FUEL—CARBURETION

FUEL SYSTEM

GENERAL

New service specifications and applications for all Model YF, Model 2100 and Model 4350 carburetors are presented in this section. The desired adjustment setting is now accompanied by a tolerance which may be used when making adjustments on a carburetor not functioning in an acceptable manner.

AIR CLEANER

The air cleaner element assembly consists of a paper cartridge and a polyurethane element (fig. 4-1).

In order for the air cleaner to function properly, it must be serviced periodically. A dirty element will restrict airflow to the carburetor and create an overly rich mixture. It will also cause excessive fuel consumption and become unable to filter dust and dirt which can lead to abnormal wear of the moving parts of the engine.

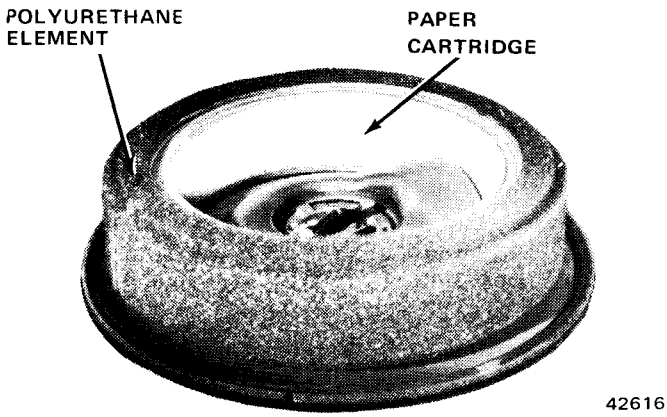


Fig. 4-1 Air Cleaner Element

The air cleaner should be serviced in accordance with the instruction decal attached. However, where no decal is present, service the air cleaner as follows:

Clean the air cleaner element assembly every 5,000 miles on Cherokee, Wagoneer, and Truck models. Replace the element every 15,000 miles on Cherokee, Wagoneer, and Truck models and every 30,000 miles on CJ models. If the vehicle is operated under dusty conditions, check the condition of the air cleaner element assembly more frequently and service if dirty.

To clean the polyurethane element, first carefully remove it from the paper cartridge and wash it in solvent. Wrap the element in a clean, dry cloth and squeeze to remove all possible solvent. Do not wring the element as it may tear.

To clean the paper cartridge, first shake out accumulated dirt—DO NOT WASH. Use compressed air and carefully blow through the element in the reverse direction of normal airflow.

After cleaning, oil the polyurethane element liberally with engine oil (SAE 10W 30) and squeeze to evenly distribute the oil through the element and to remove excess oil. The element should be slightly dampened with oil. Install the polyurethane element on the paper cartridge with the edges of the polyurethane element over the plastic end plates of the paper cartridge.

Replace the air cleaner paper cartridge more frequently if there is any apparent damage or evidence of plugging. At the same time, inspect the polyurethane element and replace it if torn or otherwise damaged.

FUEL FILTERS

All carburetors are protected against the entry of dirt and other foreign matter through the fuel inlet by a replaceable 15-micron, pleated paper filter which is located in the carburetor fuel inlet line and is secured by two short rubber hoses and clamps. The filter should be replaced every 15,000 miles.

All models have a fuel return system for 1976 (refer to Fuel Return System section) which requires an extra nipple on the fuel filter to route excess vapor back to the fuel tank.

All vehicles use a woven Saran sleeve-type filter which is attached to the end of the fuel outlet tube inside the fuel tank. This filter is rated at 65 microns and repels water. Under normal conditions it requires no maintenance or service.

FUEL TANK

The fuel tank on Cherokee, Wagoneer, and Truck models is suspended from the frame by a single steel strap and front and rear brackets. On CJ-5 and CJ-7 Models the fuel tank is attached to the frame by brackets and bolts. The brackets are attached to the tank at the seam flange. The various fuel tank and venting arrangements used on California vehicles are illustrated in figures 4-2, 4-3, 4-4, and 4-5. Nationwide vehicles, except California vehicles, use the same tank design without vapor vent lines or liquid check valve.

The fuel tank is an external expansion type. Fuel tank venting for CJ models and all California vehicles is accomplished by vapor lines which lead to a liquid check valve. The vapor lines are located so that during any inclination of the vehicle at least one line will be open. Venting for all other vehicles is through the fuel tank filler cap.

Fuel Tank Sending Unit

This assembly utilizes a float pivoted to an electrical contact that rides on a wire resistance element to electrically signal the fuel gauge, indicating the level of fuel in the fuel tank.

Fuel pickup and fuel return system nipples, and the sending wire connection are mounted on the sending unit mounting cover which is secured to the fuel tank with a locking ring.

To replace the fuel sending unit, the fuel tank must be removed.

Fuel Tank Filler Tube

The filler neck on all CJ models incorporates a restrictor to prevent entry of nozzles used on leaded fuel gasoline station pumps. The restrictor reduces the size of the filler neck to a small opening which is covered by a trap door (fig. 4-6). When a small diameter unleaded fuel pump nozzle is inserted into the filler neck, this nozzle can pass through the restrictor opening, push open the restrictor trap door, and the fuel tank can be refilled. In this way, catalytic converter contamination due to leaded fuel can be prevented.

All CJ models are designed to use unleaded fuel even though only some CJ models have catalytic converters.

The filler tube opening is located at the right rear body panel on CJ-5 and CJ-7 models. On all other vehicles, except Trucks, the filler tube opening is located at the left rear quarter panel. On Truck models it is located at the left side of the pickup box.

The filler tube is connected to the fuel tank inlet by a rubber hose and secured with clamps.

All fuel tanks are equipped with a filler tube vent hose which extends from the filler tube to a fitting at the top of the tank. The purpose of this vent is to provide easier filling by relieving the air displaced as the tank is filled.

Fuel Tank Filler Cap—California Cherokee, Wagoneer, Truck, and all CJ Models

The filler cap incorporates a two-way relief valve which is closed to atmosphere under normal operating conditions. The relief valve is calibrated to open only when a pressure of 0.75 to 1.5 psi or a vacuum of 1.1 to 1.8 inches of Hg occurs within the tank. When the pressure or vacuum is relieved, the valve returns to the normally closed position.

Fuel Tank Filler Cap—Nationwide (Except California)

This filler cap is vented externally since these vehicles do not have a closed fuel tank vent system.

Fuel Tank Vent—California Cherokee, Wagoneer, Truck and All CJ Models

A closed fuel tank vent system prevents raw fuel vapor from entering the atmosphere. Fuel vapor from the tank is routed through the vent lines at the top of the tank to a liquid check valve (fig. 4-7).

The liquid check valve incorporates a float and Viton needle assembly. In the event that liquid fuel enters the check valve, the float will rise and force the needle upward to close the vent passage and prevent fuel flow through the valve.

After passing through the check valve, the fuel vapor is routed forward through a vent line to a charcoal canister in the engine compartment.

The fuel vapors are then drawn into the air cleaner snorkel and burned along with the fuel-air mixture.

