Carburetor Models 4M, 4MC, 4MV Service Manual

9D-5

MAY, 1973

Supersedes 9D-5
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Delco

IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all motor vehicles. The service procedures recommended by Rochester Products Division and described in this service manual are effective methods for 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 some warnings against the use of specific service methods that can damage the vehicle or render it unsafe are stated in this service manual. It is also important to understand these warnings are not exhaustive. Rochester Products Division 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 Division has not undertaken any such broad evaluation. Accordingly, anyone who uses a service procedure or tool which is not recommended by Rochester Products Division 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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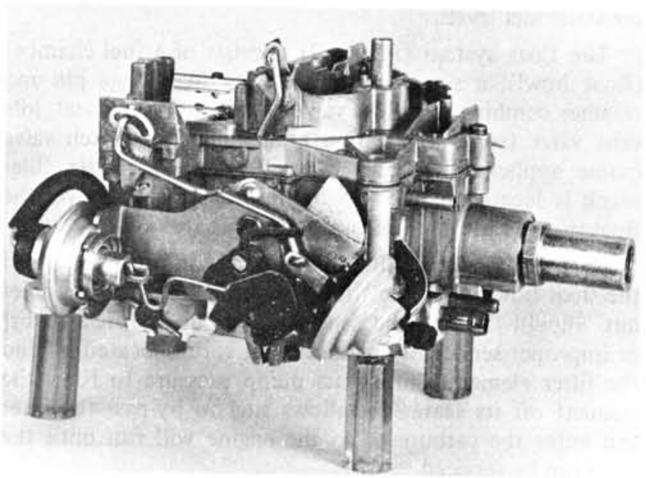
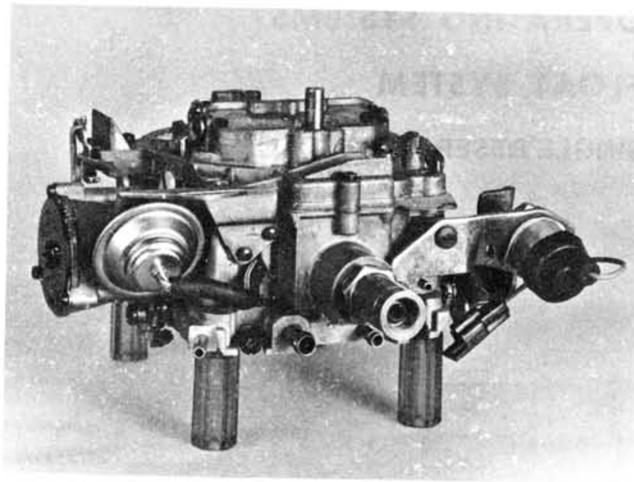
NOTE: Use this Manual plus Sections 9D-5A, 9D-5S, 9D-5T, and 9D-200 for complete service instructions.

TYPICAL MODELS 4MV-4MC





GENERAL DESCRIPTION

There are three separate basic carburetor models. They are designated as 4M, 4MC, and 4MV. The 4M is the basic carburetor equipped for manual choke operation. The 4MC model is an automatic choke carburetor with the choke housing and coil mounted at the side of the float bowl. The 4MV is an automatic choke model designed for use with a manifold mounted thermostatic choke coil. Except for choke systems, all models have basically the same principles of operation.

The Quadrajet is a four-barrel, two-stage carburetor of down-draft design. Its simplicity in construction makes it easy to service, yet its versatility and principles of operation make it adaptable from small to very large engines, without major casting changes.

The Quadrajet carburetor has two stages in operation. The primary (fuel inlet) side has small 1-3/8" bores with a triple venturi set-up equipped with plain tube nozzles. Operation is similar to most carburetors using the venturi principle. The triple venturi stack up, plus the small primary bores, result in more stable and finer fuel control during idle and part throttle operation. During off-idle and part throttle operation, fuel metering is accomplished with tapered metering rods, operating in specially designed jets positioned by a manifold vacuum responsive piston.

The secondary side of the Quadrajet has two large (2-1/4") bores. These, added to the primary, give enough air capacity to meet most engine requirements. The air valve is used in the secondary side for metering control and supplements the primary bores to meet air and fuel mixture requirements of the engine.

The secondary air valve mechanically operates tapered metering rods which move in orifice plates, thereby controlling fuel flow from the secondary nozzles in direct proportion to air flowing through the secondary bores.

The float bowl is centrally located to avoid problems of fuel spillage causing engine turn cutout and delayed fuel flow to the carburetor bores. The float bowl reservoir is small in design to reduce fuel evaporation loss during engine "shutdown" hot.

The float system has a single pontoon float and fuel valve for simplification and ease in servicing. An integral fuel filter, if used, located in the float bowl ahead of the float needle valve, is easily removed for cleaning or replacement.

The throttle body is aluminum to reduce overall weight and improve heat conduction to prevent icing. A heat insulator gasket is used between the throttle body and bowl to prevent fuel percolation in the float bowl.

Early Quadrajet applications use a shim between the throttle body and flange gasket. The shim is used to protect the carburetor aluminum throttle body from exhaust gases flowing through the heat cross-over passage in the intake manifold.

SERVICE FEATURES

The primary side of the carburetor has six operating systems. They are float, idle, main metering, power, pump and choke. The secondary side has one main metering system plus accelerating wells on some models. All metering systems receive fuel from the one float chamber.

The following text covers the operating systems for ease in trouble-shooting and also recommended service pro cedures. There are some design variations between different models which will be covered in that part of the text pertaining to the particular system or service procedure.

OPERATING SYSTEMS

FLOAT SYSTEM

SINGLE RESERVOIR *(Fig. 1)*

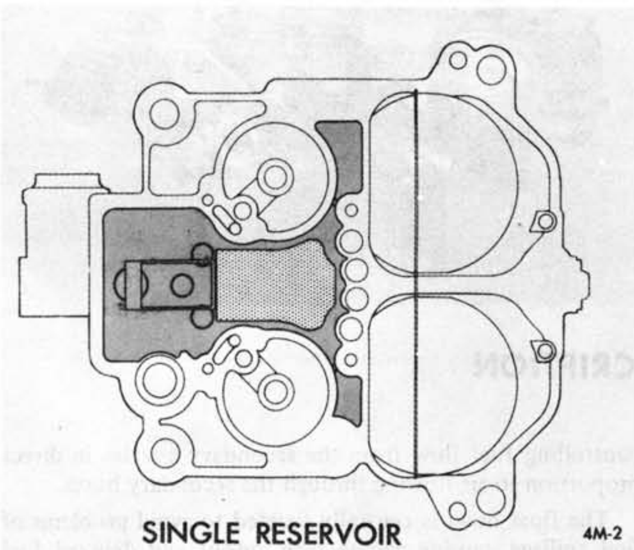


FIGURE 1

The Quadrajet carburetor is unique in that it has a centrally located fuel reservoir (float bowl). The float bowl is centered between the primary bores and is adjacent to the secondary bores. This type design assures an adequate fuel supply to all carburetor bores, resulting in excellent performance with respect to car inclination or severity of turns.

FLOAT SYSTEM *(Fig. 2)*

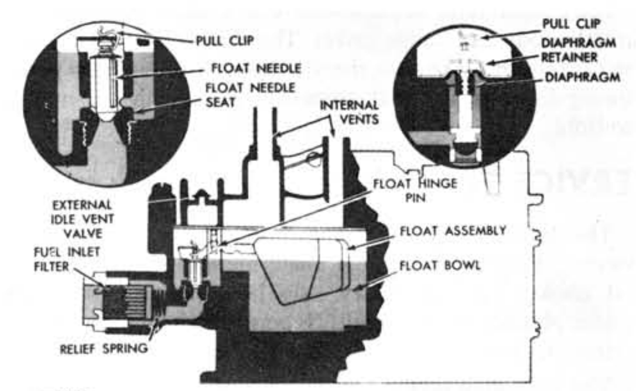


FIGURE 2

The float pontoon is solid and is made of a light, closed-cell plastic material. This feature gives added bouyancy which allows the use of a single float to maintain constant fuel levels.

The float system (Figure 2) consists of a fuel chamber (float bowl), a single pontoon float, float hinge pin and retainer combination, float valve – pull clip – and seat, idle vent valve (some applications), vacuum vent switch valve (some applications), and internal vents. A plastic filler block is located in the top of the float chamber over the float valve to prevent fuel slosh into this area.

On most models, a fuel inlet filter is an integral part of the float bowl, with the filter located behind the fuel inlet nut. Should the filter become plugged due to excessive dirt or improper service, a pressure relief spring located behind the filter element allows fuel pump pressure to force the element off its seat. This allows fuel to by-pass the filter and enter the carburetor so the engine will run until the filter can be serviced.

It is very important that the filter be serviced periodically to prevent dirt from entering the carburetor metering orifices.

The float system operates in the following manner:

Fuel from the engine fuel pump enters the carburetor fuel inlet passage. It passes through the filter element, fuel inlet valve, and on into the float bowl chamber. As the incoming fuel fills the float bowl to the prescribed level, the float pontoon rises and forces the fuel inlet valve closed, shutting off fuel flow. As fuel is used from the float bowl, the float drops allowing the float valve to open, allowing more fuel to again fill the bowl. This cycle continues, maintaining a constant fuel level in the float bowl.

A float needle pull clip, fastened to the float needle valve, hooks over the edge of the float arm at the center as shown in Figure 2. Its purpose is to assist in lifting the float valve off its seat whenever fuel level in the float bowl is low.

> *CAUTION: Do not place pull clip through small holes in top of float arm. Severe flooding will result.*

There are two types of float needle valves used in the Quadrajet carburetor: One type is diaphragm assisted and the other is the conventional needle and brass seat.

The diaphragm assisted float needle (shown in the right inset Figure 2) is used primarily with a smaller float and on engines equipped with high pressure fuel pumps. The needle seat is a brass insert and is pressed into the bowl fuel inlet channel below the diaphragm needle tip. The seat is not removable, as the needle valve tip is of a material which makes seat wear negligible. Care should be used during servicing so that the seat is not nicked, scored, or moved. The float valve is factory staked and tested and should not be re-staked in the field.

Fuel flow through the diaphragm assisted float needle valve varies from the conventional float needle. With the conventional type as shown on the left in Figure 2, fuel flows from the inlet filter and inlet channel up through the needle seat orifice past the float needle valve and spills over into the float bowl. With the diaphragm type float needle valve, fuel from the inlet filter enters the channel above the float valve tip. When fuel level is low in the bowl, the needle valve is off its seat and fuel flows down past the float valve tip into a fuel channel which leads upward through the bowl casting to a point above normal liquid level and spills over into the float bowl.

The diaphragm type needle valve differs in operation from the conventional float needle in that a larger needle seat orifice can be used to provide greater fuel flow to the float chamber and yet allow the use of a small float. This is accomplished through a balance of forces acting on the float needle valve and diaphragm against fuel pump pressure. Fuel pressure entering the float needle valve chamber tends to force the needle valve closed. However, the same pressure is also acting on the float needle diaphragm. The diaphragm has a slightly larger area than the float needle valve head, therefore the greater pressure acting on the diaphragm tends to push the needle valve off its seat. The force of the float arm acting on the needle stem, as the float bowl fills, overcomes this pressure difference and closes the needle valve. Therefore, the float's function is to overcome the pressure difference and it does not have to force a needle valve closed against direct fuel pump pressure as does the conventional needle type.

> NOTE: If desired, certain Quadrajet models may be converted from the diaphragm type needle and seat to the conventional float needle and seat by installing a service modification kit. Refer to 9C Parts Section of the Delco Carburetor 9X Manual for specific applications and part number.

The conventional float needle seat on some Quadrajet carburetors has holes or "side windows" in its side whose purpose is to supplement fuel delivery past the float needle valve when it opens, whereas the "side windows" have been removed on some float needle seat applications so that all fuel will be discharged over the top of the needle seat assembly. Removal of the "side windows" improves operation of the float needle on some applications.

Some conventional float needle seats are nickel plated and use a double angle seat. The double angle seat, along with use of a less resilient viton tip float needle, aids in preventing the float needle from possibly sticking in the seat due to fuel gum formation.

The carburetor float chamber is internally vented on all models through a vent tube or tubes located in the air horn. The internal vent tube(s) leads from beneath the air cleaner to the float bowl chamber. The purpose is to balance air pressure acting on the fuel in the bowl with air flow through the carburetor bores. In this way, balanced air/fuel mixture ratios can be maintained throughout all carburetor ranges of operation.

Some engine applications require an external vent into the float bowl during hot engine operation. The Quadrajet float bowl is externally vented through an idle vent valve. Its purpose is to vent fuel vapors which may form in the float bowl during periods of hot engine idle and "hot soak."

In operation, the idle vent valve is closed except when the throttle valves are in the idle position. When the throttles are closed, a wire tang on the pump lever pushes upward on the spring steel vent valve arm and opens the vent valve. Thus, fuel vapors are allowed to vent externally, thereby preventing them from entering the carburetor bores and being drawn into the engine. This prevents rough engine idle and excessively long, hot engine starting.

When the throttle valves are open to the off-idle and part throttle position, the idle vent valve closes, returning the carburetor to internally balanced venting.

THERMOSTATIC IDLE VENT *(Fig. 3)*

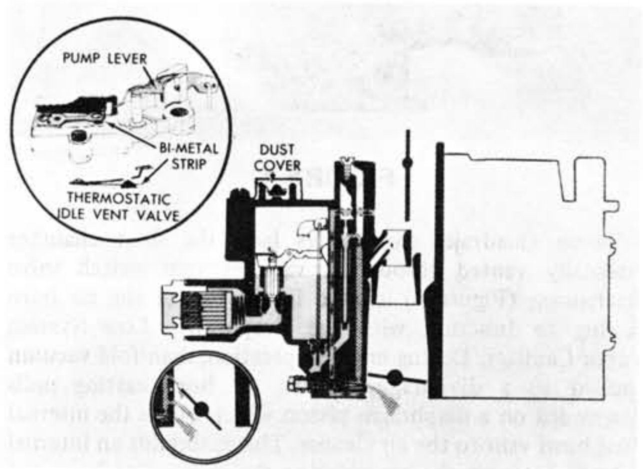


FIGURE 3

A temperature controlled idle vent valve is used on some models (Figure 3). In place of the standard vent valve; a heat sensitive bi-metal strip is used as the valve holder. This is mounted beneath the idle vent valve arm.

The bi-metal strip holds the vent valve on its seat (closed) at temperatures below 75°. When underhood temperatures are above 75° to 85° the bi-metal strip bends upward moving the vent valve off its seat. This lets fuel vapors, caused during hot engine operation, escape from the float chamber. This results in improved hot engine idle and hot starting. At temperatures below 75°, the vent valve remains closed and retains fuel vapors internally to supply extra fuel for good cold engine starting.

During hot engine operation, when the thermostatic vent valve is open, it is necessary to close the valve except at idle

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to maintain an internally balanced carburetor. This is accomplished through the spring steel vent valve arm which operates off the wire lever on the end of the pump lever. As the throttle valves are opened from the idle position, the vent arm exerts pressure on the bi-metal strip and forces the valve closed.

The thermostatic vent valve is adjustable to make sure it closes at the proper time during throttle valve opening from the idle position.

VACUUM VENT SWITCH (ENGINE OFF CONDITION) *(Fig. 4)*

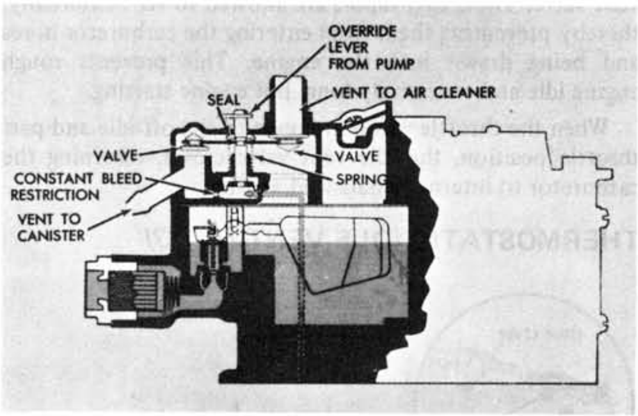

FIGURE 4

Some Quadrajet carburetors have the float chamber internally vented through a vacuum vent switch valve mechanism (Figure 4) located in the top of the air horn casting to function with the Evaporative Loss System Vapor Canister. During engine operation, manifold vacuum applied to a diaphragm in the air horn casting pulls downward on a diaphragm piston which opens the internal float bowl vent to the air cleaner. This maintains an internal balance between the air entering the carburetor bore and the fuel in the float bowl. The vacuum vent switch valve mechanism in the carburetor air horn is designed so that during periods of shutdown, when the engine is hot, fuel vapors from the float bowl are vented directly to the vapor collection canister instead of the atmosphere. This is accomplished by a spring beneath the vacuum diaphragm piston which, when the engine is shut down, forces the piston upward closing off the vent to the air cleaner and opening a vent which leads to the vapor canister. Along with the vent system, a feature is incorporated to keep the internal vent system open during high speeds and heavy acceleration when manifold vacuum is low. An actuating arm attached to the pump lever actually pushes downward on the internal vent valve and holds it open when vacuum beneath the vent valve diaphragm is not great enough to hold it open. This maintains internal carburetor balance at all times when the engine is running. A restriction, located in a passage beneath the diaphragm piston cavity in the air horn, provides a constant purging of fuel vapors from the vapor canister during engine operation.

NOTE: External venting is not used on Quadrajet carburetors designed for marine use or for use with the Evaporation Control System (E.C.S.).

IDLE SYSTEM

IDLE SYSTEM *(Fig. 5)*

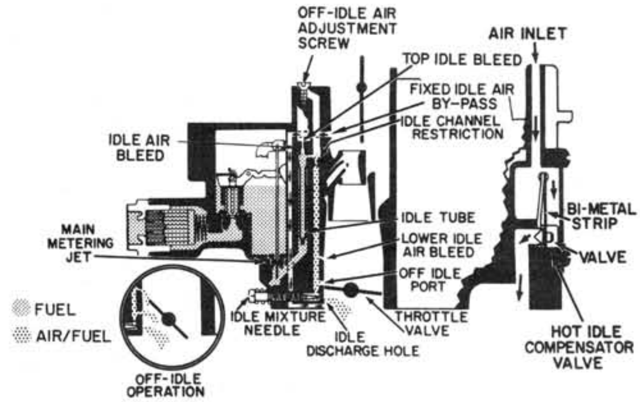

FIGURE 5

The Quadrajet carburetor has an idle system on the primary side (fuel inlet side) of the carburetor to supply the correct air/fuel mixture ratios during idle and off-idle operation. The idle system is used during this period because air flow through the carburetor venturi is not great enough to obtain efficient metering from the main discharge nozzles. The idle system is only used in the two primary bores of the carburetor. Each bore has a separate and independent idle system.

During curb idle, the throttle valves are held slightly open by the idle speed adjusting screw or solenoid plunger screw. The small amount of air passing between the primary throttle valves and bores is regulated by this screw or plunger to give the engine the desired idle speed. Since the engine requires very little air for idle and low speeds, fuel is added to the air to produce a combustible mixture by the direct application of vacuum (low pressure) from the engine manifold to the idle discharge holes below the throttle valves. With the idle discharge holes in a very low pressure area and the fuel in the float bowl vented to atmosphere (high pressure), the idle system operates as follows:

Fuel flows from the float bowl down through the main metering jets into the main fuel wells. It is picked up in the main wells by the two idle tubes (ones for each primary bore) which extend into the wells. The fuel is metered at the lower tip of the idle tubes and passes up through the tubes. On some models, the fuel is mixed with air at the top of each idle tube through an idle air bleed. The air bleed size is controlled either by a drilled hole or a brass insert depending on the carburetor application.

NOTE: No attempt should be made in the field to install a brass insert in those applications that use a drilled hole for the idle air bleed.

Then the fuel mixture crosses over to the idle down channels where it is mixed with air at the side idle bleed located just above the idle channel restriction. The mixture continues down through the calibrated idle channel restrictions past the lower idle air bleeds and off-idle discharge ports where it is further mixed with air. The air/fuel mixture moves down to the adjustable idle mixture needle discharge holes where it enters the carburetor bores and blends with the air passing the slightly open throttle valves. The combustible air/fuel mixture then passes through the intake manifold to the engine cylinders.

The idle mixture needles are adjustable to blend the correct amount of fuel mixture from the idle system with the air entering the engine at idle.

Turning the idle mixture needles inward (clockwise) decreases the idle fuel discharge (gives a leaner mixture) and turning the mixture needles outward (counterclockwise) enriches the engine idle mixture. Some carburetor models have a fixed idle air by-pass system. This consists of air channels which lead from the top of each carburetor bore in the air horn to a point below each primary throttle valve. At normal idle, extra air passes through these channels supplementing the air passing by the slightly opened throttle valves. The purpose of the idle air by-pass system is to allow reduction in the amount of air going past the throttle valves so they can be nearly closed at idle. This reduces the amount of air flowing through the carburetor venturi to prevent the main fuel nozzles from feeding during idle operation. The venturi system is very sensitive to air flow and on some applications where larger amounts of idle air are needed to maintain idle speed, the fixed idle air by-pass system is used.

On exhaust emission control carburetor applications, the idle mixture needle discharge holes have been reduced in size. This was done to prevent a too rich idle adjustment in the field should the idle mixture needles be turned out too far beyond normal idle mixture requirements. Also, starting in 1971, idle needle limiter caps were added to emission control carburetors to discourage adjustment of the needles in the field.

Another feature added to some emission carburetors is an adjustable off-idle air bleed system (Figure 5). A separate air channel is added in the air horn which leads from the top of the air horn to the idle mixture cross channel. An adjustment screw with a tapered head is mounted at the top of the channel and is used to control the amount of air bleeding into the idle system. The off-idle air bleed is adjusted at the factory to maintain very accurate off-idle air/fuel mixture ratios. It is adjusted during carburetor flow test and no attempt should be made to readjust in the field. A triangular spring clamp forced over the vent tube covers the screw to protect the adjustment from being tampered with and should not be removed. All service air horns have this screw preset at the factory.

OFF-IDLE OPERATION

As the primary throttle valves are opened from curb idle to increase engine speed (See inset – Figure 5), additional fuel is needed to combine with the extra air entering the engine. This is accomplished by the slotted off-idle discharge ports. As the primary throttle valves open, they pass by the off-idle ports, gradually exposing them to high engine vacuum below the throttle valves. The additional fuel added from the off-idle ports mixes with the increasing air flow past the opening throttle valves to meet increased engine air and fuel demands.

Further opening of the throttle valves increases the air velocity through the carburetor venturi sufficiently to cause low pressure at the lower idle air bleeds. As a result, fuel begins to discharge from the lower idle air bleed holes and continues to do so throughout operation of the part throttle to wide open throttle ranges, supplementing the main discharge nozzle delivery.

The idle needle holes and off-idle discharge ports continue to supply sufficient fuel for engine requirements until air velocity is high enough in the venturi area to obtain efficient fuel flow from the main metering system.

IDLE SYSTEM *(Fig. 6)*

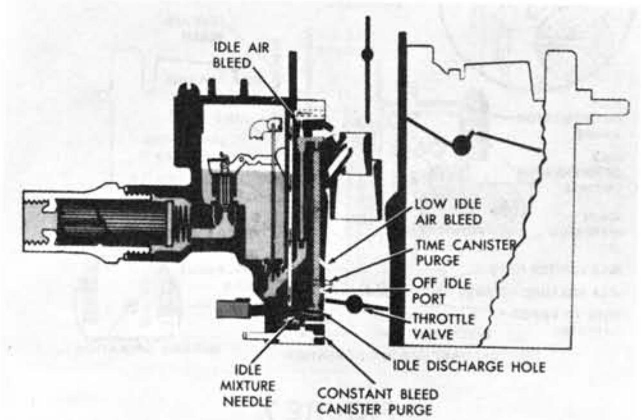

FIGURE 6

Certain 1970 and all 1971 and later G.M. model cars and light-duty trucks have completely closed fuel tank venting to control evaporative emissions. The vent from the fuel tank leads into a vapor collection canister.

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In that the fuel tank is not vented to atmosphere and fuel vapors are collected in the vapor canister, purge ports for the canister are provided in the carburetor throttle body on certain Quadrajet carburetors. The purge ports lead through passages to a common chamber in the throttle body to a purge tube which connects by a hose to the vapor canister.

The purge ports may consist of what is called a constant bleed purge and a separate timed canister purge, or a separate timed canister purge only.

CONSTANT BLEED PURGE

The constant bleed purge operates during idle operation of the engine. This provides a constant purge of the canister at all times when the engine is running.

OFF-IDLE OPERATION

Along with the constant bleed purge for the canister, a timed bleed purge is used. The timed bleed purge port is located in each bore adjacent to the off-idle discharge ports. The timed purge operates during the off-idle range and also during part throttle to wide-open throttle operation. This provides a larger purge capacity for the vapor canister and prevents over-rich mixtures from being added to the carburetor metering at any time.

EXHAUST GAS RECIRCULATION *(Fig. 7)*

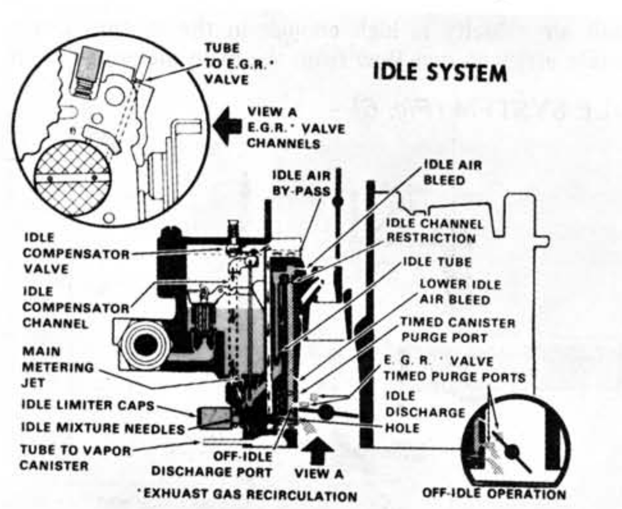


FIGURE 7

On some Quadrajet models (Figure 7), a vacuum signal to operate an Exhaust Gas Recirculation (E.G.R.) valve is supplied through a tube in the carburetor throttle body which connects to a vacuum signal port (or ports), located in the primary throttle bore. The ports supply a timed vacuum signal for E.G.R. valve operation in the off-idle and part throttle ranges of the carburetor.

As the primary throttle valve is opened beyond the idle position, the port for the E.G.R. system is exposed to manifold vacuum to supply a vacuum signal to the E.G.R. valve.

Some applications incorporate two punched ports located in the primary bore to supply a vacuum signal to the E.G.R. valve. As the primary throttle valve is opened beyond the idle position, the lower vacuum port for the E.G.R. system is exposed to manifold vacuum to supply a vacuum signal to the E.G.R. valve. To control the vacuum signal at the lower port, the upper port bleeds air into the vacuum channel and modulates the amount of vacuum signal supplied by the lower E.G.R. port.

As the primary throttle valve is opened further in the part throttle range, the upper port ceases to function as an air bleed and is gradually exposed to manifold vacuum to supplement the vacuum signal at the lower port to maintain correct E.G.R. valve position.

Thus, E.G.R. valve operation is "timed" for precise metering of exhaust gases to the intake manifold dependent upon location of the ports in the bore and by the degree of throttle valve opening.

The upper and lower E.G.R. ports connect to a cavity in the throttle body which, in turn, through a passage, supply the vacuum signal to the E.G.R. tube pressed into the front of the throttle body.

The E.G.R. vacuum signal port(s) is not exposed to manifold vacuum during engine idle and deceleration to keep the E.G.R. valve closed. This prevents rough idle which can be caused by excessive exhaust gas contamination in the air/fuel mixtures.

HOT IDLE COMPENSATOR *(Fig. 8)*

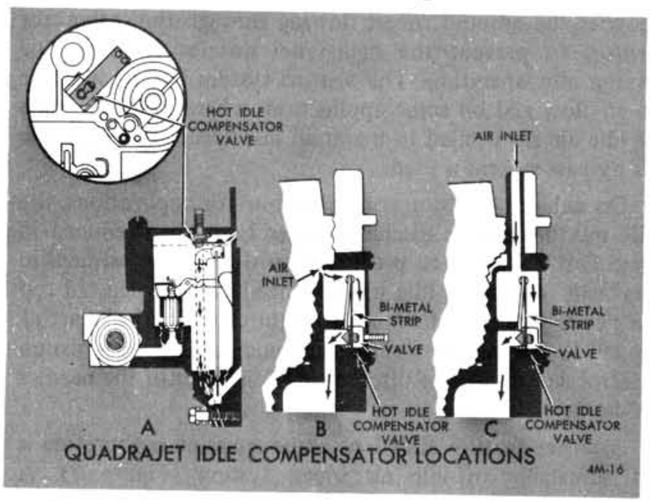


FIGURE 8

The Hot Idle Compensator, when used on 4MC and 4MV Quadrajet carburetors (View C) is located in a chamber at the rear of the carburetor float bowl adjacent to the secondary bores. Its purpose is to offset the enriching effects caused by excessive fuel vapors during hot engine operation.

The compensator consists of a thermostatically-controlled valve, a heat sensitive bi-metal strip, and a valve holder and bracket. The compensator valve assembly is held in place by a dust cover over the valve chamber. A seal is used between the compensator valve and the float bowl casting. The valve closes off an air channel leading from a hole in the top of the air horn, just beneath the air cleaner, to a point below the secondary throttle valves.

Normally, the compensator valve is held closed by tension of the bi-metal strip. During extreme hot engine operation, excessive fuel vapors entering the engine manifold cause richer than normally required mixtures, resulting in rough engine idle and stalling. At a predetermined temperature, when extra air is needed to offset the enriching effects of these fuel vapors, the bi-metal strip bends and unseats the compensator valve. This uncovers the air channel leading from the valve chamber to the point below the throttle valves. This allows enough air to be drawn into the engine manifold to offset the richer mixtures and maintain a smooth engine idle. When the engine cools and the extra air is not needed, the bi-metal strip relaxes, closes the valve, and operation returns to normal mixtures.

For proper idle adjustment when the engine is hot, the compensator valve must be closed. To check this, a finger may be held over the compensator air inlet channel located on top of the air horn. If no drop in engine RPM is noted on a tachometer, the valve is closed. If the valve is open, plug the hole or cool engine down to a point where the valve automatically closes for proper idle adjustment.

> NOTE: Plug the compensator hole with a pencil or something that will be seen, as the plug must be removed before the air cleaner is installed. Otherwise the compensator will not function if the plug is left in the hole.

> NOTE: On some applications, the air inlet to the hot idle compensator is located beneath the air valve in the secondary bores (View B). The air inlet in this location improves idle quality when the hot idle compensator valve is open. The compensator valve can be checked for proper closing during idle adjustment by pushing inward on a spring-loaded plunger mounted in the idle compensator cover. The idle adjustment procedure is the same as recommended previously.

On some Model 4MV carburetors, the Hot Idle Compensator is located on the primary side of the float bowl (View A). It is mounted in the bowl with a pin protruding through the air horn casting to facilitate closing the valve when the idle adjustment is made. The air inlet for the compensator is located in the cavity next to the choke rod in the bowl.

When the compensator opens, filtered air is drawn around the choke rod through a passage in the float bowl and throttle body and on into the intake manifold. The air enters the manifold through the opening in between the primary bores. This air mixes with the air/fuel mixture during hot engine operation.

MAIN METERING SYSTEM

MAIN METERING SYSTEM *(Fig. 9)*

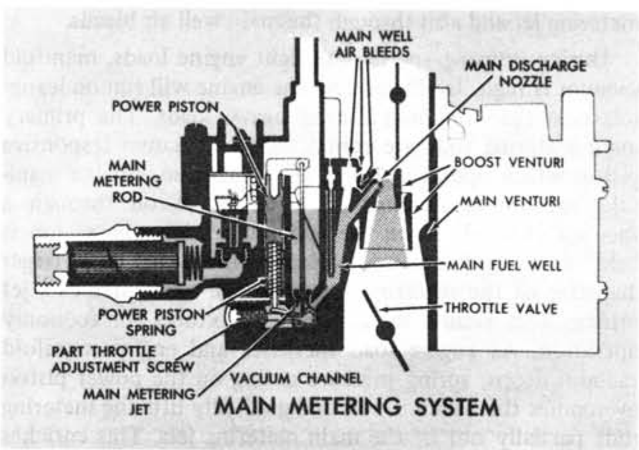


FIGURE 9

The main metering system (Figure 9) supplies fuel to the engine from off-idle to wide-open throttle. The primary bores (two smaller bores) supply fuel and air during this range through plain tube nozzles and the venturi principle.

The multiple venturi in each primary bore produce excellent fuel metering control due to their sensitivity to air flow.

The main metering system begins to operate as air flow increases through the venturi system and additional fuel is needed to supply the correct air/fuel mixture to the engine. Fuel from the idle system gradually diminishes as the lower pressures are now in the venturi system.

The main metering system consists of main metering jets, vacuum operated primary metering rods, main fuel wells, main well air bleeds, main discharge nozzles, triple venturi, fuel pull-over enrichment (some applications), adjustable part throttle (some applications).

As the primary throttle valves are opened beyond the off-idle range allowing more air to enter the engine intake manifold, air velocity increases in the carburetor venturi. This causes a drop in pressure in the large venturi which increases many times in the boost venturi. Since the low pressure (vacuum) is now in the smallest boost venturi, fuel flows from the main discharge nozzle as follows:

Fuel from the float bowl flows through the main metering jets into the main fuel wells. It passes upward in the main well and is bled with air by an air bleed located at the top of well. The fuel is further bled air through calibrated air bleeds located near the top of the well in the carburetor bores. The fuel mixture then passes from the main well through the main discharge nozzles into the boost venturi. At the boost venturi, the fuel mixture then combines with the air entering the engine through the carburetor bores. It then passes as a combustible mixture through the intake manifold and on into the engine cylinders. The main metering system is calibrated by tapered and stepped metering rods operating in the main metering jet and also through the main well air bleeds.

