flange on the choke housing. A new procedure for removal of the choke cover is required when performing major carburetor overhaul, replacement of the cover and coil assembly or choke housing.

**NOTICE:** The choke thermostatic cover and coil assembly must not be removed unless required during major carburetor overhaul, or replacement of the cover and coil assembly or choke housing.

The E2SE carburetor has a separate screw located in the primary throttle lever for fast idle speed adjustment. A separate screw, located in the throttle body, is used to make the curb or base (depending upon application) idle speed setting (solenoid de-energized).

For ease of service, alphabetical code letters are included on the air horn, float bowl, and throttle body castings at external tube locations to identify air and vacuum hose connections.

The carburetor model identification is stamped vertically on the float bowl in a flat area adjacent to the vacuum tube (location B, Figure 3). If replacing the float bowl, follow the manufacturer's instructions contained...
in the service package so that the identification number can be transferred to the new float bowl. Refer to the part number on the bowl when servicing the carburetor.

An exhaust gas recirculation system (E.G.R.) is used on all applications to control oxides of nitrogen. The vacuum supply port(s) necessary to operate the recirculation valve is located in the throttle body and connects through a channel to a tube (location C) in the float bowl. This tube is connected by a hose to the E.G.R. valve. See Idle System (Figure 5) for port location and operation.

A fixed idle air by-pass system (where used) is used to reduce the amount of air flowing through the carburetor primary venturi to prevent the main nozzle from feeding fuel at idle.

An idle speed solenoid, mounted on the primary side vacuum break bracket, is used to position the primary throttle valve to obtain idle speed requirements of the engine.

The primary and secondary throttle shafts, the secondary actuating lever and lock-out lever, are coated with a special coating to reduce friction and wear in these operating parts. Also, the secondary throttle bore and valve on E2SE models for the V6 engine is coated with a special graphite compound for minimum air leakage past the valve for good idle air control. Care should be taken during carburetor service to not disturb or damage these coatings.

**OPERATING SYSTEMS (FIGURES 4 THROUGH 9)**

The model E2SE carburetor has six basic systems. They are float, idle, main metering, secondary stage, pump, and choke.

**FLOAT SYSTEM (FIGURE 4)**

The float system consists of a fuel chamber, a single pontoon float, and a float needle valve and seat. A plastic filler block is located in the top of the float chamber over the float valve to prevent fuel slosh in this area.

Fuel from the fuel pump enters the carburetor fuel inlet passage, passes through the fuel inlet filter, fuel inlet valve and into the float bowl. As the float bowl fills with fuel, it lifts the float pontoon to the prescribed level and the fuel inlet valve closes. As fuel is used from the float bowl, the float drops, allowing the float needle to move off its seat and more fuel to enter the float bowl.

A fuel inlet check valve is part of the fuel inlet to the carburetor. This valve is installed to prevent fuel from flowing from the inlet line into the carburetor if the vehicle is overturned. The check valve, which is normally closed, opens when overcome by the fuel pump pressure.

The carburetor float chamber is internally vented to filtered air in the air cleaner by a vent cast in the air horn. The fuel is also externally vented through a tube leading to the evaporative canister.

**FIGURE 4**

**IDLE SYSTEM (FIGURE 5)**

The model E2SE carburetor has an idle system in the primary stage to supply the correct air/fuel mixture to the engine during idle and off-idle operation.

The idle system consists of an idle fuel well, a fuel pickup tube, a solenoid modulated air bleed, crossover and down channels, a channel restriction, rich idle authority orifice, and rich idle authority screw.

The idle system operates as follows:

Fuel flows from the float bowl down through a solenoid operated on/off valve where it combines with fuel flowing through a preset "lean authority" needle valve and orifice. It is picked up in the main well by the idle tube. The fuel is metered at the lower tip of the submerged idle tube and passes up through the tube. Air, metered by the mixture control solenoid, is then mixed with the fuel. The mixture crosses over to the idle down channel, past an idle air bleed and continues down through the calibrated idle channel restriction past the lower air bleed and off-idle discharge port where it is further mixed with air. The air/fuel mixture moves down to the adjustable idle mixture screw discharge hole where it enters the carburetor bore and blends with the air passing the slightly open throttle valve.

The exhaust gas recirculation valve is operated by a vacuum signal taken from the carburetor. A vacuum supply tube connects to the carburetor port located just above the throttle valve in the throttle body bore. This
port creates a partial vacuum signal for the EGR valve as explained in the EGR description section.

A hot idle compensator may be located in a cavity between the primary and secondary air inlets on the air horn. Its purpose is to offset the enrichening effects caused by fuel vapors during hot engine operation. The compensator consists of a thermostatically controlled valve, a heat sensitive bi-metal strip, a valve holder and bracket, and two screws that hold the assembly in place. The valve closes off an air channel leading from the top of the air horn to a passage below the primary throttle valve.

During low and moderate ambient temperature operation, the compensator valve is held closed by tension of the bi-metal strip. During high ambient temperature operation, excessive fuel vapors enter the intake manifold, causing richer than normally required air/fuel mixtures resulting in rough engine idle and stalling. At a predetermined temperature when additional air is needed to offset these enrichening effects of fuel vapors, the bi-metal strip bends and unseats the compensator valve. This uncovers the air channel leading to the passage below the primary throttle valve to allow enough air to be drawn into the intake manifold to offset the richer mixtures and maintain a smooth engine idle. When the engine cools and the additional air is not required, the bi-metal strip relaxes and closes the valve.

Pump system (Figure 7)

When the throttle is opened rapidly, air flow through the carburetor changes almost instantaneously. Because the fuel tends to lag behind causing a momentary leanness, the accelerator pump system is used to provide the extra fuel necessary for smooth operation. When the pump plunger moves upward in the pump well, as happens during throttle closing, fuel from the float chamber enters the pump well through a vertical slot located near the top of the pump well. When the primary throttle valve is opened, the connecting linkage forces the pump plunger downward. The pump cup seats and fuel is forced through the pump discharge passage where it unseats the pump discharge check ball and passes on through the passage to the pump jet where it sprays into
the venturi area of the primary bore. The pump discharge check ball seats in the pump discharge passage during upward motion of the pump plunger so that air will not be drawn into the passage and prevent proper pump fill.