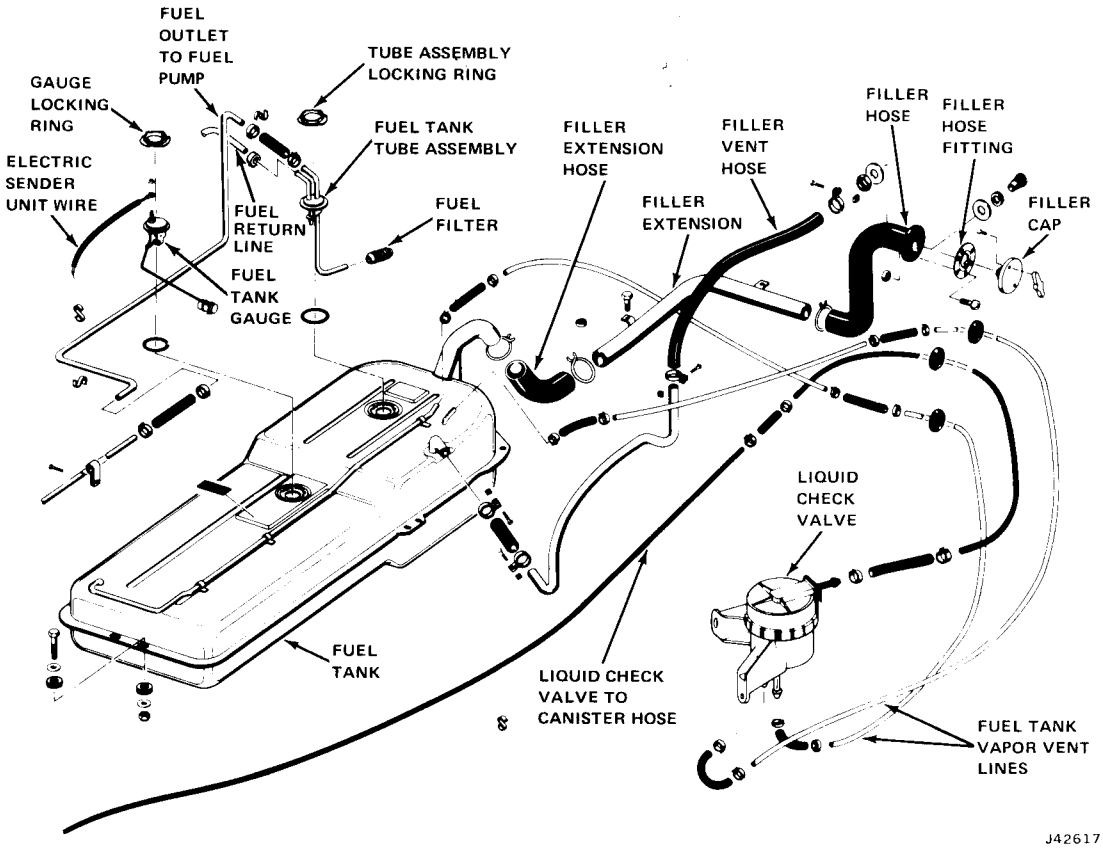


Fig. 4-2 Fuel Tank and Vent Lines—Cherokee and Wagoneer

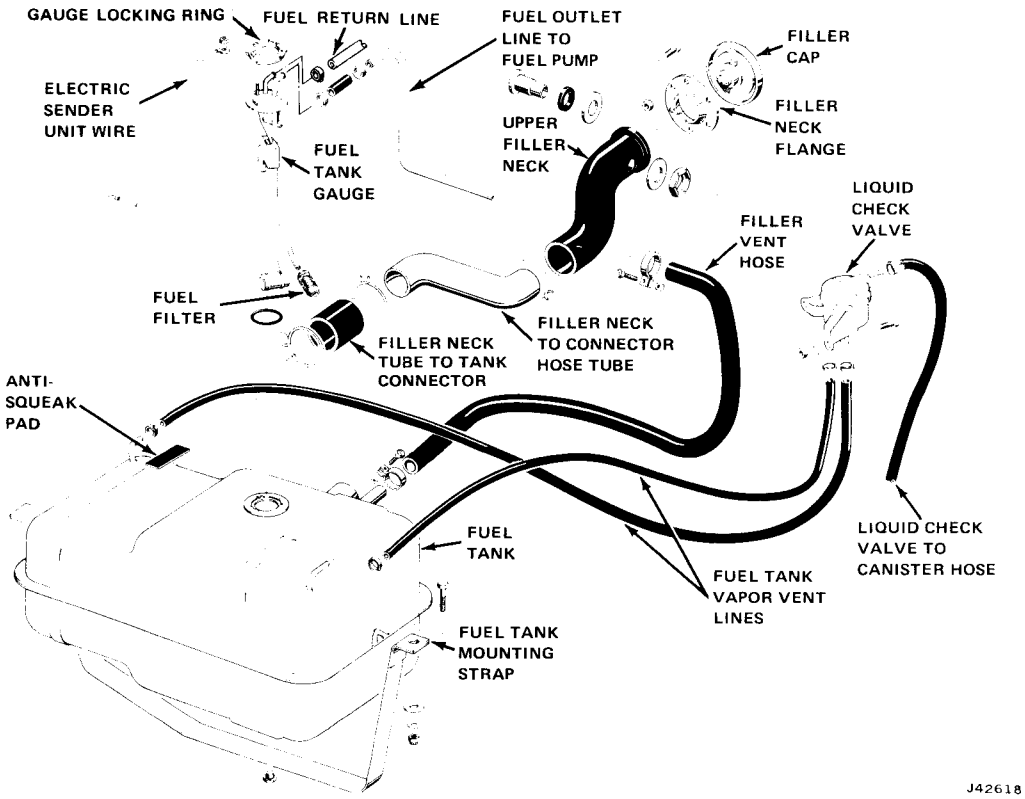


Fig. 4-3 Fuel Tank and Vent Lines—Truck (Townside)

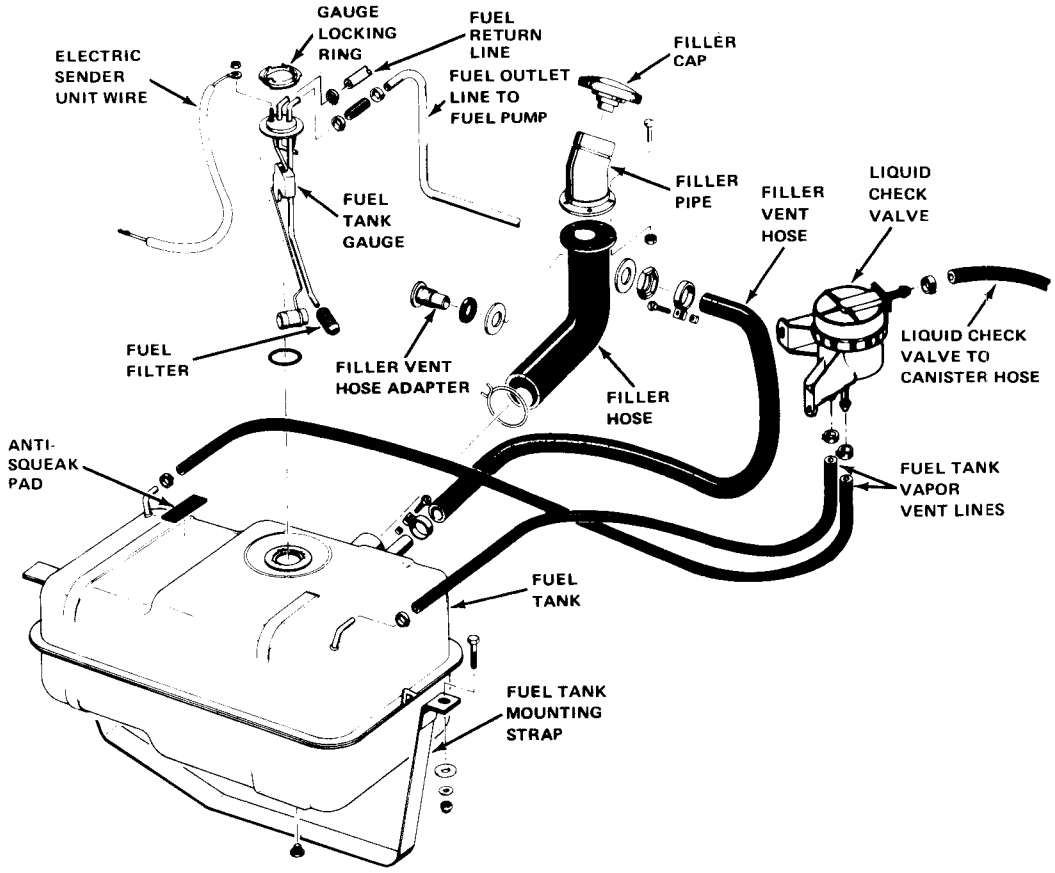


Fig. 4-4 Fuel Tank and Vent Lines—Truck (Thriftside)