During cruising speeds and light engine loads, manifold vacuum is high. In this period, the engine will run on leaner mixtures than required during heavy loads. The primary main metering rods are connected to a vacuum responsive piston which operates against spring tension. Engine manifold vacuum is supplied to a power piston through a vacuum channel. When the vacuum is high, the piston is held downward against spring tension and the larger diameter of the metering rod is in the main metering jet orifice. This results in leaner fuel mixtures for economy operation. As engine load increases and engine manifold vacuum drops, spring pressure acting on the power piston overcomes the vacuum pull and gradually lifts the metering rods partially out of the main metering jets. This enriches the fuel mixture enough to give the desired power required to overcome the added load.

ADJUSTABLE PART THROTTLE FEATURE

Some exhaust emmission control carburetor models have an adjustable part throttle feature (Figure 9) used in production to maintain a very close tolerance of fuel mixtures during part throttle operation. This includes a special power piston and primary main metering rods. The piston has a pin pressed into its base which protrudes through the float bowl and gasket and contacts an adjustable link in the throttle body. The metering rods are tapered at the upper metering end, so that fuel flow through the main metering jets is controlled by the depth of the taper in the main metering jet orifice. During production, the adjustable part throttle screw is turned in or out to place the taper at the exact point in the jet orifice to obtain the desired air/fuel mixture ratio. Once set, the adjustment screw is capped and no attempt should be made to readjust it in the field.

The tapered metering rod used with the adjustable part throttle feature can be identified by the Suffix "B" after the part number stamped on the side of the rod.

Whenever the throttle body of a Quadrajet with the Adjustable Part Throttle (A.P.T.) feature is replaced, the A.P.T. screw should be adjusted as specified in the instruction sheet included with Rochester Service Replacement Throttle Body Assemblies (Also see step 1.d, page 30.).

ADJUSTABLE MAIN WELL AIR BLEED FEATURE *(Fig. 10)*

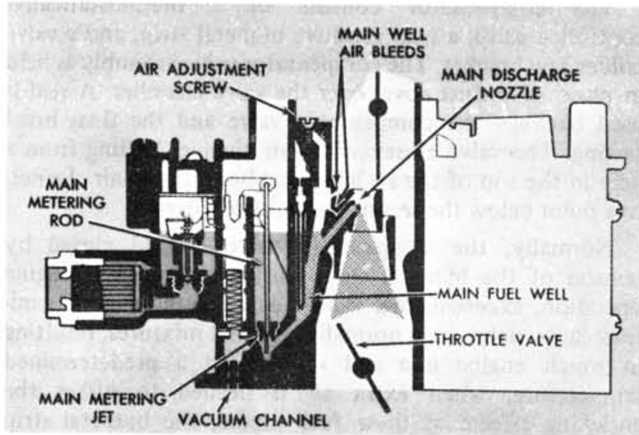


FIGURE 10

Some exhaust emission control carburetors use an adjustable main well air bleed system, replacing the Adjustable Off-Idle (A.O.I.) air bleed, for more accurate fuel control during part throttle operation (Figure 10). The adjustable part throttle air bleed system supplements the other main well air bleeds. The adjustable part throttle air bleed screw refines fuel mixtures to meet exhaust emission control requirements. The screw is adjusted at the factory during carburetor flow test and no atempt should be made to readjust in the field. A triangular spring clamp forced over the vent tube covers the screw to protect the adjustment from being tampered with and should not be removed. All service air horns have this screw preset at the factory.

FUEL PULL-OVER ENRICHMENT *(Fig. 11)*

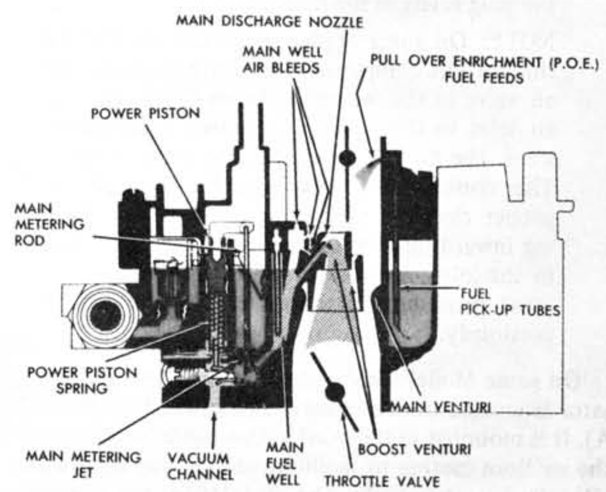


FIGURE 11

Some Quadrajet carburetors have a fuel pull-over enrichment system to provide added enrichment and improved fuel control during higher engine speeds and carburetor air flows (Figure 11).

Two calibrated holes, one in each primary bore, are located either just above or just below the choke valve and feed fuel from tubes that extend into the float bowl. During high carburetor air flows, low pressure created in the air horn bore pulls fuel from the high-speed fuel feeds, supplementing fuel flow from the primary main metering system. The pull-over enrichment system begins to feed fuel at approximately 8 lbs. of air per minute and continues to feed at higher engine speeds to provide extra fuel necessary for good engine performance.

On those carburetor models that have the two calibrated holes located just below the choke valve (See Choke System 4MV), the pull-over enrichment system feeds additional fuel at closed choke for good cold engine starting. Calibrated air bleeds, located in the air horn, are used with this system.

The pull-over enrichment system allows the use of slightly leaner mixtures during part throttle operation and still provide enough fuel during high-speed operation. This feature gives added refinement to the fuel mixtures for exhaust emission control.

POWER SYSTEM

POWER SYSTEM *(Fig. 12)*

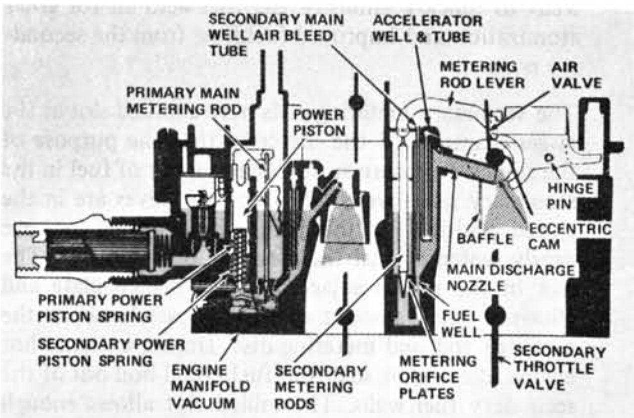


FIGURE 12

The power system in the Quadrajet carburetor provides extra mixture enrichment to meet power requirements under heavy engine loads and high-speed operation. The richer mixtures are supplied through the main metering systems in the primary and secondary sides of the carburetor (Figure 12).

The fuel mixture is enriched in the two primary bores through the power system. This consists of a vacuum operated power piston and a spring located in a cylinder connected by a passage to intake manifold vacuum. The spring under the power piston pushes the piston upward against manifold vacuum force tending to pull the piston downward.

During part throttle and cruising ranges, manifold vacuums are sufficient to hold the power piston down against spring tension so that the larger diameter of the primary metering rod tip is held in the main metering jet orifice to provide leaner mixtures during these periods of engine operation. However, as engine load is increased to a point where extra mixture enrichment is required, the power piston spring overcomes the vacuum pull on the power piston and the tapered tip of the primary metering rods moves upward in the main metering jet orifice. The smaller diameter of the metering rod tip allows more fuel to pass through the main metering jet and enrich the fuel mixture to meet the added power requirements. As engine load decreases, the manifold vacuum rises and extra mixture enrichment is no longer needed. The higher vacuum pulls downward on the power piston against spring tension, which moves the larger diameter of the metering rod into the metering jet orifice returning the fuel mixture to normal economy ranges.

A dual power piston spring is used beneath the power piston in the piston bore of some Quadrajet models (Figure 12). The smaller diameter power piston spring seats in the center of the piston and bottoms on the float bowl casting. The spring is used to control power enrichment during light engine loads. A larger diameter spring surrounds the smaller inner spring and exerts additional pressure on the bottom of the power piston to provide efficient mixture ratios at heavier engine load conditions. The dual power piston spring feature, on models so equipped, assists in providing improved fuel control of air/fuel mixture ratios to meet emission and power requirements of the engine.

The primary side of the carburetor provides adequate air and fuel for low-speed operation. However, at higher speed, more air and fuel are needed to meet engine demands. The secondary side of the carburetor is used to provide extra air and fuel through the secondary throttle bores.

The secondary section of the Quadrajet has a separate and independent metering system. It consists of two large throttle valves connected by a shaft and linkage to the primary throttle shaft. Fuel metering is controlled by spring loaded air valves, metering orifice plates, secondary metering rods, main fuel wells with bleed tubes, fuel discharge nozzles, accelerating wells and tubes. The secondary metering system supplements fuel flow from the primary side and operates as follows:

When the engine reaches a point where the primary bores cannot meet engine air and fuel demands, a lever on the primary throttle shaft, through a connecting link to the secondary throttle shaft, begins to open the secondary throttle valves, provided the engine has warmed the choke coil to release the secondary lockout lever, if used. As the secondary throttle valves are opened, engine manifold vacuum (low pressure) is applied directly beneath the air valves. Atmospheric pressure on top of the air valves, provided the engine has warmed the choke coil to release the air valve lockout lever (if used), forces the air valves open against spring tension and allows metered air to pass through the secondary bores of the carburetor.

On most models, accelerating wells are used to supply fuel immediately to the secondary bores. This prevents a momentary leanness until fuel begins to feed from the secondary discharge nozzles.

When the air valves begin to open, the upper edge of each valve passes the accelerating well ports (one for each bore). As the edge of the air valves pass the ports, they are exposed to manifold vacuum and immediately feed fuel from the accelerating wells located on each side of the float bowl chamber. Each accelerating well has a calibrated orifice which meters the fuel supplied to the well from the float chamber. Some models have the accelerating well ports located beneath the front edge of the air valve instead of above. These begin to feed fuel to the secondary bores almost instantly after the secondary throttle valves open and before the air valves begin to open. This type porting is used on some models where added enrichment is needed during cold operation when the air valve is locked closed and also provides an earlier cut in of fuel from the ports than the models which have the port located above the valves. The use of either type of porting is dependent upon engine fuel demands.

The secondary main discharge nozzles (one for each bore) are located just below the center of the air valves and above the secondary throttle valves. The nozzles, being located in a low pressure area, feed fuel as follows:

As the secondary throttle valves are opened, atmospheric pressure opens the air valves. This rotates a plastic eccentric cam attached to the center of the air valve shaft. As the cam rotates, if lifts the secondary metering rods out of the secondary orifice plates through the metering rod lever which follows rotation of the eccentric cam.

Fuel flows from the float chamber through the secondary metering orifice plates into the secondary main wells where it is mixed with air from the secondary main well air bleed tubes. The air emulsified fuel mixture travels from the main wells through the secondary discharge nozzles where it sprays into the secondary bores. Here the fuel is mixed with air traveling through the secondary bores to supplement the air/fuel mixture delivered from the primary bores and goes on into the engine as a combustible mixture.

As the throttle valves are opened further and engine speeds increase, air flow through the secondary side increases and opens the air valves to a greater degree which in turn lifts the secondary metering rods further out of the orifice plates. The metering rods are tapered so that fuel flow through the secondary metering orifice plates is directly proportional to air flow through the secondary carburetor bores. In this manner, correct air/fuel mixtures through the secondary bores are controlled by the depth of the metering rods in the orifice plates.

The depth of the metering rods in the orifice plates in relation to the air valve position are factory adjusted to meet air/fuel requirements for each specific engine model.

METERING RODS – PRIMARY

There are two types of primary main metering rods used in the Quadrajet carburetors. 1968 models use a rod which has a double taper at the metering tip. The 1967 and earlier models have a single taper at the metering tip.

Both type rods use a similar two-digit numbering system. The number indicates the diameter of the metering rod and is the last two digits of the part number. The 1968 models with the double taper will have "B" stamped on the rod after the two-digit number.

METERING RODS – SECONDARY

The secondary rods are coded with a two-letter system which corresponds directly to the part number.

(See Delco Bulletin 9A-100 for a complete description and listing of metering rods.)

There are other features incorporated in the secondary metering system as follows:

1. The secondary main well air bleed tubes extend downward into the main fuel well below normal fuel level. These bleed air into the fuel in the secondary wells to quickly emulsify the fuel with air for good atomization and improved fuel flow from the secondary nozzles.

2. The secondary metering rods have a milled slot at the larger diameter of the metering tip. The purpose of the slots is to ensure an adequate supply of fuel in the secondary main wells when the air valves are in the closed position. At this point, the metering rods are nearly seated against the metering orifice plates. The slot in the rod is adjacent to the orifice plate and allows a small amount of fuel to pass between the metering rod and metering disc. During extreme hot engine idle or hot soak the fuel could boil out of the secondary fuel wells. The milled slot allows enough fuel to by-pass the orifice plate and keep the main fuel wells full of fuel. This insures adequate fuel supply in the main wells at all times to give immediate fuel delivery from the secondary discharge nozzles. On some later Quadrajet models, the milled slot in the secondary metering rods is removed. Hot engine idle and hot soak tests have proved the slot is not needed on these applications.

3. There are two baffle plates in each secondary bore located just below the air valves. They extend up and around the secondary discharge nozzles. Their pur-

pose is to provide good fuel distribution at lower air flows by providing, as near as possible, equal fuel distribution to all engine cylinders.

4. An air horn baffle is used on some models to prevent incoming air from the air cleaner reacting on the secondary main well bleed tubes. The baffle is located adjacent to the secondary well bleed tubes and extends above the air horn between the primary and secondary bores. This prevents incoming air from forcing fuel level down in the secondary wells through the bleed tubes and prevents secondary nozzle lag on heavy acceleration.
5. Some models use notched secondary air valves to reduce the vacuum signal at the nozzles for leaner air/fuel mixture ratios during initial air valve opening. The leaner mixtures assist in meeting emission requirements and also improve throttle response when operating at high altitudes.

AIR VALVE DASHPOTS

AIR VALVE DASHPOT OPERATION *(Fig. 13)*

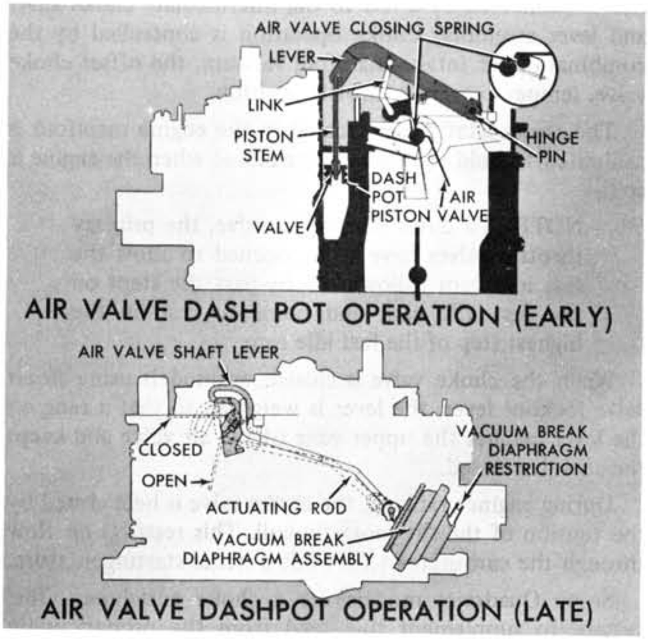


FIGURE 13

There are two different type air valve dashpots used in the Quadrajet carburetor. Their primary purpose is to control the opening rate of the air valves and prevent secondary discharge nozzle lag.

The early type dashpot (Top of picture, Figure 13) consists of a piston which operates in a fuel well adjacent to the float bowl. The piston stem is connected to the air valve through a link and lever assembly. As the air valves open, the dashpot piston is pulled upward forcing fuel to flow between the side of the piston and fuel well which retards the air valve opening. A rubber washer attached to the piston stem acts as a check valve. During upward movement of the piston, the rubber washer seats and forces all fuel flow around the piston. When the air valve closes, the check valve unseats and allows fuel to also pass through the center of the piston allowing the air valves to return closed rapidly.

The late type air valve dashpot (Lower picture, Figure 13) operates off of the choke vacuum break diaphragm unit. The secondary air valve is connected to the choke vacuum break unit by a rod, to control the opening rate of the air valve.

Whenever manifold vacuum is above approximately 5"-6" of Mercury (Hg), the vacuum break diaphragm is seated (plunger is fully inward) against spring tension. At this point, the vacuum break rod is in the forward end of the slot in the air valve lever, or in the rear of the slot in the vacuum break plunger, and the air valves are closed.

During acceleration or heavy engine loads when the secondary throttle valves are opened, the manifold vacuum drops. The spring located in the vacuum break diaphragm overcomes the vacuum pull and forces the plunger and link outward which, in turn, allows the air valves to open. The opening rate of the air valves is controlled by the calibrated restriction in the vacuum inlet in the diaphragm cover. This gives the dashpot action required to delay air valve opening enough for efficient fuel flow from the secondary discharge nozzles.

PUMP SYSTEM

ACCELERATING PUMP SYSTEM *(Fig. 14)*

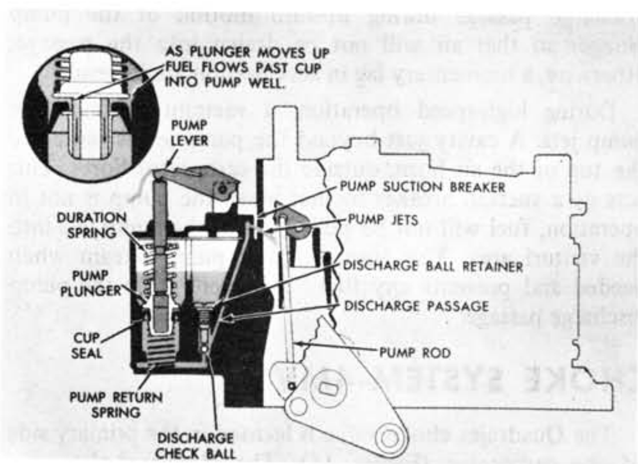


FIGURE 14

During quick acceleration, when the throttle is opened rapidly, the air flow and manifold vacuum change almost instantaneously. The fuel, which is heavier, tends to lag behind causing a momentary leanness. The accelerator pump is used to provide the extra fuel necessary for smooth operation during this time.

The accelerating pump system is located in the primary side of the carburetor (Figure 14). It consists of a spring-loaded pump plunger and pump return spring, operating in a fuel well. The pump plunger is operated by a pump lever on the air horn which is connected directly to the throttle lever by a pump rod.

When the pump plunger moves upward in the pump well, as happens during throttle closing, fuel from the float bowl enters the pump well through a slot in the top of the pump well. It flows past the synthetic pump cup seal into the bottom of the pump well. The pump cup is a floating type. (The cup moves up and down on the pump plunger head.) When the pump plunger is moved upward, the flat on the top of the cup unseats from the flat on the plunger head and allows free movement of fuel through the inside of the cup into the bottom of the pump well. This also vents any vapors which may be in the bottom of the pump well so that a solid charge of fuel can be maintained in the fuel well beneath the plunger head.

When the primary throttle valves are opened, the connecting linkage forces the pump plunger downward. The pump cup seats instantly 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 jets located in the air horn where it sprays into the venturi area of each primary bore.

It should be noted the pump plunger is spring loaded. The upper duration spring is balanced with the bottom pump return spring so that a smooth sustained charge of fuel is delivered during acceleration.

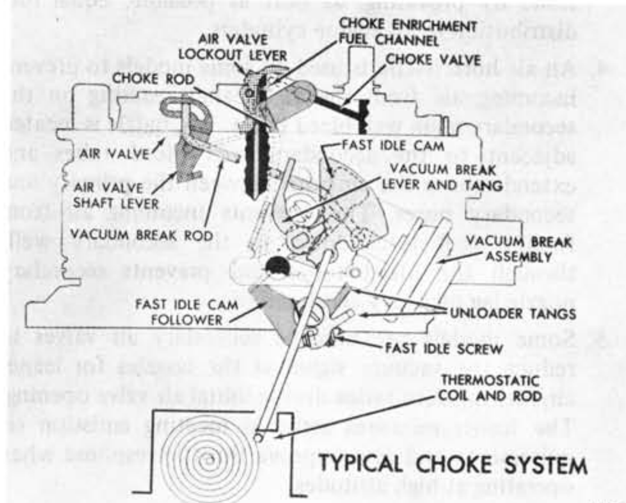
The pump discharge check ball seats in the pump discharge passage during upward motion of the pump plunger so that air will not be drawn into the passage; otherwise, a momentary lag in acceleration could result.

During high-speed operation, a vacuum exists at the pump jets. A cavity just beyond the pump jets is vented to the top of the air horn, outside the carburetor bores. This acts as a suction breaker so that when the pump is not in operation, fuel will not be pulled out of the pump jets into the venturi area. This insures a full pump stream when needed and prevents any fuel "pull-over" from the pump discharge passage.

CHOKE SYSTEM-4MV

The Quadrajet choke valve is located in the primary side of the carburetor (Figure 15). The closed choke valve provides the correct air/fuel mixture enrichment to the engine for quick cold engine starting and (partially open) during the warm-up period. The air valve or secondary throttle valves (on some models) are locked closed until the engine is thoroughly warm and choke valve is wide open.

CHOKE SYSTEM – 4MV *(Fig. 15)*



4M-25

FIGURE 15

The thermostatic coil is located in the engine manifold and is connected by a rod to the intermediate choke shaft and lever assembly. Choke operation is controlled by the combination of intake manifold vacuum, the offset choke valve, temperature, and throttle position.

The thermostatic coil located in the engine manifold is calibrated to hold the choke valve closed when the engine is cold.

> NOTE: To close the choke valve, the primary throttle valves have to be opened to allow the fast idle cam follower to by-pass the steps on the fast idle cam and come to rest on the highest step of the fast idle cam.

When the choke valve is closed, on models using an air valve lockout lever, the lever is weighted so that a tang on the lever catches the upper edge of the air valve and keeps the air valve closed.

During engine cranking, the choke valve is held closed by the tension of the thermostatic coil. This restricts air flow through the carburetor to provide a richer starting mixture.

Some Quadrajet models use a choke enrichment fuel system to supplement fuel feed from the primary main discharge nozzles for good cold engine starting.

Two calibrated holes, one in each primary bore, are located in the air horn just BELOW the choke valve to supply added fuel for cold enrichment during the cranking period. The extra fuel is supplied through channels which lead to the secondary accelerating well pickup tubes to allow fuel at closed choke to be drawn from the secondary accelerating wells located in the float bowl chamber. Also, during warm engine operation, the two calibrated holes in the air horn feed a small metered amount of fuel at higher air flows to supplement fuel flow in the primary bores to provide the extra fuel needed at higher engine speeds.

As mentioned earlier (See Main Metering System), other Quadrajet models use the fuel pull-over enrichment system. This system is similar to the choke enrichment fuel system except that the two calibrated holes, one in each primary bore, are located in the air horn just ABOVE the choke valve to supply added fuel during higher carburetor air flows. The calibrated holes, located above the choke valve, do not feed fuel at closed choke during the engine cranking period.

When the engine starts and is running, manifold vacuum applied to the vacuum diaphragm unit mounted on the float bowl opens the choke valve to a point where the engine will run without loading or stalling. At the same time, the fast idle cam follower lever on the end of the primary throttle shaft will drop from the highest step on the fast idle cam to a lower step when the throttle is opened. This gives the engine sufficient fast idle and correct fuel mixture for running until the engine begins to warm up and heat the thermostatic coil. As the thermostatic coil on the engine manifold becomes heated, it relaxes its tension and allows the choke valve to open further because of intake air pushing on the offset choke valve. Choke valve opening continues until the thermostatic coil is completely relaxed, at which point the choke valve is wide open.

When the engine is thoroughly warm, the choke coil pulls the intermediate choke lever completely down and allows the fast idle cam to rotate so that the cam follower drops off the last step of the fast idle cam allowing the engine to run at normal speeds. When the choke rod moves upward in the choke shaft lever, the end of the rod strikes a tang on the air valve lock-out lever, if used. As the rod moves to the end of its travel, it pushes the lock-out tang upward and unlocks the air valve.

CHOKE SYSTEM WITH SECONDARY LOCKOUT FEATURE *(Fig. 16)*

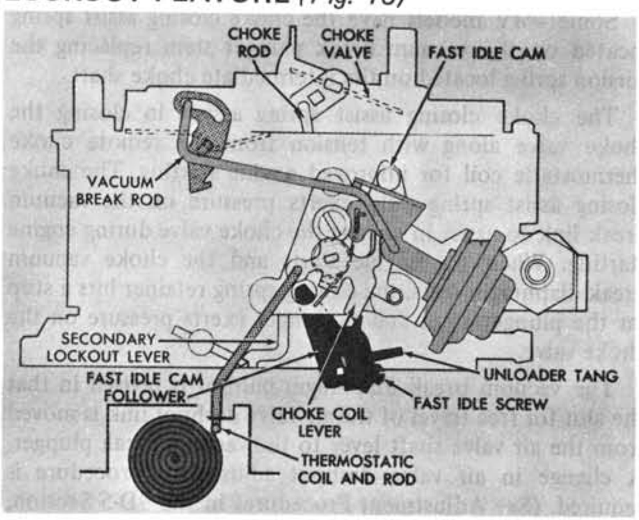


FIGURE 16

On some models, a secondary throttle valve lock-out is used in place of the air valve lock-out feature. This type design is used on applications where little or no air flow can be tolerated from the secondary throttle bores during engine warm up. On these applications, a lock-out lever located on the float bowl is weighted so that a tang on the lower end of the lever catches a lock pin on the secondary throttle shaft and holds the secondary throttle valves closed. As the engine warms up, the choke valve opens and the fast idle cam drops. When the engine is thoroughly warm, the choke valve is wide open and the fast idle cam drops down so that the cam follower is completely off the steps of the cam. As the cam drops the last few degrees it strikes the secondary lock-out lever and pushes it away from the secondary valve lock-out pin. This allows the secondary valves to open and operate as described under the Power System.

On all 4MV models, the choke system is equipped with an unloader mechanism which is designed to partially open the choke valve, should the engine become loaded or flooded. To unload the engine, the accelerator pedal must be depressed so that the throttle valves are held wide open. A tang on a lever on the choke side of the primary throttle shaft contacts the fast idle cam and through the intermediate choke shaft forces the choke valve slightly open. This allows extra air to enter the carburetor bores and pass on into the engine manifold and cylinders to lean out the fuel mixture so that the engine will start.

CHOKE SYSTEM *(Fig. 17)*

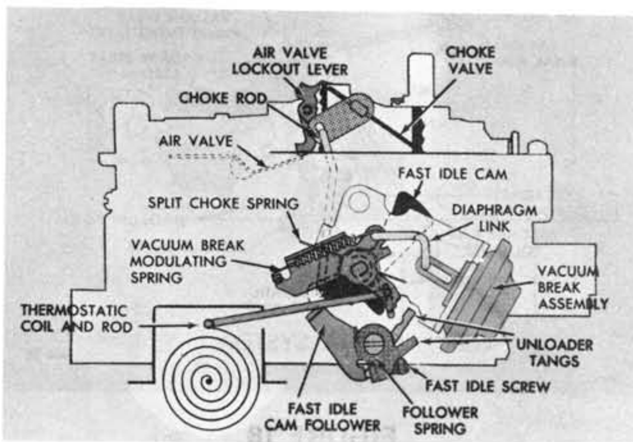


FIGURE 17

Some early model 4MV carburetors use a vacuum break modulating spring and split choke spring. The vacuum break modulating spring allows the vacuum break (choke valve position) to vary according to ambient temperature. The vacuum break modulating spring, connected to the vacuum break link, allows varying choke openings depending on the closing force of the thermostatic coil. As the closing force of the coil increases (cool weather), the link is allowed to move in the slotted lever until the modulating

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spring overcomes the coil force, or the link is in the end of the slot. This results in less vacuum break during cooler weather and more vacuum break during warmer weather.

The split choke feature operates during the last few degrees of choke thermostat rotation. The purpose is to maintain the fast idle speed long enough to keep the engine from stalling, but allow the use of choke coil which lets the choke valve open quickly. The operation of the split choke feature is controlled by a torsion spring on the intermediate choke lever shaft. As explained earlier, air pressure action on the offset choke valve tends to force the choke valve open against tension of the choke thermostatic coil. In the last few degrees of thermostatic coil opening motion, a tang on the intermediate choke lever contacts the end of the torsion spring. This keeps the fast idle cam follower lever on the last step of the fast idle cam longer to maintain fast idle until the engine is thoroughly warm. The spring works against the thermostatic coil until the coil is hot enough to pull on the intermediate choke lever and overcome the torsion spring tension. The torsion spring must be placed in the specified notch in the vacuum break mounting bracket for the application used.

CHOKE SYSTEM *(Fig. 18)*

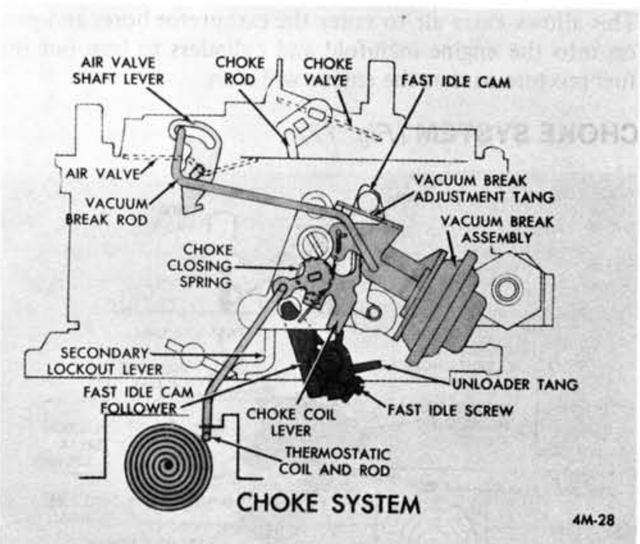


FIGURE 18

Some 4MV carburetors use a spring assist choke closing system (Figure 18). The assist spring is of the torsion type and is added to the intermediate choke shaft. It exerts pressure on the vacuum break lever to force the choke valve toward the closed choke position. The tension of the torsion spring is overcome by the choke thermostatic coil located on the engine manifold which, during the engine warmup period, will pull the choke valve open. The addition of a torsion spring assists in closing the choke valve to ensure good engine starting when the engine is cold.

Along with the choke closing assist spring, certain 4MV models use the fast idle cam "pull-off" feature.

When the engine starts and is running, manifold vacuum is applied to the vacuum break diaphragm and the diaphragm plunger moves slowly inward to open the choke valve. As the diaphragm plunger moves inward, a tang on the plunger contacts the end or "tail" of the fast idle cam to "pull-off" the cam from the high step to the lower second step setting.

A slight change in the method of vacuum break adjustment is required on these models that use the fast idle cam "pull-off" feature. (See Adjustment Procedures in the 9D-5 Section of the Delco Carburetor Parts and Service Manual 9X.)

CHOKE SYSTEM *(Fig. 19)*

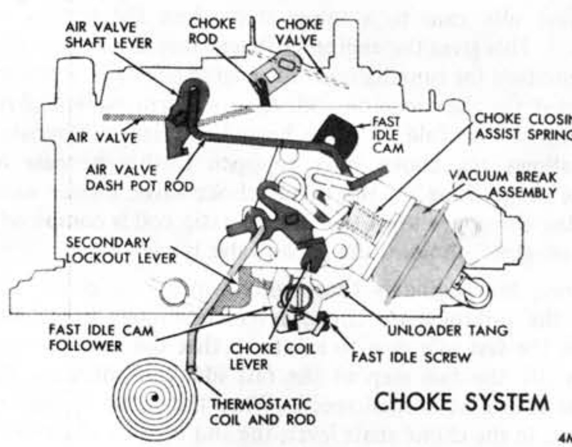


FIGURE 19

Some 4MV models have the choke closing assist spring located on the vacuum break plunger stem replacing the torsion spring located on the intermediate choke shaft.

The choke closing assist spring assists in closing the choke valve along with tension from the remote choke thermostatic coil for improved engine starting. The choke closing assist spring only exerts pressure on the vacuum break link to assist in closing the choke valve during engine starting. When the engine starts and the choke vacuum break diaphragm seats, the closing spring retainer hits a stop on the plunger stem and no longer exerts pressure on the choke valve.

The vacuum break diaphragm plunger is revised in that the slot for free travel of the air valve dashpot link is moved from the air valve shaft lever to the vacuum break plunger. A change in air valve dashpot adjustment procedure is required. (See Adjustment Procedures in the 9D-5 Section, Delco Carburetor Parts and Service Manual 9X.)

CHOKE SYSTEM *(Fig. 20)*

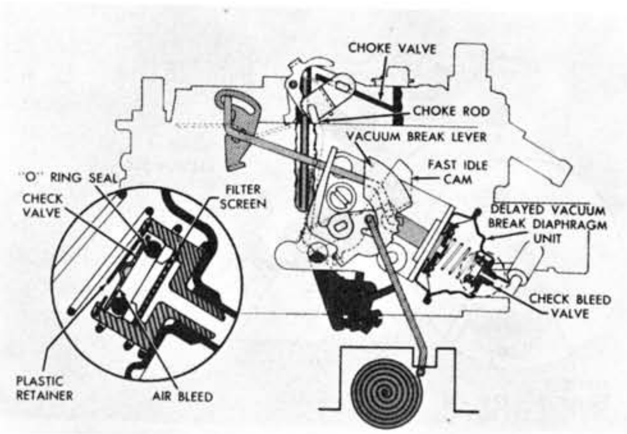


FIGURE 20

Some models use a delayed vacuum break system.

This system operates as follows:

When the engine is started cold, vacuum is applied to the choke vacuum break diaphragm unit, opening the choke valve against tension of the thermostatic choke coil to a point where the engine will run without loading or stalling.

To delay the choke valve from opening too fast, an internal air bleed check valve is used inside the diaphragm unit. When the engine starts, vacuum acting on the internal check valve bleeds air through a small hole in the valve which allows the vacuum diaphragm plunger to move slowly inward. This gives sufficient time to overcome engine friction and wet the engine manifold to prevent a lean stall. When the vacuum break diaphragm is fully seated, which takes a few seconds, the choke valve will remain in the vacuum break position until the engine begins to warm and relax the thermostatic coil located on the exhaust crossover in the intake manifold.