![Pump System Diagram](FIGURE 7)

The venturi area of the primary bore. The pump discharge check ball seats in the pump discharge passage during upward motion of the pump plunger so that air will not be drawn into the passage and prevent proper pump fill.

![Secondary System Diagram](FIGURE 8)

SECONDARY METERING SYSTEM (FIGURE 8)

As engine speed increases, the primary bore cannot meet engine air and fuel requirements. A lever in the primary throttle linkage, through contact with a pin on the secondary throttle lever, begins to open the secondary throttle valve. This occurs only if the electric choke has warmed the thermostatic coil sufficiently to release the secondary lockout lever. As the secondary throttle valve opens, engine manifold vacuum is applied directly beneath the air valve. Atmospheric pressure on top of the off-set air valve causes the air valve to open against the spring. This allows air to pass through the secondary bore of the carburetor.

As the air valve opens, the secondary metering rod is pulled out of the jet allowing increased fuel flow into the secondary bore. Fuel reaches the secondary metering jet from the float bowl through a secondary fuel pick up tube and channel in the air horn.

As the secondary throttle valve is opened further and engine speeds increase, air flow through the secondary stage increases and opens the air valve to a greater degree which, in turn, moves the secondary metering rod out of the metering jet. The metering rod is tapered so that fuel flow through the secondary metering jet provides the proper air/fuel ratio during secondary operation.

The secondary air valve may use an air valve dashpot feature to control opening rate of the air valve. The dashpot, through linkage, controls opening of the air valve to provide a smooth transition to secondary system operation. The primary side vacuum diaphragm provides the air valve dashpot action.

CHoke SYSTEM (FIGURE 9)

The choke system consists of the choke housing and thermostatic coil mounted on the throttle body next to the secondary stage of the carburetor. The thermostatic coil is calibrated to provide the correct air/fuel mixture enrichment for the engine at cold engine starting and operation during the warm-up period.

A vacuum break system is used and consists of a vacuum diaphragm unit mounted on the carburetor. A vacuum diaphragm unit may be mounted on the primary side of the carburetor and it can be used as a vacuum break, a secondary air valve dashpot or both. Some applications may use only the primary side unit acting as both a vacuum break and an air valve dashpot, with no secondary side unit.

An unloader feature is provided should the engine become flooded during the starting period. To unload the engine, the accelerator pedal must be depressed so that the primary throttle is held wide open. A tang on the primary throttle lever contacts an arm on the fast idle cam and forces the choke valve partially open. The increased air flow through the primary bore of the carburetor reduces vacuum at the fuel feed holes to lean out the overly rich mixtures.

When the engine starts and is running, manifold vacuum is applied to the vacuum break unit. This moves the diaphragm plunger in until it strikes the rear cover, thereby opening the choke valve to a point where the engine will run without loading or stalling. As the engine
warms up, heat gradually relaxes tension of the thermostatic coil to allow the choke valve to continue opening. Through inlet air pressure pushing on the off-set choke valve and the weight of the linkage pulling the choke valve open, the choke valve continues to open until it is fully open when the engine can run at normal air/fuel mixtures.

On applications using a dual vacuum break system, the vacuum signal to the secondary side vacuum break unit is controlled by a thermal vacuum switch. The vacuum signal to the secondary vacuum break is delayed until the engine has warmed up slightly, and is able to run at leaner mixtures.

This carburetor is equipped with an electric choke. A two element heater is used to heat the bi-metal choke coil causing it to relax and open the choke valve. Current to the choke assembly is supplied through an oil pressure activated switch so that the electric choke is activated only when the engine is running. One heating element is in operation whenever current is supplied to the choke, and the temperature inside the choke housing is below the calibration value. This element heats the bi-metal coil and also heats the plate above the switch pocket for the second heating element. When the switch pocket reaches the calibration value or above, a bi-metal switch then supplies current to the second heater connecting it in parallel with the first heater. This switching function causes the choke to come off at a faster rate with two heaters connected than with one heater connected.

![Diagram of Choke System](image-url)

**FIGURE 9**
UNIT REPAIR

The procedures below apply to the complete overhaul with the carburetor removed from the engine.

However, in many cases service adjustments of individual systems may be completed without removing the carburetor from the engine.

A complete carburetor overhaul includes disassembly, thorough cleaning, inspection, and replacement of all gaskets, diaphragms, seals, worn or damaged parts, and service adjustment of individual systems.

NOTICE: Before performing any service on the carburetor, it is essential that the carburetor be placed on a holding fixture such as Tool J-9787-118 or BT-3553. Without the use of the holding fixture, it is possible to damage throttle valves.

MODEL E2SE CARBURETOR SERVICE

IDLE SPEED SOLENOID

Remove

1. Bend back retaining tabs on lockwasher; then remove large solenoid retaining nut using suitable wrench.

2. Remove lockwasher and solenoid unit from bracket.

NOTICE: The solenoid should not be immersed in any type of carburetor cleaner and should always be removed before complete carburetor overhaul. Immersion in cleaner will damage solenoid.

AIR HORN

Remove

1. If clip is used in pump rod, remove clip and remove pump rod from hole in pump lever.

   NOTICE: DO NOT REMOVE PUMP LEVER RETAINING SCREW, PUMP LEVER, AND WASHER FROM AIR HORN ASSEMBLY.

2. If clip is not used in pump rod (“clipless” design), remove pump lever retaining screw and washer from air horn (Figure 10). Then rotate pump lever to remove from pump rod.