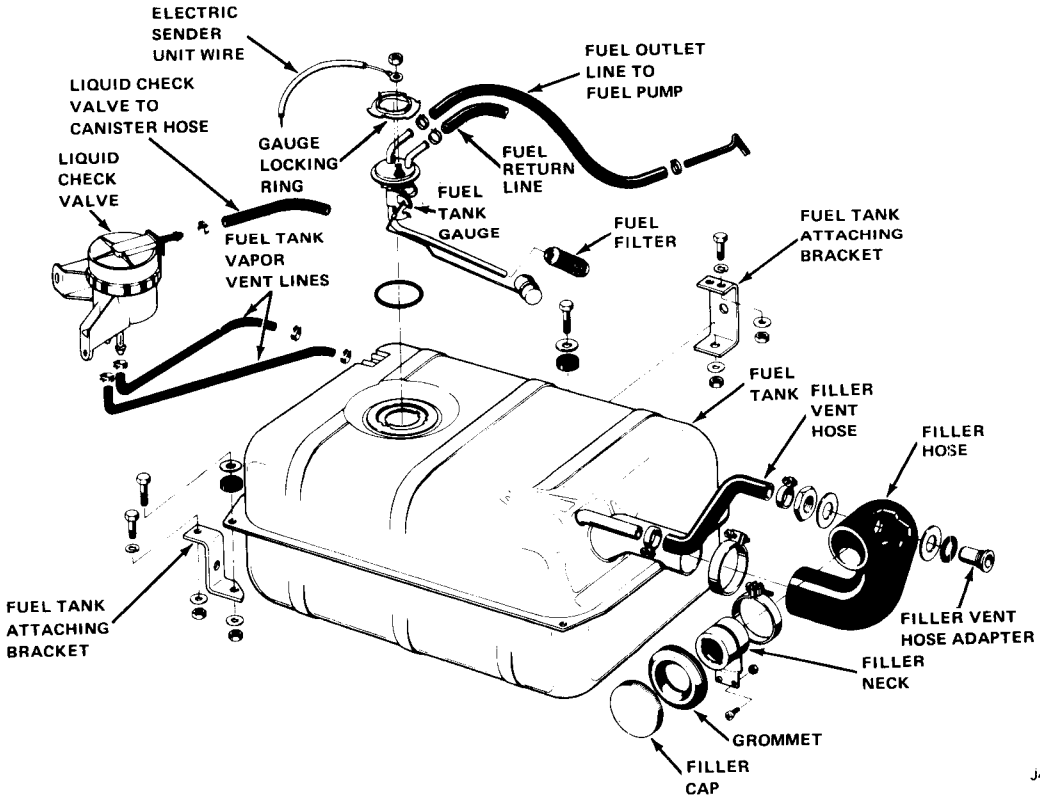


Fig. 4-5 Fuel Tank and Vent Lines—CJ-5 and CJ-7

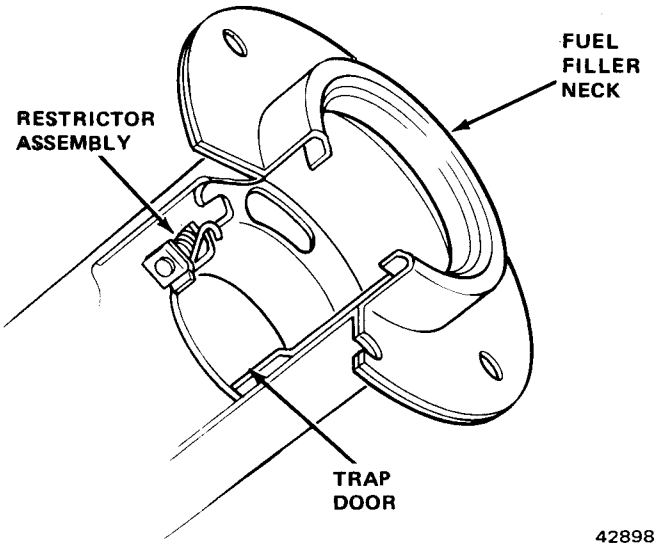


Fig. 4-6 Filler Neck Restrictor

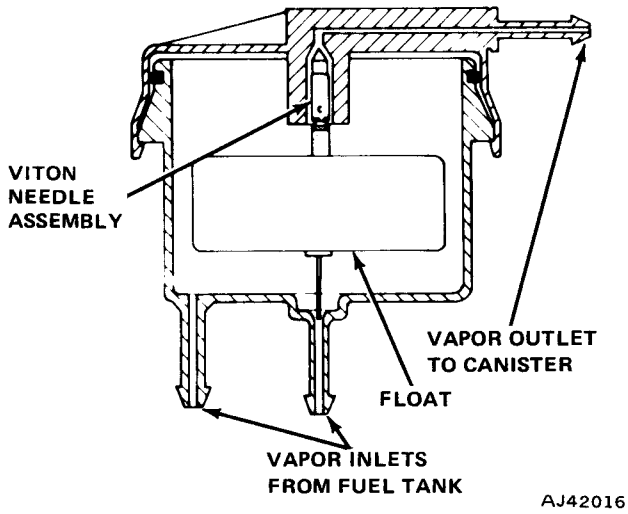


Fig. 4-7 Liquid Check Valve

Fuel Tank Capacities (Gallons)

CJ Models	15.5
Wagoneer, Cherokee	22
Truck	19

60572

FUEL RETURN SYSTEM

All models use a fuel return system to reduce the possibility of high temperature fuel vapor problems. The fuel return system consists of a special fuel filter and a return line to the fuel tank (fig. 4-8).

The special fuel filter has an extra outlet nipple connected to the fuel return line. The fuel return line is routed back to the fuel tank, where it attaches to an extra nipple on the fuel tank sending unit. During normal operation, a small portion of fuel is returned to the tank. During periods of high underhood temperatures, vaporized fuel is returned to the tank and not passed through the carburetor.

The extra nipple on the special fuel filter should be positioned upward to ensure proper fuel system operation.

FUEL PUMP

A single-action, stamped fuel pump is used for all engine applications.

The fuel pump rocker arm is activated by an eccentric on the engine camshaft and provides a steady supply of fuel at a constant pressure to the carburetor.

When the carburetor fuel inlet needle closes, accumulation of fuel in the pump extends the diaphragm, compressing the diaphragm spring. This action causes the rocker arm linkage to become inoperative until the pressure on the diaphragm and spring is reduced. The fuel pump discharge pressure is thus controlled by the diaphragm spring.

NOTE: *Fuel pumps are not to be overhauled. Prior to replacement of a fuel pump assembly suspected to be defective, test for specific requirements as outlined in the following test procedures.*

Fuel Pump Testing

Be sure the in-line fuel filter is not clogged before making tests. The following tests will determine if the fuel pump requires replacement.

Pressure Test

(1) Remove air cleaner assembly.

(2) Disconnect fuel inlet line or fuel filter at the carburetor.

(3) Disconnect fuel return line at fuel filter and plug nipple on filter.

NOTE: *Use care to prevent combustion due to fuel spillage.*

(4) Connect pressure gauge, restrictor, and flexible hose (fig. 4-9) between fuel filter and carburetor.

(5) Position flexible hose and restrictor so fuel can be discharged into suitable graduated container.

(6) Before taking pressure reading, operate engine at curb idle rpm and vent the system into the container by momentarily opening hose restrictor.