In addition to the internal bleed check valve, some car applications have a separate vacuum delay tank added to the system. This is connected "in series" to a second vacuum tube on the vacuum diaphragm unit to further delay the choke vacuum break diaphragm operation.

The check valve in the choke vacuum diaphragm unit is designed to "pop" off its seat and allow the diaphragm plunger to extend outward, when the spring force against the diaphragm is greater than the vacuum pull. This will give added enrichment as needed on heavy acceleration during cold drive-a-way by allowing the choke coil to slightly close the choke valve. Some 4MV models use a calibrated restriction in the vacuum inlet to the vacuum break diaphragm unit in place of the internal air bleed check valve. Similar to the internal air bleed check valve, the calibrated restriction delays the supply of vacuum to the diaphragm unit to retard opening of the choke valve for good engine starting.

CHOKE SYSTEM *(Fig. 21)*

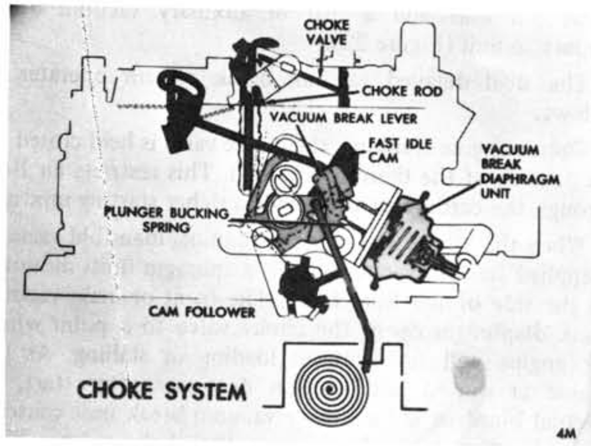


FIGURE 21

A spring loaded plunger is used in the vacuum break unit on some 4MV models (Figure 21). The purpose of the spring, called a "bucking spring," is to offset choke thermostatic coil tension and balance the opening of the choke valve with tension of the choke coil. This enables further refinement of air/fuel mixtures because the coil, which senses engine and ambient temperatures, will allow the choke valve to open gradually against spring tension in the diaphragm plunger head. In other words, in very cold temperatures, the extra tension created by the thermostatic coil will overcome the tension of the diaphragm plunger (bucking) spring to provide less choke valve opening with the results of slightly richer mixtures. In warmer temperatures, the thermostatic coil will have less tension and, consequently, will not press the spring as much thereby giving a greater choke valve opening for slightly leaner mixtures.

CHOKE SYSTEM *(Fig. 22)*

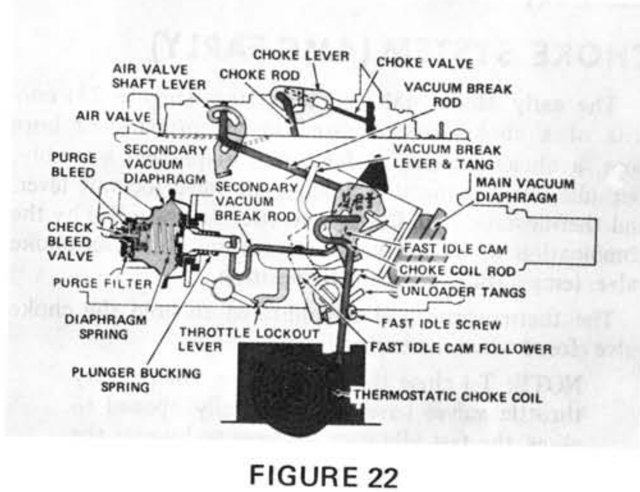


FIGURE 22

Other Quadrajet carburetors use a dual delayed vacuum break system consisting of a front or main vacuum break diaphragm unit and a rear or auxiliary vacuum break diaphragm unit (Figure 22).

The dual delayed vacuum break system operates as follows:

During engine cranking, the choke valve is held closed by the tension of the thermostatic coil. This restricts air flow through the carburetor to provide a richer starting mixture.

When the engine starts and is running, manifold vacuum is applied to both vacuum break diaphragm units mounted on the side of the float bowl. The front or main vacuum break diaphragm opens the choke valve to a point where the engine will run without loading or stalling. As the engine is wetted and friction decreases after start, an internal bleed in the auxiliary vacuum break unit causes a delayed action to gradually open the choke valve a little further until the engine will run at a slightly leaner mixture to prevent loading.

Included in the auxiliary vacuum break unit is a spring-loaded plunger. The purpose of the spring is to offset choke thermostatic coil tension and balance the opening of the choke valve with tension of the choke coil. This enables further refinement because the coil, which senses engine temperature, will allow the choke valve to open gradually against spring tension in the diaphragm plunger head.

A clean air purge feature is added to the rear or auxiliary vacuum break diaphragm unit on some 4MV models using the dual delayed vacuum break system (Figure 22). A clean air bleed, added to the tube at the rear of the auxiliary vacuum break unit and located beneath a rubber covered filter, purges the system of any fuel vapors and dirt which may possibly enter the internai check bleed valve to disrupt operation. A change in adjustment procedure for setting the auxiliary vacuum break is required on those models using the clean air purge feature. (See Adjustment Procedures, Section 5, of the Delco Carburetor Parts and Service Manual 9X).

CHOKE SYSTEM (4MC EARLY)

The early Model 4MC choke system (Figure 23) consists of a choke valve located in the primary air horn bore, a choke housing and vacuum diaphragm assembly, fast idle cam, connecting linkage, air valve lockout lever, and thermostatic coil. Choke operation is controlled by the combination of intake manifold vacuum, the offset choke valve, temperature, and throttle position.

The thermostatic coil is calibrated to hold the choke valve closed when the engine is cold.

> NOTE: To close the choke valve, the primary throttle valves have to be partially opened to allow the fast idle cam follower to by-pass the steps on the fast idle cam and come to rest on the highest step of the fast idle cam.

CHOKE SYSTEM – 4MC (EARLY) *(Fig. 23)*

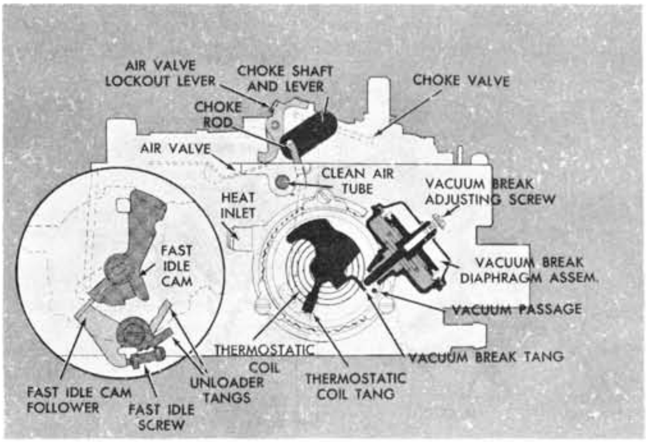


FIGURE 23

When the choke valve is closed, the air valve lockout lever is weighted so that a tang on the lever catches the upper edge of the air valve and keeps the air valve closed.

During engine cranking, the choke valve is held closed by the tension of the thermostatic coil. This restricts air flow through the carburetor to provide a richer starting mixture. When the engine starts and is running, manifold vacuum applied to the vacuum diaphragm unit mounted on the float bowl, opens the choke valve to a point where the engine will run without loading or stalling. This is accomplished through an adjustable plastic plunger mounted on the vacuum break diaphragm. Engine vacuum pulls inward on the diaphragm and the plunger strikes the vacuum break tang inside the choke housing which, in turn, rotates the intermediate choke shaft and through connecting linkage opens the choke valve. At the same time, the fast idle cam follower lever on the end of the primary throttle shaft will drop from the highest step on the fast idle cam to the second step if the throttle is opened. This gives the engine sufficient fast idle and correct fuel mixture for running until the engine begins to warm up and heat the thermostatic coil. As the thermostatic coil becomes heated, it relaxes its tension and allows the choke valve to open further because of intake air pushing on the offset choke valve. Choke valve opening continues until the thermostatic coil is completely relaxed and the choke valve is wide open.

During engine warmup the choke coil rotates, forcing the intermediate choke shaft and lever clockwise. This allows the fast idle cam to rotate until the cam follower drops off the last step of the fast idle cam so the engine will run at normal idle speeds. When the choke moves toward the open position, the end of the choke rod strikes a tang on the air valve lockout. As the choke rod moves to the end of its travel, it pushes the lockout tang upward and unlocks the air valve.

CHOKE SYSTEM – 4MC (LATE) *(Fig. 24)*

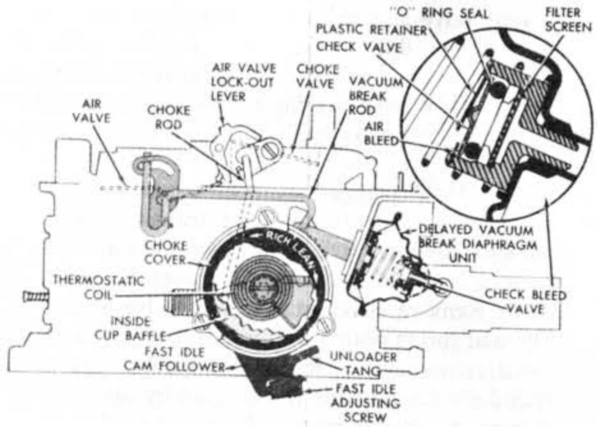


FIGURE 24

Later 4MC Quadrajet carburetors (Figure 24) use a delayed vacuum break system. An internal bleed check valve in the vacuum break diaphragm unit delays the diaphragm action a few seconds before it becomes seated. This allows the engine manifold to be wetted and engine friction to decrease enough so that when the vacuum break point is reached, the engine will run without loading or stalling.

When the choke valve moves to the vacuum break position, the fast idle cam follower lever on the end of the primary throttle shaft will drop from the highest step on the fast idle cam to the next lower step (second step) when the throttle is opened. This gives the engine sufficient fast idle speed and correct fuel mixture for running until the engine begins to warm up and heat the thermostatic coil in the choke housing. Engine vacuum pulls heat from the manifold heat stove into the choke housing and gradually relaxes choke coil tension. This allows the choke valve to continue opening through carburetor inlet air pressure pushing on the offset choke valve. Choke valve opening continues until the thermostatic coil is completely relaxed, at which point the choke valve is wide open and the engine is thoroughly warmed up.

During the last few degrees of choke valve opening, a tang on the choke lever contacts the secondary air valve lockout lever and rotates the lever counterclockwise so that the tang over the air valve will move completely away from the valve, allowing the air valves to open and operate.

The choke system on all 4MC models is designed to partially open the choke valve, should the engine become flooded or loaded. To unload the engine, the accelerator pedal must be depressed so that the throttle valves are held wide open. A tang on the lever on the choke side of the primary throttle shaft contacts the fast idle cam and through the intermediate choke shaft forces the choke valve slightly open. This allows extra air to enter the carburetor bores and pass on into the engine manifold and cylinders to lean out the fuel mixture so that the engine will start.

COMBINATION EMISSION CONTROL (C.E.C.) VALVE *(Fig. 25)*

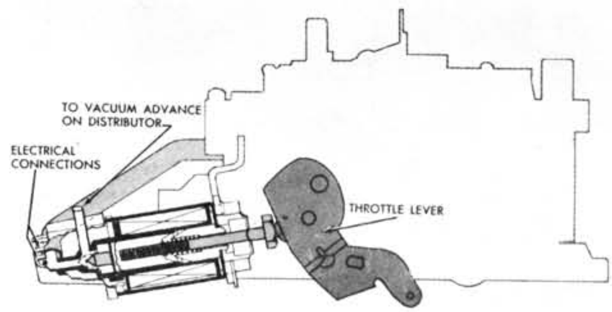


FIGURE 25

On some Quadrajet applications, a carburetor mounted Combination Emission Control (C.E.C.) valve is added to help reduce exhaust emissions (Figure 25). A vacuum tube in the float bowl is connected by hose to the C.E.C. valve which, when energized through the transmission, controls distributor vacuum spark advance by providing spark vacuum advance during transmission high-gear operation (and in reverse on turbo-hydramatic transmission applications) and, when de-energized, retarded spark timing during operation of the transmission in lower gears and at idle.

The C.E.C. valve, when energized through the transmission, also acts as a throttle stop by increasing engine idle speed during high-gear operation (and in reverse on turbo-hydramatic transmission applications) to add more air as an aid in controlling over-run hydrocarbons (unburned fuel) during deceleration. Normal idle speed setting is made with the idle stop screw. Idle speed settings should be made following vehicle manufacturer's specification (noted on the decal in the engine compartment).

The C.E.C. valve may be identified from the idle stop solenoid by two vacuum tubes for distributor vacuum advance, located at the end of the valve, and by the following precautionary label affixed to the valve:

> *"CAUTION: Never use to set idle. See Service Manual for adjustments."*

IDLE STOP SOLENOID

An electrically-operated idle stop solenoid (Figure 26, Page 20) mounted on a bracket on the carburetor, is added to the float bowl on some Quadrajet carburetors and, where applicable, replaces the Combination Emission Control (C.E.C.) valve. The idle stop solenoid controls the engine curb idle speed. Curb idle speed setting is made by adjusting the plunger screw in the idle stop solenoid with the solenoid energized electrically. The low idle speed is adjusted by turning the idle stop screw on the carburetor bowl. Curb idle and low idle speed settings should be made using information located on the decal in the engine compartment (1968 and later vehicles).

IDLE STOP SOLENOID *(Fig. 26)*

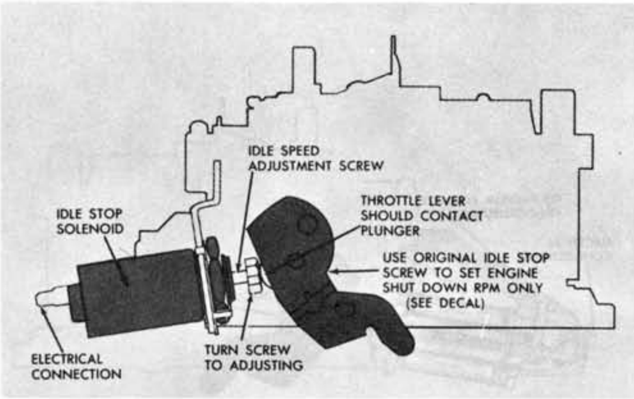


FIGURE 26

MAJOR SERVICE OPERATIONS ALL MODELS

DISASSEMBLY, CLEANING, INSPECTION AND ADJUSTMENTS

The following disassembly and assembly procedures may vary somewhat between applications due to specific design features. However, they will basically pertain to all Quadrajet models.

DISASSEMBLY

NOTE: Place carburetor on proper holding fixture such as BT-3553.

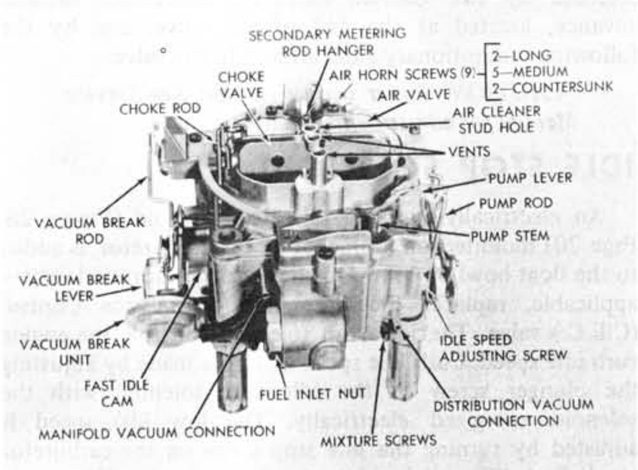


FIGURE 27

AIR HORN REMOVAL – (Figure 27)

1. Remove idle vent valve attaching screw; then remove idle vent valve assembly. If thermostatic vent valve is used, remove dust cover, then remove valve. Care should be used not to bend or distort the bi-metal strip.
2. On those 4MV models using the vacuum operated vent switch valve, remove small screw from top of vent valve plunger stem.

   NOTE: Hold plunger stem with needle-nosed pliers to prevent turning and tearing of diaphragm. Remove vent valve cover screw and air horn screw and carefully lift cover from air horn. Remove cover gasket, vent valve assembly, and spring noting position of the vent valve for later reassembly. Remove diaphragm retainer and diaphragm from the air horn by carefully moving the diaphragm stem back and forth.
3. Remove clip from upper end of choke rod, disconnect upper end of choke rod from upper choke shaft lever. Remove choke rod from lower choke lever in bowl by working choke rod "up and down" until lower end of rod is free from lever.

   NOTE: On late 4MC models, remove upper choke lever from end of choke shaft by removing retaining screw.
4. Remove clip from upper end of pump rod; then disconnect pump rod from pump lever. Wire vent valve lever can be removed from pump lever if replacement is necessary.

   NOTE: On those models that do not use a retaining clip in the upper end of the pump rod, known as the "clipless" pump rod, using a pin punch, carefully drive the accelerator pump lever roll pin out of the boss only enough to lift pump arm out of the way. Then, disconnect pump rod from pump lever.

   CAUTION: Do not bend the pump rod to remove from pump lever; follow the above procedure.
5. On Chevrolet 4MV models using either a Combination Emission Control (C.E.C.) valve or idle stop solenoid mounted on the carburetor:
   a. On C.E.C. valve models only, remove vacuum hose from the C.E.C. valve and vacuum tube on the float bowl.
   b. Remove screw securing C.E.C. valve or idle stop solenoid bracket to float bowl.

   NOTE: Do not remove the bracket for the C.E.C. valve or idle stop solenoid from the air horn assembly unless replacement of the bracket is necessary.

   CAUTION: Do not immerse the C.E.C. valve assembly or idle stop solenoid in any type of carburetor cleaner.
6. On other 4MV and 4MC models using an idle stop solenoid mounted on the carburetor:

a. Remove screws securing idle stop solenoid bracket to float bowl and remove solenoid and bracket assembly.

NOTE: If solenoid replacement is necessary, bend back retaining tabs on lockwasher; then remove large idle stop solenoid nut and remove solenoid from bracket.

CAUTION: The idle stop solenoid should not be immersed in any type of carburetor cleaner and should always be removed before complete overhaul.

7. If used, remove retaining clip from the vacuum break rod at the vacuum diaphragm plunger and remove other end of rod from dashpot lever on end of the air valve shaft.

NOTE: On some models, the vacuum break rod is clipless, so it will be necessary to remove during air horn removal (See step 10).

8. Remove secondary metering rods from secondary wells by removing small screw in the secondary metering rod holder. Lift rods and holder as an assembly from carburetor. Metering rods may be disassembled from the hanger by rotating ends out of the holes in the end of the hanger.

9. Remove (9) air horn to bowl attaching screws; (2) attaching screws are located next to the primary venturi. ([2] long screws, [5] short screws, [2] countersunk screws.)

NOTE: Some models have a secondary baffle plate mounted under the (2) center air horn attaching screws next to the secondary bores. The baffle can be removed also at this time. Other models have a secondary air valve lock-out shield located over the lockout lever. This is held in place by the air horn screw next to the lockout lever and a small attaching screw. (Check the "C" parts bulletin in the Delco Carburetor Parts and Service Manual 9X for correct usage of these extra parts.)

10. Remove air horn by lifting straight up. If the clipless vacuum break rod is used, rotate air horn to remove vacuum break rod from dashpot lever on the end of the air valve shaft. Air horn gasket should remain on bowl for removal later.

CAUTION: Place air horn inverted on clean bench. Care must be taken not to bend the small bleed tubes, accelerating well tubes, and pull-over enrichment tubes in air horn casting. These small tubes protrude from the air horn casting and are permanently pressed in place. DO NOT REMOVE.

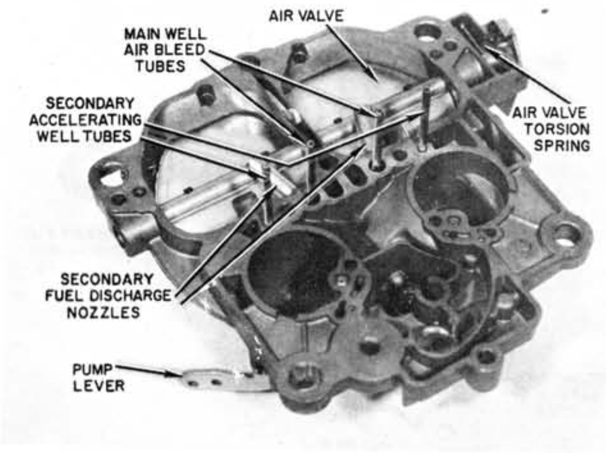


FIGURE 28

AIR HORN DISASSEMBLY – (Figure 28)

1. (Early Models) Remove end of dashpot plunger rod from air valve lever. Some slide out of lever and others are held by a retaining clip. The dashpot piston has a synthetic seal inside the piston on the plunger shaft. This should not be immersed in carburetor cleaner as the seal will be destroyed. Clean in a stoddard solvent or kerosene.

NOTE: Further disassembly of the air horn is not required for cleaning purposes. If part replacement is required, proceed as follows.

2. Remove staking on (2) choke valve attaching screws, then remove choke valve and shaft from air horn.

3. If the air horn is equipped with the air valve lockout and it needs replacement, remove the lockout lever by driving out roll pin with small drift punch.

NOTE: Air valves and air valve shaft should not be removed. However, if it is necessary to replace the air valve closing spring or center plastic eccentric cam, a repair kit is available. (Refer to the "C" Parts Bulletin in the Delco Carburetor Parts and Service Manual for part number application.)

To replace the air valve spring or eccentric cam, proceed as follows:

A. Remove air valve spring fulcrum pin lock screw.
B. Remove air valve spring fulcrum pin from casting.
C. Remove air valve spring.
D. Remove (4) air valve attaching screws and remove valves from shaft.
E. Remove air valve shaft by sliding out of air horn casting. Then plastic metering rod cam can be removed.

No further disassembly of the air horn is required.

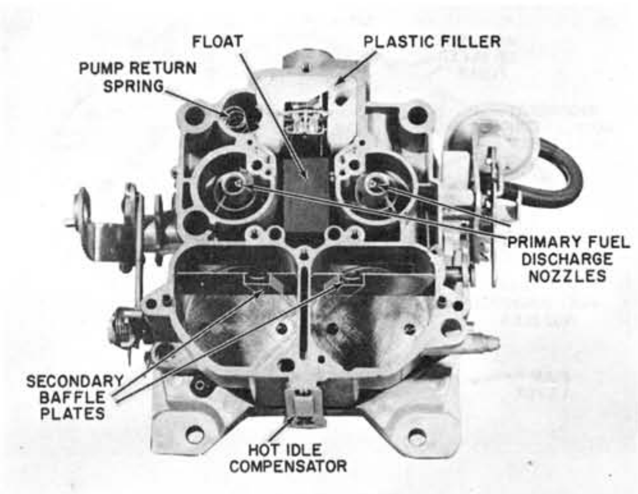


FIGURE 29

FLOAT BOWL DISASSEMBLY – (Figure 29)

1. Remove pump plunger from pump well.
2. Remove air horn gasket from dowels on secondary side of bowl, then remove gasket from around power piston and primary metering rod and lift gasket from bowl.
3. Remove pump return spring from pump well.
4. Remove plastic filler block over float valve.
5. Remove power piston and primary metering rods as an assembly. There are four different type power piston retainers used. (See Figure 30.)

   CAUTION: Do not remove power piston by using pliers on metering rod holder.

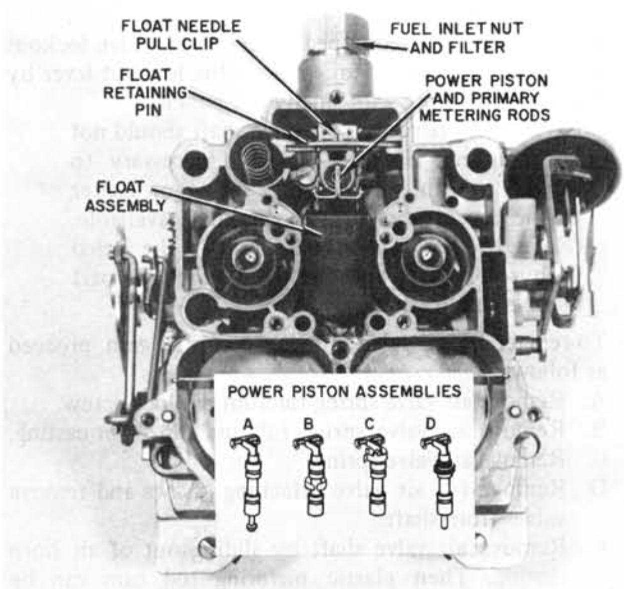


FIGURE 30

A. The first design has a "button head" pin extension pressed into the base of the power piston. This type power piston is held in place by the "button head" which protrudes through a hole in the throttle body gasket. The power piston can be removed by using needle-nosed pliers to pull straight up on metering rod hanger directly over power piston.
B. The second type power piston retainer is a flat brass spring clip which fits around the power piston, at the center. This type power piston assembly is removed in the same manner as above.
C. The third type power piston retainer is a spring clip which fits over and around the top of the power piston cavity. Two fingers at the top of clip hold the piston down in cavity. This type power piston can be removed by pushing upward on clip retainer to disengage from casting.
D. The fourth power piston retainer is a plastic retainer which is part of the power piston assembly. The plastic retainer fits in a recess at the top of the power piston cavity. The power piston with the plastic retainer can be removed by pushing downward against spring tension and allowing the piston to snap back against the retainer until it "pops" out of casting. This procedure may have to be repeated several times to free power piston retainer.

6. Remove primary metering rods from power piston by disconnecting tension spring loops from top of each rod. Then rotate each metering rod to remove from hanger.

   CAUTION: Use care when disassembling rods to prevent distortion of tension spring and/or metering rods. Note carefully position of tension spring for later reassembly (See Figure 31).

POWER PISTON AND METERING RODS *(Fig. 31)*

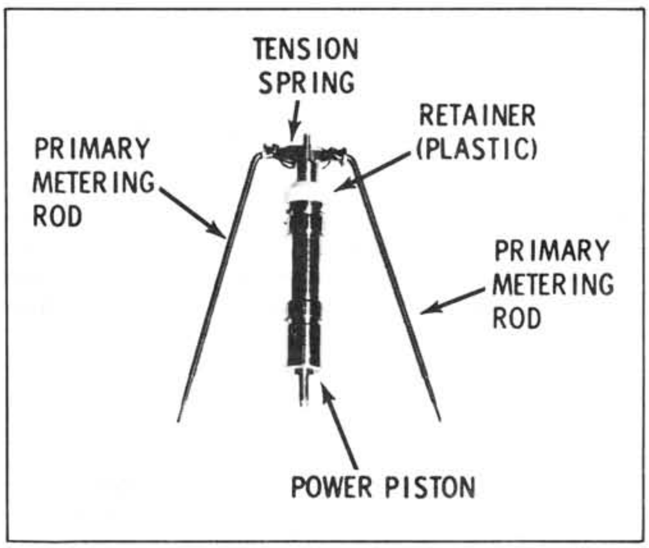


FIGURE 31

a. Remove screws securing idle stop solenoid bracket to float bowl and remove solenoid and bracket assembly.

NOTE: If solenoid replacement is necessary, bend back retaining tabs on lockwasher; then remove large idle stop solenoid nut and remove solenoid from bracket.

CAUTION: The idle stop solenoid should not be immersed in any type of carburetor cleaner and should always be removed before complete overhaul.

7. If used, remove retaining clip from the vacuum break rod at the vacuum diaphragm plunger and remove other end of rod from dashpot lever on end of the air valve shaft.

   NOTE: On some models, the vacuum break rod is clipless, so it will be necessary to remove during air horn removal (See step 10).

8. Remove secondary metering rods from secondary wells by removing small screw in the secondary metering rod holder. Lift rods and holder as an assembly from carburetor. Metering rods may be disassembled from the hanger by rotating ends out of the holes in the end of the hanger.

9. Remove (9) air horn to bowl attaching screws; (2) attaching screws are located next to the primary venturi. ([2] long screws, [5] short screws, [2] countersunk screws.)

   NOTE: Some models have a secondary baffle plate mounted under the (2) center air horn attaching screws next to the secondary bores. The baffle can be removed also at this time. Other models have a secondary air valve lock-out shield located over the lockout lever. This is held in place by the air horn screw next to the lockout lever and a small attaching screw. (Check the "C" parts bulletin in the Delco Carburetor Parts and Service Manual 9X for correct usage of these extra parts.)

10. Remove air horn by lifting straight up. If the clipless vacuum break rod is used, rotate air horn to remove vacuum break rod from dashpot lever on the end of the air valve shaft. Air horn gasket should remain on bowl for removal later.

    CAUTION: Place air horn inverted on clean bench. Care must be taken not to bend the small bleed tubes, accelerating well tubes, and pull-over enrichment tubes in air horn casting. These small tubes protrude from the air horn casting and are permanently pressed in place. DO NOT REMOVE.

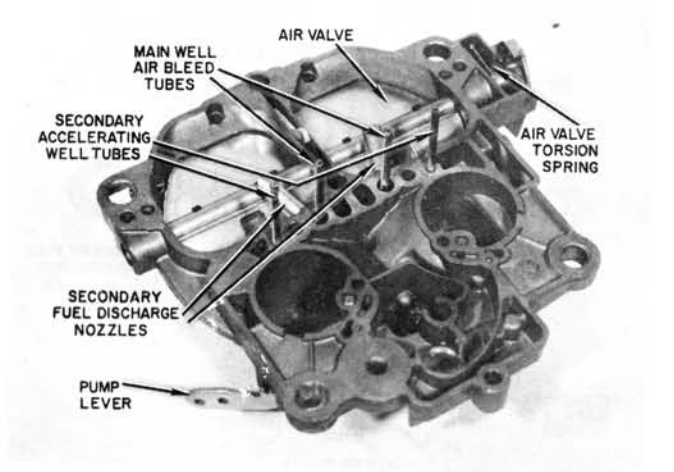


FIGURE 28

AIR HORN DISASSEMBLY – (Figure 28)

1. (Early Models) Remove end of dashpot plunger rod from air valve lever. Some slide out of lever and others are held by a retaining clip. The dashpot piston has a synthetic seal inside the piston on the plunger shaft. This should not be immersed in carburetor cleaner as the seal will be destroyed. Clean in a stoddard solvent or kerosene.

   NOTE: Further disassembly of the air horn is not required for cleaning purposes. If part replacement is required, proceed as follows.

2. Remove staking on (2) choke valve attaching screws, then remove choke valve and shaft from air horn.

3. If the air horn is equipped with the air valve lockout and it needs replacement, remove the lockout lever by driving out roll pin with small drift punch.

   NOTE: Air valves and air valve shaft should not be removed. However, if it is necessary to replace the air valve closing spring or center plastic eccentric cam, a repair kit is available. (Refer to the "C" Parts Bulletin in the Delco Carburetor Parts and Service Manual for part number application.)

   To replace the air valve spring or eccentric cam, proceed as follows:

   A. Remove air valve spring fulcrum pin lock screw.
   B. Remove air valve spring fulcrum pin from casting.
   C. Remove air valve spring.
   D. Remove (4) air valve attaching screws and remove valves from shaft.
   E. Remove air valve shaft by sliding out of air horn casting. Then plastic metering rod cam can be removed.

   No further disassembly of the air horn is required.

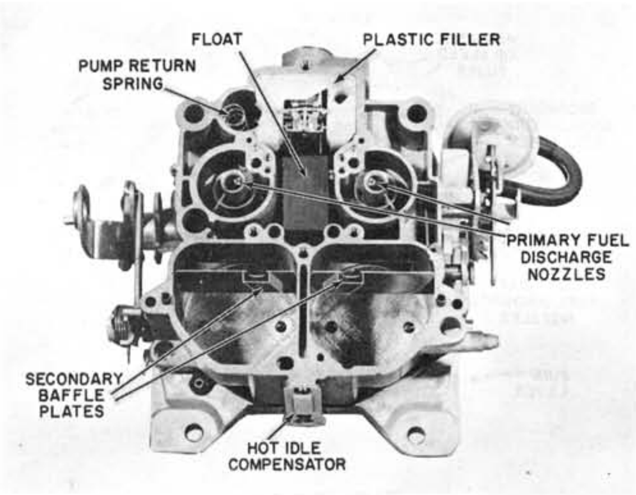


FIGURE 29

FLOAT BOWL DISASSEMBLY – (Figure 29)

1. Remove pump plunger from pump well.
2. Remove air horn gasket from dowels on secondary side of bowl, then remove gasket from around power piston and primary metering rod and lift gasket from bowl.
3. Remove pump return spring from pump well.
4. Remove plastic filler block over float valve.
5. Remove power piston and primary metering rods as an assembly. There are four different type power piston retainers used. (See Figure 30.)

   CAUTION: Do not remove power piston by using pliers on metering rod holder.

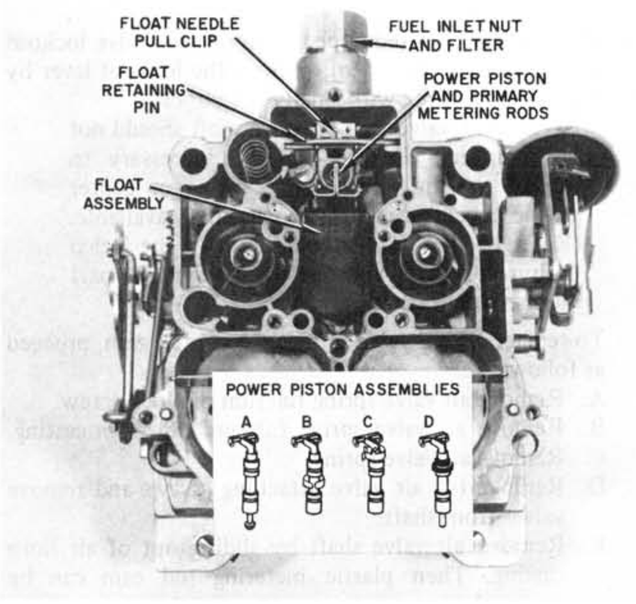


FIGURE 30

A. The first design has a "button head" pin extension pressed into the base of the power piston. This type power piston is held in place by the "button head" which protrudes through a hole in the throttle body gasket. The power piston can be removed by using needle-nosed pliers to pull straight up on metering rod hanger directly over power piston.
B. The second type power piston retainer is a flat brass spring clip which fits around the power piston, at the center. This type power piston assembly is removed in the same manner as above.
C. The third type power piston retainer is a spring clip which fits over and around the top of the power piston cavity. Two fingers at the top of clip hold the piston down in cavity. This type power piston can be removed by pushing upward on clip retainer to disengage from casting.
D. The fourth power piston retainer is a plastic retainer which is part of the power piston assembly. The plastic retainer fits in a recess at the top of the power piston cavity. The power piston with the plastic retainer can be removed by pushing downward against spring tension and allowing the piston to snap back against the retainer until it "pops" out of casting. This procedure may have to be repeated several times to free power piston retainer.