3. Remove hose from primary side vacuum break assembly and throttle body.

4. Remove idle speed solenoid-vacuum break bracket attaching screws from air horn and throttle body (Figure 11). Then, rotate vacuum break assembly to remove vacuum break rod and air valve rod from vacuum break diaphragm plunger (L4 engine). On V6 models, rotate vacuum break and bracket assembly to disengage rods from vacuum break and air valve levers. It is not necessary to remove the vacuum break or air valve rods from the vacuum break plunger on V6 models unless replacement of the rods or vacuum break unit is necessary (Figure 12). If not removed previously idle speed solenoid may be removed from bracket following procedure described above.

FIGURE 10 PUMP LEVER SCREW REMOVAL

NOTICE: Do not place vacuum break assembly and solenoid in carburetor cleaner. Immersion in cleaner will damage vacuum break diaphragm or solenoid.

5. If necessary to replace the vacuum break, vacuum break rod or air valve rod on V6 models, remove and discard retaining clips from end of rods. New retaining clips are required for reassembly. Remove plastic bushings used on rods and retain for later re-use.

6. Where used, remove secondary side vacuum break bracket attaching screws from the throttle body, then rotate bracket to remove vacuum break rod from vacuum break lever.
FIGURE 11 VACUUM BREAK REMOVAL  L4

NOTICE: Do not place vacuum break assembly in carburetor cleaner. Immersion in cleaner will damage vacuum break diaphragm.

7. It is not necessary to remove the secondary side vacuum break rod from the vacuum break plunger unless replacement of the vacuum break or rod is necessary. If necessary to replace the secondary side vacuum break rod, remove and discard retaining clip from end of rod. A new retaining clip is required for reassembly. Remove plastic bushing used on rod and retain for later re-use.

8. Remove and discard retaining clip from intermediate choke rod at choke lever (Figure 13). A new retaining clip is required for reassembly. Remove choke rod and plastic bushing from choke lever and save the bushing for later re-use.

9. Remove three (3) mixture control solenoid screws in air horn; then using a slight twisting motion, carefully lift solenoid out of air horn (Figure 14). Remove and discard solenoid gasket.

10. Remove seal retainer and rubber seal from end of solenoid plunger, being careful not to damage or nick end of solenoid plunger. Discard seal and retainer.

11. If equipped, remove two (2) small screws that retain the hot idle compensator valve (Figure 15). Remove valve and seal from air horn. Discard seal. Hot idle compensator valve must be removed to gain access to the short air horn to bowl attaching screw.

12. Remove the six (L4), seven (V6), air horn to bowl attaching screws and lockwashers (Figure 16).

13. Rotate fast idle cam to the full UP position and remove air horn assembly by tilting to disengage fast idle cam rod from slot in fast idle cam (Figure 17). The air horn gasket should remain on the float bowl for removal later. Do not remove fast idle cam screw and cam from float bowl. These parts are not serviced separately and are to remain permanently in place as installed by the factory. The new service replacement float bowl will include the secondary lockout lever, fast idle cam and screw installed as required.

14. Remove fast idle cam rod from choke lever by rotating rod to align squirt on rod with small slot in lever.
AIR HORN DISASSEMBLY

1. Remove Throttle Position Sensor plunger, if used, by pushing through seal in air horn (Figure 18 and 19).
   NOTICE: Use fingers only to remove plunger to prevent damage to sealing surface.

2. If used, remove throttle position sensor seal by inverting air horn and use a small screwdriver to remove staking holding seal retainer in place (Figure 19). Remove and discard retainer and seal.

3. If used, remove pump plunger stem seal by inverting air horn and use a small screwdriver to remove staking holding the seal retainer in place (Figure 19). Remove and discard retainer and seal.

   NOTICE: Use care in removing the T.P.S. plunger seal retainer and pump plunger stem seal retainer to prevent damage to air horn casting. New seals and retainers are required for reassembly.

4. If necessary, remove two (2) small screws and remove vent/screen assembly.

5. Further disassembly of the air horn is not required for cleaning purposes. If part replacement is required, remove staking on two (2) choke valve attaching screws. Remove screws, choke valve, and shaft from air horn.
service, the new service air horn assembly will include the secondary metering rod - air valve assembly pre-set as required.

6. On L4 models, it is not necessary to remove the vacuum break rod or air valve rod from the levers in the air horn unless replacement of the rods is necessary. The plastic bushings in the levers will withstand normal cleaning in the carburetor cleaner.

If necessary to replace the vacuum break rod or air valve rod on L4 models, remove and discard retaining clips from end of rods. New retaining clips are required for reassembly. Remove plastic bushing used on rods and retain for later re-use.

**FLOAT BOWL**

Disassemble

1. Remove air horn gasket.
2. Remove pump plunger from pump well.
3. Remove pump return spring from pump well.
4. If used, push up from bottom on electrical connector and remove Throttle Position Sensor (TPS) and Connector Assembly from float bowl (Figure 20). Remove spring from bottom of T.P.S. well in bowl.

**NOTICE:** Use care in removing sensor and connector assembly to prevent damage to this critical electrical part.

5. Remove plastic filler block over float valve.
6. Remove float assembly and float valve by pulling up on retaining pin. Remove float valve seat and gasket, using seat remover J-22769 or BT-3006M (Figure 21).

**NOTICE:** The air valve screws are permanently staked in place and should not be removed. Do not attempt to remove the secondary metering rod from the air valve assembly. Also, do not remove the plugs covering the idle air bleed screw and throttle position sensor adjustment screw during routine servicing. These adjustment screws are pre-set at the factory and no attempt should be made to change these adjustments in the field except during air horn or float bowl replacement at which time service instructions must be followed carefully. If air horn replacement is required during carburetor
7. Using a wide-blade screwdriver that fully fits the slot in top of jet, remove the extended metering jet from the float bowl or use tool J-22769 or BT-3006M (Figure 22).