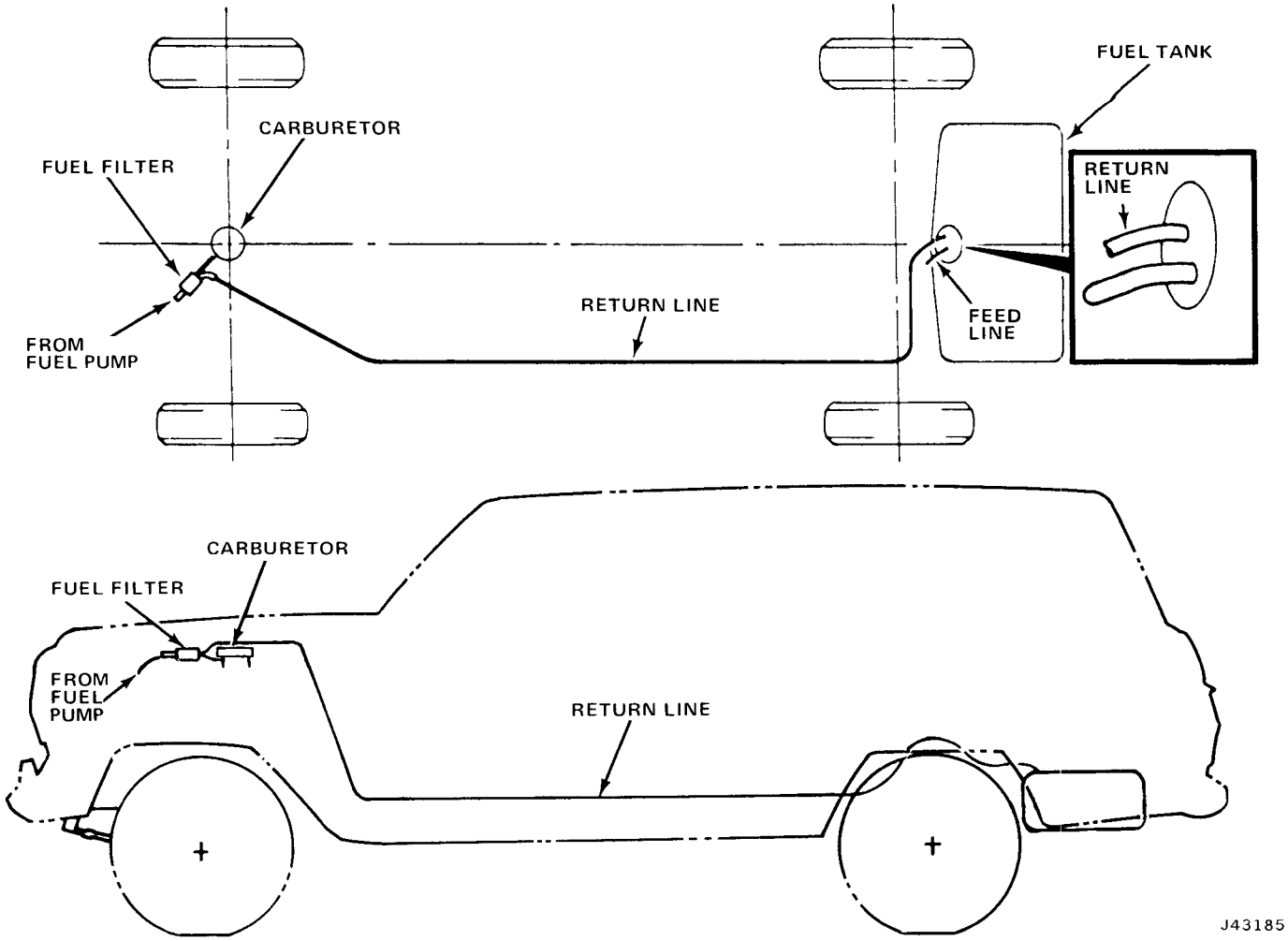


Fig. 4-8 Fuel Vapor Return System—Typical

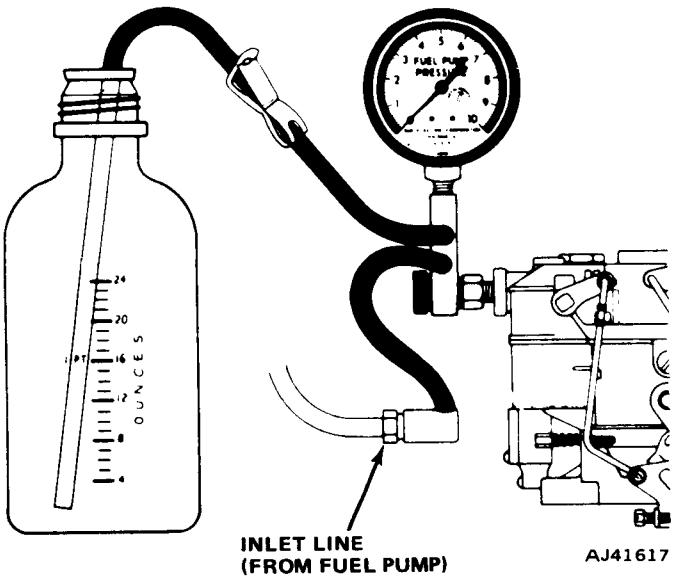


Fig. 4-9 Fuel Pump Testing

(7) Close hose restrictor, allow pressure to stabilize, and note gauge reading. Gauge should indicate 4 to 5 psi for six-cylinder engines, and 5 to 6.5 psi for V-8 engines.

NOTE: *If the pump pressure is not within specification and the fuel lines and filter are in satisfactory condition, the pump is defective and should be replaced. If the pump pressure is within specifications, perform the capacity and vacuum tests.*

Capacity (Volume) Test

If fuel pump pressure is within specification, test the capacity (volume) as follows:

(1) Operate engine at curb idle rpm.

(2) Open hose restrictor and allow fuel to discharge into graduated container for 30 seconds, then close restrictor.

NOTE: *At least one pint of fuel should have been discharged. If pump volume is less than one pint, repeat test using an auxiliary fuel supply and a new fuel filter. If the pump volume meets specification while using the auxiliary fuel supply, check for a restriction in the fuel supply from the tank and for proper tank venting.*

Vacuum Test

(1) Disconnect fuel inlet line at fuel pump.

(2) Connect vacuum gauge to fuel pump inlet.

(3) Operate engine at curb idle rpm and note vacuum gauge reading. Gauge should indicate ten inches of mercury (10 Hg). If the pump vacuum reading is not within specification, the pump is defective and should be replaced.

NOTE: *Vacuum gauge will not register a reading until fuel in carburetor float bowl has been used and pump begins to operate at full capacity.*

Fuel Pump Specifications

Volume	1 quart of fuel in 1 minute or less
Vacuum	10 inches of mercury (min)
Pressure	Six-Cylinder: 4 to 5 psi V-8 : 5 to 6.5 psi

60573

CARBURETION

CARBURETOR MODEL YF—1 VENTURI

GENERAL

Some Model YF carburetors for 1976 are equipped with an electric assist choke which supplies supplemental heat to the choke bimetallic spring. This speeds choke valve opening after the choke cover interior reaches modulating temperature (refer to Thermostatic Switch chart). This feature reduces emissions of carbon monoxide (CO) and hydrocarbons during warmup.

The electric assist choke is powered from a special ac terminal at the alternator which provides a 7-volt power source for an electric heating element within the choke cover.

Identification

The carburetor is identified by a code number and build date which is stamped on the identification tag. Each carburetor build month is coded alphabetically

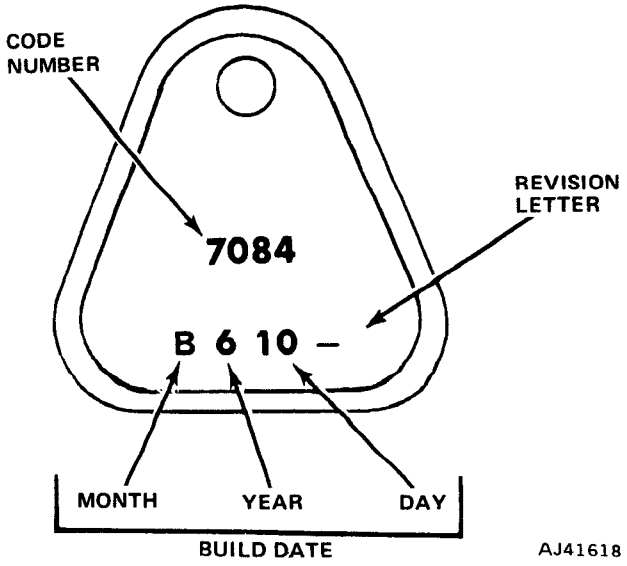


Fig. 4-10 Identification Tag

choke valve, fuel bowl vents, fuel inlet fitting, float assembly, needle and seat assembly, and dashpot or solenoid assembly (if equipped).

The main body assembly contains the metering rod and jet, accelerator pump assembly, pump discharge jet, ball and weight, low speed jet, antiperc bleed, economizer, and main discharge nozzle.

The throttle body assembly contains the throttle shaft and lever assembly with coded return spring, curb idle adjusting screw, idle mixture adjusting screw, idle limiter cap, distributor vacuum fitting, and EGR vacuum fitting.

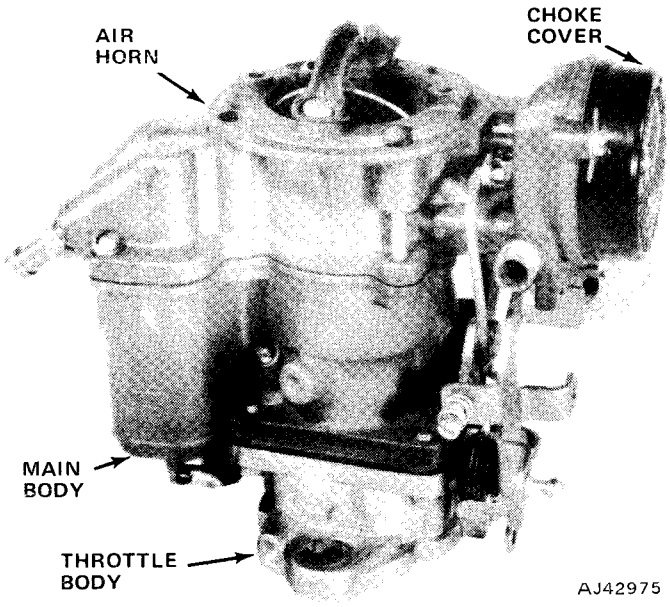


Fig. 4-11 Model YF Carburetor Assembly

CARBURETOR CIRCUITS

Five conventional circuits are used: Float (Fuel Inlet) Circuit, Idle (Low Speed) Circuit, Main Metering (High Speed) Circuit, Pump Circuit, and Choke Circuit.

Float (Fuel Inlet) Circuit

The float circuit maintains the specified fuel level in the bowl to provide an adequate fuel supply to the metering circuits for all engine operating conditions.

A spring-loaded, two-piece needle is used to prevent float vibration from affecting the fuel level. The needle also incorporates a flared tip which is capable of digesting small foreign particles, resulting in minimum fuel leakage or flooding under extreme dirt conditions. The flared tip needle also reduces wear to extend the normal life of the needle and seat assembly. Special precautions must be taken when adjusting the float level (refer to Float Level Adjustment).