6. Remove primary metering rods from power piston by disconnecting tension spring loops from top of each rod. Then rotate each metering rod to remove from hanger.

   CAUTION: Use care when disassembling rods to prevent distortion of tension spring and/or metering rods. Note carefully position of tension spring for later reassembly (See Figure 31).

POWER PISTON AND METERING RODS *(Fig. 31)*

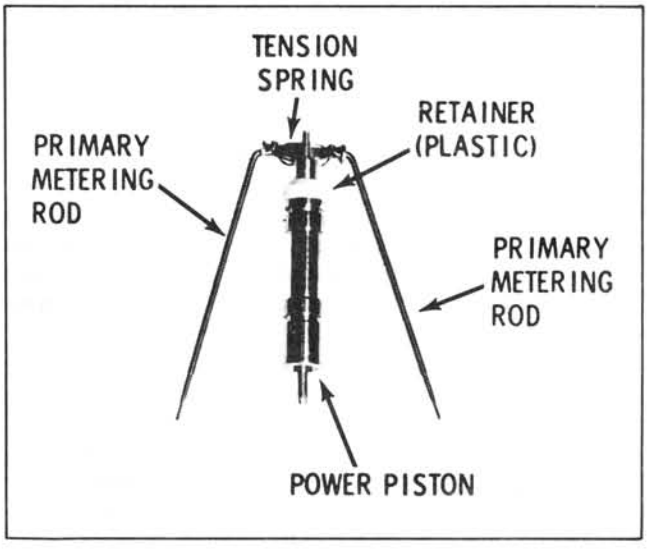


FIGURE 31

7. Remove power piston spring(s) from power piston cavity.

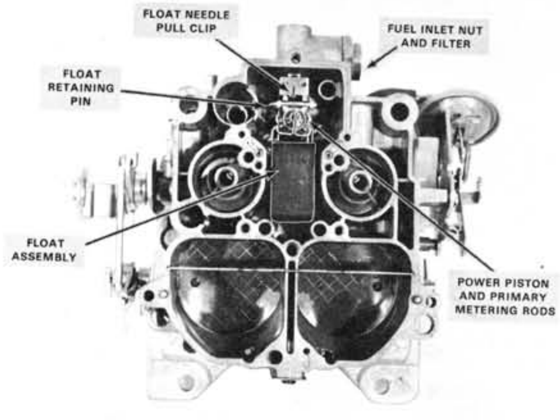


FIGURE 32

8. FLOAT ASSEMBLY REMOVAL:
   A. DIAPHRAGM TYPE – (Figure 32)
      1. Remove float assembly by pulling upward on hinge pin until pin can be removed from float hanger by sliding toward pump well. After pin is removed, slide float assembly toward front of bowl to disengage needle pull clip from float arm. *Do not distort float needle pull clip.*
      2. Using needle-nosed pliers, remove pull clip from float needle.
      3. Remove two screws from float needle diaphragm retainer; then remove retainer and float needle assembly from bowl (Figure 33).

   CAUTION: Needle seat is factory staked and tested. Do not attempt to remove or restake. If damaged, replace float bowl assembly.

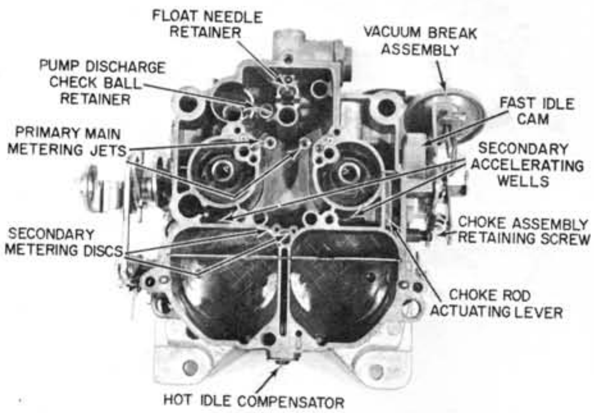


FIGURE 33

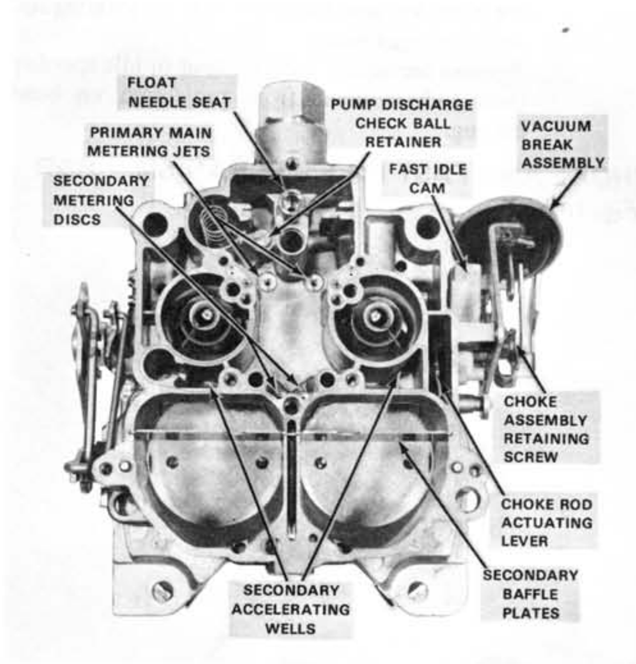


FIGURE 34

   B. STANDARD TYPE NEEDLE AND SEAT – (Figure 34)
      1. Remove float assembly by pulling upward on hinge pin. Float needle and hinge pin can now be removed from float assembly.
      2. Remove float needle seat and gasket from float bowl using tool BT-3006.

   NOTE: Float needle and seat are factory matched and tested and should be replaced as a set.

9. Remove primary main metering jets. No attempt should be made to remove secondary metering orifice plates. Normal cleaning is all that is necessary.
10. Using a screwdriver, remove pump discharge check ball retainer, then steel check ball.
11. The baffle plate in secondary bores need not be removed for cleaning purposes. It can be removed for replacement by lifting straight upward, out of slots in side of bores.

12. CHOKE DISASSEMBLY:
   A. 4MV MODELS – (Figure 35)
      1. Remove vacuum break hose from main vacuum break assembly and, if used, from rear (or auxiliary) vacuum break assembly, and remove hose(s) from connection on float bowl.
      2. Remove retaining screw from choke vacuum break bracket assembly and remove assembly from float bowl. If not removed previously, vacuum break rod can now be removed from

the main vacuum break plunger by rotating rod out of plunger stem.

3. Remove secondary lockout lever or idle speedup lever (where used) from projection on bowl casting.

CHOKE AND FAST IDLE MECHANISM – R&R *(Figure 35)*

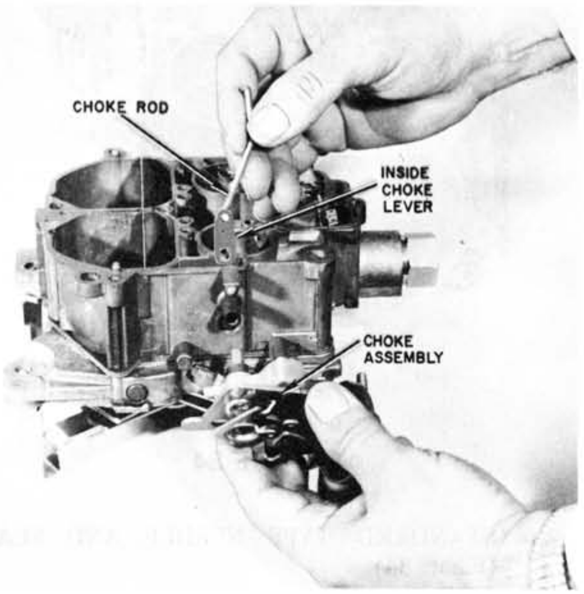


FIGURE 35

4. Remove the fast idle cam from bushing on choke vacuum break bracket assembly.

NOTE: If further disassembly of the choke vacuum break assembly is necessary, the vacuum break assembly can be removed as follows:

(a) (Early Models) Remove clip on connecting link at vacuum break lever. Then, remove link from lever and vacuum break diaphragm plunger.

(b) (All Models) Spread the retaining ears on bracket for removing either the primary vacuum break diaphragm assembly or the secondary vacuum break assembly. The secondary vacuum break assembly has a rod connecting the plunger to the intermediate choke shaft lever. This can also be removed by rotating the vacuum break diaphragm assembly and sliding rod out of plunger stem and the other end out of vacuum break lever.

CAUTION: Do not place vacuum break assemblies in carburetor cleaner.

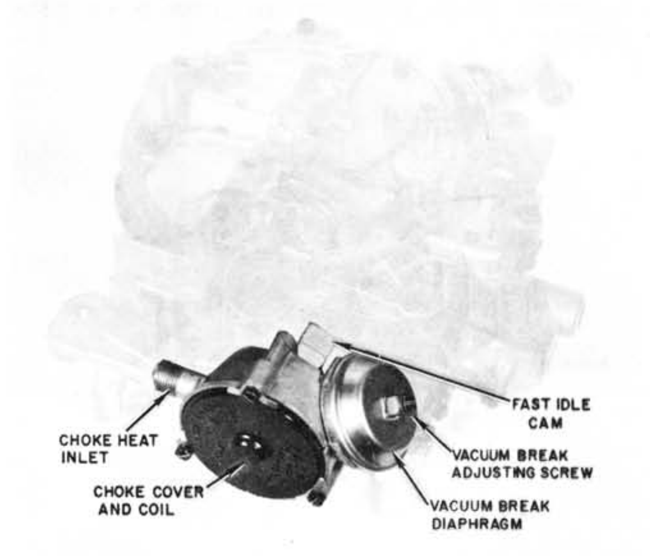


FIGURE 36

B. EARLY 4MC MODELS – (Figure 36)

1. Remove (3) choke cover screws and retainers. Then remove cover and coil assembly and inside baffle plate from choke housing.
2. Remove attaching screw from inside choke housing. Then remove choke housing assembly from float bowl. Remove vacuum passage gasket between choke housing and float bowl.
3. Remove fast idle cam from choke housing.

CAUTION: Do not place vacuum break diaphragm assembly in carburetor cleaner.

4MC BOWL ASSEMBLY *(Fig. 37)*

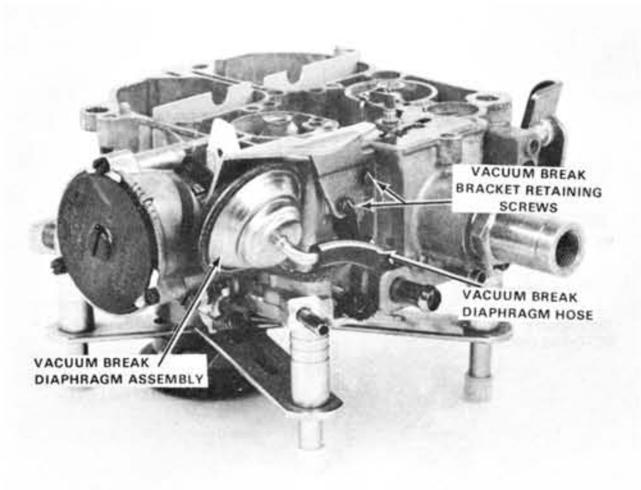


FIGURE 37

C. LATE 4MC MODELS

1. Remove vacuum break hose from vacuum break assembly and connection at tube on float bowl (Figure 37).
2. Remove (2) retaining screws and remove vacuum break and bracket assembly from float bowl.

CAUTION: Do not place vacuum break assembly in carburetor cleaner. Remove choke assembly. If further disassembly is necessary, spread the retaining ears on bracket next to vacuum break assembly, then remove vacuum break from bracket.

CHOKE HOUSING *(Figure 38)*

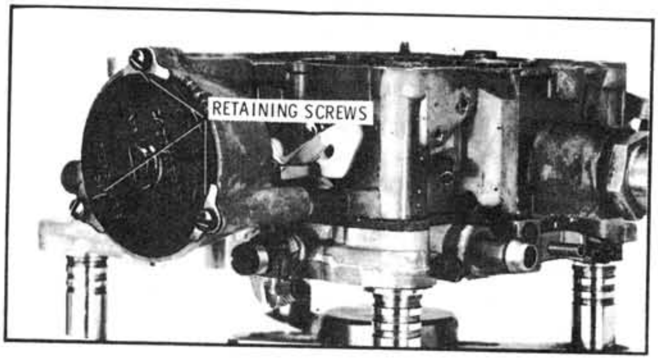


FIGURE 38

3. Remove (3) choke cover screws and retainers (Figure 38). Then pull straight outward and remove cover and coil assembly from choke housing.

NOTE: It is not necessary to remove baffle plate beneath the thermostatic coil. Distortion of the thermostatic coil may result if forced off the center retaining post on the choke cover.

CHOKE HOUSING ATTACHMENT *(Figure 39)*

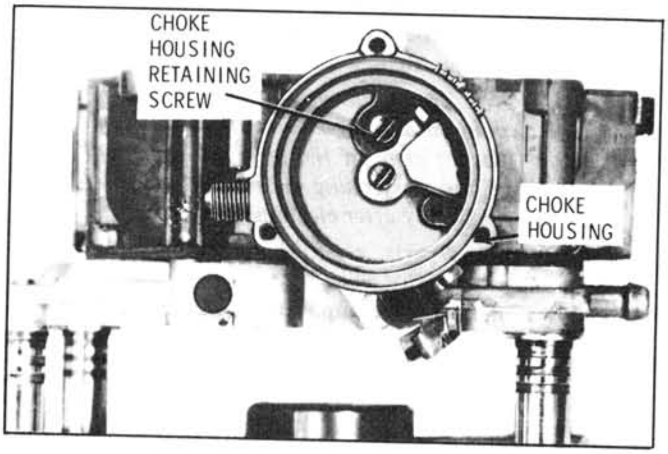


FIGURE 39

4. Remove choke housing assembly from float bowl by removing retaining screw and washer inside the choke housing (Figure 39). The complete choke assembly can be removed from the float bowl by sliding outward. Remove plastic tube seal from choke housing.

CAUTION: Plastic tube seal should not be immersed in carburetor cleaner.

CHOKE COIL LEVER *(Figure 40)*

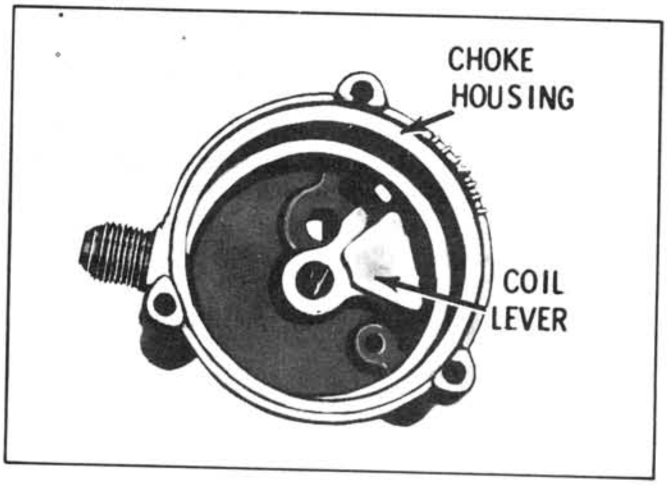


FIGURE 40

5. To disassemble intermediate choke shaft from choke housing, remove coil lever retaining screw at end of shaft inside the choke housing (Figure 40). Then remove thermostatic coil lever from flats on intermediate choke shaft. Remove intermediate choke shaft from the choke housing by sliding outward. The fast idle cam can now be removed from the intermediate choke shaft.

CAUTION: Remove the cup seal from inside choke housing shaft hole if the housing is to be immersed in carburetor cleaner. Also, remove the cup seal from the float bowl plastic insert for bowl cleaning purposes. DO NOT ATTEMPT TO REMOVE PLASTIC INSERT.

DISASSEMBLY OF REMAINING FLOAT BOWL PARTS

1. If used, remove hot idle compensator by removing (2) screws in compensator cover at rear of float bowl. Remove cover, hot idle compensator and "O" ring seal in bowl cavity recess beneath compensator.

   NOTE: Remove hot idle compensator and cork "O" ring from top of float bowl on those models having the compensator located adjacent to pump well area.

2. Remove lower choke lever from inside float bowl cavity by inverting bowl.

3. Remove screws securing idle stop solenoid bracket (if used) to float bowl and remove solenoid and bracket assembly.

   CAUTION: The idle stop solenoid should not be immersed in any type of carburetor cleaner and should always be removed before complete overhaul.

   NOTE: If solenoid replacement is necessary, bend back lockwasher retaining ears and remove retaining nut.

4. Remove fuel inlet filter nut, gasket, filter, and spring. Some models use a filter screen with no pressure relief spring. Consult the parts list for each model for proper parts application.
5. Invert float bowl-throttle body assembly and carefully place on clean flat surface. Remove attaching screws and remove throttle body from float bowl.

   NOTE: Some early models use a center screw and lockwasher (See Figure 41) in throttle body.

6. Remove throttle body to bowl insulator gasket.

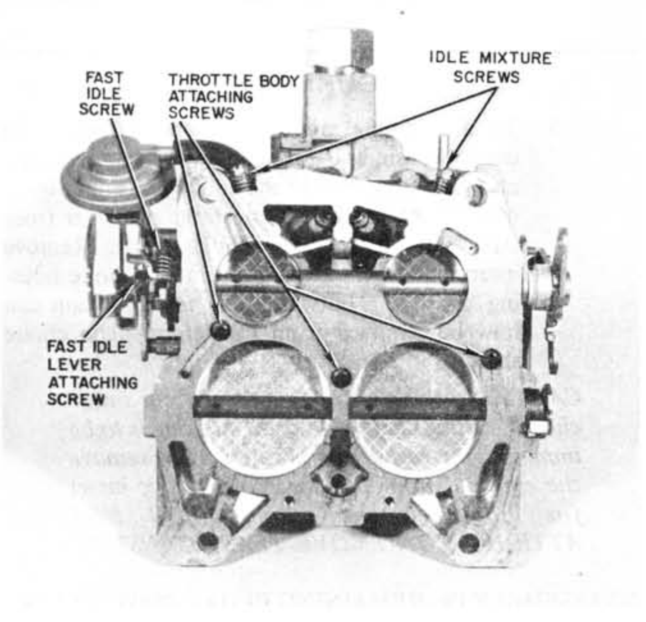


FIGURE 41

THROTTLE BODY DISASSEMBLY – (Figure 41)

NOTE: Place throttle body assembly on carburetor holding fixture to protect throttle valves. Extreme care must be taken to avoid damaging throttle valves.

1. Remove pump rod from throttle lever by rotating rod out of primary throttle lever.
2. DO NOT REMOVE idle mixture limiter caps, if equipped, unless it is necessary to replace the mixture needles or normal soaking and air pressure fails to clean the idle passages. If the idle mixture needles are removed, readjust the idle mixture per recommended instructions furnished by the vehicle manufacturer.

   IMPORTANT: Before removing the idle mixture needle, it is suggested count the number of turns to bottom the old mixture needle. Then, when installing a new needle, lightly bottom the new needle and then back off the number of turns it took to bottom the old needle. Proceed to adjust needles to final idle mixture following vehicle manufacturer's procedures and specifications noted in Service Manual.

3. Remove idle mixture needles and springs, if required.
4. The fast idle lever and fast idle cam follower lever can be removed for replacement by removing attaching screw in end of primary throttle shaft.

   NOTE: Some models have a torsion spring which ties the two levers together. Make sure to check spring location for ease in reassembly.

   CAUTION: No further disassembly of the throttle body is required or desirable. Under no circumstances should the plug at the front of the throttle body on certain emission control carburetors be removed to adjust the A.P.T. screw behind it. The A.P.T. screw is factory set for emission control and should not be readjusted in the field. A new throttle body should be installed if any damage to the existing throttle body is encountered. Service throttle bodies are available only as complete assemblies. A.P.T. adjustment instructions are included in the service package.

CLEANING AND INSPECTION OF PARTS

1. Thoroughly clean carburetor castings and metal parts in an approved carburetor cleaner, such as Carbon X (X-55) or its equivalent.

   CAUTION: The following should NOT be immersed in carburetor cleaner; However, the delrin (plastic) cam on the air valve shaft will withstand normal cleaning in carburetor cleaner (Rinse thoroughly after cleaning.):

   a. Any rubber parts, plastic parts, diaphragms, pump plunger.
   b. Metal and plastic vacuum break assemblies.
   c. Choke housing plastic tube seal (4MC models).
   d. Choke coil and cover assembly (4MC models).
   e. Intermediate choke lever shaft cup seal recessed in float bowl plastic insert (4MC models).

   NOTE: DO NOT ATTEMPT TO REMOVE PLASTIC INSERT.

f. If choke housing is to be immersed in carburetor cleaner, remove the cup seal from inside the choke housing shaft hole (4MC models).
g. Fuel filter assembly.
h. Idle stop solenoid, vacuum actuator, C.E.C. solenoid.

2. Blow out all passages in castings with compressed air. Do not pass drills or wire through jets or passages.
3. Inspect upper and lower surface of carburetor castings for damage.
4. Examine fuel inlet needle and seat for wear. Replace, if necessary, with new needle and seat assembly. Be careful not to bend needle pull clip.
5. Remove production (black) plastic idle mixture needle limiter caps, if used. Remove idle mixture needles and inspect for ridges, burrs, or being bent. Install idle mixture needles and springs until needles are lightly seated. Back out mixture needles specified number of turns as an initial adjustment.

   NOTE: Final idle mixture and idle speed settings should be made on the car following the vehicle manufacturer's procedures and specifications.
6. Clean or replace fuel inlet filter or screen.
7. Inspect holes in levers for excessive wear or out-of-round conditions. If worn, levers should be replaced.
8. Examine fast idle cam for wear or damage.
9. Check throttle levers and valves for binds or other damage.
10. Check air valve for binding conditions. If air valve is damaged, the air horn assembly must be replaced. A torsion spring kit is available for repairs to the air valve closing spring. A new plastic secondary metering rod cam is included in the kit.
11. Inspect metering rods and jets for wear or damage.
12. Inspect float assembly for bent float arms, or damaged float. Check density of material in the float; if spongy or soggy, replace float.
13. Check all diaphragms for possible ruptures or leaks.
14. Clean plastic parts only in stoddard solvent or kerosene – never gasoline.

ASSEMBLY AND ADJUSTMENT PROCEDURES

THROTTLE BODY ASSEMBLY – (Figure 41)

1. Install fast idle cam follower, fast idle lever on end of primary throttle shaft. Install torsion spring (where used) and retaining screw in end of shaft. Tighten securely. (See Figure 41, page 26)
2. If removed for cleaning, install the idle mixture needles and springs until lightly seated. Then, back out the mixture needles number of turns counted at time of disassembly (See step 2, page 26) as a preliminary idle mixture adjustment. Final adjustment must be made on the engine using the procedure described by the vehicle manufacturer.

   CAUTION: Do not force the idle mixture needles against the seat or damage will result.
3. Install lower end of pump rod in throttle lever by aligning tang on rod with slot in lever. End of rod should point outwards toward throttle lever.

FLOAT BOWL ASSEMBLY – (Refer to Figures 29, 30, 31, 32, 33, 34, 35, 42)

1. Install new throttle body to bowl insulator gasket making sure the gasket is properly positioned on two locating dowels on bottom of float bowl.
2. Install throttle body on bowl making certain throttle body is properly located over dowels on float bowl. Install throttle body to bowl screws (and lockwashers, if used) and tighten evenly and securely.

   NOTE: If a new (service) throttle body is used, be sure to perform step 1.d, page 30.

   Place carburetor on proper holding fixture (such as BT-3553).
3. Install new fuel inlet filter, spring, new gasket(s), and inlet nut and tighten nut securely (18ft.-lbs.). The filter spring is not used on models that have a fuel strainer.

   CAUTION: Do not tighten the fuel inlet nut beyond specified torque to prevent damage to the nylon gasket.
4. If used, install hot idle compensator "O" ring seal in recess in bowl, then install hot idle compensator. If used, install compensator cover and (2) retaining screws. Tighten securely.

4MV CHOKE ASSEMBLY – (Figure 42)

5. If the vacuum break diaphragm(s) was removed from bracket, slide vacuum break diaphragm between retaining ears and bend ears down slightly to hold securely.

   NOTE: If a second (auxiliary) vacuum break diaphragm is used, the vacuum diaphragm rod must be installed in the vacuum break lever and plunger stem previous to installing the unit on the choke bracket.

   (Early Models) Install vacuum break link (U-bend end) in slot in diaphragm plunger. End of link should be on inside of slot toward choke bracket. Install other end of vacuum break link in hole on vacuum break lever and retain with clip.
6. Install the secondary lockout lever (or idle speed-up lever), if used, on the bearing pin on the float bowl.
7. Install fast idle cam on the choke shaft making sure the cam actuating tang on the intermediate choke shaft lever is located on the underside of the tail of the fast idle cam.

TYPICAL 4MV FLOAT BOWL EXPLODED VIEW *(Fig. 42)*

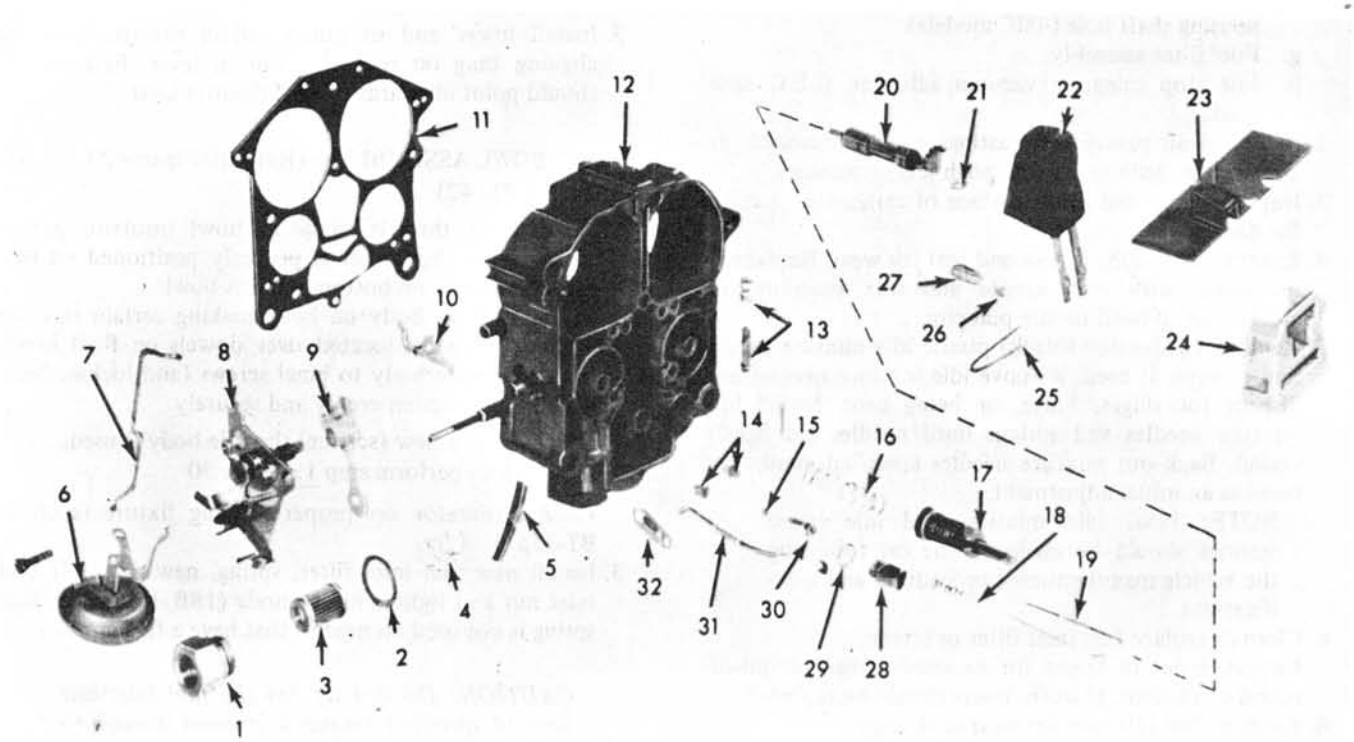


FIGURE 42

1. Fuel Inlet Nut
2. Gasket
3. Fuel Filter
4. Fuel Filter Spring
5. Vacuum Break Hose
6. Vacuum Diaphragm
7. Air Valve Dashpot Rod
8. Choke Control Bracket
9. Fast Idle Cam
10. Secondary Throttle Lockout
11. Throttle Body to Bowl Gasket
12. Float Bowl Assembly
13. Idle Speed Screw
14. Primary Jets
15. Pump Discharge Ball
16. Pump Return Spring
17. Accelerator Pump
18. Power Piston Spring
19. Primary Metering Rods
20. Power Piston
21. Metering Rod Retainer
22. Float
23. Secondary Air Baffle
24. Float Bowl Insert
25. Float Hinge Pin
26. Float Needle Pull Clip
27. Float Needle
28. Float Needle Seat
29. Needle Seat Gasket
30. Discharge Ball Retainer
31. Choke Rod
32. Choke Lever

ASSEMBLY OF CHOKE TO BOWL-4MV – (Figure 42)

8. Connect choke rod (plain end) to choke rod actuating lever – then – holding choke rod with grooved end pointing inward – position choke rod actuating lever in well of float bowl and install choke assembly, engaging shaft with hole in choke actuating lever. Install retaining screw and tighten securely. Remove choke rod from lever for installation later.

   NOTE: Tool BT-6911 can be used to hold the choke lever while performing assembly of choke to bowl.

9. Install vacuum break hose(s) or rubber tee to tube connection on bowl and vacuum break assembly. If two vacuum break diaphragm units are used, the shorter vacuum hose goes to the main or front vacuum break diaphragm unit.

ASSEMBLY OF CHOKE TO BOWL-EARLY 4MC – (Figure 36)

10. Install choke housing using step 8. Make sure small gasket is installed on vacuum passage between choke housing and float bowl. Install retaining screw and tighten securely.

    NOTE: Choke inside baffle, cover and coil can be installed later after inside choke adjustments are made.

CHOKE HOUSING SEALING *(Fig. 43)*

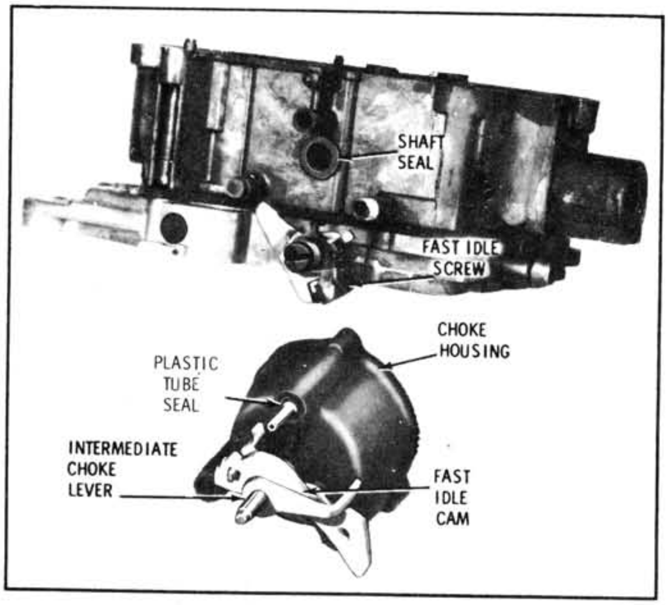


FIGURE 43

ASSEMBLY OF CHOKE TO BOWL-LATE 4MC – (Figure 43)

1. Install new cup seal into plastic insert on side of float bowl for intermediate choke shaft. Lip on cup seal faces outward.
2. Install fast idle cam on the intermediate choke shaft (steps on fast idle cam face downward) (Figure 43).
3. Install new rubber cup seal inside choke housing. Lips on seal should face towards carburetor bowl.
4. Carefully install fast idle cam and intermediate choke shaft assembly through seal in choke housing; then install thermostatic coil lever onto flats on intermediate choke shaft. Inside thermostatic choke coil lever is properly aligned when both inside and outside levers face towards fuel inlet. Install inside lever retaining screw into end of intermediate choke shaft. Tighten securely.
5. Install lower choke rod lever into cavity in float bowl. Install plastic tube seal into cavity on choke housing before assembling choke housing to bowl. Install choke housing to bowl sliding intermediate choke shaft into lower choke lever (Figure 35).

   NOTE: Tool BT-6911 can be used to hold the lower choke lever in correct position while installing the choke housing (Figure 35).
6. Install choke housing retaining screw and washer and tighten securely.

   NOTE: The intermediate choke shaft lever and fast idle cam are in correct relation when the tang on lever is beneath the fast idle cam. Do not install choke cover and coil assembly until inside coil lever is adjusted. (See Adjustment Procedures Bulletin 9D-5A of the Delco Carburetor Parts and Service Manual 9X).

COMPLETION OF FLOAT BOWL ASSEMBLY-ALL MODELS – (Figure 34)

1. Install baffle in secondary side of float bowl with notches toward top of bowl. Make sure baffle is seated and top is flush with casting surface.
2. Install pump discharge check ball and retainer in passage next to pump well. Tighten retainer securely.
3. Install primary main metering jets. Tighten securely.