**NOTICE:** Do not remove or change adjustment of the small calibration screw located deep inside the metering jet during routine servicing. The adjustment screw is pre-set at the factory and no attempt should be made to change this adjustment in the field except during air horn or float bowl replacement at which time service instructions must be followed carefully.

8. Using small slide hammer or equivalent, remove plastic retainer holding pump discharge spring and check ball in place (Figure 23). Discard plastic retainer (a new retainer is required for reassembly).

**NOTICE:** DO NOT ATTEMPT TO REMOVE PLASTIC RETAINER BY PRYING OUT WITH A TOOL SUCH AS A PUNCH OR SCREWDRIVER - THIS WILL DAMAGE THE SEALING BEADS ON THE BOWL CASTING SURFACE AND REQUIRE COMPLETE FLOAT BOWL REPLACEMENT.

Turn bowl upside down catching pump discharge spring and check ball in palm of hand.

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**CHOKE**

**Disassemble**

The tamper-resistant choke cover design is used to discourage readjustment of the choke thermostatic cover and coil assembly in the field. However, it is necessary to remove the cover and coil assembly during normal carburetor disassembly for cleaning and overhaul using procedures described below.

**REMOVAL OF CHOKE COVER**

1. Support float bowl and throttle body as an assembly on a suitable holding fixture such as Tool J-9789-118 or BT-3553.

2. Carefully align a #21 drill (.159") on pop-rivet head and drill only enough to remove rivet head. (Figure 24). Drill the two (2) remaining rivet heads and then use a drift and small hammer to drive the remainder of the rivets out of the choke housing. Use care in drilling to prevent damage to choke cover or housing.

3. Remove the three (3) retainers and choke cover assembly from choke housing.

4. Remove screw from end of intermediate choke shaft inside choke housing (Figure 25). Remove choke coil lever from shaft.

5. Remove intermediate choke shaft and lever assembly from float bowl by sliding rearward out throttle lever side (Figure 26).

6. Remove choke housing by removing two (2) attaching screws in throttle body (Figure 27).
FIGURE 23 PUMP DISCHARGE RETAINER REMOVAL (TYPICAL)

FIGURE 24 RIVETED CHOKE COVER REMOVAL (TYPICAL)

FIGURE 25 CHOKE COIL LEVER REMOVAL

FIGURE 26 INTERMEDIATE CHOKE SHAFT REMOVAL
REMAINING FLOAT BOWL PARTS

Disassembly

1. Remove fuel inlet nut, gasket, check valve filter assembly, and spring.

2. Remove four (4) throttle body to bowl attaching screws and lockwashers and remove throttle body assembly (Figure 28).

3. Remove throttle body to bowl insulator gasket.

THROTTLE BODY

Disassemble (Figure 29)

1. Place throttle body assembly on carburetor holding fixture to avoid damaging throttle valves.

2. Hold primary throttle lever wide-open and disengage pump rod from the throttle lever by rotating rod until squirt on rod aligns with slot in lever.

3. If replacement is necessary, remove fast idle screw and clip in primary throttle lever.

4. If required, remove curb or base idle speed screw and spring in throttle body. Further disassembly of the throttle body is not required for cleaning purposes. The primary and secondary throttle valve screws are permanently staked in place and should not be removed. The throttle body is serviced as a complete assembly. (Figure 29).

5. DO NOT remove plugs covering idle mixture needle unless it is necessary to replace the mixture needle or normal soaking and air pressure fails to clean the idle mixture passages.

Remove idle mixture plug and needle as follows:

a. Invert throttle body and place on carburetor holding fixture - manifold side up.

b. Make two parallel cuts in the throttle body on either side of the locator point beneath the idle mixture needle plug (manifold side) with a hack saw. The cuts should reach down to the steel plug but should not extend more than 1/8" beyond the locator point. The distance between the saw marks depends on the size of the punch to be used.

c. Place a flat punch at a point near the ends of the saw marks in the throttle body. Holding the punch at a 45° angle, drive it into the throttle body until the casting breaks away, exposing the steel plug.
d. Holding a center punch vertical, drive it into the steel plug. Then holding the punch at a 45° angle, drive the plug out of the casting.

NOTICE: Hardened plug will break rather than remaining intact. It is not necessary to remove the plug completely; instead, remove loose pieces to allow use of idle mixture adjusting tool. NOTE: Two styles of idle mixture screws are used. 1. Hex head, 3/16", use tool J-28706 or BT-7610A (or) 2. Double D head, tool J-29030 or BT-7610B.

c. Using proper tool, remove idle mixture needle, and spring from throttle body. (Figure 31).

CLEANING AND INSPECTION

The carburetor parts should be cleaned in a cold immersion-type cleaner such as Carbon X (X-55) or its equivalent.

NOTICE: The idle speed solenoid, mixture control solenoid, throttle position sensor, electric choke, rubber parts, plastic parts, diaphragms, pump plunger, plastic filler block, should NOT be immersed in carburetor cleaner as they will harden, swell, or distort.

The plastic bushings in the end of the vacuum break rod and air valve rod on L4 models will withstand normal cleaning in carburetor cleaner.

1. Thoroughly clean all metal parts and blow dry with compressed air. Make sure all fuel passages and metering parts are free of burrs and dirt. Do not pass drills or wires through jets and passages.

2. Inspect upper and lower surface of carburetor castings for damage.

3. Inspect holes in levers for excessive wear or out of round conditions. If worn, levers should be replaced. Inspect plastic bushings in levers for damage and excessive wear. Replace as required.