Fuel enters the carburetor through the needle and seat assembly. When the fuel in the bowl reaches a specified level, the float lever pushes the needle toward its seat and restricts the incoming fuel flow to admit only enough fuel to replace that being used (fig. 4-12).

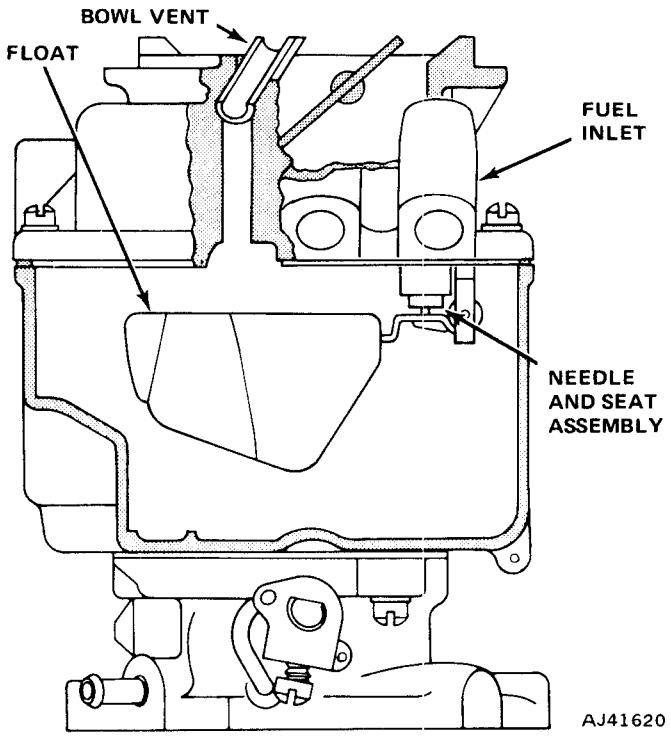


Fig. 4-12 Float Circuit

The bowl is vented internally by a tube and a drilled passage, located inside the air horn, to assure correct air pressure above the fuel for all engine operating conditions. The vent automatically compensates for any air cleaner restriction by balancing pressure between the fuel bowl and the incoming air.

All YF carburetors have an external fuel bowl pressure vent. Excess bowl pressure is vented from the carburetor to the fuel vapor storage canister. An aluminum wafer, located inside the air horn, is normally seated. When pressure within the fuel bowl becomes excessive, the wafer unseats and pressure is vented through a passage in the air horn. A hose connected to the air horn vent passage sends the excess pressure and fuel vapor to the fuel vapor storage canister (fig. 4-13).

Idle (Low Speed) Circuit

Fuel for idle and early part-throttle operation is metered through the idle circuit. The low speed jet is threaded into the low speed well and may be removed for cleaning.

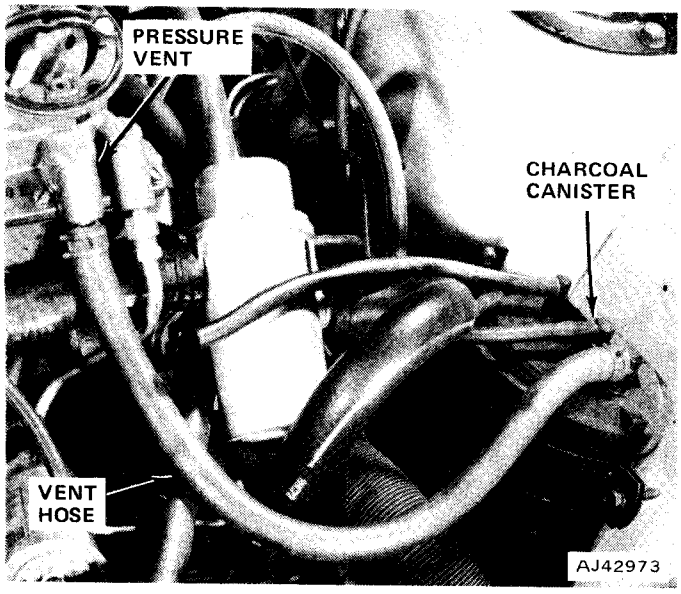


Fig. 4-13 External Fuel Bowl Pressure Vent

Fuel is metered as it enters the lower end of the low speed jet and flows up through the tube. The fuel is then mixed with air which is metered through the bypass. The fuel-air mixture then travels downward through the economizer and past the idle bleed where additional metered air is introduced. The fuel-air mixture continues downward and is discharged below the throttle valve at the idle port opening and the idle mixture adjustment screw port (fig. 4-14).

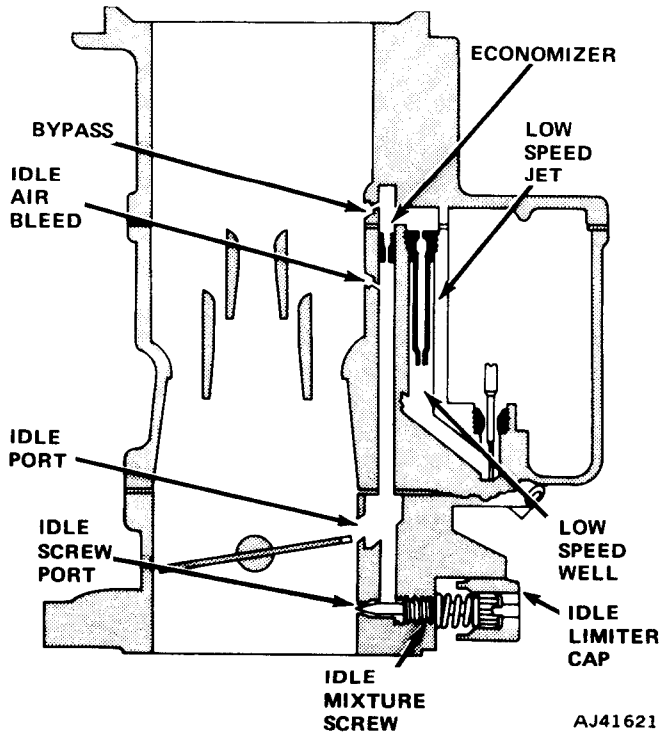


Fig. 4-14 Idle Circuit

The idle mixture adjustment screw controls the amount of mixture discharged into the manifold. Turning the screw inward (clockwise) decreases the amount of fuel-air mixture supplied for idle. The idle limiter cap is designed to regulate the adjustment range of the idle mixture adjusting screw, effectively controlling the exhaust emission level at idle speeds to comply with Federal Motor Vehicle Emission Standards.

The idle port is slotted and, as the throttle valve is opened, more of the port is exposed to manifold vacuum to allow an increased discharge of the fuel-air mixture for early part-throttle operation.

Main Metering (High Speed) Circuit

Fuel for most part-throttle and full-throttle operation is supplied through the main metering circuit (fig. 4-15).

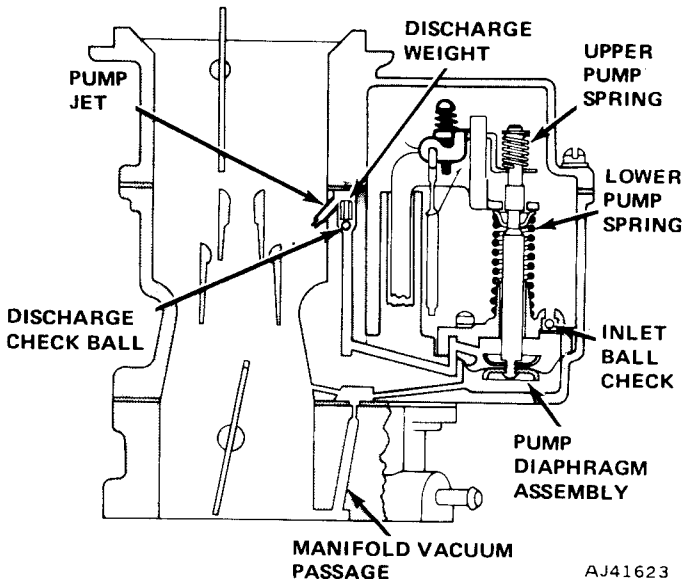


Fig. 4-15 Main Metering Circuit

The position of the metering rod in the metering rod jet regulates the amount of fuel admitted to the main discharge nozzle. The lower end of the metering rod is calibrated in steps to meter accurately the fuel required. As the metering rod is raised or lowered in the jet, the opening is varied in size to provide the correct amount of fuel proportionate to the engine requirements for part-throttle and full-throttle operations. The metering rod is actuated by mechanical linkage and also by changing manifold vacuum.