DIAPHRAGM TYPE NEEDLE INSTALLATION – (Refer to Figures 32 and 33)

4. Install float needle and diaphragm assembly, making sure diaphragm is properly seated (Figure 44).

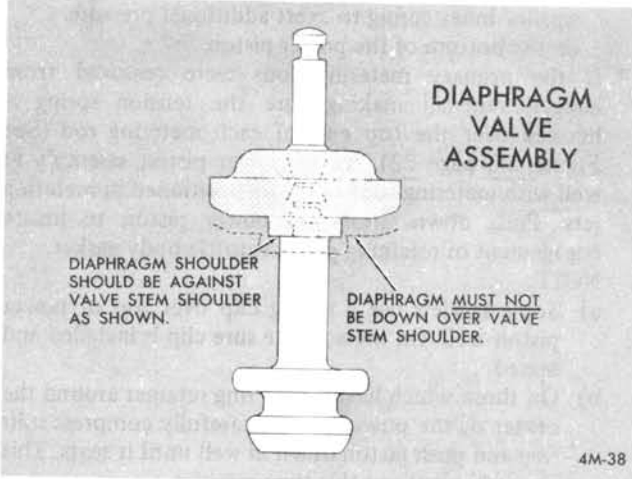


FIGURE 44

5. Install diaphragm retainer and two screws. Tighten securely.
6. Install float needle pull clip on float needle stem using needle nosed pliers. Pull clip is properly positioned with open end towards front of bowl.
7. Install float by sliding float lever into loop in pull clip. With lever in clip, hold float assembly at toe and install float hinge pin from pump well side. *Be careful not to bend needle pull clip.*

   NOTE: If desired, certain Quadrajet models may be converted from the diaphragm type needle and seat to the standard or conventional float needle and seat by installing a service modification kit. (Refer to 9C Parts Section of the Delco 9X Manual for specific applications and part number.)

INSTALLATION OF STANDARD FLOAT NEEDLE AND SEAT – (Refer to Figures 32 and 34, page 23.)

8. Install float needle seat and gasket. Tighten securely.

NOTE: To make adjustment easier, bend float arm upward at notch in arm before assembly.

9. Install float by sliding float arm under pull clip from front to back. With float arm in pull clip, hold float assembly at toe and install float hinge pin.
Needle pull clip should be installed so that it hooks over top of float arm as shown in Figure 2.
NOTE: Do not place pull clip through small holes in top of float arm – severe flooding will result.
10. Carefully adjust float level following procedures and specifications listed in the "D" Section of the Delco Carburetor Parts and Service Manual (9X).
11. Install power piston spring in power piston well.
NOTE: If two power piston springs are used, the smaller spring seats in the center of the piston and bottoms on the float bowl casting. The larger diameter spring surrounds the smaller inner spring to exert additional pressure on the bottom of the power piston.
12. If the primary metering rods were removed from hanger, reinstall making sure the tension spring is hooked over the top end of each metering rod (See Figure 31, page 22). Install power piston assembly in well with metering rods carefully positioned in metering jets. Press down firmly on power piston to insure engagement of retaining pin in throttle body gasket.
NOTE:
a) Some models use a spring clip over top of power piston well. On these, make sure clip is installed and seated.
b) On those which have a split ring retainer around the center of the power piston, carefully compress split ring and push piston down in well until it seats. This properly positions this type retainer.
c) On late models which use the plastic retainer on the top of the power piston, install power piston in well and force plastic retainer into cavity until the edge is flush with top of casting.
NOTE: It may be necessary to tap the plastic retainer lightly in place with a hammer and drift. Make sure the plastic retainer is flush with the top of the float bowl casting.
13. Install plastic filler block over float needle; press downward until seated.
14. Install pump return spring into pump well.
15. Install air horn gasket around primary metering rods and piston. Position gaskets over two dowels on secondary side of float bowl.
16. Install pump plunger in pump well.

AIR HORN ASSEMBLY – (Refer to Figure 28, Page 21)

1. Install the following – if removed:
a) Choke shaft, choke valve and (2) attaching screws. Tighten screws securely and stake securely in place.
b) Dashpot plunger rod through air horn and attach to air valve dashpot lever. Make sure clip retainer is installed (where used).
c) Air valve lockout lever (where used) – retain with roll pin. Make sure lever is free from binds.
d) Normally, the air valve and shaft do not have to be removed from the air horn for cleaning purposes. A repair kit is available which includes a new plastic cam, an air valve torsion spring, and retaining pin. Complete instructions are included also in the kit for installation. (Refer to the "C" Parts Bulletin in the Delco Carburetor Parts and Service Manual for part number application.)
If it was necessary to replace the air valve closing spring and the air valve shaft was removed, install air valve shaft, plastic cam, air valves and four (4) attaching screws. Center air valves, tighten screws and stake in place. *Make sure air valve operates freely with no binds.* Then install air valve closing spring in air horn cavity. Insert spring pin, adjust air valve closing spring as outlined under adjustment procedures.

NOTE: Whenever a service replacement throttle body is to be installed on carburetors (except 4MV Pontiac) equipped for exhaust emission control, the following adjustment procedures must be performed carefully before installing air horn.

a. Seat the power piston assembly by pushing down on top of metering rod hanger.
b. At the front of the throttle body, recessed in the center, an adjusting screw is visible. The screw is plugged off except on service throttle bodies.
c. Back off the screw sufficiently to seat the power piston in the float bowl.
d. Making sure the power piston assembly is completely down, turn the adjusting screw inward until it comes in contact with the power piston through a lever arrangement (concealed in the throttle body) and resistance to any further inward movement of the screw is noticed. Any further movement of the screw will begin to raise the power piston and can be felt.
e. From this point, turn the adjusting screw inward the exact specified number of turns. This completes the adjustment. Install the Welch plug, furnished with the throttle body, over the adjusting screw and stake in place to conceal the screw.

ASSEMBLY OF AIR HORN TO BOWL

1. Carefully place air horn assembly on float bowl, aligning vent tubes and accelerating well tubes with proper holes in air horn gasket. On 4MV and 4MC models using a "clipless" vacuum break rod, install vacuum break rod into main vacuum break diaphragm plunger and into air valve lever on air horn before the air horn is lowered onto the float bowl. Position pump plunger stem into hole in air horn and dashpot (where

used) in well in float bowl. Gently lower air horn assembly on gasket and locating dowels until properly seated.

2. Install (9) air horn to float bowl attaching screws. (2) long screws go through secondary side of air horn at rear and (2) countersunk screws inside primary bores next to venturi. Install air valve lockout guard, if used, under intermediate length screw (#4 in Figure 45) and secure with self-tapping screw. If used, install air horn baffle (secondary side) beneath #3 and #4 air horn screws. Tighten all screws evenly and securely – in sequence as shown in Figure 45.

   NOTE: Do not install air horn screw #5 on 4MV models using vacuum operated vent switch valve until cover is installed (See step 5).

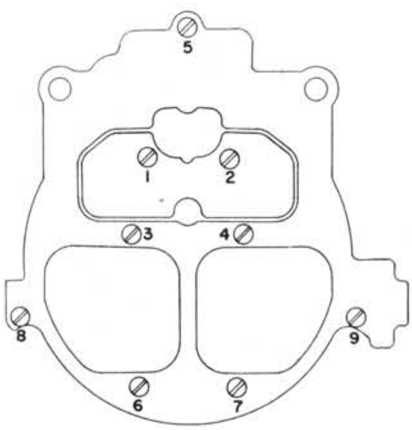


FIGURE 45

3. Connect choke rod into lower choke lever inside bowl cavity; then install upper end of rod into upper choke lever and retain rod in upper lever with clip.
   On 4MC models, connect choke rod into lower choke lever inside bowl cavity; then install upper end of rod into upper choke lever by aligning squirt on rod with hole in lever and retain the upper choke lever to the end of the choke shaft with attaching screw, making sure tang on upper choke lever is beneath tang on air valve lockout lever. Tighten screw securely.

   NOTE: Make sure that the flats on the end of the choke shaft align with flats in the choke lever.

4. Install idle vent valve on locating pins after engaging with actuating wire. Install attaching screw and tighten securely.

   NOTE: Some later models use a thermostatically-controlled idle vent valve. On these, install the thermostatic bi-metal strip first then the spring arm on top of the bi-metal strip. Then install attaching screw. Install dust cover under air horn screw.

5. On models using a vacuum operated vent switch valve, carefully install diaphragm and stem in diaphragm retainer; then install diaphragm and retainer in air horn, making sure diaphragm is not wrinkled or torn. Lightly tap diaphragm retainer into air horn assembly until fully seated.
   Install diaphragm spring over diaphragm stem and, with stem raised, compress spring while sliding vent valve assembly under slot in diaphragm stem.

   NOTE: Part number and "RP" on vent valve face upward. Install vent valve cover gasket, cover, and screw. Align cover with holes in air horn and tighten screw securely. Install longer air horn screw in vent valve cover and air horn and tighten screw securely. Install pump override lever on diaphragm stem and retain with small screw. Tighten screw securely.

6. Install (2) secondary metering rods into the secondary metering rod hanger (upper ends of rod point towards each other). Install secondary metering rod holder onto air valve cam follower. Install retaining screw and tighten securely. Work air valves up and down several times to make sure they are free in all positions.

7. Connect pump lever to upper end of pump rod. If two-hole pump lever is used, make sure pump rod is in correct hole – see specifications. Place pump lever on air horn casting. Align hole in pump lever with hole in air horn casting and push pump lever roll pin back through casting until end of pin is flush with casting.

   NOTE: If the "clipless" pump design is not used, install pump rod in pump lever and retain with clip.

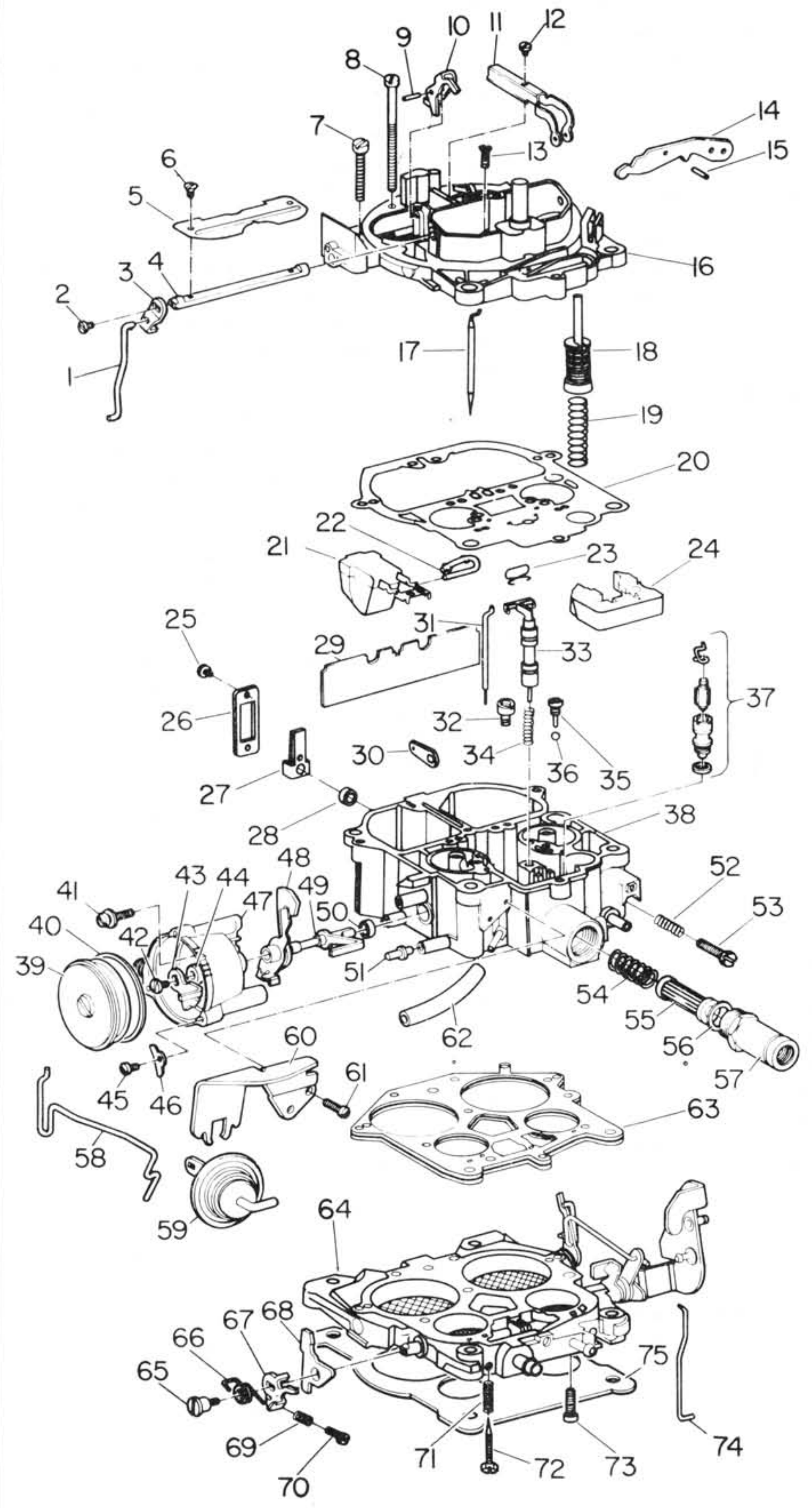
8. After the inside thermostatic coil lever is adjusted, the thermostatic coil, cover and gasket assembly should be installed and rotated counterclockwise until the choke valve just closes. At this point, the index cover should be set as specified.

   NOTE: On 4MC models, the thermostatic coil lever inside the choke housing has to be indexed properly before installing the choke thermostatic coil, cover, baffle, and gasket assembly. (See Adjustment Procedures Bulletin 9D-5A in the Delco carburetor 9X manual.)

9. On models using a C.E.C. valve or idle stop solenoid, install attaching screw(s) securing C.E.C. or idle stop solenoid bracket to float bowl. Tighten screw(s) securely.

   NOTE: If the C.E.C. valve or idle stop solenoid was removed from the bracket, refer to steps 5 and 6, pages 20 and 21, reversing order for installation of the solenoid to the bracket.

TYPICAL EXPLODED VIEW – MODEL 4MC QUADRAJET



PARTS

1. Rod - Choke.
2. Screw - Choke lever.
3. Lever - Choke.
4. Shaft - Choke.
5. Valve - Choke.
6. Screw - Choke valve (2).
7. Screw - air horn (short).
8. Screw - air horn (long).
9. Roll Pin - air valve lockout lever.
10. Lever - air valve lockout.
11. Holder - Secondary metering rod.
12. Screw - Secondary metering rod holder.
13. Screw - Air horn (countersunk) (2).
14. Lever - Pump actuating.
15. Roll Pin - Pump lever.
16. Air Horn Assembly.
17. Metering Rod - Secondary (2).
18. Pump Assembly.
19. Spring - Pump Return.
20. Gasket - Air Horn.
21. Float Assembly
22. Hinge Pin - float assembly.
23. Spring - Primary metering rod retainer.
24. Insert - Float bowl.
25. Screw - Idle Compensator Cover (2).
26. Cover - Idle Compensator.
27. Idle Compensator.
28. Seal - Idle compensator.
29. Baffle - Float bowl (secondary bores).
30. Lever - Choke rod (lower end).
31. Metering Rod - Primary (2).
32. Jet - Primary main metering (2).
33. Power Piston Assembly.
34. Spring - Power Piston.
35. Retainer - Pump discharge ball.
36. Ball - Pump discharge.
37. Needle and seat assembly, gasket, and pull clip.
38. Float Bowl Assembly.
39. Thermostatic Cover and coil assembly.
40. Gasket - Thermostatic cover.
41. Screw - Choke housing to bowl.
42. Screw - Choke coil lever.
43. Lever - Choke coil.
44. Seal - Intermediate choke shaft.
45. Screw - Stat cover (3).
46. Retainer - Stat cover (3).
47. Choke Housing.
48. Cam - Fast idle.
49. Lever Assembly - Inter. choke shaft.
50. Seal - Intermediate choke shaft.
51. Seal - Choke housing to bowl.
52. Spring - Idle adjust screw.
53. Screw - Idle adjusting.
54. Spring - Filter relief.
55. Filter - Fuel inlet.
56. Gasket - Filter nut.
57. Filter Nut - Fuel inlet.
58. Rod - Vacuum break.
59. Vacuum Break Diaphragm Assembly.
60. Bracket - Vacuum break control.
61. Screw - Bracket attaching.
62. Hose - Vacuum control.
63. Gasket - Throttle body to bowl.
64. Throttle Body Assembly.
65. Screw - Cam and fast idle levers.
66. Spring - Fast idle lever.
67. Lever - Fast idle.
68. Lever - Cam follower.
69. Spring - Fast idle screw.
70. Screw - Fast idle adjusting.
71. Spring - Idle mixture needle (2).
72. Needle - Idle mixture (2).
73. Screw - Throttle body to bowl attaching.
74. Rod - Pump.
75. Gasket - Flange (carburetor to manifold).

ADJUSTMENT PROCEDURES AND SPECIFICATIONS

Refer to the Delco Carburetor 9X Manual "C" Section for Replacement Parts and "D" Section for Trouble Shooting, Adjustment Procedures and Specifications, for each carburetor model. The adjustments should be performed in sequence listed as applicable to each carburetor model.

The 9X Manual, Carburetor Tools and Gauges, are available through United Delco Suppliers.

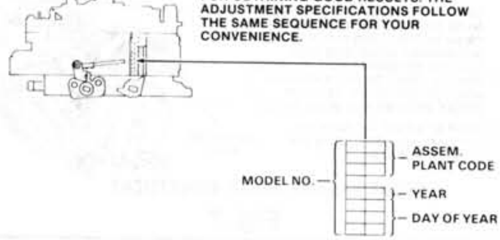
Delco Carburetor

ADJUSTMENT PROCEDURES
MODELS M4MC-M4ME

Bulletin: 9D-5A
Date: April 1982

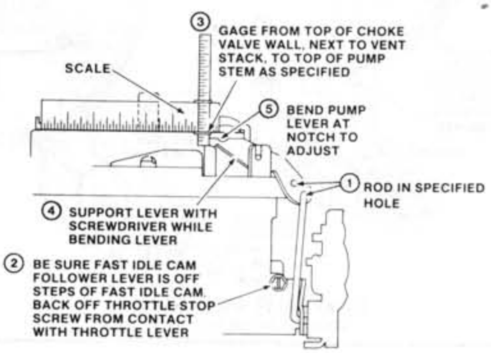
File after Bulletin 9D-5

THIS SET OF ADJUSTMENT PROCEDURES IS ARRANGED IN A LOGICAL SEQUENCE FOR OBTAINING GOOD RESULTS. THE ADJUSTMENT SPECIFICATIONS FOLLOW THE SAME SEQUENCE FOR YOUR CONVENIENCE.



CARBURETOR IDENTIFICATION "4M" TYPE (TYPICAL)

Fig. 1



PUMP ADJUSTMENT

Fig. 3

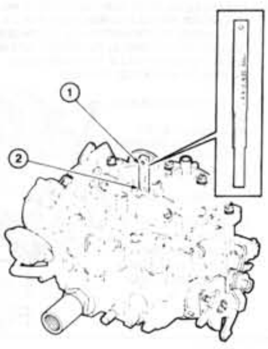
① WITH ENGINE RUNNING AT IDLE, CHOKE WIDE-OPEN, INSERT GAGE IN VENT SLOT OR VENT HOLE (NEXT TO AIR CLEANER STUD) AND ALLOW IT TO FLOAT FREELY.

NOTICE: DO NOT PRESS DOWN ON GAGE. FLOODING OR FLOAT DAMAGE COULD RESULT.

② OBSERVE AT EYE LEVEL THE MARK ON GAGE THAT LINES UP WITH TOP OF CASTING AT VENT SLOT OR VENT HOLE. SETTING SHOULD BE WITHIN ±1/16" OF SPECIFIED FLOAT LEVEL SETTING.

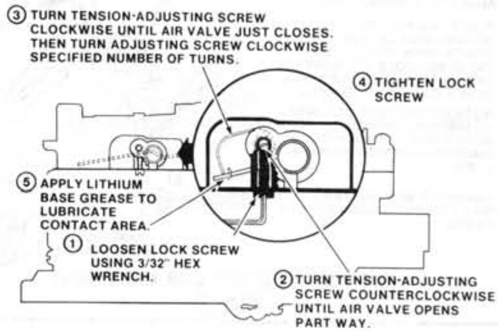
INCORRECT FUEL PRESSURE WILL ADVERSELY AFFECT FUEL LEVEL

③ IF NECESSARY, REMOVE AIR HORN AND ADJUST FLOAT LEVEL TO SPECIFICATION.



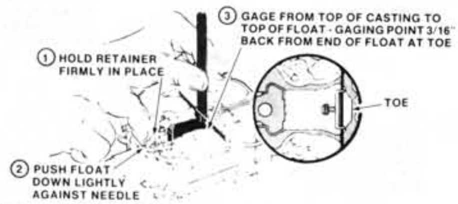
FLOAT GAGE - EXTERNAL CHECKING PROCEDURE

Fig. 2A



AIR VALVE SPRING ADJUSTMENT

Fig. 4

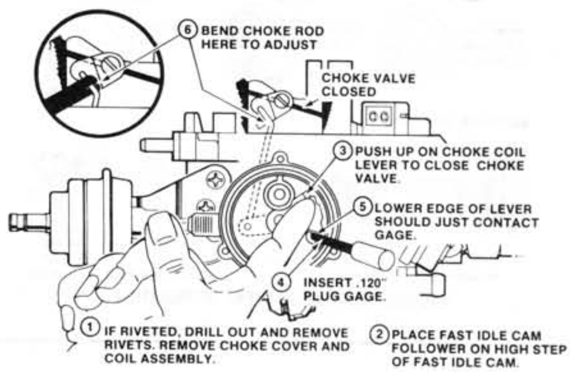


④ IF FLOAT LEVEL VARIES OVER ±1/16" FROM SPECIFICATIONS.
FOR LEVEL TOO HIGH, HOLD RETAINER IN PLACE AND PUSH DOWN ON CENTER OF FLOAT PONTOON TO OBTAIN CORRECT SETTING.
FOR LEVEL TOO LOW,

- A IF M4M OR M2M CARBURETOR, REMOVE POWER PISTON, METERING RODS, PLASTIC FILLER BLOCK. REMOVE FLOAT. BEND FLOAT ARM UPWARD TO ADJUST. REINSTALL PARTS. VISUALLY CHECK FLOAT ALIGNMENT.
- B IF E4M OR E2M REMOVE METERING RODS, SOLENOID CONNECTOR SCREW. COUNT, AND RECORD FOR REASSEMBLY, THE NUMBER OF TURNS NEEDED TO LIGHTLY BOTTOM LEAN MIXTURE SCREW. BACK OUT AND REMOVE SCREW, SOLENOID, CONNECTOR. REMOVE FLOAT AND FLOAT ARM UPWARD TO ADJUST. REINSTALL PARTS, RESET LEAN MIXTURE SCREW. VISUALLY CHECK FLOAT ALIGNMENT.

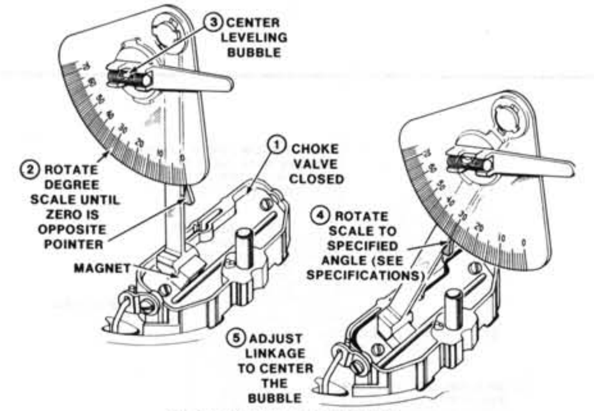
FLOAT ADJUSTMENT

Fig. 2B



CHOKE COIL LEVER ADJUSTMENT

Fig. 5



CHOKE VALVE ANGLE GAGE
TOOL J-26701 OR BT-7704

① ATTACH RUBBER BAND TO GREEN TANG OF INTERMEDIATE CHOKE SHAFT

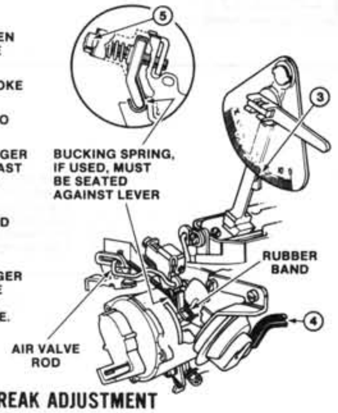
② OPEN THROTTLE TO ALLOW CHOKE VALVE TO CLOSE

③ SET UP ANGLE GAGE AND SET TO SPECIFICATION

④ RETRACT VACUUM BREAK PLUNGER USING VACUUM SOURCE, AT LEAST 18" HG. PLUG AIR BLEED HOLES WHERE APPLICABLE

ON QUADRAJETS, AIR VALVE ROD MUST NOT RESTRICT PLUNGER FROM RETRACTING FULLY. IF NECESSARY, BEND ROD (SEE ARROW) TO PERMIT FULL PLUNGER TRAVEL. FINAL ROD CLEARANCE MUST BE SET AFTER VACUUM BREAK SETTING HAS BEEN MADE.

⑤ WITH AT LEAST 18" HG STILL APPLIED, ADJUST SCREW TO CENTER BUBBLE



FRONT VACUUM BREAK ADJUSTMENT

Fig. 7

① ATTACH RUBBER BAND TO GREEN TANG OF INTERMEDIATE CHOKE SHAFT

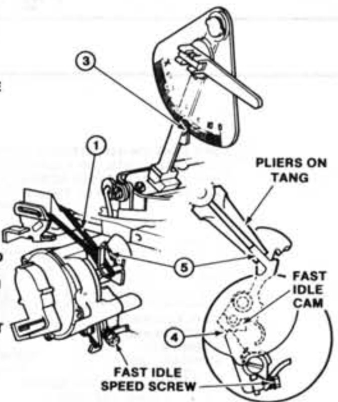
② OPEN THROTTLE TO ALLOW CHOKE VALVE TO CLOSE

③ SET UP ANGLE GAGE AND SET ANGLE TO SPECIFICATIONS

④ PLACE CAM FOLLOWER ON SECOND STEP OF CAM, AGAINST RISE OF HIGH STEP. IF CAM FOLLOWER DOES NOT CONTACT CAM, TURN IN FAST IDLE SPEED SCREW ADDITIONAL TURN(S).

NOTICE: FINAL FAST IDLE SPEED ADJUSTMENT MUST BE PERFORMED ACCORDING TO UNDER-HOOD EMISSION CONTROL INFORMATION LABEL.

⑤ ADJUST BY BENDING TANG OF FAST IDLE CAM UNTIL BUBBLE IS CENTERED.



CHOKE ROD - FAST IDLE CAM ADJUSTMENT
Fig. 6

① ATTACH RUBBER BAND TO GREEN TANG OF INTERMEDIATE CHOKE SHAFT.

② OPEN THROTTLE TO ALLOW CHOKE VALVE TO CLOSE.

③ SET UP ANGLE GAGE AND SET ANGLE TO SPECIFICATION.

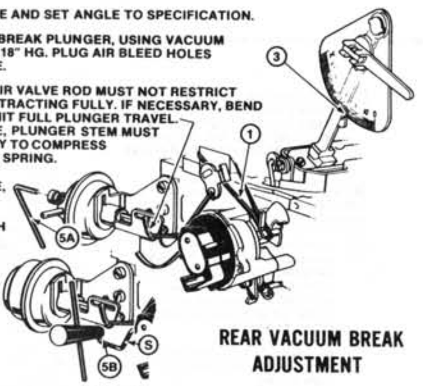
④ RETRACT VACUUM BREAK PLUNGER, USING VACUUM SOURCE, AT LEAST 18" HG. PLUG AIR BLEED HOLES WHERE APPLICABLE.

④A ON QUADRAJETS, AIR VALVE ROD MUST NOT RESTRICT PLUNGER FROM RETRACTING FULLY. IF NECESSARY, BEND ROD HERE TO PERMIT FULL PLUNGER TRAVEL. WHERE APPLICABLE, PLUNGER STEM MUST BE EXTENDED FULLY TO COMPRESS PLUNGER BUCKING SPRING.

⑤ TO CENTER BUBBLE, EITHER:
A. ADJUST WITH 1/8" HEX WRENCH (VACUUM STILL APPLIED)

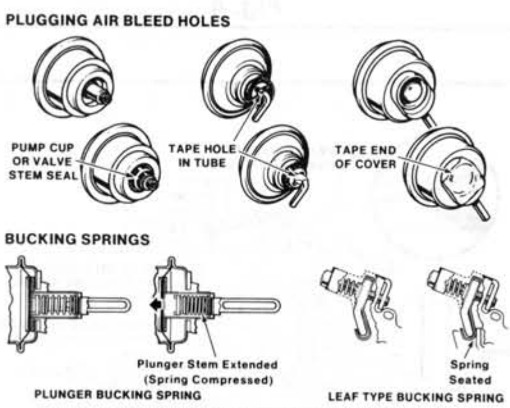
-OR-

B. SUPPORT AT "S" AND BEND VACUUM BREAK ROD (VACUUM STILL APPLIED)

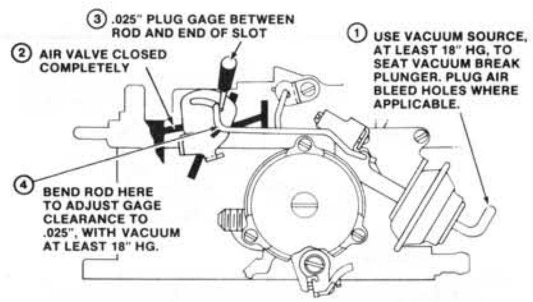


REAR VACUUM BREAK ADJUSTMENT

Fig. 8

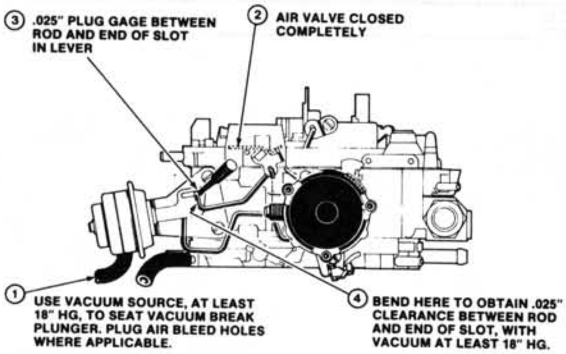


VACUUM BREAK ADJUSTMENT INFORMATION



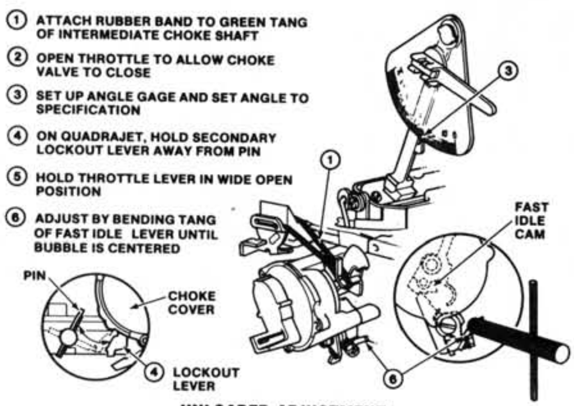
AIR VALVE ROD ADJUSTMENT - FRONT

Fig. 9A



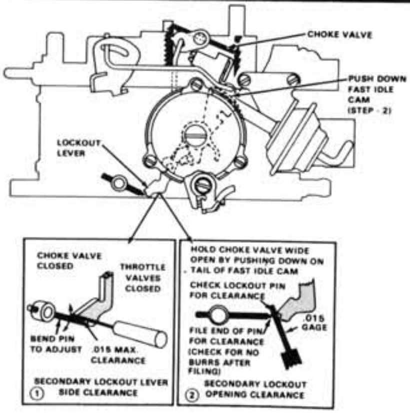
AIR VALVE ROD ADJUSTMENT - REAR

Fig. 9B



UNLOADER ADJUSTMENT

Fig. 10



SECONDARY LOCKOUT ADJUSTMENT

Fig. 11

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ADJUSTMENT SPECIFICATIONS – QUADRAJET M4MC, M4ME

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING	FIG. 3 PUMP SETTING	FIG. 4 AIR VALVE SPRING	FIG. 5 CHOKE COIL LEVER	FIG. 6 CHOKE ROD CAM	FIG. 7 VAC. BREAK FRONT	FIG. 8 VAC. BREAK REAR	FIG. 9 AIR VALVE ROD	FIG. 10 UNLOADER
17080201	15/32	INNER 9/32	7/8	.120	46°	—	23°	.025	42°
17080202	7/16	INNER 1/4	7/8	.120	20°	27°	—	.025	38°
17080204	7/16	INNER 1/4	7/8	.120	20°	27°	—	.025	38°
17080205	15/32	INNER 9/32	7/8	.120	46°	—	23°	.025	42°
17080206	15/32	INNER 9/32	7/8	.120	46°	—	23°	.025	42°
17080207	7/16	INNER 1/4	7/8	.120	20°	27°	—	.025	38°
17080212	3/8	INNER 9/32	3/4	.120	46°	24°	30°	.025	40°
17080213	3/8	INNER 9/32	1	.120	37°	23°	30°	.025	40°
17080215	3/8	INNER 9/32	1	.120	37°	23°	30°	.025	40°
17080224	15/32	INNER 9/32	7/8	.120	46°	—	23°	.025	42°
17080226	15/32	INNER 9/32	7/8	.120	46°	—	23°	.025	42°
17080227	15/32	INNER 9/32	7/8	.120	46°	—	23°	.025	42°