4. Check, repair, or replace parts if the following problems are encountered;

A. Flooding

1. Inspect float valve and seat for dirt, deep wear grooves, scores, and proper seating.

2. Inspect float valve pull clip for proper installation (Figure 32). Be careful not to bend pull clip.
D. Poor Performance - Poor Gas Mileage

1. Clean all fuel and vacuum passages in castings.
2. Check choke valve for freedom of movement.
3. Check Mixture Control Solenoid for sticking, binding, or leaking as follows (Figure 33):
   a. Connect one end of a jumper wire to either terminal of the solenoid connector and the other end to the positive (+) terminal of a 12-volt battery source.
   b. Connect a jumper wire to the other terminal of the solenoid connector and the other end to a known good ground.
   c. With rubber seal and retainer removed from the end of the solenoid stem, attach a hose from a hand vacuum pump.
   d. With the solenoid fully energized (lean position), apply at least 25" Hg of vacuum and time the leak-down rate from 20" Hg to 15" Hg. Leak-down rate should not exceed 5" Hg in 5 seconds. If leakage exceeds that amount, replace solenoid.
   e. To check solenoid for sticking in the down position, remove jumper lead to 12 volt source and observe hand vacuum pump reading. Reading should go to zero in less than one (1) second.

B. Hesitation

1. Inspect pump plunger for cracks, scores, or excessive cup wear.
   A used pump cup will shrink when dry. If dried out, soak in fuel for 8 hours before testing.
2. Inspect pump duration and return springs for being weak or distorted.
3. Check pump passages and jet for dirt, improper seating of discharge checkball and scores in pump well. Check condition of pump discharge check ball spring.
4. Check pump linkage for excessive wear; repair or replace as necessary.

C. Hard Starting - Poor Cold Operation

1. Check choke valve and linkage for excessive wear, binds or distortion.
2. Inspect choke vacuum diaphragm(s) for leaks.
3. Clean or replace carburetor fuel filter.
4. Inspect float valve for sticking, dirt, etc.
5. Also check items under "Flooding".
4. Inspect metering jet for dirt, loose parts, or damage.
   NOTICE: DO NOT attempt to readjust the lean mixture screw located inside the extended metering jet during routine servicing. The screw is factory adjusted during carburetor flow test and misadjustment can affect carburetor calibration.

5. Check air valve and secondary metering rod for binding conditions. If air valve or metering rod is damaged or metering rod adjustment is changed from the factory setting, the air horn assembly must be replaced.

E. Rough Idle

1. Inspect gasket and gasket mating surfaces on castings for damage to sealing beads, nicks, burrs and other damage.
2. Check operation and sealing of mixture control solenoid (see 3, page 17).
3. Clean all idle fuel passages.
4. If removed, inspect idle mixture needle for ridges, burrs, or being bent.
5. Check throttle lever and valves for binds, nicks and other damage.
6. Check all diaphragms for possible ruptures or leaks.
7. Clean plastic parts only in a low volatile cleaning solvent - never in gasoline.

CARBURETOR ASSEMBLY

THROTTLE BODY

Assemble

NOTICE: Place throttle body assembly on carburetor holding fixture to avoid damaging throttle valves.

1. Install curb or base idle speed screw and spring, if removed, in throttle body (Figure 29).
2. If removed, install fast idle adjustment screw and clip in primary throttle lever (Figure 29).
3. Holding primary throttle lever wide open, install lower end of pump rod in throttle lever by aligning squirt on rod with slot in lever. End of rod should point outward toward throttle lever.
4. If removed, install idle mixture needle and spring using Tool J-29030 or equivalent (Figure 31). Lightly seat needle and then back out three (3) turns as a preliminary idle mixture adjustment. Final idle mixture adjustment must be made on car using the procedures described under Idle Mixture Adjustment in this section.

FLOAT BOWL

Assemble

NOTICE: If a new float bowl assembly is used, stamp or engrave the model number on the new float bowl (see Figure 3).

1. Install new throttle body to bowl insulator gasket over two locating dowels on bowl (Figure 34).
2. Holding fast idle cam so that steps face fast idle screw on throttle lever when properly installed, install throttle body making certain throttle body is properly located over dowels on float bowl; then, install four (4) throttle body to bowl screws and lockwashers and tighten evenly and securely. (Figure 28).

Inspect linkage to insure lockout tang is located properly to engage slot in secondary lockout lever and that linkage moves freely and does not bind.

3. Place carburetor on proper holding fixture such as J-9789-118 or BT-3553.
4. Install fuel inlet filter spring, check valve-filter assembly, new gasket and inlet nut, and tighten nut to 24 Nm (18 ft. lbs.).

When installing a service replacement filter, make sure the filter is the type that includes the check valve to meet U.S. Motor Vehicle Safety Standards (M.V.S.S.).
When properly installed, hole in filter faces toward inlet nut. Ribs on closed end of filter element prevent filter from being installed incorrectly unless forced.

Tightening beyond specified torque can damage nylon gasket to cause fuel leak.

5. Install choke housing on throttle body, making sure raised boss and locating lug on rear of housing fit into recesses in float bowl casting (Figure 27). Install two (2) choke housing attaching screws and lockwashers in throttle body and tighten screws evenly and securely.

6. Install intermediate choke shaft and lever assembly in float bowl by pushing through from throttle lever side (Figure 26).

7. With intermediate choke lever in the UP (12 o'clock) position, install thermostatic coil lever inside choke housing onto flats on intermediate choke shaft. Coil lever is properly aligned when the coil pick-up tang is at the top (12 o'clock) position (Figure 35). Install inside lever retaining screw into end of intermediate choke shaft and tighten securely.

c. Install the thermostatic cover and coil assembly in the choke housing, aligning notch in cover with raised casting projection on housing cover flange. Make sure coil pick-up tang engages the inside choke coil lever.

On E2SE models for the V6 engine, the tang on the thermostatic coil is the “trapped stat” design (See Figure 37). This means that the coil tang is formed so that it will completely encircle the coil pick-up lever. Make sure the coil pick-up lever is located inside the coil tang when installing the choke cover and coil assembly.

d. Install three (3) cover retainers and self-tapping screws and tighten screws securely.