The restriction and air bleeds within the vacuum passage leading to the pump diaphragm vacuum chamber provide a lower and more uniform vacuum.

To prevent percolation in the low speed well or main discharge nozzle, which may occur during hot engine idle or shutdown, an antiperc passage is used. Its purpose is to vent vapors and relieve pressure to prevent fuel from being forced out of the nozzle and into the intake manifold.

The main discharge nozzle and the antiperc bushing are permanently installed and are not to be removed.

Mechanical Action

During part-throttle operation, manifold vacuum pulls the pump diaphgram assembly downward, holding the metering rod arm against the pump lifter link which is connected by linkage to the throttle shaft. Therefore, the metering rod is mechanically controlled as long as manifold vacuum is strong enough to overcome the tension of the lower pump diaphragm spring. The upper spring assists the lower pump spring on acceleration.

Vacuum Action

Under any engine operating condition in which the tension of the lower pump diaphragm spring is sufficient to overcome the manifold vacuum applied to the pump diaphragm assembly, the metering rod will move upward toward the wide-open or power enrichment position.

Pump Circuit

The pump circuit provides the increased amount of fuel required during acceleration at lower vehicle speeds to assure satisfactory engine performance (fig. 4-16).

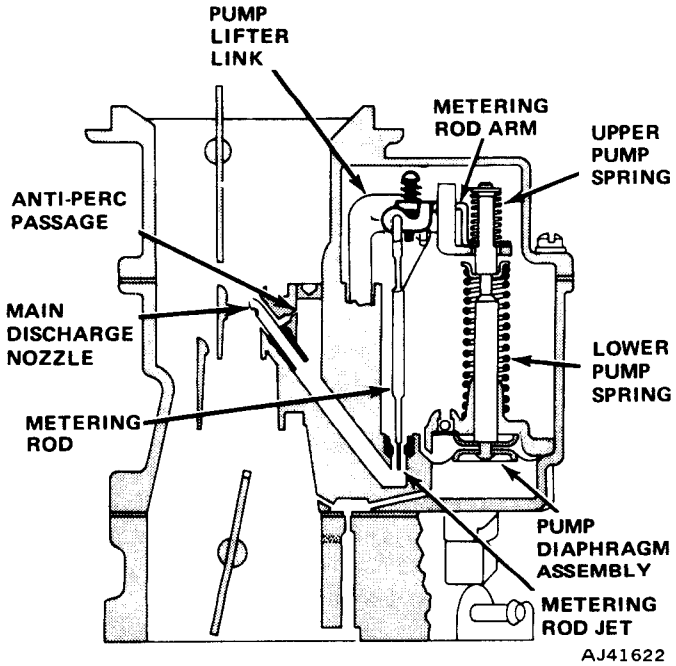


Fig. 4-16 Pump Circuit

The accelerator pump is actuated in the same manner as the metering rod. When the throttle closes, the pump diaphragm moves downward, both by mechanical linkage and by increased manifold vacuum supplied to the underside of the diaphragm. During the downward movement of the diaphragm, fuel is drawn into the chamber above the diaphragm through the inlet check ball. The discharge check ball is seated during the intake stroke to prevent air entering the pump chamber. When the throttle is opened, manifold vacuum decreases at the underside of the diaphragm and tension of the lower pump diaphragm spring moves the diaphragm upward. The upward movement of the diaphragm is mechanically assisted by the pump lifter link which is connected by linkage to the throttle shaft. During the upward movement of the diaphragm, fuel under pressure is forced through the pump discharge passage, unseats the discharge check ball, and is discharged through the pump jet. The inlet check ball is seated during the discharge stroke to prevent fuel leakage back into the bowl. If the throttle is opened suddenly, the upper pump spring is compressed, resulting in a smooth pump discharge.

A pump relief bushing, located near the top of the pump discharge passage, allows fuel bowl air pressure to enter the passage. The pump relief serves two purposes. One is to prevent fuel from being drawn out of the pump circuit during high speed constant throttle operation. The other is to bleed off a calibrated portion of the pump discharge back to the fuel bowl, thereby regulating the amount of discharge through the pump jet.

Choke Circuit

The automatic choke provides a richer mixture that is necessary for quick cold engine starting and proper warmup performance (fig. 4-17). When the engine is cold, thermostatic coil tension holds the choke valve closed. As the engine is cranked, air pressure against the offset choke valve causes the valve to open slightly against the thermostatic coil tension. Intake manifold vacuum, applied to the choke piston, also tends to pull the choke valve open. When the engine starts, the choke valve assumes a partially open position where thermostatic coil tension is balanced by the pull of vacuum on the piston and force of the air stream against the offset choke valve. This choke valve opening is known as the initial choke valve clearance.

As the choke piston moves down in the cylinder, it exposes slots located in the sides of the cylinder. This allows intake manifold vacuum to draw warm air, heated by the exhaust manifold, through the thermostatic coil housing. This warm air causes the thermostatic spring to lose its tension gradually until the choke valve is in a wide-open position.

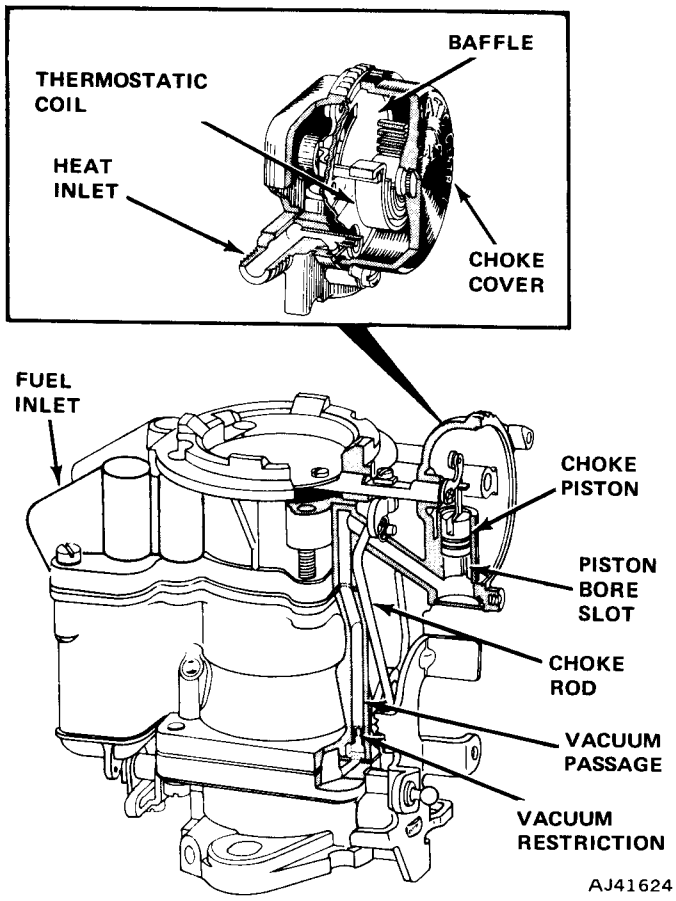


Fig. 4-17 Choke Circuit

If the engine is accelerated during the warmup period, the corresponding drop in manifold vacuum allows the thermostatic coil to momentarily close the choke valve to provide a richer mixture.

To prevent stalling during the warmup period, it is necessary to provide a faster idle speed. The fast idle cam, actuated by the choke shaft through connecting linkage, rotates into position against the fast idle screw. The cam is progressively stepped to provide the correct speed in proportion to the choke valve opening. When the choke valve reaches the fully open position, the fast idle cam rotates free of the fast idle screw, allowing the throttle lever to return to curb idle position.

If the engine floods during starting, the choke valve may be opened manually to clean out excessive fuel in the intake manifold. This is accomplished by depressing the accelerator pedal to the floor and cranking the engine. With the accelerator linkage in this position, a tang on the throttle lever contacts the fast idle cam, causing the choke rod to move upward and open the choke valve a predetermined amount.

All YF carburetors have a choke clean air tube to prevent dust or other contaminants from being brought into the choke housing. The choke clean air tube is fitted through the air horn into the throttle bore above the choke valve. From the air horn, the clean air tube passes under the exhaust manifold where it slips into the choke heater tube (fig. 4-18). In this manner air, filtered by the air cleaner assembly, is pulled into the choke clean air tube, passes through the choke heater tube, and eventually enters the choke housing.