Secondary Lockout –.015 Fig. 11

REFER TO EMISSION CONTROL INFORMATION LABEL FOR
ENGINE ADJUSTMENT PROCEDURES AND
TUNE-UP SPECIFICATIONS

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Delco Carburetor

ADJUSTMENT SPECIFICATIONS – QUADRAJET M4MC, M4ME

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING	FIG. 3 PUMP SETTING	FIG. 4 AIR VALVE SPRING	FIG. 5 CHOKE COIL LEVER	FIG. 6 CHOKE ROD CAM	FIG. 7 VAC. BREAK FRONT	FIG. 8 VAC. BREAK REAR	FIG. 9 AIR VALVE ROD	FIG. 10 UNLOADER
17080228	13/32	INNER 9/32	1	.120	20^{o}	30^{o}	—	.025	38^{o}
17080229	3/8	INNER 9/32	1	.120	37^{o}	23^{o}	30^{o}	.025	40^{o}
17080230	13/32	INNER 9/32	1/2	.120	16^{o}	26^{o}	24^{o}	.025	35^{o}
17080231	13/32	INNER 9/32	1/2	.120	16^{o}	28^{o}	28^{o}	.025	35^{o}
17080240	3/16	INNER 9/32	9/16	.120	14.5^{o}	16^{o}	16^{o}	.025	30^{o}
17080241	7/16	INNER 9/32	3/4	.120	18^{o}	23^{o}	20.5^{o}	.025	38^{o}
17080242	13/32	INNER 9/32	9/16	.120	14.5^{o}	15^{o}	18^{o}	.025	35^{o}
17080243	3/16	INNER 9/32	9/16	.120	14.5^{o}	16^{o}	16^{o}	.025	30^{o}
17080244	5/16	INNER 9/32	5/8	.120	24.5^{o}	18^{o}	14^{o}	.025	38^{o}
17080247	13/32	INNER 9/32	9/16	.120	14.5^{o}	16^{o}	15^{o}	.025	35^{o}
17080249	7/16	INNER 9/32	3/4	.120	18^{o}	23^{o}	20.5^{o}	.025	38^{o}
17080250	13/32	INNER 9/32	1/2	.120	17^{o}	26^{o}	34^{o}	.025	35^{o}

Secondary Lockout –.015 Fig. 11

REFER TO EMISSION CONTROL INFORMATION LABEL FOR
ENGINE ADJUSTMENT PROCEDURES AND
TUNE-UP SPECIFICATIONS

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ADJUSTMENT SPECIFICATIONS — QUADRAJET M4MC, M4ME

FIG. 1	FIG. 2	FIG. 3	FIG. 4	FIG. 5	FIG. 6	FIG. 7	FIG. 8	FIG. 9	FIG. 10
CARB. NUMBER	FLOAT SETTING	PUMP SETTING	AIR VALVE SPRING	CHOKE COIL LEVER	CHOKE ROD CAM	VAC. BREAK FRONT	VAC. BREAK REAR	AIR VALVE ROD	UNLOADER
17080251	13/32	INNER 9/32	1/2	.120	17°	26°	34°	.025	35°
17080252	13/32	INNER 9/32	1/2	.120	17°	26°	34°	.025	35°
17080253	13/32	INNER 9/32	1/2	.120	17°	26°	34°	.025	35°
17080259	13/32	INNER 9/32	1/2	.120	17°	26°	34°	.025	35°
17080260	13/32	INNER 9/32	1/2	.120	17°	26°	34°	.025	35°
17080270	7/16	OUTER 3/8	5/8	.120	14.5°	25°	32.5°	.025	33°
17080271	7/16	OUTER 3/8	5/8	.120	20°	25°	34°	.025	33°
17080272	7/16	OUTER 3/8	5/8	.120	14.5°	25°	32.5°	.025	33°
17080274	15/32	INNER 5/16	5/8	.120	16°	20°	28°	.025	33°
17080282	7/16	OUTER 11/32	7/8	.120	20°	25°	—	.025	38°
17080284	7/16	OUTER 11/32	7/8	.120	20°	25°	—	.025	38°
17080290	15/32	INNER 9/32	7/8	.120	46°	—	26°	.025	42°

Secondary Lockout —.015 Fig. 11

REFER TO EMISSION CONTROL INFORMATION LABEL FOR ENGINE ADJUSTMENT PROCEDURES AND TUNE-UP SPECIFICATIONS

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ADJUSTMENT SPECIFICATIONS – QUADRAJET M4MC, M4ME

FIG. 1	FIG. 2	FIG. 3	FIG. 4	FIG. 5	FIG. 6	FIG. 7	FIG. 8	FIG. 9	FIG. 10
CARB. NUMBER	FLOAT SETTING	PUMP SETTING	AIR VALVE SPRING	CHOKE COIL LEVER	CHOKE ROD CAM	VAC. BREAK FRONT	VAC. BREAK REAR	AIR VALVE ROD	UNLOADER
17080291	15/32	INNER 9/32	7/8	.120	46°	––	26°	.025	42°
17080292	15/32	INNER 9/32	7/8	.120	46°	––	26°	.025	42°
17080295	15/32	INNER 9/32	7/8	.120	46°	––	23°	.025	42°
17080297	15/32	INNER 9/32	7/8	.120	46°	––	23°	.025	42°
17080298	3/8	INNER 9/32	1	.120	37°	23°	30°	.025	40°
17080299	3/8	INNER 9/32	1	.120	37°	23°	30°	.025	40°
17080503	15/32	INNER 9/32	7/8	.120	46°	––	26°	.025	42°
17080506	15/32	INNER 9/32	7/8	.120	46°	––	26°	.025	42°
17080507	3/8	INNER 9/32	1	.120	37°	23°	30°	.025	40°
17080508	15/32	INNER 9/32	7/8	.120	46°	––	26°	.025	42°
17080511	3/8	INNER 9/32	1	.120	37°	23°	30°	.025	40°
17080512	3/8	INNER 9/32	3/4	.120	46°	24°	30°	.025	40°

Secondary Lockout –.015 Fig. 11

REFER TO EMISSION CONTROL INFORMATION LABEL FOR
ENGINE ADJUSTMENT PROCEDURES AND
TUNE-UP SPECIFICATIONS

Delco Carburetor

ADJUSTMENT SPECIFICATIONS – QUADRAJET M4MC, M4ME

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING	FIG. 3 PUMP SETTING	FIG. 4 AIR VALVE SPRING	FIG. 5 CHOKE COIL LEVER	FIG. 6 CHOKE ROD CAM	FIG. 7 VAC. BREAK FRONT	FIG. 8 VAC. BREAK REAR	FIG. 9 AIR VALVE ROD	FIG. 10 UNLOADER
17080513	3/8	INNER 9/32	1	.120	37°	23°	30°	.025	40°
17080515	3/8	INNER 9/32	1	.120	37°	23°	30°	.025	40°
17080523	15/32	INNER 9/32	7/8	.120	46°	--	23°	.025	42°
17080524	15/32	INNER 9/32	7/8	.120	46°	--	23°	.025	42°
17080525	15/32	INNER 9/32	7/8	.120	46°	--	23°	.025	42°
17080526	15/32	INNER 9/32	7/8	.120	46°	--	23°	.025	42°
17080527	15/32	INNER 9/32	7/8	.120	46°	--	23°	.025	42°
17080528	15/32	INNER 9/32	7/8	.120	46°	--	23°	.025	42°
17080529	3/8	INNER 9/32	1	.120	37°	23°	30°	.025	40°
17081200	13/32	INNER 9/32	7/8	.120	46°	--	23°	.025	42°
17081201	13/32	INNER 9/32	7/8	.120	46°	--	23°	.025	42°
17081205	13/32	INNER 9/32	7/8	.120	46°	--	23°	.025	42°

Secondary Lockout –.015 Fig. 11

REFER TO EMISSION CONTROL INFORMATION LABEL FOR
ENGINE ADJUSTMENT PROCEDURES AND
TUNE-UP SPECIFICATIONS

Delco Carburetor

ADJUSTMENT SPECIFICATIONS – QUADRAJET M4MC, M4ME

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING	FIG. 3 PUMP SETTING	FIG. 4 AIR VALVE SPRING	FIG. 5 CHOKE COIL LEVER	FIG. 6 CHOKE ROD CAM	FIG. 7 VAC. BREAK FRONT	FIG. 8 VAC. BREAK REAR	FIG. 9 AIR VALVE ROD	FIG. 10 UNLOADER
17081206	13/32	INNER 9/32	7/8	.120	46°	––	23°	.025	42°
17081211	13/32	INNER 9/32	7/8	.120	46°	––	23°	.025	42°
17081220	13/32	INNER 9/32	7/8	.120	46°	––	23°	.025	42°
17081226	13/32	INNER 9/32	7/8	.120	46°	––	24°	.025	42°
17081227	13/32	INNER 9/32	7/8	.120	46°	––	24°	.025	42°
17081260	11/32	INNER 9/32	1/2	.120	17°	26°	34°	.025	35°
17081276	15/32	INNER 5/16	5/8	.120	16°	20°	28°	.025	33°
17081282	3/8	INNER 9/32	7/8	.120	20°	25°	––	.025	38°
17081283	3/8	INNER 9/32	7/8	.120	20°	25°	––	.025	38°
17081284	1/2	INNER 9/32	7/8	.120	20°	25°	––	.025	38°
17081285	1/2	INNER 9/32	7/8	.120	20°	25°	––	.025	38°
17081286	13/32	INNER 9/32	1/2	.120	15°	22°	34°	.025	35°

Secondary Lockout –.015 Fig. 11

REFER TO EMISSION CONTROL INFORMATION LABEL FOR
ENGINE ADJUSTMENT PROCEDURES AND
TUNE-UP SPECIFICATIONS

Delco Carburetor

ADJUSTMENT SPECIFICATIONS – QUADRAJET M4MC, M4ME

FIG. 1	FIG. 2	FIG. 3	FIG. 4	FIG. 5	FIG. 6	FIG. 7	FIG. 8	FIG. 9	FIG. 10
CARB. NUMBER	FLOAT SETTING	PUMP SETTING	AIR VALVE SPRING	CHOKE COIL LEVER	CHOKE ROD CAM	VAC. BREAK FRONT	VAC. BREAK REAR	AIR VALVE ROD	UNLOADER
17081287	13/32	INNER 9/32	1/2	.120	15°	22°	34°	.025	35°
17081290	13/32	INNER 9/32	7/8	.120	46°	---	24°	.025	42°
17081291	13/32	INNER 9/32	7/8	.120	46°	---	24°	.025	42°
17081292	13/32	INNER 9/32	7/8	.120	46°	---	24°	.025	42°
17081294	5/16	INNER 9/32	5/8	.120	24.5°	18°	14°	.025	38°
17081295	13/32	INNER 9/32	9/16	.120	14.5°	15°	13°	.025	35°
17081296	1/2	INNER 9/32	7/8	.120	20°	25°	---	.025	38°
17081297	1/2	INNER 9/32	7/8	.120	20°	25°	---	.025	38°
17081506	13/32	INNER 9/32	7/8	.120	46°	23°	36°	.025	36°
17081508	13/32	INNER 9/32	7/8	.120	46°	23°	36°	.025	36°
17081524	13/32	OUTER 5/16	7/8	.120	46°	25°	36°	.025	38°
17081526	13/32	OUTER 5/16	7/8	.120	46°	25°	36°	.025	38°

Secondary Lockout –.015 Fig. 11

REFER TO EMISSION CONTROL INFORMATION LABEL FOR ENGINE ADJUSTMENT PROCEDURES AND TUNE-UP SPECIFICATIONS

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ADJUSTMENT SPECIFICATIONS – QUADRAJET M4MC, M4ME

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING	FIG. 3 PUMP SETTING	FIG. 4 AIR VALVE SPRING	FIG. 5 CHOKE COIL LEVER	FIG. 6 CHOKE ROD CAM	FIG. 7 VAC. BREAK FRONT	FIG. 8 VAC. BREAK REAR	FIG. 9 AIR VALVE ROD	FIG. 10 UNLOADER
17082213	9/32	INNER 9/32	1	.120	37°	23°	30°	.025	40°
17082220	13/32	INNER 9/32	7/8	.120	46°	—	24°	.025	39°
17082221	13/32	INNER 9/32	7/8	.120	46°	—	24°	.025	39°
17082222	13/32	INNER 9/32	7/8	.120	46°	—	24°	.025	39°
17082223	13/32	INNER 9/32	7/8	.120	46°	—	24°	.025	39°
17082224	13/32	INNER 9/32	7/8	.120	46°	—	24°	.025	39°
17082225	13/32	INNER 9/32	7/8	.120	46°	—	24°	.025	39°
17082226	13/32	INNER 9/32	7/8	.120	46°	—	24°	.025	39°
17082227	13/32	INNER 9/32	7/8	.120	46°	—	24°	.025	39°
17082230	13/32	INNER 9/32	7/8	.120	46°	—	26°	.025	39°
17082231	13/32	INNER 9/32	7/8	.120	46°	—	26°	.025	39°
17082234	13/32	INNER 9/32	7/8	.120	46°	—	26°	.025	39°

Secondary Lockout –.015 Fig. 11

REFER TO EMISSION CONTROL INFORMATION LABEL FOR
ENGINE ADJUSTMENT PROCEDURES AND
TUNE-UP SPECIFICATIONS

Delco Carburetor

ADJUSTMENT SPECIFICATIONS – QUADRAJET M4MC, M4ME

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING	FIG. 3 PUMP SETTING	FIG. 4 AIR VALVE SPRING	FIG. 5 CHOKE COIL LEVER	FIG. 6 CHOKE ROD CAM	FIG. 7 VAC. BREAK FRONT	FIG. 8 VAC. BREAK REAR	FIG. 9 AIR VALVE ROD	FIG. 10 UNLOADER
17082235	13/32	INNER 9/32	7/8	.120	46°	—	26°	.025	39°
17082257	13/32	INNER 9/32	1/2	.120	15°	22°	34°	.025	35°
17082280	3/8	INNER 9/32	7/8	.120	20°	25°	—	.025	38°
17082281	3/8	INNER 9/32	7/8	.120	20°	25°	—	.025	38°
17082282	3/8	INNER 9/32	7/8	.120	20°	25°	—	.025	38°
17082283	3/8	INNER 9/32	7/8	.120	20°	25°	—	.025	38°
17082284	13/32	INNER 9/32	1/2	.120	19.5°	22°	34°	.025	35°
17082286	13/32	INNER 9/32	1/2	.120	15°	22°	34°	.025	35°
17082287	13/32	INNER 9/32	1/2	.120	19.5°	22°	34°	.025	35°
17082288	3/8	INNER 9/32	7/8	.120	20°	25°	—	.025	38°
17082289	3/8	INNER 9/32	7/8	.120	20°	25°	—	.025	38°
17082290	13/32	INNER 9/32	7/8	.120	46°	—	24°	.025	39°
17082291	13/32	INNER 9/32	7/8	.120	46°	—	24°	.025	39°

Secondary Lockout –.015 Fig. 11

REFER TO EMISSION CONTROL INFORMATION LABEL FOR ENGINE ADJUSTMENT PROCEDURES AND TUNE-UP SPECIFICATIONS

Delco Carburetor

ADJUSTMENT SPECIFICATIONS – QUADRAJET M4MC, M4ME

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING	FIG. 3 PUMP SETTING	FIG. 4 AIR VALVE SPRING	FIG. 5 CHOKE COIL LEVER	FIG. 6 CHOKE ROD CAM	FIG. 7 VAC. BREAK FRONT	FIG. 8 VAC. BREAK REAR	FIG. 9 AIR VALVE ROD	FIG. 10 UNLOADER
17082292	13/32	INNER 9/32	7/8	.120	46°	—	24°	.025	39°
17082293	13/32	INNER 9/32	7/8	.120	46°	—	24°	.025	39°
17082296	1/2	INNER 9/32	7/8	.120	20°	25°	—	.025	38°
17082297	1/2	INNER 9/32	7/8	.120	20°	25°	—	.025	38°
17082506	13/32	INNER 9/32	7/8	.120	46°	23°	36°	.025	39°
17082508	13/32	INNER 9/32	7/8	.120	46°	23°	36°	.025	39°
17082513	3/8	INNER 9/32	1	.120	37°	23°	30°	.025	40°
17082524	13/32	INNER 9/32	7/8	.120	46°	25°	36°	.025	39°
17082526	13/32	INNER 9/32	7/8	.120	46°	25°	36°	.025	39°
17083220	13/32	INNER 9/32	7/8	.120	46°	—	24°	.025	39°
17083221	13/32	INNER 9/32	7/8	.120	46°	—	24°	.025	39°
17083222	13/32	INNER 9/32	7/8	.120	46°	—	24°	.025	39°
17083223	13/32	INNER 9/32	7/8	.120	46°	—	24°	.025	39°
17083224	13/32	INNER 9/32	7/8	.120	46°	—	24°	.025	39°

Secondary Lockout – .015 Fig. 11

REFER TO EMISSION CONTROL INFORMATION LABEL FOR
ENGINE ADJUSTMENT PROCEDURES AND
TUNE-UP SPECIFICATIONS

Delco Carburetor

ADJUSTMENT SPECIFICATIONS – QUADRAJET M4MC, M4ME

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING	FIG. 3 PUMP SETTING	FIG. 4 AIR VALVE SPRING	FIG. 5 CHOKE COIL LEVER	FIG. 6 CHOKE ROD CAM	FIG. 7 VAC. BREAK FRONT	FIG. 8 VAC. BREAK REAR	FIG. 9 AIR VALVE ROD	FIG. 10 UNLOADER
17083225	13/32	INNER 9/32	7/8	.120	46°	––	24°	.025	39°
17083226	13/32	INNER 9/32	7/8	.120	46°	––	24°	.025	39°
17083227	13/32	INNER 9/32	7/8	.120	46°	––	24°	.025	39°
17083230	13/32	INNER 9/32	7/8	.120	46°	––	26°	.025	39°
17083231	13/32	INNER 9/32	7/8	.120	46°	––	26°	.025	39°
17083234	13/32	INNER 9/32	7/8	.120	46°	––	26°	.025	39°
17083235	13/32	INNER 9/32	7/8	.120	46°	––	26°	.025	39°
17083280	3/8	INNER 9/32	7/8	.120	20°	25°	––	.025	38°
17083281	3/8	INNER 9/32	7/8	.120	20°	25°	––	.025	38°
17083282	3/8	INNER 9/32	7/8	.120	20°	25°	––	.025	38°
17083283	3/8	INNER 9/32	7/8	.120	20°	25°	––	.025	38°
17083286	13/32	INNER 9/32	1/2	.120	19.5°	23°	34°	.025	35°
17083287	13/32	INNER 9/32	1/2	.120	19.5°	23°	34°	.025	35°
17083290	13/32	INNER 9/32	7/8	.120	46°	––	24°	.025	39°

Secondary Lockout – .015 Fig. 11

REFER TO EMISSION CONTROL INFORMATION LABEL FOR ENGINE ADJUSTMENT PROCEDURES AND TUNE-UP SPECIFICATIONS

ADJUSTMENT SPECIFICATIONS – QUADRAJET M4MC, M4ME

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING ±2/32"	FIG. 3 PUMP SETTING	FIG. 4 AIR VALVE SPRING	FIG. 5 CHOKE STAT LEVER	FIG. 6 CHOKE LINK CAM ±2.5°	FIG. 7 VAC. BREAK FRONT ±2.5°	FIG. 8 VAC. BREAK REAR ±3.5°	FIG. 9 AIR VALVE LINK	FIG. 10 UNLOADER ±4°
17083291	13/32	INNER 9/32	7/8	.120	46°	--	24°	.025	39°
17083292	13/32	INNER 9/32	7/8	.120	46°	--	24°	.025	39°
17083293	13/32	INNER 9/32	7/8	.130	46°	--	24°	.025	39°
17083298	3/8	INNER 9/32	1	.120	37°	23°	30°	.025	.40°
17083507	3/8	INNER 9/32	1	.120	37°	23°	30°	.025	40°
17084206	13/32	INNER 9/32	7/8	.120G	46°	--	26°	.025	39°
17084220	13/32	INNER 9/32	7/8	.120G	46°	--	26°	.025	39°
17804221	13/32	INNER 9/32	7/8	.120G	46°	--	26°	.025	39°
17084226	13/32	INNER 9/32	7/8	.120G	46°	--	24°	.025	39°
17084227	13/32	INNER 9/32	7/8	.120G	46°	--	24°	.025	39°
17084228	13/32	INNER 9/32	7/8	.120G	46°	--	26°	.025	39°
17084229	13/32	INNER 9/32	7/8	.120G	46°	--	26°	.025	39°

1. Secondary Lockout – .015 (Fig. 11)
2. G= Gage

REFER TO EMISSION CONTROL INFORMATION LABEL FOR
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TUNE-UP SPECIFICATIONS

Delco Carburetor

ADJUSTMENT SPECIFICATIONS – M4ME – M4MC

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING ±2/32"	FIG. 3 PUMP SETTING	FIG. 4 AIR VALVE SPRING	FIG. 5 CHOKE STAT LEVER	FIG. 6 CHOKE LINK CAM ±2.5°	FIG. 7 VAC. BREAK FRONT ±2.5°	FIG. 8 VAC. BREAK REAR ±3.5°	FIG. 9 AIR VALVE LINK	FIG. 10 UNLOADER ±4°
17084230	13/32	INNER 9/32	7/8	.120G	46°	––	26°	.025	39°
17084231	13/32	INNER 9/32	7/8	.120G	46°	––	26°	.025	39°
17084234	13/32	INNER 9/32	7/8	.120G	46°	––	26°	.025	39°
17084235	13/32	INNER 9/32	7/8	.120G	46°	––	26°	.025	39°
17084236	13/32	INNER 9/32	7/8	.120G	46°	––	24°	.025	39°
17084237	13/32	INNER 9/32	7/8	.120G	46°	––	24°	.025	39°
17084238	13/32	INNER 9/32	7/8	.120G	46°	––	24°	.025	39°
17084239	13/32	INNER 9/32	7/8	.120G	46°	––	24°	.025	39°
17084280	12/32	INNER 9/32	7/8	.120G	20°	23°	––	.025	38°
17084281	12/32	INNER 9/32	7/8	.120G	20°	23°	––	.025	38°
17084282	12/32	INNER 9/32	7/8	.120G	20°	23°	––	.025	38°
17084283	12/32	INNER 9/32	7/8	.120G	20°	23°	––	.025	38°

1. Secondary Lockout – .015 (Fig. 11)
2. G = Gage

REFER TO EMISSION CONTROL INFORMATION LABEL FOR
ENGINE ADJUSTMENT PROCEDURES AND
TUNE-UP SPECIFICATIONS

Delco Carburetor

ADJUSTMENT SPECIFICATIONS – M4MC – M4ME

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING ±2/32"	FIG. 3 PUMP SETTING	FIG. 4 AIR VALVE SPRING	FIG. 5 CHOKE STAT LEVER	FIG. 6 CHOKE LINK CAM ±2.5°	FIG. 7 VAC. BREAK FRONT ±2.5°	FIG. 8 VAC. BREAK REAR ±3.5°	FIG. 9 AIR VALVE LINK	FIG. 10 UNLOADER ±4°
17084284	12/32	INNER 9/32	7/8	.120G	20°	23°	--	.025	38°
17084285	12/32	INNER 9/32	7/8	.120G	20°	23°	--	.025	38°
17804286	13/32	INNER 9/32	1/2	.120G	19.5°	23°	34°	.025	35°
17084287	13/32	INNER 9/32	1/2	.120G	19.5°	23°	34°	.025	35°
17084288	12/32	INNER 9/32	7/8	.120G	20°	23°	--	.025	38°
17084289	12/32	INNER 9/32	7/8	.120G	20°	23°	--	.025	38°
17084290	13/32	INNER 9/32	7/8	.120G	46°	--	24°	.025	39°
17084291	13/32	INNER 9/32	7/8	.120G	46°	--	26°	.025	39°
17084292	13/32	INNER 9/32	7/8	.120G	46°	--	24°	.025	39°
17084293	13/32	INNER 9/32	7/8	.120G	46°	--	26°	.025	39°
17084294	13/32	INNER 9/32	7/8	.120G	46°	--	26°	.025	39°
17084296	16/32	INNER 9/32	7/8	.120G	20°	23°	--	.025	38°

1. Secondary Lockout – .015 (Fig. 11)
2. G = Gage

REFER TO EMISSION CONTROL INFORMATION LABEL FOR ENGINE ADJUSTMENT PROCEDURES AND TUNE-UP SPECIFICATIONS

Delco Carburetor

1985 ADJUSTMENT SPECIFICATIONS – M4ME – M4MC – M4MED – M4MEF

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING ±2/32″	FIG. 3 PUMP SETTING	FIG. 4 AIR VALVE SPRING	FIG. 5 CHOKE STAT LEVER	FIG. 6 CHOKE LINK CAM ±2.5°	FIG. 7 VAC. BREAK FRONT ±2.5°	FIG. 8 VAC. BREAK REAR ±3.5°	FIG. 9 AIR VALVE LINK	FIG. 10 UNLOADER ±4°
17084297	16/32	INNER 9/32	7/8	.120G	20°	23°	--	.025	38°
17084298	13/32	INNER 9/32	7/8	.120G	46°	--	26°	.025	39°
17084500	12/32	INNER 9/32	1	.120G	37°	23°	30°	.025	40°
17084501	12/32	INNER 9/32	1	.120G	37°	23°	30°	.025	40°
17084502	12/32	INNER 9/32	7/8	.120G	46°	24°	30°	.025	40°
17085000	12/32	INNER 9/32	7/8	.120G	46°	24°	30°	.025	40°
17085001	12/32	INNER 9/32	1	.120G	46°	23°	30°	.025	40°
17085003	13/32	INNER 9/32	7/8	.120G	46°	27°	--	.025	35°
17085004	13/32	INNER 9/32	7/8	.120G	46°	23°	--	.025	35°
17085206	13/32	INNER 9/32	7/8	.120G	46°	--	26°	.025	39°
17085208	13/32	INNER 9/32	7/8	.120G	20°	26°	38°	.025	39°
17085209	13/32	OUTER 3/8	7/8	.120G	20°	26°	36°	.025	39°

1. Secondary Lockout – .015″ (Fig. 11)
2. G = Gage

REFER TO EMISSION CONTROL INFORMATION LABEL FOR ENGINE ADJUSTMENT PROCEDURES AND TUNE-UP SPECIFICATIONS

1985 ADJUSTMENT SPECIFICATIONS – M4ME – M4MC – M4MED – M4MEF

FIG. 1	FIG. 2	FIG. 3	FIG. 4	FIG. 5	FIG. 6	FIG. 7	FIG. 8	FIG. 9	FIG. 10
CARB. NUMBER	FLOAT SETTING ±2/32″	PUMP SETTING	AIR VALVE SPRING	CHOKE STAT LEVER	CHOKE LINK CAM ±2.5°	VAC. BREAK FRONT ±2.5°	VAC. BREAK REAR ±3.5°	AIR VALVE LINK	UNLOADER ±4°
17085210	13/32	INNER 9/32	7/8	.120G	20°	26°	38°	.025	39°
17085211	13/32	OUTER 3/8	7/8	.120G	20°	26°	36°	.025	39°
17085212	13/32	INNER 9/32	7/8	.120G	46°	23°	--	.025	35°
17085213	13/32	INNER 9/32	7/8	.120G	46°	27°	--	.025	35°
17085215	13/32	INNER 9/32	7/8	.120G	46°	--	26°	.025	32°
17085220	13/32	OUTER 3/8	7/8	.120G	20°	--	26°	.025	32°
17085221	13/32	OUTER 3/8	7/8	.120G	20°	--	26°	.025	32°
17085222	13/32	INNER 9/32	1/2	.120G	20°	26°	36°	.025	39°
17085223	13/32	OUTER 3/8	1/2	.120G	20°	26°	36°	.025	39°
17085224	13/32	INNER 9/32	1/2	.120G	20°	26°	36°	.025	39°
17085225	13/32	OUTER 3/8	1/2	.120G	20°	26°	36°	.025	39°
17085226	13/32	INNER 9/32	7/8	.120G	20°	--	24°	.025	32°

1. Secondary Lockout – .015″ (Fig. 11)
2. G = Gage

REFER TO EMISSION CONTROL INFORMATION LABEL FOR ENGINE ADJUSTMENT PROCEDURES AND TUNE-UP SPECIFICATIONS

1985 ADJUSTMENT SPECIFICATIONS – M4ME – M4MC – M4MED – M4MEF

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING ±2/32″	FIG. 3 PUMP SETTING	FIG. 4 AIR VALVE SPRING	FIG. 5 CHOKE STAT LEVER	FIG. 6 CHOKE LINK CAM ±2.5°	FIG. 7 VAC. BREAK FRONT ±2.5°	FIG. 8 VAC. BREAK REAR ±3.5°	FIG. 9 AIR VALVE LINK	FIG. 10 UNLOADER ±4°
17085227	13/32	INNER 9/32	7/8	.120G	20°	--	24°	.025	32°
17085228	13/32	INNER 9/32	7/8	.120G	46°	--	24°	.025	39°
17085229	13/32	INNER 9/32	7/8	.120G	46°	--	24°	.025	39°
17085230	13/32	INNER 9/32	7/8	.120G	20°	--	26°	.025	32°
17085231	13/32	INNER 9/32	7/8	.120G	20°	--	26°	.025	32°
17085235	13/32	INNER 9/32	7/8	.120G	46°	--	26°	.025	39°
17085238	13/32	OUTER 3/8	7/8	.120G	20°	--	26°	.025	32°
17085239	13/32	OUTER 3/8	7/8	.120G	20°	--	26°	.025	32°
17085246	13/32	INNER 9/32	7/8	.120G	18°	20°	--	.025	30°
17085247	13/32	INNER 9/32	7/8	.120G	18°	20°	--	.025	30°
17085248	13/32	INNER 9/32	7/8	.120G	18°	20°	--	.025	30°
17085249	13/32	INNER 9/32	7/8	.120G	18°	20°	--	.025	30°

1. Secondary Lockout – .015″ (Fig. 11)
2. G = Gage

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1985 ADJUSTMENT SPECIFICATIONS – M4ME – M4MC – M4MED – M4MEF

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING ±2/32"	FIG. 3 PUMP SETTING	FIG. 4 AIR VALVE SPRING	FIG. 5 CHOKE STAT LEVER	FIG. 6 CHOKE LINK CAM ±2.5°	FIG. 7 VAC. BREAK FRONT ±2.5°	FIG. 8 VAC. BREAK REAR ±3.5°	FIG. 9 AIR VALVE LINK	FIG. 10 UNLOADER ±4°
17085290	13/32	INNER 9/32	7/8	.120G	46°	--	24°	.025	39°
17085291	13/32	OUTER 3/8	7/8	.120G	46°	--	26°	.025	39°
17085292	13/32	INNER 9/32	7/8	.120G	46°	--	24°	.025	39°
17085293	13/32	OUTER 3/8	7/8	.120G	46°	--	26°	.025	39°
17085294	13/32	INNER 9/32	7/8	.120G	46°	--	26°	.025	39°
17085298	13/32	INNER 9/32	7/8	.120G	46°	--	26°	.025	39°
17085408	13/32	OUTER 3/8	1/2	.120G	20°	--	27°	.025	38°
17085409	13/32	OUTER 3/8	5/8	.120G	20°	--	27°	.025	38°
17085414	13/32	OUTER 3/8	1/2	.120G	20°	--	27°	.025	38°
17085416	13/32	OUTER 3/8	1/2	.120G	20°	--	27°	.025	38°
17085417	13/32	OUTER 3/8	3/4	.120G	20°	--	27°	.025	38°

1. Secondary Lockout – .015" (Fig. 11)
2. G = Gage

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1985 ADJUSTMENT SPECIFICATIONS – M4ME – M4MC – M4MED – M4MEF

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING ±2/32"	FIG. 3 PUMP SETTING	FIG. 4 AIR VALVE SPRING	FIG. 5 CHOKE STAT LEVER	FIG. 6 CHOKE LINK CAM ±2.5°	FIG. 7 VAC. BREAK FRONT ±2.5°	FIG. 8 VAC. BREAK REAR ±3.5°	FIG. 9 AIR VALVE LINK	FIG. 10 UNLOADER ±4°
17085431	13/32	OUTER 3/8	1/2	.120G	20°	--	27°	.025	38°
17085432	13/32	OUTER 3/8	1/2	.120G	20°	--	24°	.025	38°
17085580	12/32	INNER 9/32	7/8	.120G	15°	21°	--	.025	30°
17085581	12/32	INNER 9/32	7/8	.120G	15°	21°	--	.025	30°
17085582	12/32	INNER 9/32	7/8	.120G	15°	21°	--	.025	30°
17085583	12/32	INNER 9/32	7/8	.120G	15°	21°	--	.025	30°
17085584	12/32	INNER 9/32	7/8	.120G	15°	21°	--	.025	30°
17085586	12/32	INNER 9/32	7/8	.120G	15°	21°	--	.025	30°
17085588	12/32	INNER 9/32	7/8	.120G	15°	21°	--	.025	30°
17085590	12/32	INNER 9/32	7/8	.120G	15°	21°	--	.025	30°
17085592	13/32	INNER 9/32	1/2	.120G	15°	21°	34°	.025	27°
17085594	13/32	INNER 9/32	1/2	.120G	15°	21°	34°	.025	27°

1. Secondary Lockout – .015" (Fig. 11)
2. G = Gage

REFER TO EMISSION CONTROL INFORMATION LABEL FOR ENGINE ADJUSTMENT PROCEDURES AND TUNE-UP SPECIFICATIONS

1986 ADJUSTMENT SPECIFICATIONS – M4ME – M4MC – M4MED – M4MEF

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING ±2/32″	FIG. 3 PUMP SETTING	FIG. 4 AIR VALVE SPRING	FIG. 5 CHOKE STAT LEVER	FIG. 6 CHOKE LINK CAM ±2.5°	FIG. 7 VAC. BREAK FRONT ±2.5°	FIG. 8 VAC. BREAK REAR ±3.5°	FIG. 9 AIR VALVE LINK	FIG. 10 UNLOADER ±4°
17085283	13/32	INNER 9/32	7/8	.120G	20°	--	24°	.025	32°
17085284	13/32	INNER 9/32	7/8	.120G	20°	--	26°	.025	32°
17085285	13/32	INNER 9/32	7/8	.120G	20°	--	24°	.025	32°
17085596	16/32	INNER 9/32	7/8	.120G	20°	23°	--	.025	38°
17085598	16/32	INNER 9/32	7/8	.120G	20°	23°	--	.025	38°
17086044	17/32	INNER 9/32	7/8	.120G	20°	26°	38°	.025	39°
17086045	17/32	OUTER 3/8	7/8	.120G	20°	26°	36°	.025	39°
17086046	17/32	INNER 9/32	7/8	.120G	20°	26°	38°	.025	39°
17086047	17/32	OUTER 3/8	7/8	.120G	20°	26°	36°	.025	39°
17086048	17/32	INNER 9/32	1/2	.120G	20°	26°	36°	.025	39°
17086053	17/32	OUTER 3/8	1/2	.120G	20°	26°	36°	.025	39°
17086054	17/32	INNER 9/32	1/2	.120G	20°	26°	36°	.025	39°