NOTICE: Ground contact for the electric choke is provided by a metal plate located at the rear of the choke cover assembly. Do not install a choke cover gasket between the electric choke assembly and the choke housing.

9. Install pump discharge steel check ball and spring in passage next to float chamber (Figure 38). Insert end of new plastic retainer into end of spring and install retainer in float bowl, tapping lightly in place until top of retainer is flush with bowl casting surface.

10. Using a screwdriver that fully fits the slot in the top, install main metering jet into bottom of float chamber. Tighten jet securely.

11. Install float valve seat assembly, with gasket, using seat installer J-22769 or BT-3006M (Figure 21).

12. To make adjustment easier, carefully bend float arm upward at notch in arm before assembly.

13. Install float valve onto float arm by sliding float lever under pull clip. Correct installation of the pull clip is to hook the clip over the edge of the float on the float arm facing the float pontoon (Figure 32).

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FIGURE 35 CHOKE COIL LEVER POSITION INSTALLED

8. Install the choke cover and coil assembly in choke housing as follows:

a. Start the three self-tapping screws (supplied with service kit) in the choke housing, checking to be sure screws start easily and are aligned properly (Figure 36). Then, remove screws.

b. Place fast idle screw on highest step of fast idle cam.

---

FIGURE 36 SELF-TAPPING CHOKE COVER SCREWS
14. Install float retaining pin into float arm with end of loop of pin facing pump well. Then, install float assembly by aligning valve in the seat and float retaining pin into locating channels in float bowl.

FIGURE 37 “TRAPPED STAT” CHOKE COVER INSTALLATION

FIGURE 38 PUMP DISCHARGE RETAINER INSTALLATION

15. Float Level Adjustment (Figure 39).
   a. Hold float retaining pin firmly in place and push down lightly on float arm at outer end against top of float valve.

b. Using adjustable "T" scale, measure from top of float bowl casting surface (air horn gasket removed) to top of float at toe, gaging point 3/16" back from end of float at toe. (See Figure 39, Float Adjustment).
   c. Bend float arm as necessary for proper adjustment by pushing on pontoon.
   d. Visually check float alignment after adjustment.

16. Install plastic filler block over float valve pressing downward until properly seated (flush with bowl casting surface).

17. If used, install Throttle Position Sensor return spring in bottom of well in float bowl (Figure 20).

18. If used, install Throttle Position Sensor and connector assembly in float bowl by aligning groove in electrical connector with slot in float bowl casting. Push down on connector and sensor assembly so that connector, wires, and sensor are located below bowl casting surface (Figure 20).

19. Install air horn gasket on float bowl, locating gasket over two dowel locating pins on bowl.

20. Install pump return spring in pump well.

21. Install pump plunger assembly in pump well.

**AIR HORN**

**Assemble**

1. If removed, install vent/screen assembly and two (2) small attaching screws. Tighten screws securely.

2. If removed, install choke shaft, choke valve, and two attaching screws. Tighten screws securely and stake lightly in place.
Check choke valve for freedom of movement and proper alignment before staking screws in place.

3. If used, install new pump plunger stem seal and retainer in air horn casting (Figure 19). Lightly stake seal retainer in three places, choosing locations different from original stakings.

4. If used, install new Throttle Position Sensor actuator plunger seal and retainer in air horn casting (Figure 19). Lightly stake seal retainer in three places, choosing locations different from the original stakings.

5. Install fast idle cam rod in lower hole of choke lever, aligning squirt on rod with small slot in lever.

   a. L4 Models Only

   If removed, install plastic bushing in hole in vacuum break lever making sure small end of bushing faces retaining clip when installed. Then, insert end of vacuum break rod through bushing in lever. Retain rod with new clip, pressing clip in place using needle nose pliers. Make sure clip has full contact on rod but is not seated tightly against the bushing. Rod to bushing clearance should be .08mm (.030"). Retaining clip is “dished”. Install clip on rod with outward bend of self-locking clip facing end of rod. Check that clip fully engages rod and that clip is not distorted.

   b. L4 Models Only

   If removed, install plastic bushing in hole in air valve lever, making sure small end of bushing faces retaining clip when installed. Then, insert end of air valve rod through bushing in lever. Retain with new clip, pressing clip in place using needle nose pliers. Make sure clip has full contact on rod but is not seated tightly against the bushing. Rod to bushing clearance should be .08mm (.030"). Retaining clip is “dished”. Install clip on rod with outward bend of self-locking clip facing end of rod. Check that clip fully engages rod and that clip is not distorted.

6. Apply a light coating of silicone grease or light engine oil on the T.P.S. metal actuator plunger (if used - Figure 18) and push plunger through seal in air horn until about one-half of the plunger extends above the surface of the air horn casting. Seal pressure should hold plunger in place during air horn installation on float bowl.

AIR HORN TO BOWL

Installation

1. Prior to installing air horn on the float bowl, apply a light coating of silicone grease or light engine oil to the stem on the pump plunger in the bowl to aid insertion of the stem through the seal on the air horn.

2. Rotate fast idle cam to the full UP position and tilt the air horn assembly to engage lower end of fast idle cam rod in slot in fast idle cam; then, holding down on the pump plunger assembly, carefully lower air horn assembly onto float bowl, guiding pump plunger stem through seal in air horn casting.

NOTICE: Do not force air horn assembly onto bowl, but rather lightly lower in place. Make sure T.P.S. actuator plunger (if used) engages sensor plunger in bowl by checking plunger movement.

3. Install six (L4), seven (V6), air horn to bowl attaching screws and lockwashers.

   Four (4) long air horn screws are located in the primary and secondary venturi area of which the one (1) larger head screw goes next to the choke valve on the primary side on V6 models. In addition, two (2) short screws are located on the fuel inlet side and one (1) short screw is located in the area beneath the hot idle compensator valve. All air horn screws must be tightened evenly and securely. See Figure 40 for proper tightening sequence.