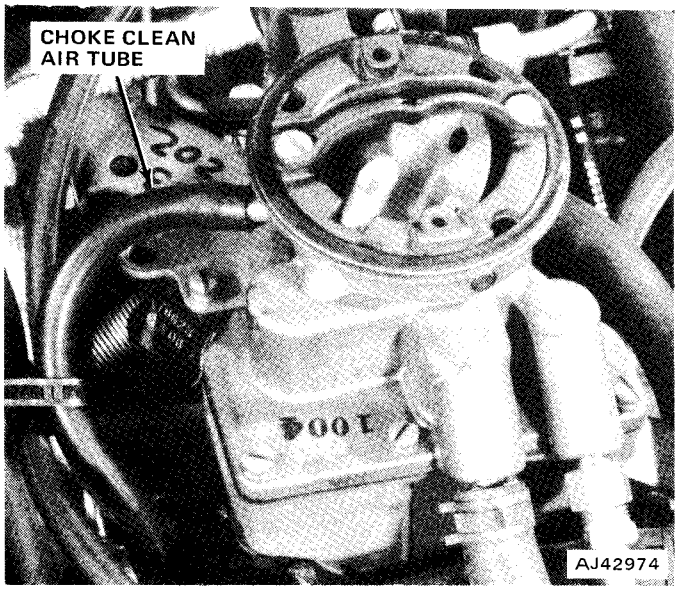


Fig. 4-18 Choke Clean Air Tube

When equipped with an electric heat assist, a thermostatic switch (bimetallic disc) within the choke cover closes when modulating temperature is reached, allowing current to flow to the heating element. When normal engine operating temperature is reached, the thermostatic coil exerts sufficient pressure against the choke piston lever to hold the choke fully open. Since the choke piston is in the full downward position, enough heated air bypasses through the slots of the piston passage to keep the thermostatic coil heated and the choke valve fully open during continued engine operation.

The electric assist is integral with the choke cover and cannot be repaired or adjusted. It can be tested for proper operation in the following manner.

Electric Assist Choke Test

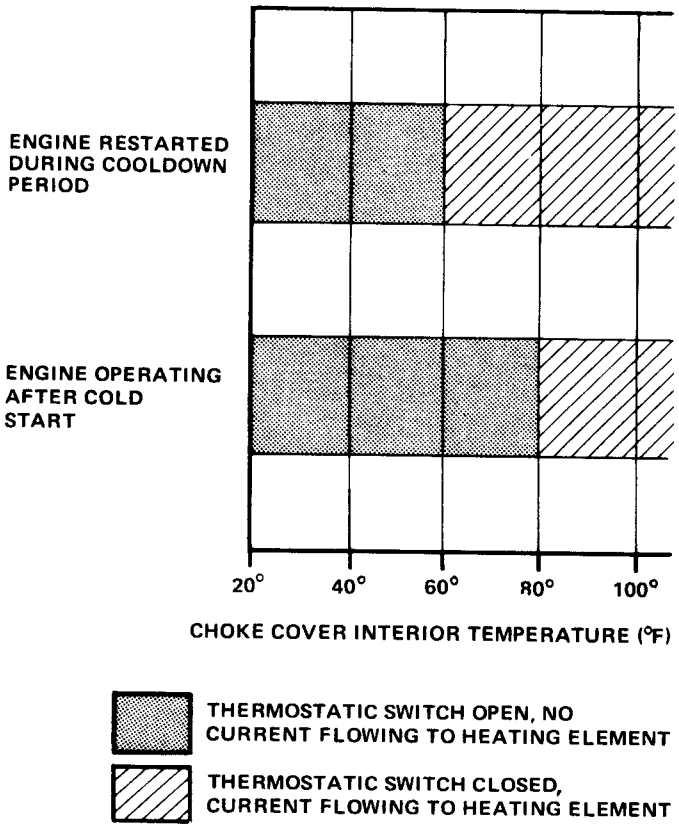
(1) Bring engine to operating temperature.

(2) Turn off ignition, remove choke cover, and start engine.

(3) Hold choke cover so thermostatic coil can be observed and bring ground cover strap on choke cover into contact with any suitable engine ground.

Within a few seconds the coil, warmed by the heating element, will begin to expand. If it does not, discard and replace the choke cover unit.

Thermostatic Switch Choke Modulation Chart



CARBURETOR OVERHAUL

The following procedure applies to complete overhaul, with the carburetor removed from the engine. A complete disassembly is not necessary when performing adjustments. In most cases, service adjustments of individual systems may be completed without removing the carburetor from the engine (refer to Service Adjustment Procedures).

A complete carburetor overhaul includes disassembly, thorough cleaning, inspection and replacement of gaskets and worn or damaged parts. Refer to figure 4-19 for parts identification.

NOTE: *When using an overhaul kit, use all parts included in kit.*

Removal

Flooding, stumble on acceleration, and other performance problems are in many instances caused by the presence of dirt, water, or other foreign matter in the carburetor. To aid in diagnosing the problem, the carburetor should be carefully removed from the engine without removing the fuel from the bowl. The bowl contents then may be examined for contamination as the carburetor is disassembled.

(1) Remove air cleaner.

(2) Remove control shaft from throttle lever and disconnect distributor vacuum line, in-line fuel filter, choke clean air tube, vacuum hoses, pullback spring, and the choke heat tube at the carburetor.

(3) Remove carburetor retaining nuts and remove carburetor.

(4) Remove carburetor mounting gasket, spacer (if equipped), and lower gasket from the intake manifold.

Installation

(1) Clean gasket mounting surfaces of spacer and carburetor. Place spacer between two new gaskets and position the spacer and gasket on the intake manifold. Position carburetor on the spacer and gasket and secure it with retaining nuts. To prevent leakage, distortion, or damage to the carburetor body flange, first snug the nuts and then tighten to 12 to 15 foot-pounds torque.

(2) Connect in-line fuel filter, control shaft, choke heat tube, pullback spring, vacuum hoses, choke clean air tube, and distributor vacuum line.

Disassembly

(1) Remove choke cover attaching screws, dashpot or solenoid bracket assembly, air horn assembly, and air horn gasket (fig. 4-19).

(2) Hold air horn assembly bottom side up, and remove float pin, and float lever and lever assembly. Turn the air horn assembly over and catch the needle pin, spring, and needle.

(3) Remove needle seat and gasket (fig. 4-20).

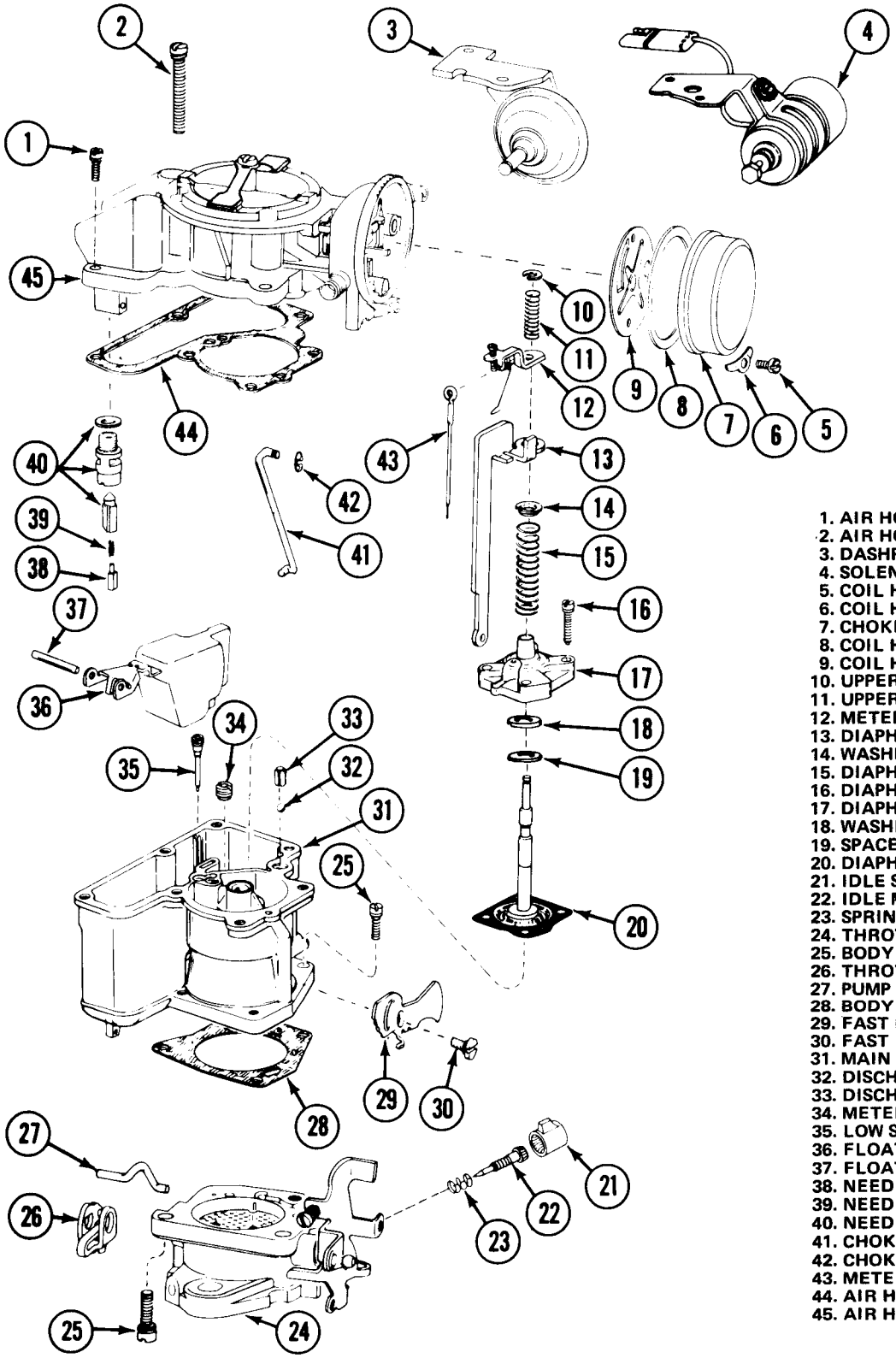
(4) Remove air cleaner bracket. If choke plate attaching screws are staked, file staked ends and remove screws. Use new screws on assembly. Remove choke plate from air horn assembly, choke link lever, and attaching screw. Rotate choke shaft and piston assembly counterclockwise until choke piston is out of choke piston cylinder (fig. 4-21). Remove assembly from air horn. Remove piston pin and piston from choke piston lever and link assembly.