1. Secondary Lockout – .015″ (Fig. 11)
2. G = Gage

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1986 ADJUSTMENT SPECIFICATIONS - M4ME - M4MC - M4MED - M4MEF

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING ±2/32"	FIG. 3 PUMP SETTING	FIG. 4 AIR VALVE SPRING	FIG. 5 CHOKE STAT LEVER	FIG. 6 CHOKE LINK CAM ±2.5°	FIG. 7 VAC. BREAK FRONT ±2.5°	FIG. 8 VAC. BREAK REAR ±3.5°	FIG. 9 AIR VALVE LINK	FIG. 10 UNLOADER ±4°
17086055	17/32	OUTER 3/8	1/2	.120G	20°	26°	36°	.025	39°
17086246	13/32	INNER 9/32	7/8	.120G	18°	20°	--	.025	30°
17086247	13/32	INNER 9/32	7/8	.120G	18°	20°	--	.025	30°
17086248	13/32	INNER 9/32	7/8	.120G	18°	20°	--	.025	30°
17086249	13/32	INNER 9/32	7/8	.120G	18°	20°	--	.025	30°
17086425	15/32	OUTER 3/8	1/2	.120G	20°	--	23°	.025	38°
17086434	15/32	OUTER 3/8	1/2	.120G	20°	--	24°	.025	38°
17086580	12/32	INNER 9/32	7/8	.120G	15°	21°	--	.025	30°
17086581	12/32	INNER 9/32	7/8	.120G	15°	21°	--	.025	30°
17086582	12/32	INNER 9/32	7/8	.120G	15°	21°	--	.025	30°
17086583	12/32	INNER 9/32	7/8	.120G	15°	21°	--	.025	30°

1. Secondary Lockout - .015" (Fig. 11)
2. G = Gage

REFER TO EMISSION CONTROL INFORMATION LABEL FOR
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1986 ADJUSTMENT SPECIFICATIONS – M4ME – M4MC – M4MED – M4MEF

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING ±2/32″	FIG. 3 PUMP SETTING	FIG. 4 AIR VALVE SPRING	FIG. 5 CHOKE STAT LEVER	FIG. 6 CHOKE LINK CAM ±2.5°	FIG. 7 VAC. BREAK FRONT ±2.5°	FIG. 8 VAC. BREAK REAR ±3.5°	FIG. 9 AIR VALVE LINK	FIG. 10 UNLOADER ±4°
17086584	12/32	INNER 9/32	7/8	.120G	15°	21°	--	.025	30°
17086586	12/32	INNER 9/32	7/8	.120G	15°	21°	--	.025	30°
17086588	12/32	INNER 9/32	7/8	.120G	15°	21°	--	.025	30°
17086590	12/32	INNER 9/32	7/8	.120G	15°	21°	--	.025	30°
17086596	16/32	INNER 9/32	7/8	.120G	15°	21°	--	.025	30°
17086598	16/32	INNER 9/32	7/8	.120G	15°	21°	--	.025	30°

1. Secondary Lockout – .015″ (Fig. 11)
2. G = Gage

REFER TO EMISSION CONTROL INFORMATION LABEL FOR
ENGINE ADJUSTMENT PROCEDURES AND
TUNE-UP SPECIFICATIONS

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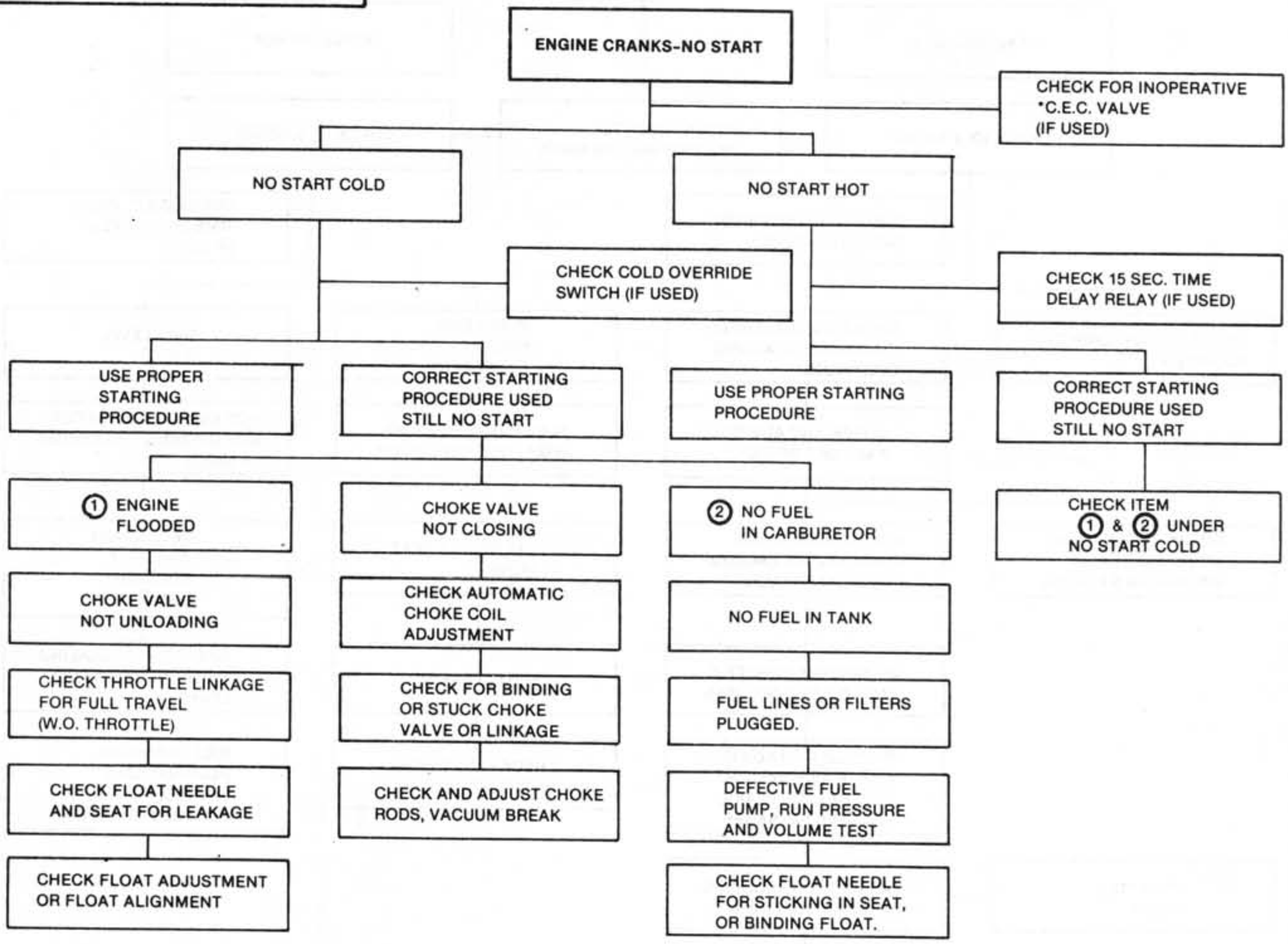
TROUBLE — SHOOTING THE QUADRAJET 4 MC — 4 MV CARBURETOR

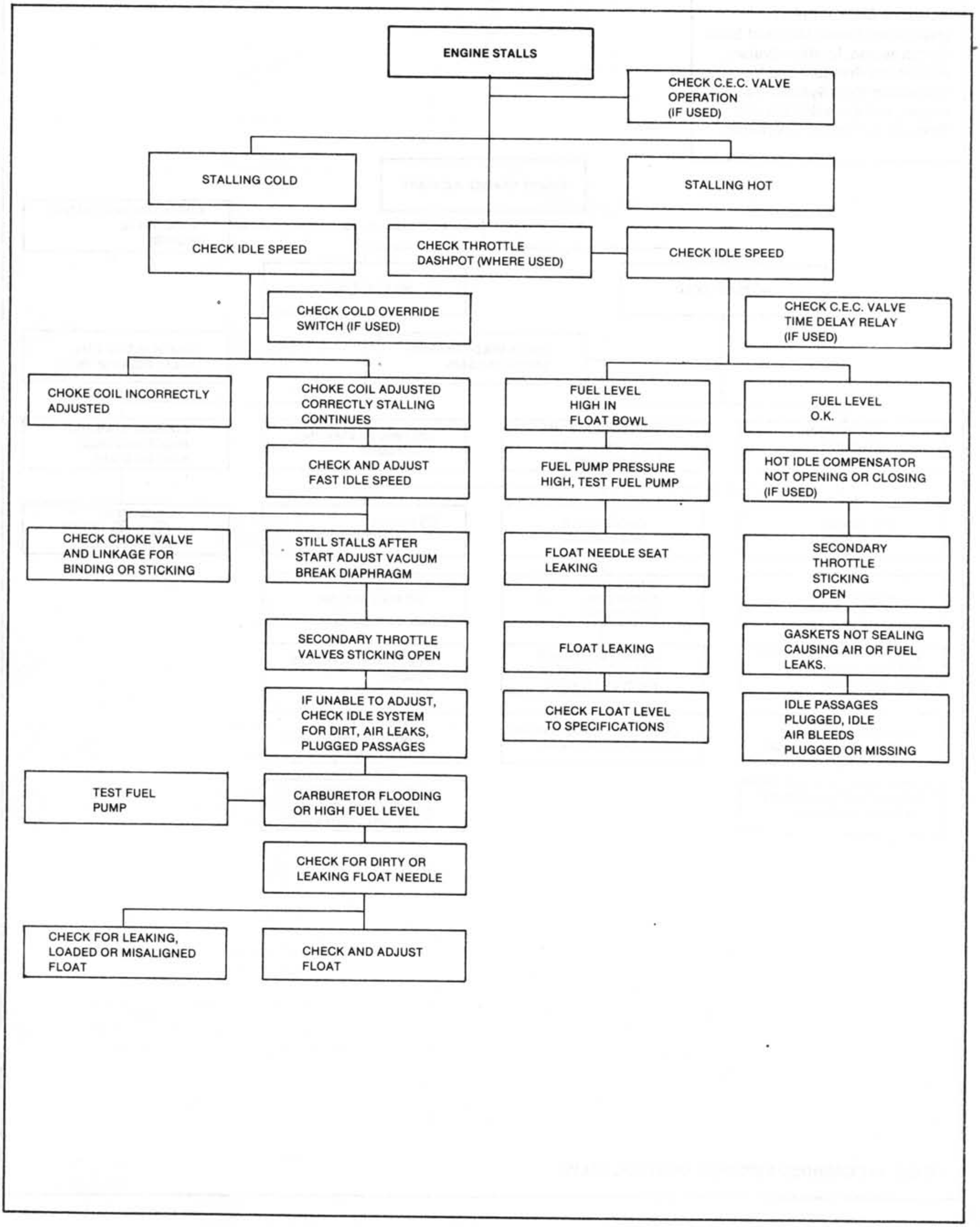
ALWAYS CHECK FIRST:
Heat Riser, Intake Manifold Bolts Compression, Ignition System, Fuel Pump Pressure and Volume, Crankcase Vent System, Vacuum Hoses, and Emission Control Systems for Proper Operation.



*C.E.C. — COMBINED EMISSION CONTROL VALVE

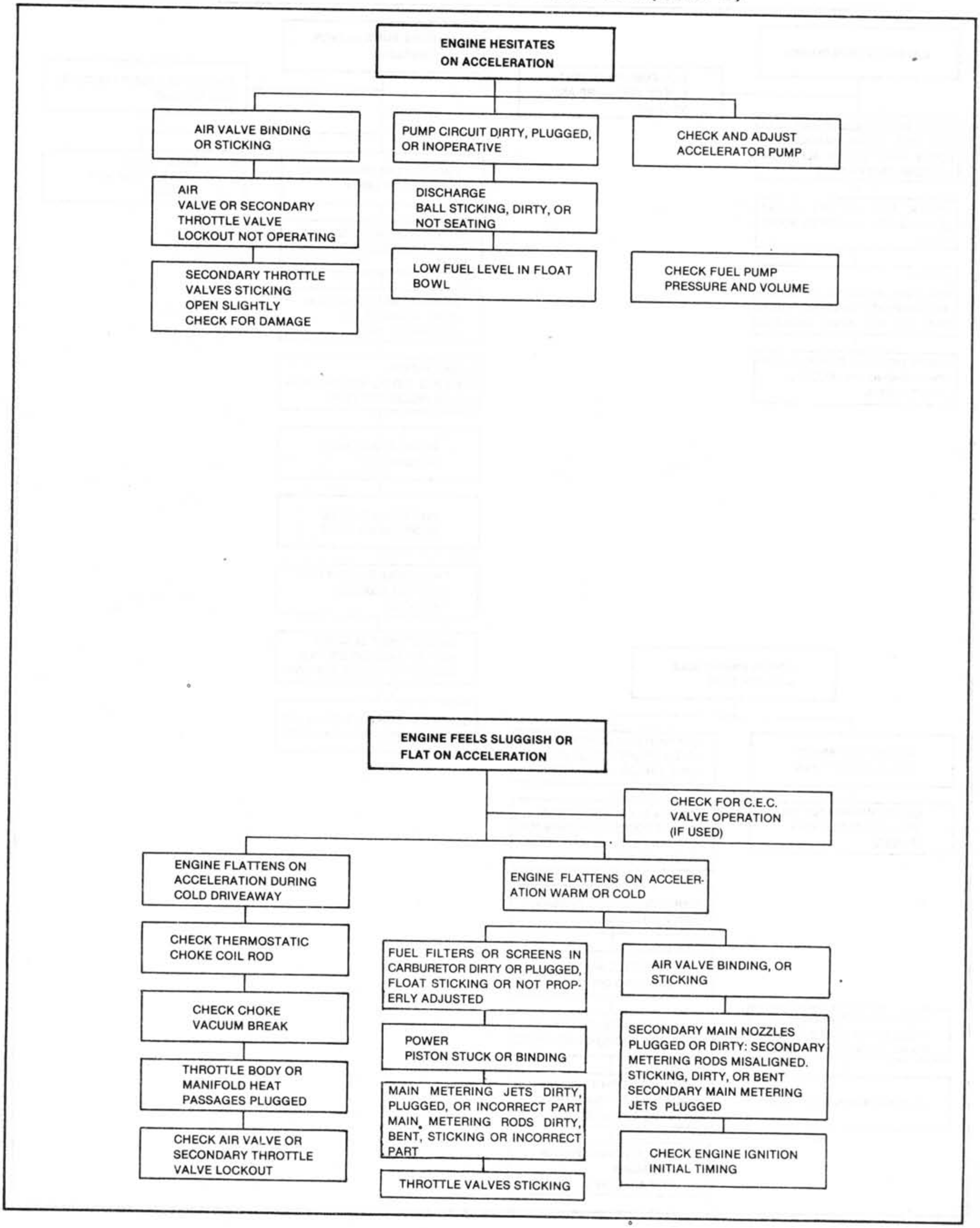
Delco Carburetor

TROUBLE — SHOOTING THE QUADRAJET 4 MC — 4 MV CARBURETOR (CONT'D)



Quadrajet (4 bbl.) Carburetor

TROUBLE — SHOOTING THE QUADRAJET 4 MC — 4 MV CARBURETOR (CONT'D.)



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TROUBLE — SHOOTING THE QUADRAJET 4 MC — 4 MV CARBURETOR (CONT'D.)

Delco

CARBURETOR FLOODING

- RUN FUEL PUMP TEST CHECK PRESSURE AND VOLUME
- CHECK FLOAT NEEDLE AND SEAT FOR DIRT, WEAR, DAMAGE, OR LOOSE PART CLEAN ALL FUEL SCREENS AND FILTERS
- CHECK AND ADJUST FLOAT LEVEL CHECK DISTORTED FLOAT ARMS
- CHECK (FILL BOWL WITH FUEL ON BENCH AND OBSERVE FOR LEAKS) CHECK SEAL ON ALL BOWL GASKETS
- CHECK HOT IDLE COMPENSATOR FOR OPENING AND CLOSING (WHERE USED)

ENGINE RUNS UNEVEN OR SURGES

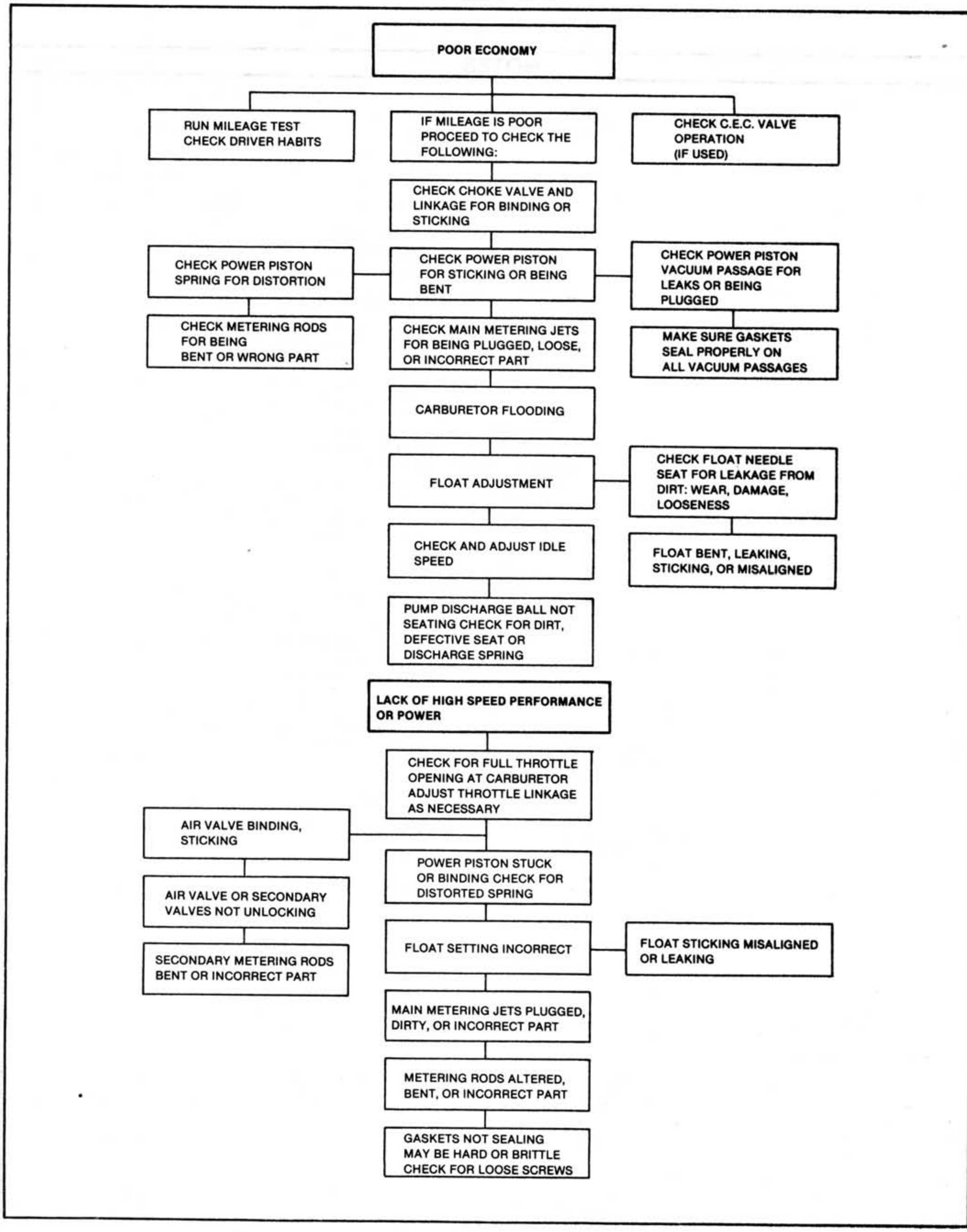
- CHECK FUEL PUMP PRESSURE AND VOLUME
- CHECK C.E.C. VALVE OPERATION (IF USED)
- FUEL FILTERS OR SCREENS PLUGGED OR DIRTY
- MAIN METERING JETS PLUGGED, LOOSE, OR WRONG PART
- PRIMARY METERING RODS BENT, ALTERED, OR INCORRECT PART
- POWER PISTON STICKING DIRTY, SPRING MISSING OR INCORRECT PART
- FLOAT ADJUSTMENT INCORRECT
- ADJUST IDLE SPEED TO SPECIFICATIONS
- CHECK IDLE SYSTEM FOR DIRTY OR PLUGGED PASSAGES
- GASKETS NOT SEALING MAY BE HARD OR BRITTLE CHECK FOR LOOSE SCREWS
- SECONDARY THROTTLE VALVES STICKING OPEN OR MISALIGNED

ROUGH ENGINE IDLE AND STALLING

- ADJUST IDLE SPEED TO SPECIFICATIONS
  - IDLE COMPENSATOR NOT OPENING OR CLOSING (IF USED)
- IF ROUGH IDLE CONTINUES AFTER PROPER IDLE ADJUSTMENT, CHECK AS FOLLOWS
  - TIGHTEN ALL CARBURETORS SCREWS TORQUE CARBURETOR TO MANIFOLD AND MANIFOLD TO ENGINE BOLTS
  - CARBURETOR IDLE PASSAGES DIRTY OR PLUGGED
  - THROTTLE VALVES STICKING OPEN
  - FLOAT NEEDLE SEAT LEAKING FLOAT NOT PROPERLY ADJUSTED
    - CLEAN OR REPLACE FLOAT NEEDLE AND SEAT ADJUST FLOAT TO SPECIFICATIONS
    - CHECK FOR BINDING FLOAT
  - CHECK AIR HORN TO BOWL AND THROTTLE BODY GASKETS FOR AIR LEAKS BETWEEN CASTINGS
  - CHECK POWER PISTON PASSAGES FOR AIR LEAKS

Delco Carburetor

TROUBLE — SHOOTING THE QUADRAJET 4 MC — 4 MV CARBURETOR (CONT'D.)

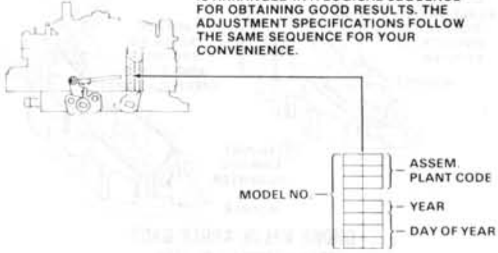


Delco Carburetor

ADJUSTMENT PROCEDURES
MODELS E4MC-E4ME

Bulletin: 9D-5-1A
Date: April 1982
Page: 1
File after Bulletin 9D-5-1

THIS SET OF ADJUSTMENT PROCEDURES IS ARRANGED IN A LOGICAL SEQUENCE FOR OBTAINING GOOD RESULTS. THE ADJUSTMENT SPECIFICATIONS FOLLOW THE SAME SEQUENCE FOR YOUR CONVENIENCE.



CARBURETOR IDENTIFICATION "4M" TYPE (TYPICAL)

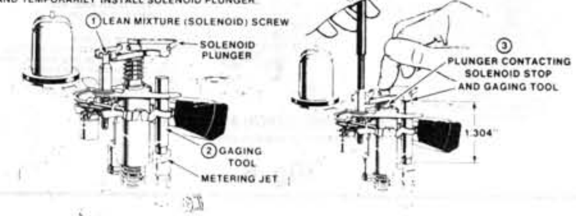
Fig. 1

SEE VEHICLE MANUFACTURER'S SERVICE MANUAL, SECTION 6C, FOR "ON-VEHICLE" MIXTURE CONTROL ADJUSTMENT PROCEDURES.

(1) LEAN MIXTURE (SOLENOID) SCREW SHOULD HAVE FIRST SIX THREADS ENGAGED IN FLOAT BOWL TO ASSURE PROPER INSTALLATION.

(2) INSTALL MIXTURE CONTROL SOLENOID GAGING TOOL J-33815-1, BT-8253-A, OR EQUIVALENT, OVER THE THROTTLE SIDE METERING JET ROD GUIDE, AND TEMPORARILY INSTALL SOLENOID PLUNGER.

(3) HOLDING THE SOLENOID PLUNGER AGAINST THE SOLENOID STOP, USE TOOL J-28696-10, BT-7928, OR EQUIVALENT, TO TURN THE LEAN MIXTURE (SOLENOID) SCREW SLOWLY CLOCKWISE, UNTIL THE SOLENOID PLUNGER JUST CONTACTS THE GAGING TOOL.



LEAN MIXTURE SCREW (BENCH) ADJUSTMENT
E2M & E4M MODELS ONLY

Fig. 3

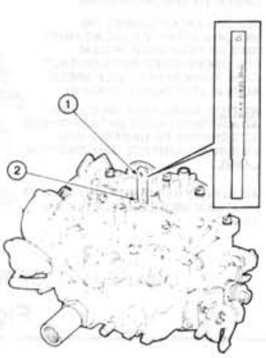
(1) WITH ENGINE RUNNING AT IDLE, CHOKE WIDE-OPEN, INSERT GAGE IN VENT SLOT OR VENT HOLE (NEXT TO AIR CLEANER STUD) AND ALLOW IT TO FLOAT FREELY.

NOTICE: DO NOT PRESS DOWN ON GAGE. FLOODING OR FLOAT DAMAGE COULD RESULT.

(2) OBSERVE AT EYE LEVEL THE MARK ON GAGE THAT LINES UP WITH TOP OF CASTING AT VENT SLOT OR VENT HOLE. SETTING SHOULD BE WITHIN ±1/16" OF SPECIFIED FLOAT LEVEL SETTING.

INCORRECT FUEL PRESSURE WILL ADVERSELY AFFECT FUEL LEVEL

(3) IF NECESSARY, REMOVE AIR HORN AND ADJUST FLOAT LEVEL TO SPECIFICATION.



FLOAT GAGE - EXTERNAL CHECKING PROCEDURE

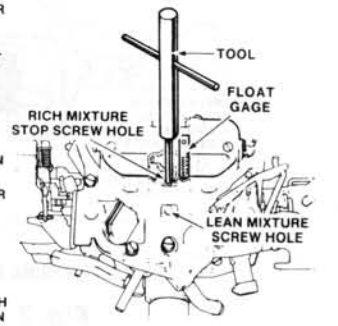
Fig. 2A

SEE VEHICLE MANUFACTURER'S SERVICE MANUAL, SECTION 6C, FOR ON-VEHICLE MIXTURE CONTROL ADJUSTMENT PROCEDURES.

(1) WITH LEAN MIXTURE SCREW SET PROPERLY AND AIR HORN REINSTALLED FOLLOWING RECOMMENDED SERVICE PROCEDURES, INSERT TOOL J-9789-130, BT-7720 OR EQUIVALENT IN VERTICAL "D" SHAPED VENT HOLE IN AIR HORN CASTING.

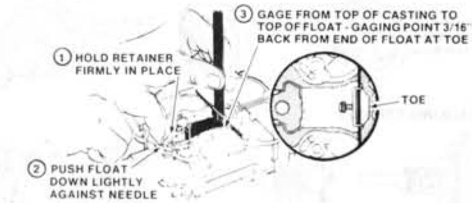
(2) USE TOOL J-28696-10, BT-7928, OR EQUIVALENT, TO TURN RICH MIXTURE STOP SCREW CLOCKWISE UNTIL TOTAL SOLENOID PLUNGER TRAVEL IS 4/32" (3.175 mm.)

(3) INSTALL NEW PLUGS PROVIDED IN SERVICE KITS, TO RETAIN RICH MIXTURE STOP SCREW AND LEAN MIXTURE (SOLENOID) SCREW SETTINGS, AND TO PREVENT FUEL VAPOR LOSS.



RICH MIXTURE STOP SCREW (BENCH) ADJUSTMENT
E2M & E4M MODELS ONLY

Fig. 4



(4) IF FLOAT LEVEL VARIES OVER ±1/16" FROM SPECIFICATIONS.
FOR LEVEL TOO HIGH, HOLD RETAINER IN PLACE AND PUSH DOWN ON CENTER OF FLOAT PONTOON TO OBTAIN CORRECT SETTING.
FOR LEVEL TOO LOW,

A. IF M4M OR M2M CARBURETOR, REMOVE POWER PISTON, METERING RODS, PLASTIC FILLER BLOCK. REMOVE FLOAT, BEND FLOAT ARM UPWARD TO ADJUST. REINSTALL PARTS. VISUALLY CHECK FLOAT ALIGNMENT.

B. IF E4M OR E2M REMOVE METERING RODS, SOLENOID CONNECTOR SCREW. COUNT, AND RECORD FOR REASSEMBLY, THE NUMBER OF TURNS NEEDED TO LIGHTLY BOTTOM LEAN MIXTURE SCREW. BACK OUT AND REMOVE SCREW, SOLENOID, CONNECTOR. REMOVE FLOAT AND FLOAT ARM UPWARD TO ADJUST. REINSTALL PARTS. RESET LEAN MIXTURE SCREW. VISUALLY CHECK FLOAT ALIGNMENT.

FLOAT ADJUSTMENT

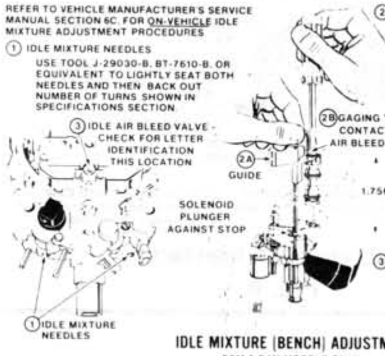
Fig. 2B

REFER TO VEHICLE MANUFACTURER'S SERVICE MANUAL SECTION 6C, FOR ON-VEHICLE IDLE MIXTURE ADJUSTMENT PROCEDURES

(1) IDLE MIXTURE NEEDLES
USE TOOL J-29030-B, BT-7610-B, OR EQUIVALENT TO LIGHTLY SEAT BOTH NEEDLES AND THEN BACK OUT NUMBER OF TURNS SHOWN IN SPECIFICATIONS SECTION.

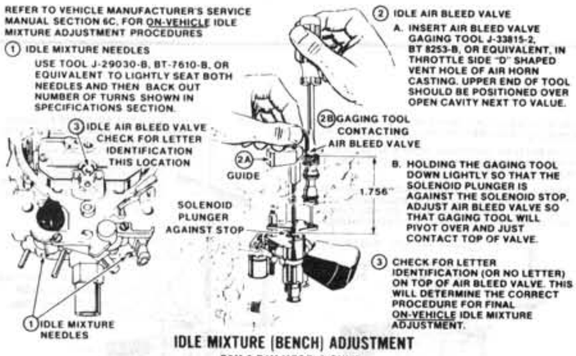
(2) IDLE AIR BLEED VALVE
A. INSERT AIR BLEED VALVE GAGING TOOL J-33815-2, BT 8253-B, OR EQUIVALENT, IN THROTTLE SIDE "D" SHAPED VENT HOLE OF AIR HORN CASTING. UPPER END OF TOOL SHOULD BE POSITIONED OVER OPEN CAVITY NEXT TO VALUE.
B. HOLDING THE GAGING TOOL DOWN LIGHTLY SO THAT THE SOLENOID PLUNGER IS AGAINST THE SOLENOID STOP, ADJUST AIR BLEED VALVE SO THAT GAGING TOOL WILL PIVOT OVER AND JUST CONTACT TOP OF VALVE.

(3) CHECK FOR LETTER IDENTIFICATION (OR NO LETTER) ON TOP OF AIR BLEED VALVE. THIS WILL DETERMINE THE CORRECT PROCEDURE FOR FINAL ON-VEHICLE IDLE MIXTURE ADJUSTMENT.