4. If equipped, install new seal in recess of float bowl; then install hot idle compensator valve and retain with two (2) small attaching screws. Tighten screws securely.

5. If not tested previously, test mixture control solenoid for sticking, binding, or leaking following steps noted under cleaning and inspection procedure. Then, install new rubber seal on mixture control solenoid stem until seal is up against boss on solenoid stem. Then, using a 3/16" socket and light hammer, carefully drive retainer on stem (Figure 41). Driver retainer on stem only far enough to retain rubber seal on stem leaving a slight clearance between the retainer and seal to allow for seal expansion.

6. Prior to installing the mixture control solenoid, lightly coat the rubber seal on the end of the solenoid stem with a silicone grease or light engine oil. Using a new mounting gasket, install mixture control solenoid on air horn, carefully aligning solenoid stem with recess in bottom of bowl (Figure 42).

   Use a slight twisting motion of the solenoid during installation to ensure rubber seal on stem is guided into recess in the bottom of the bowl to prevent distortion or damage to the rubber seal.

   Install three (3) solenoid attaching screws and tighten securely.

7. Install plastic bushing in hole in choke lever, making sure small end of bushing faces retaining clip when installed.

   With inner coil lever and intermediate choke lever at the 12 o'clock position, install intermediate choke rod in bushing. Retain rod with new clip, pressing clip securely in place with needle nose pliers. Make sure clip has full
contact on rod but is not seated tightly against bushing. Rod to bushing clearance should be .8mm (.030”). Retaining clip is “dished”. Install clip on rod with outward bend of self-locking clip facing end of rod. Check that clip fully engages rod and that clip is not distorted.

a. V6 Models - If removed, install plastic bushing in hole in secondary side vacuum break plunger, making sure small end of bushing faces retaining clip when installed. Then, install secondary side vacuum break rod and secure new clip to rod with needle nosed pliers. Make sure clip has full contact on rod but is not seated tightly against bushing. Rod to bushing clearance should be .8mm (.030”). Retaining clip is “dished”. Install clip on rod with outward bend of self-locking clip facing end of rod. Check that clip fully engages rod and that clip is not distorted.

b. V6 Models - Rotate bracket and insert end of secondary side vacuum break rod into upper slot of vacuum break lever. Install bracket on throttle body and install countersunk screws. Tighten screws securely (Figure 12).

8. All Models - If removed, install idle speed solenoid, lockwasher, and retaining nut on primary side vacuum break bracket. Tighten nut securely. Then, bend back two (2) retaining tabs on lockwasher to fit in slots in bracket.

**NOTICE:** Use care in tightening with wrench to avoid damaging vacuum break plunger.

a. L4 Models - Rotate solenoid bracket and insert end of vacuum break rod into inner slot of vacuum break diaphragm plunger and end of air valve rod into outer slot of vacuum break diaphragm plunger.

Install bracket over locating lugs on air horn and install countersunk screw in air horn and screw with lockwasher in throttle body. Tighten screws securely (Figure 11).
b. V6 Models - If removed, install plastic bushings in holes in primary side vacuum break plunger, making sure small end of bushings face retaining clips when installed. Then, install vacuum break rod in upper hole of plunger and air valve rod in lower hole of plunger and secure new clips to rods with needle-nosed pliers. Make sure clips have full contact on rods but are not seated tightly against bushings. Rod to bushing clearance should be .8mm (.030""). Retaining clips are "dished". Install clip on rod with outward bend of self-locking clip facing end of rod. Check that clips fully engage rods and that clip is not distorted.

Rotate primary side vacuum break bracket to engage vacuum break and air valve rods in vacuum break and in air valve lever, positioning bracket over locating lug on air horn. Install two (2) countersunk screws and tighten securely (Figure 12).

c. On L4 models, insert pump rod in hole in pump lever by rotating lever (Figure 10). Install retaining screw in pump lever, then install washer. Holding down on pump plunger stem, install pump lever on air horn. Make sure shoulder on screw seats in hole in lever and washer goes between lever and air horn casting. Tighten screw securely.

d. On V6 models, install pump rod in hole in pump lever and install new retaining clip in rod, making sure clip is securely locked in place.

ON-CAR ADJUSTMENT PROCEDURE

VARAJET - MODEL E2SE

CARBURETOR CALIBRATION (This procedure does not apply to high altitude applications).

The E2SE carburetor has been calibrated at the factory and should normally not need adjustment in the field. However, if necessary due to results of C-4 diagnosis, contamination, tampering, replacement of parts, etc., it can be adjusted using the following procedure. Since the C-4 is a sophisticated system, the procedure must be followed exactly.

IMPORTANT: Before any attempt is made to adjust the E2SE carburetor, the following checks should have been made.

1. Normal engine tune-up items; ignition system including distributor, timing, spark plugs and wires. Check air cleaner, Evaporative Emission Systems, EFE System, PCV System, EGR valve and engine compression. Also inspect intake manifold, vacuum hoses and hose connections for leaks, and carburetor mounting bolts.

2. The "Diagnostic Circuit Check" of the C-4 system.

3. The "Systems Performance Check".

Refer to vehicle manufacturer's service manual or AC-Delco Tune-Up Specifications Manual (SD-100) for Diagnostic Circuit check and Systems Performance Check.

CARBURETOR CALIBRATION PROCEDURE

1. With engine off, remove carburetor from engine following normal service procedures to gain access to plug covering the idle mixture needle. Remove plug following procedure in Service Manual, Fig. 30. Turn mixture screw in until lightly seated and back out specified turns. Refer to vehicle manufacturer's service manual or "D" section of Delco Carburetor Manual (9X) for specifications.

2. If the plug in air horn covering idle air bleed screw has been removed (Fig. 43), turn bleed screw in until lightly seated, then back it out specified number of turns. However, if plug is in place, removal and adjustment is not required.

3. Remove vent stack - screen assembly to gain access to lean mixture screw. (Be sure to reinstall vent stack after adjustment).

4. Turn lean mixture screw in until lightly seated and back out specified turns. Fig. 43.

5. Reinstall carburetor on the engine.

a. Do not install air cleaner and gasket.

b. Disconnect bowl vent line at carburetor and disconnect and plug vacuum hose to "T" in bowl vent line (if used). Fig. 44 & 45.

c. Disconnect EGR valve and canister purge at carburetor (location C) and plug carburetor port.

d. V6 models only, remove secondary vacuum break thermal vacuum switch mounted in the air cleaner. Fig. 45. Disconnect hose connecting switch to the thermostatic air cleaner sensor (THERMAC) and cap open tube on switch. Vacuum switch hoses to the secondary vacuum break, carburetor and lean authority switch should remain connected. Fig. 45.
NOTE: If lean authority switch hose is not connected, or has been plugged, the mixture control solenoid will not operate.

e. Connect tach/dwell; connect dwell meter to mixture control solenoid test lead (green connector). Set dwell meter to 6 cylinder position. Connect tachometer to distributor tach lead (brown connector).

NOTE: The dwell reading of the M/C solenoid is used to determine calibration and is sensitive to changes in fuel mixture caused by heat, air leaks, etc.

While idling it is normal for the dwell to increase and decrease fairly constantly over a relatively narrow range, such as 5°. However, it may occasionally vary by as much as 10–15° momentarily due to temporary mixture changes. The dwell reading specified is the average of the most consistent variation. Refer to vehicle manufacturer’s service manual or AC-Delco Tune-Up Specifications Manual (SD-100) for dwell specifications.

The engine must be allowed a few moments to stabilize at idle or 3000 RPM as applicable before taking a dwell reading.

CAUTION: BEFORE PROCEEDING: BLOCK DRIVE WHEELS. PLACE TRANSMISSION IN PARK AND SET PARKING BRAKE. ON TRANSVERSE MOUNTED ENGINES, THE ROTATING PARTS, PULLEYS, BELTS, ETC., ARE ON THE RIGHT SIDE OF THE ENGINE.

6. Run engine on high step of fast idle cam until engine cooling fan starts to cycle. (At least 3 minutes and until in closed loop).

7. Run engine at 3000 RPM and adjust the lean mixture screw (Fig. 43) in small increments to obtain an average dwell as specified. Allow time for dwell to stabilize after each adjustment. If dwell is too low, back screw out; if too high, screw it in. If unable to adjust to specifications, inspect main metering circuit for leaks, restrictions, etc.

8. Return to idle and adjust idle speed to 700 RPM in Park with cooling fan in “off” cycle.

9. Adjust idle mixture screw to obtain an average dwell as specified (see chart) with cooling fan in “off” cycle. If reading is too low, carefully back screw out. If too high, carefully turn it in. Allow time for reading to stabilize after each adjustment. Adjustment is very sensitive. Make final check with adjusting tool removed.

If unable to adjust to specifications, inspect idle system for leaks, restrictions, etc.

10. Disconnect mixture control solenoid while cooling fan is in “off” cycle and check for an RPM change of at least 50 RPM up or down. If RPM does not change enough, inspect idle air bleed circuit for restrictions, leaks, idle air bleed preset.

11. Repeat 3000 RPM check. If not correct, reset it, then reset idle dwell. If correct, reconnect systems; purge, bowl vent and EGR. Install vent stack and set idle speed per decal instructions. It is not necessary to repeat the C-4 system performance check after calibrating the carburetor.
FIGURE 44

AIR HORN PARTS
1. Mixture Control Solenoid
2. Screw—Solenoid Attaching (3)
3. Gasket—Solenoid to Air Horn
4. Adapter—Solenoid Seal
5. Seal—Solenoid to Float Bowl
6. Retainer—Solenoid Seal
7. Air Horn Assembly
8. Gasket—Air Horn
9. Screw—Air Horn (Short) (2)
10. Screw—Air Horn (3)
11. Screw and Washer—Air Horn to Bowl
12. Pump Lever
13. Screw—Pump Lever Attaching
14. Spacer Washer—Pump Lever
15. Retainer—Pump Lever
16. Vent Stack Assembly
17. Screw—Vent Stack Attach
18. Seal—Pump Stem
19. Retainer—Seal
20. Seal—Throttle Sensor
21. Retainer—Seal
22. Idle Compensator Assembly
23. Gasket—Idle Compensator
24. Screw—Idle Compensator

CHOKE PARTS
25. Choke Shaft & Lever Assembly
26. Choke Lever & Bushing Assembly
27. Choke Valve
28. Screw—Choke Valve (2)
29. Electric Stat Cover & Coil
30. Stat Cover Retainer Kit
31. Retainer—Stat Cover
32. Choke Housing
33. Screw—Choke Housing (2)
34. Tee—Vacuum Hose—Pri. Side
35. Hose—Vacuum (Long)
36. Hose—Vacuum (Short)
37. Choke Lever & Contact Assembly
38. Screw—Choke Lever
39. Intermediate Choke Shaft & Lever
40. Bushing—Intermediate Choke Shaft & Lever
41. Retainer—Intermediate Choke Shaft & Lever
42. Link—Fast Idle Cam
43. Vacuum Break & Bracket—Primary
44. Vacuum Break & Bracket—Secondary
45. Link—Air Valve
46. Bushing—Link Air Valve
47. Retainer—Link Air Valve
48. Link—Vacuum Break—Primary
49. Link—Vacuum Break—Secondary
50. Retainer—Vacuum Break Link (2)
51. Bushing—Vacuum Break Link (2)
52. Screw—Vac Break Attach—Pri. (Top)
53. Screw—Vac Break Attach—Pri. (Bottom)
54. Screw—Vac Break Attach—Sec. (2)
TYPICAL EXPLODED VIEW—VARAJET II E2SE V6 (Continued)

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FIGURE 44 (Continued)