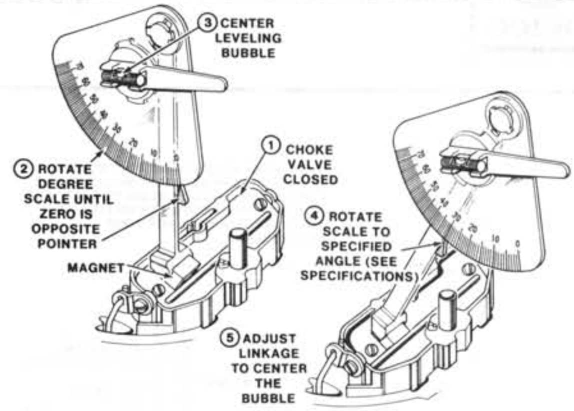
IDLE MIXTURE (BENCH) ADJUSTMENT
E2M & E4M MODELS ONLY

Fig. 5

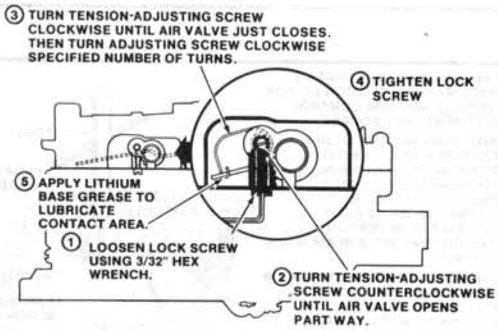


IDLE MIXTURE (BENCH) ADJUSTMENT
E2M & E4M MODELS ONLY

Fig. 6

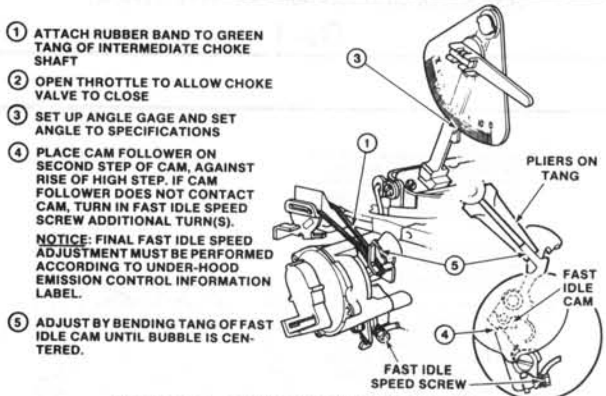


CHOKE VALVE ANGLE GAGE
TOOL J-26701 OR BT-7704



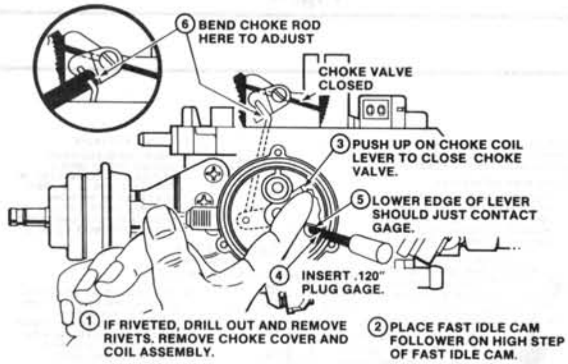
AIR VALVE SPRING ADJUSTMENT

Fig. 7



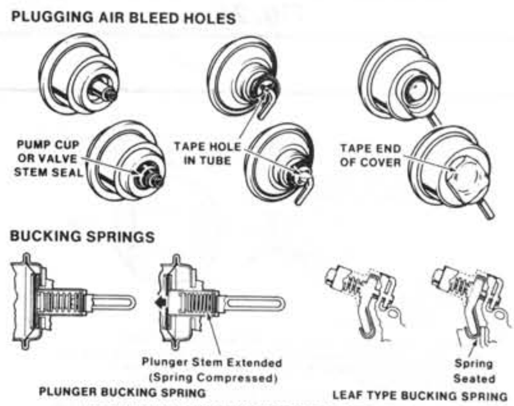
CHOKE ROD - FAST IDLE CAM ADJUSTMENT

Fig. 9



CHOKE COIL LEVER ADJUSTMENT

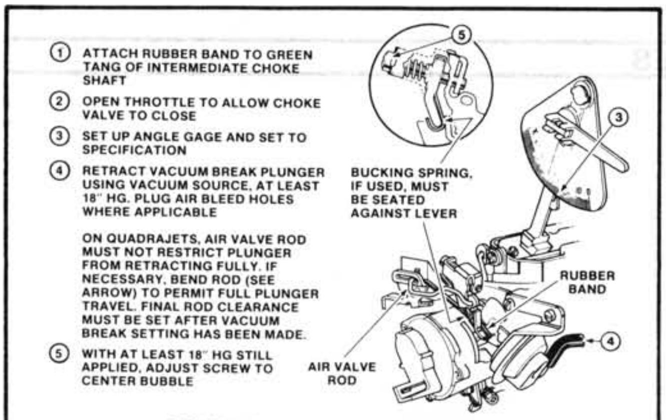
Fig. 8



VACUUM BREAK ADJUSTMENT INFORMATION

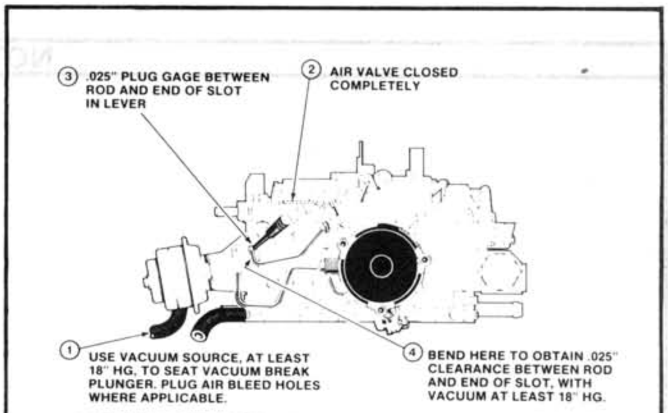
Delco Carburetor

ADJUSTMENT PROCEDURES
MODELS E4MC-E4ME



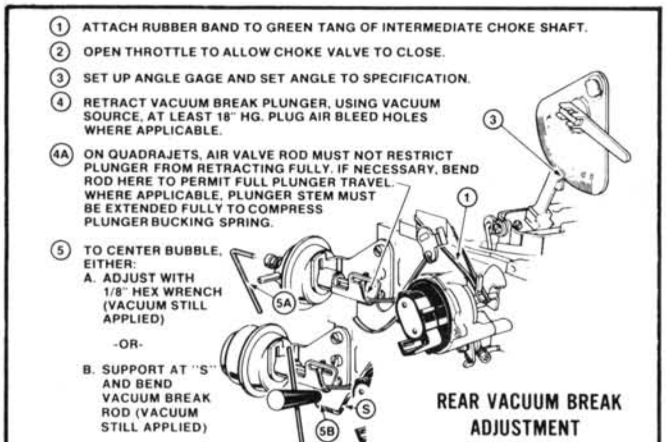
FRONT VACUUM BREAK ADJUSTMENT

Fig. 10



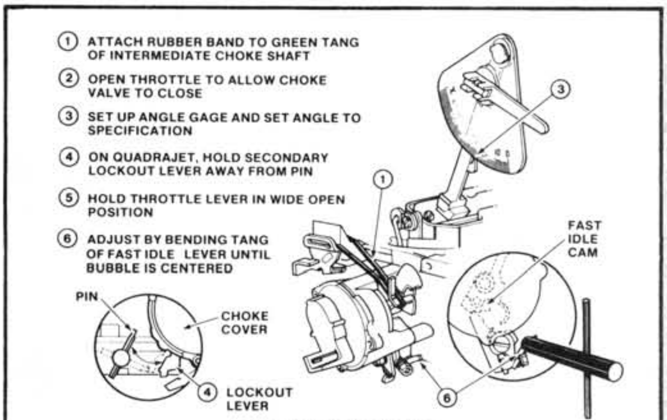
AIR VALVE ROD ADJUSTMENT - REAR

Fig. 12B



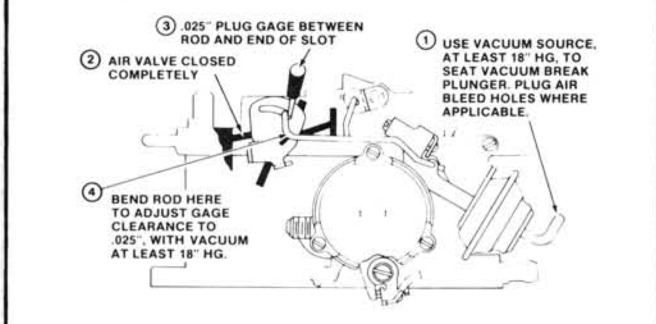
REAR VACUUM BREAK ADJUSTMENT

Fig. 11



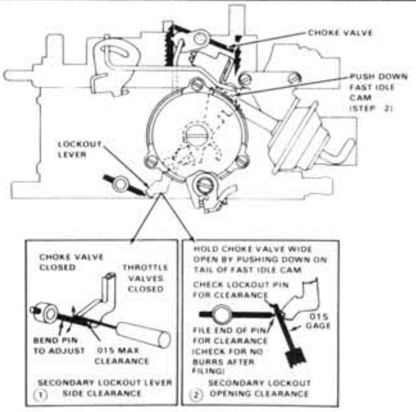
UNLOADER ADJUSTMENT

Fig. 13



AIR VALVE ROD ADJUSTMENT - FRONT

Fig. 12A



SECONDARY LOCKOUT ADJUSTMENT

Fig. 14

Delco Carburetor

ADJUSTMENT SPECIFICATIONS – E4MC – E4ME

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING	FIG. 3 LEAN MIXT. SCREW	FIG. 4 RICH MIXT. SCREW	FIG. 5 IDLE MIXT. SCREW	FIG. 6 IDLE AIR BLEED	FIG. 7 AIR VALVE SPRING	FIG. 8 CHOKE COIL LEVER	FIG. 9 CHOKE ROD CAM	FIG. 10 VAC. BREAK FRONT	FIG. 11 VAC. BREAK REAR	FIG. 12 AIR VALVE ROD	FIG. 13 UNLOADER
17080502	1/2	1.304G	4/32	$1^1/4$	NOTE 2	7/8	.120	20°	24°	30°	.025	38°
17080504	1/2	1.304G	4/32	$1^1/4$	NOTE 2	7/8	.120	20°	24°	30°	.025	38°
17080516	1/2	1.304G	4/32	$2^1/4$	NOTE 2	7/8	.120	20°	24°	30°	.025	38°
17080517	1/2	1.304G	4/32	$1^3/4$	NOTE 2	7/8	.120	20°	24°	30°	.025	38°
17080530	17/32	1.304G	4/32	5.0	NOTE 2	1/2	.120	16°	25°	47°	.025	40°
17080540	3/8	1.304G	4/32	$5^1/4$	NOTE 2	9/16	.120	14.5°	19°	23°	.025	38°
17080542	3/8	1.304G	4/32	$5^3/4$	NOTE 2	9/16	.120	14.5°	19°	13°	.025	38°
17080543	3/8	1.304G	4/32	$5^3/4$	NOTE 2	9/16	.120	14.5°	19°	23°	.025	38°
17080545	3/8	1.304G	4/32	$5^1/4$	NOTE 2	9/16	.120	14.5°	19°	18°	.025	38°
17080553	15/32	1.304G	4/32	$4^3/4$	NOTE 2	1/2	.120	17°	25°	35°	.025	35°
17080554	15/32	1.304G	4/32	$4^3/4$	NOTE 2	1/2	.120	17°	25°	34°	.025	35°
17081202	11/32	1.304G	4/32	3.0	NOTE 2	7/8	.120	20°	26°	—	.025	38°

1. G = Gage
2. Preset 1.756G, final adjustment on vehicle.
3. Preset 3 turns, final adjustment on vehicle.
4. Secondary lockout – .015 (Fig. 14)

REFER TO EMISSION CONTROL INFORMATION LABEL FOR
ENGINE ADJUSTMENT PROCEDURES AND
TUNE-UP SPECIFICATIONS

BULLETIN: 9D-5-1S
DATE: JUNE 1982

FILE AFTER BULLETIN 9-D-5-1A

Delco

Delco Carburetor

ADJUSTMENT SPECIFICATIONS – E4MC – E4ME

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING	FIG. 3 LEAN MIXT. SCREW	FIG. 4 RICH MIXT. SCREW	FIG. 5 IDLE MIXT. SCREW	FIG. 6 IDLE AIR BLEED	FIG. 7 AIR VALVE SPRING	FIG. 8 CHOKE COIL LEVER	FIG. 9 CHOKE ROD CAM	FIG. 10 VAC. BREAK FRONT	FIG. 11 VAC. BREAK REAR	FIG. 12 AIR VALVE ROD	FIG. 13 UNLOADER
17081203	11/32	1.304G	4/32	3.0	NOTE 2	7/8	.120	20°	26°	—	.025	38°
17081204	11/32	1.304G	4/32	3 1/4	NOTE 2	7/8	.120	20°	26°	—	.025	38°
17081207	11/32	1.304G	4/32	3.0	NOTE 2	7/8	.120	20°	26°	—	.025	38°
17081216	11/32	1.304G	4/32	3 1/2	NOTE 2	7/8	.120	20°	26°	—	.025	38°
17081217	11/32	1.304G	4/32	3 3/4	NOTE 2	7/8	.120	20°	26°	—	.025	38°
17081218	11/32	1.304G	4/32	3 3/4	NOTE 2	7/8	.120	20°	26°	—	.025	38°
17081219	11/32	1.304G	4/32	3.0	NOTE 2	7/8	.120	20°	28°	—	.025	38°
17081222	11/32	1.304G	4/32	3 1/4	NOTE 2	7/8	.120	20°	28°	—	.025	38°
17081224	11/32	1.304G	4/32	3 1/2	NOTE 2	7/8	.120	20°	28°	—	.025	38°
17081228	11/32	1.304G	4/32	3 1/2	NOTE 2	7/8	.120	20°	28°	—	.025	38°
17081242	5/16	1.304G	4/32	3 1/2	NOTE 2	9/16	.120	24.5°	17°	15°	.025	38°
17081243	1/4	1.304G	4/32	4 1/2	NOTE 2	9/16	.120	24.5°	19°	17°	.025	38°

1. G = Gage
2. Preset 1.756G, final adjustment on vehicle.
3. Preset 3 turns, final adjustment on vehicle.
4. Secondary lockout – .015 (Fig. 14)

REFER TO EMISSION CONTROL INFORMATION LABEL FOR ENGINE ADJUSTMENT PROCEDURES AND TUNE-UP SPECIFICATIONS

Delco Carburetor

Delco

ADJUSTMENT SPECIFICATIONS – E4MC – E4ME

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING	FIG. 3 LEAN MIXT. SCREW	FIG. 4 RICH MIXT. SCREW	FIG. 5 IDLE MIXT. SCREW	FIG. 6 IDLE AIR BLEED	FIG. 7 AIR VALVE SPRING	FIG. 8 CHOKE COIL LEVER	FIG. 9 CHOKE ROD CAM	FIG. 10 VAC. BREAK FRONT	FIG. 11 VAC. BREAK REAR	FIG. 12 AIR VALVE ROD	FIG. 13 UNLOADER
17081245	3/8	1.304G	4/32	5 1/4	NOTE 2	5/8	.120	24.5°	28°	24°	.025	38°
17081247	3/8	1.304G	4/32	5 1/4	NOTE 2	5/8	.120	24.5°	28°	24°	.025	38°
17081248	3/8	1.304G	4/32	4 1/2	NOTE 2	5/8	.120	24.5°	28°	24°	.025	38°
17081249	3/8	1.304G	4/32	5 1/4	NOTE 2	5/8	.120	24.5°	28°	24°	.025	38°
17081253	15/32	1.304G	4/32	4.0	NOTE 2	1/2	.120	14°	25°	36°	.025	35°
17081254	15/32	1.304G	4/32	3 3/4	NOTE 2	1/2	.120	14°	25°	36°	.025	35°
17081270	7/16	1.304G	4/32	3.0	NOTE 2	5/8	.120	14.5°	24°	36°	.025	35°
17081273	7/16	1.304G	4/32	3 3/4	NOTE 2	5/8	.120	16°	24°	34°	.025	35°
17081289	13/32	1.304G	4/32	4 1/2	NOTE 2	5/8	.120	24.5°	28°	24°	.025	38°
17082202	11/32	1.304G	4/32	2 1/2	NOTE 2	7/8	.120	20°	27°	—	.025	38°
17082203	11/32	1.304G	4/32	2 1/2	NOTE 2	7/8	.120	38°	27°	—	.025	38°
17082204	11/32	1.304G	4/32	2 1/2	NOTE 2	7/8	.120	20°	27°	—	.025	38°

1. G = Gage
2. Preset 1.756G, final adjustment on vehicle.
3. Preset 3 turns, final adjustment on vehicle.
4. Secondary lockout – .015 (Fig. 14)

REFER TO EMISSION CONTROL INFORMATION LABEL FOR ENGINE ADJUSTMENT PROCEDURES AND TUNE-UP SPECIFICATIONS

Delco Carburetor

ADJUSTMENT SPECIFICATIONS – E4MC – E4ME

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING	FIG. 3 LEAN MIXT. SCREW	FIG. 4 RICH MIXT. SCREW	FIG. 5 IDLE MIXT. SCREW	FIG. 6 IDLE AIR BLEED	FIG. 7 AIR VALVE SPRING	FIG. 8 CHOKE COIL LEVER	FIG. 9 CHOKE ROD CAM	FIG. 10 VAC. BREAK FRONT	FIG. 11 VAC. BREAK REAR	FIG. 12 AIR VALVE ROD	FIG. 13 UNLOADER
17082207	11/32	1.304G	4/32	$2^1/2$	NOTE 2	7/8	.120	38°	27°	—	.025	38°
17082216	11/32	1.304G	4/32	$2^1/2$	NOTE 2	7/8	.120	20°	27°	—	.025	38°
17082218	11/32	1.304G	4/32	$2^1/2$	NOTE 2	7/8	.120	20°	27°	—	.025	38°
17082232	11/32	1.304G	4/32	NOTE 3	1.756 G	7/8	.120	20°	27°	—	.025	38°
17082233	11/32	1.304G	4/32	NOTE 3	1.756G	7/8	.120	38°	27°	—	.025	38°
17082236	11/32	1.304G	4/32	NOTE 3	1.756G	7/8	.120	20°	27°	—	.025	38°
17082237	11/32	1.304G	4/32	NOTE 3	1.756G	7/8	.120	38°	27°	—	.025	38°
17082238	11/32	1.304G	4/32	NOTE 3	1.756G	7/8	.120	20°	27°	—	.025	38°
17082239	11/32	1.304G	4/32	NOTE 3	1.756G	7/8	.120	20°	27°	—	.025	38°
17082244	9/32	1.304G	4/32	NOTE 3	1.756G	9/16	.120	24.5°	21°	16°	.025	32°
17082245	3/8	1.304G	4/32	NOTE 3	1.756G	5/8	.120	24.5°	26°	26°	.025	32°
17082246	3/8	1.304G	4/32	NOTE 3	1.756G	5/8	.120	24.5°	26°	26°	.025	32°

1. G = Gage
2. Preset 1.756G, final adjustment on vehicle.
3. Preset 3 turns, final adjustment on vehicle.
4. Secondary lockout – .015 (Fig. 14)

REFER TO EMISSION CONTROL INFORMATION LABEL FOR ENGINE ADJUSTMENT PROCEDURES AND TUNE-UP SPECIFICATIONS

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ADJUSTMENT SPECIFICATIONS – E4MC – E4ME

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING	FIG. 3 LEAN MIXT. SCREW	FIG. 4 RICH MIXT. SCREW	FIG. 5 IDLE MIXT. SCREW	FIG. 6 IDLE AIR BLEED	FIG. 7 AIR VALVE SPRING	FIG. 8 CHOKE COIL LEVER	FIG. 9 CHOKE CAM ROD	FIG. 10 VAC. BREAK FRONT	FIG. 11 VAC. BREAK REAR	FIG. 12 AIR VALVE ROD	FIG. 13 UNLOADER
17082247	3/8	1.304G	4/32	NOTE 3	1.756G	5/8	.120	18°	26°	26°	.025	32°
17082248	3/8	1.304G	4/32	NOTE 3	1.756G	5/8	.120	18°	26°	26°	.025	32°
17082249	9/32	1.304G	4/32	NOTE 3	1.756G	9/16	.120	24.5°	20°	15°	.025	38°
17082253	7/16	1.304G	4/32	$3^3/4$	NOTE 2	1/2	.120	14°	27°	41°	.025	35°
17082255	15/32	1.304G	4/32	4.0	NOTE 2	1/2	.120	14°	27°	41°	.025	35°
17082260	9/32	1.304G	4/32	NOTE 3	1.756G	9/16	.120	24.5°	21°	16°	.025	32°
17082264	9/32	1.304G	4/32	NOTE 3	1.756G	9/16	.120	24.5°	26°	26°	.025	32°
17082265	3/8	1.304G	4/32	NOTE 3	1.756G	5/8	.120	24.5°	26°	26°	.025	32°
17082266	3/8	1.304G	4/32	NOTE 3	1.756G	5/8	.120	24.5°	26°	26°	.025	32°
17082267	3/8	1.304G	4/32	NOTE 3	1.756G	5/8	.120	18°	26°	26°	.025	32°
17082268	3/8	1.304G	4/32	NOTE 3	1.756G	5/8	.120	18°	26°	26°	.025	32°
17082269	9/32	1.304G	4/32	NOTE 3	1.756G	9/16	.120	24.5°	20°	15°	.025	38°

1. G = Gage
2. Preset 1.756G, final adjustment on vehicle.
3. Preset 3 turns, final adjustment on vehicle.
4. Secondary lockout – .015 (Fig. 14)

REFER TO EMISSION CONTROL INFORMATION LABEL FOR
ENGINE ADJUSTMENT PROCEDURES AND
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Delco Carburetor

ADJUSTMENT SPECIFICATIONS – E4MC – E4ME

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING	FIG. 3 LEAN MIXT. SCREW	FIG. 4 RICH MIXT. SCREW	FIG. 5 IDLE MIXT. NEEDLE	FIG. 6 IDLE AIR BLEED	FIG. 7 AIR VALVE SPRING	FIG. 8 CHOKE COIL LEVER	FIG. 9 CHOKE CAM ROD	FIG. 10 VAC. BREAK FRONT	FIG. 11 VAC. BREAK REAR	FIG. 12 AIR VALVE ROD	FIG. 13 UNLOADER
17082294	3/8	1.304G	4/32	NOTE 3	1.756G	5/8	.120	24.5°	26°	26°	.025	32°
17082295	3/8	1.304G	4/32	NOTE 3	1.756G	5/8	.120	24.5°	26°	26°	.025	32°
17082298	3/8	1.304G	4/32	NOTE 3	1.756G	5/8	.120	18°	26°	26°	.025	32°
17082299	3/8	1.304G	4/32	NOTE 3	1.756G	5/8	.120	18°	26°	26°	.025	32°
17083204	11/32	1.304G	4/32	$3^3/8$	NOTE 2	7/8	.120G	20°	27°	––	.025	38°
17083205	11/32	1.304G	4/32	$3^3/8$	NOTE 2	7/8	.120G	38°	27°	––	.025	38°
17083206	11/32	1.304G	4/32	$3^3/8$	NOTE 2	7/8	.120G	20°	27°	––	.025	38°
17083207	11/32	1.304G	4/32	$3^3/8$	NOTE 2	7/8	.120G	38°	27°	––	.025	38°
17083218	11/32	1.304G	4/32	$3^3/8$	NOTE 2	7/8	.120G	20°	27°	––	.025	38°
17083236	11/32	1.304G	4/32	NOTE 3	1.756G	7/8	.120G	20°	27°	––	.025	38°
17083242	9/32	1.304G	4/32	NOTE 3	1.756G	9/16	.120G	24.5°	25°	––	.025	38°
17083244	1/4	1.304G	4/32	NOTE 3	1.756G	9/16	.120G	24.5°	21°	16°	.025	32°

1. G = Gage
2. Preset 1.756G, final adjustment on vehicle.
3. Preset 3 turns, final adjustment on vehicle.
4. Secondary lockout – .015 (Fig. 14)

REFER TO EMISSION CONTROL INFORMATION LABEL FOR
ENGINE ADJUSTMENT PROCEDURES AND
TUNE-UP SPECIFICATIONS

Delco Carburetor

ADJUSTMENT SPECIFICATIONS – E4MC – E4ME

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING ±2/32"	FIG. 3 LEAN MIXT. SCREW	FIG. 4 RICH MIXT. SCREW ±2/32"	FIG. 5 IDLE MIXT. NEEDLE	FIG. 6 IDLE AIR BLEED	FIG. 7 AIR VALVE SPRING	FIG. 8 CHOKE STAT LEVER	FIG. 9 CHOKE LINK ROD ±2.5°	FIG. 10 VAC. BREAK FRONT ±2.5°	FIG. 11 VAC. BREAK REAR ±3.5°	FIG. 12 AIR VALVE ROD	FIG. 13 UNLOADER ±4°
17083248	3/8	1.304G	4/32	NOTE 3	1.756G	5/8	.120G	24.5°	26°	26°	.025	32°
17083250	7/16	1.304G	4/32	NOTE 3	1.756G	1/2	.120G	14°	27°	42°	.025	35°
17083251	7/16	1.304G	4/32	NOTE 3	1.756G	1/2	.120G	14°	27°	42°	.025	35°
17083252	7/16	1.304G	4/32	NOTE 3	1.756G	1/2	.120G	14°	27°	41°	.025	35°
17083253	7/16	1.304G	4/32	NOTE 3	1.756G	1/2	.120G	14°	27°	41°	.025	35°
17083506	7/16	1.304G	4/32	NOTE 3	1.756G	7/8	.120G	20°	27°	36°	.025	36°
17083508	7/16	1.304G	4/32	NOTE 3	1.756G	7/8	.120G	20°	27°	36°	.025	36°
17083524	7/16	1.304G	4/32	NOTE 3	1.756G	7/8	.120G	20°	25°	36°	.025	36°
17083526	7/16	1.304G	4/32	NOTE 3	1.756G	7/8	.120G	20°	25°	36°	.025	36°
17083553	7/16	1.304G	4/32	NOTE 3	1.756G	1/2	.120G	14°	27°	41°	.025	35°
17084201	11/32	1.304G	4/32	3 3/32	NOTE 2	7/8	.120G	20°	27°	--	.025	38°
17084205	11/32	1.304G	4/32	3 3/8	NOTE 2	7/8	.120G	38°	27°	--	.025	38°

1. G = Gage
2. Preset 1.756G, final adjustment on vehicle.
3. Preset 3 turns, final adjustment on vehicle.
4. Secondary lockout – .015 (Fig. 14)

REFER TO EMISSION CONTROL INFORMATION LABEL FOR
ENGINE ADJUSTMENT PROCEDURES AND
TUNE-UP SPECIFICATIONS

Delco Carburetor

ADJUSTMENT SPECIFICATIONS – E4ME – E4MC

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING ±2/32"	FIG. 3 LEAN MIXT. SCREW	FIG. 4 RICH MIXT. SCREW ±2/32"	FIG. 5 IDLE MIXT. NEEDLE	FIG. 6 IDLE AIR BLEED	FIG. 7 AIR VALVE SPRING	FIG. 8 CHOKE STAT LEVER	FIG. 9 CHOKE LINK CAM $\pm 2.5^\circ$	FIG. 10 VAC. BREAK FRONT $\pm 2.5^\circ$	FIG. 11 VAC. BREAK REAR $\pm 3.5^\circ$	FIG. 12 AIR VALVE LINK	FIG. 13 UNLOADER $\pm 4^\circ$
17084208	11/32	1.304G	4/32	3 3/8	NOTE 2	7/8	.120G	20°	27°	--	.025	38°
17084209	11/32	1.304G	4/32	3 3/8	NOTE 2	7/8	.120G	38°	27°	--	.025	38°
17084210	11/32	1.304G	4/32	3 3/8	NOTE 2	7/8	.120G	20°	27°	--	.025	38°
17084240	10/32	1.304G	4/32	NOTE 3	1.756G	1	.120G	24.5°	24°	--	.025	32°
17084244	10/32	1.304G	4/32	NOTE 3	1.756G	1	.120G	24.5°	24°	--	.025	32°
17084246	10/32	1.304G	4/32	NOTE 3	1.756G	1	.120G	24.5°	22°	24°	.025	32°
17084252	14/32	1.304G	4/32	NOTE 3	1.756G	1/2	.120G	14°	27°	41°	.025	35°
17084254	14/32	1.304G	4/32	NOTE 3	1.756G	1/2	.120G	14°	27°	41°	.025	35°
17084256	11/32	1.304G	4/32	NOTE 3	1.756G	1/2	.120G	14°	25°	41°	.025	35°
17084258	11/32	1.304G	4/32	NOTE 3	1.756G	1/2	.120G	14°	25°	41°	.025	35°
17084507	14/32	1.304G	4/32	NOTE 3	1.756G	1	.120G	20°	27°	36°	.025	36°
17084509	14/32	1.304G	4/32	NOTE 3	1.756G	1	.120G	20°	27°	36°	.025	36°

1. G = Gage
2. Preset 1.756G, final adjustment on vehicle.
3. Preset 3 turns, final adjustment on vehicle.
4. Secondary lockout – .015 (Fig. 14)

REFER TO EMISSION CONTROL INFORMATION LABEL FOR
ENGINE ADJUSTMENT PROCEDURES AND
TUNE-UP SPECIFICATIONS

Delco Carburetor

1985 ADJUSTMENT SPECIFICATIONS – E4ME – E4MC – E4MED

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING ±2/32″	FIG. 3 LEAN MIXT. SCREW	FIG. 4 RICH MIXT. SCREW ±2/32″	FIG. 5 IDLE MIXT. NEEDLE	FIG. 6 IDLE AIR BLEED	FIG. 7 AIR VALVE SPRING	FIG. 8 CHOKE STAT LEVER	FIG. 9 CHOKE LINK CAM ±2.5°	FIG. 10 VAC. BREAK FRONT ±2.5°	FIG. 11 VAC. BREAK REAR ±3.5°	FIG. 12 AIR VALVE LINK	FIG. 13 UNLOADER ±4°
17084525	14/32	1.304G	4/32	NOTE 3	1.756G	1	.120G	20°	25°	36°	.025	36°
17084527	14/32	1.304G	4/32	NOTE 3	1.756G	1	.120G	20°	25°	36°	.025	36°
17084554	14/32	1.304G	4/32	NOTE 3	1.756G	1/2	.120G	14°	27°	41°	.025	35°
17085202	11/32	1.304G	4/32	3 3/8	NOTE 1	7/8	.120G	20°	27°	--	.025	38°
17085203	11/32	1.304G	4/32	3 3/8	NOTE 1	7/8	.120G	*	27°	--	.025	38°
17085204	11/32	1.304G	4/32	3 3/8	NOTE 1	7/8	.120G	20°	27°	--	.025	38°
17085207	11/32	1.304G	4/32	3 3/8	NOTE 1	7/8	.120G	38°	27°	--	.025	38°
17085218	11/32	1.304G	4/32	3 3/8	NOTE 1	7/8	.120G	20°	27°	--	.025	38°

1. G = Gage
2. Preset 1.756G, final adjustment on vehicle.
3. Preset 3 turns, final adjustment on vehicle.
4. Secondary lockout – .015″ (Fig. 14)

* CHOKE ROD - FAST IDLE CAM ADJUSTMENT - 20°

CHOKE ROD - FAST IDLE CAM ADJUSTMENT - 38°

REFER TO EMISSION CONTROL INFORMATION LABEL FOR ENGINE ADJUSTMENT PROCEDURES AND TUNE-UP SPECIFICATIONS

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1985 ADJUSTMENT SPECIFICATIONS – E4ME – E4MC – E4MED

FIG. 1	FIG. 2	FIG. 3	FIG. 4	FIG. 5	FIG. 6	FIG. 7	FIG. 8	FIG. 9	FIG. 10	FIG. 11	FIG. 12	FIG. 13
CARB. NUMBER	FLOAT SETTING ±2/32″	LEAN MIXT. SCREW	RICH MIXT. SCREW ±2/32″	IDLE MIXT. NEEDLE	IDLE AIR BLEED	AIR VALVE SPRING	CHOKE STAT LEVER	CHOKE LINK CAM ±2.5°	VAC. BREAK FRONT ±2.5°	VAC. BREAK REAR ±3.5°	AIR VALVE LINK	UNLOADER ±4°
17085282	11/32	1.304G	--	NOTE 2	1.756G	1/2	.120G	14°	25°	43°	.025	35°
17085407	14/32	1.304G	4/32	NOTE 2	1.756G	7/8	.120G	20°	25°	--	.025	30°
17085433	14/32	1.304G	4/32	NOTE 2	1.756G	7/8	.120G	20°	25°	--	.025	30°
17085502	14/32	1.304G	--	NOTE 2	1.756G	7/8	.120G	20°	26°	36°	.025	39°
17085503	14/32	1.304G	--	NOTE 2	1.756G	7/8	.120G	20°	26°	36°	.025	39°
17085506	14/32	1.304G	--	NOTE 2	1.756G	1	.120G	20°	27°	36°	.025	36°
17085508	14/32	1.304G	--	NOTE 2	1.756G	1	.120G	20°	27°	36°	.025	36°
17085524	14/32	1.304G	--	NOTE 2	1.756G	1	.120G	20°	25°	36°	.025	36°
17085526	14/32	1.304G	--	NOTE 2	1.756G	1	.120G	20°	25°	36°	.025	36°
17085554	14/32	1.304G	4/32	NOTE 2	1.756G	1/2	.120G	14°	27°	41°	.025	35°

1. G = Gage
2. Preset 1.756G, final adjustment on vehicle.
3. Preset 3 turns, final adjustment on vehicle.
4. Secondary lockout – .015″ (Fig. 14)

REFER TO EMISSION CONTROL INFORMATION LABEL FOR
ENGINE ADJUSTMENT PROCEDURES AND
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Delco Carburetor

1986 ADJUSTMENT SPECIFICATIONS – E4ME – E4MC – E4MED

FIG. 1 CARB. NUMBER	FIG. 2 FLOAT SETTING ±2/32''	FIG. 3 SOLENOID ADJUST SCREW	FIG. 4 SOLENOID STOP SCREW ±2/32''	FIG. 5 IDLE MIXT. NEEDLE	FIG. 6 IDLE AIR BLEED	FIG. 7 AIR VALVE SPRING	FIG. 8 CHOKE STAT LEVER	FIG. 9 CHOKE LINK CAM ±2.5°	FIG. 10 VAC. BREAK FRONT ±2.5°	FIG. 11 VAC. BREAK REAR ±3.5°	FIG. 12 AIR VALVE LINK	FIG. 13 UNLOADER ±4°
17086003	11/32	1.304G	4/32	3 3/8	NOTE 2	7/8	.120G	20°	27°	--	.025	38°
17086004	11/32	1.304G	4/32	3 3/8	NOTE 2	7/8	.120G	20°	27°	--	.025	38°
17086005	11/32	1.304G	4/32	3 3/8	NOTE 2	7/8	.120G	38°	27°	--	.025	38°
17086006	11/32	1.304G	4/32	3 3/8	NOTE 2	7/8	.120G	20°	27°	--	.025	38°
17086008	11/32	1.304G	--	NOTE 3	1.756G	1/2	.120G	14°	25°	43°	.025	35°
17086009	14/32	1.304G	--	NOTE 3	1.756G	1/2	.120G	14°	25°	43°	.025	35°
17086040	11/32	1.304G	4/32	3 3/8	NOTE 2	7/8	.120G	38°	27°	--	.025	38°
17086057	18/32	1.304G	--	NOTE 3	1.756G	7/8	.120G	20°	26°	36°	.025	39°
17086058	18/32	1.304G	--	NOTE 3	1.756G	7/8	.120G	20°	26°	36°	.025	39°

1. G = Gage
2. Preset 1.756G, final adjustment on vehicle.
3. Preset 3 turns, final adjustment on vehicle.
4. Secondary lockout – .015'' (Fig. 14)

REFER TO EMISSION CONTROL INFORMATION LABEL FOR
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