(5) Turn pump main body casting upside down and catch accelerating pump discharge check ball and weight.

(6) Loosen throttle shaft arm screw and remove arm and pump connector link (fig. 4-22).

(7) Remove fast idle cam and shoulder screw.

(8) Remove accelerating pump diaphragm housing screws. Lift out the pump diaphragm assembly, pump lifter link, and metering rod as a unit (fig. 4-23).



1. AIR HORN SCREW (SHORT)
2. AIR HORN SCREW (LONG)
3. DASHPOT AND BRACKET
4. SOLENOID AND BRACKET
5. COIL HOUSING SCREW
6. COIL HOUSING RETAINER
7. CHOKE COVER
8. COIL HOUSING GASKET
9. COIL HOUSING BAFFLE PLATE
10. UPPER PUMP SPRING RETAINER
11. UPPER PUMP SPRING
12. METERING ROD ARM
13. DIAPHRAGM LIFTER LINK
14. WASHER
15. DIAPHRAGM SPRING
16. DIAPHRAGM HOUSING SCREW (4)
17. DIAPHRAGM HOUSING
18. WASHER
19. SPACER
20. DIAPHRAGM
21. IDLE SCREW LIMITER CAP
22. IDLE MIXTURE SCREW
23. SPRING
24. THROTTLE BODY
25. BODY FLANGE SCREW (3)
26. THROTTLE SHAFT ARM
27. PUMP CONNECTOR LINK
28. BODY GASKET
29. FAST IDLE CAM
30. FAST IDLE CAM SCREW
31. MAIN BODY
32. DISCHARGE BALL
33. DISCHARGE BALL WEIGHT
34. METERING JET
35. LOW SPEED JET
36. FLOAT
37. FLOAT PIN
38. NEEDLE PIN
39. NEEDLE SPRING
40. NEEDLE, NEEDLE SEAT, GASKET
41. CHOKE CONNECTOR ROD
42. CHOKE CONNECTOR ROD RETAINER
43. METERING ROD
44. AIR HORN GASKET
45. AIR HORN

AJ41625

Fig. 4-19 Model YF Carburetor—Exploded View

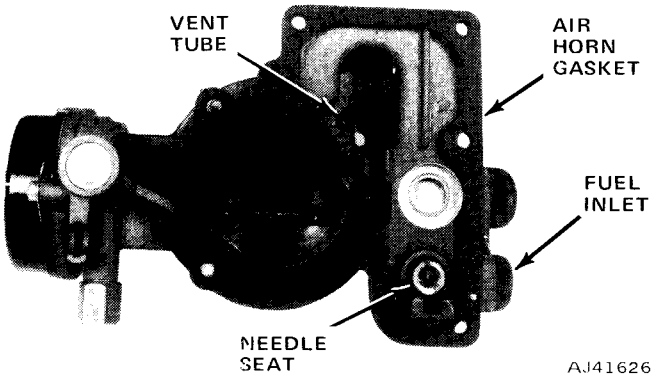


Fig. 4-20 Interior View of Air Horn

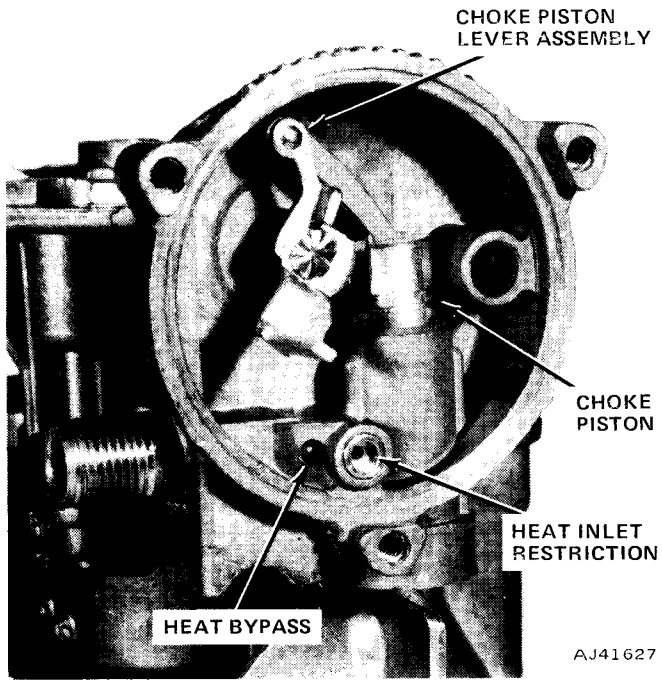


Fig. 4-21 Choke Piston and Lever Assembly

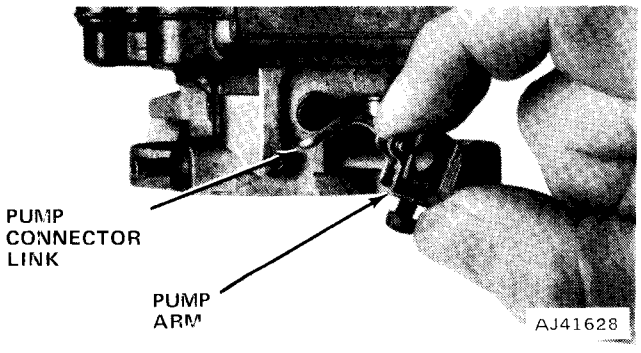


Fig. 4-22 Replacement of Pump Arm and Link

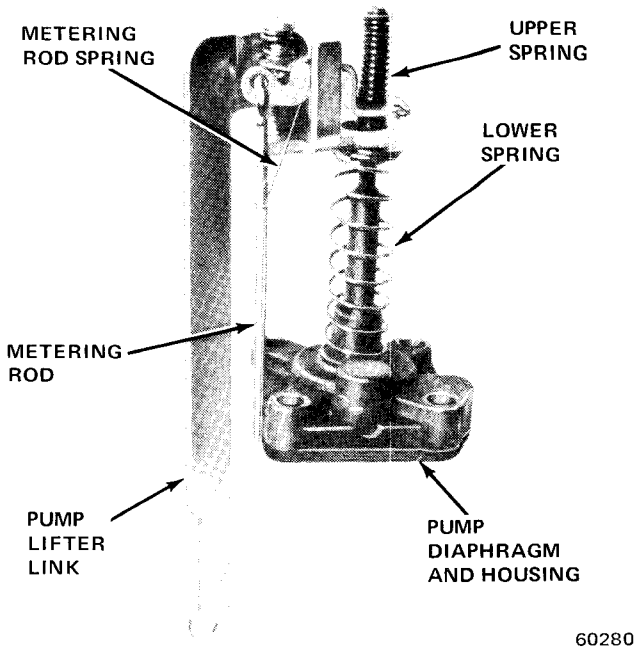


Fig. 4-23 Accelerator Pump and Metering Rod Assembly

(9) Disengage metering rod arm spring from metering rod, and remove metering rod from metering rod arm assembly. Note the location of any washers shimming either spring for proper assembly. Compress upper pump spring and remove spring retainer. Remove upper spring, metering rod arm assembly, and pump lifter link from pump diaphragm shaft. Compress pump diaphragm spring and remove pump diaphragm spring retainer, spring, and pump diaphragm assembly from pump diaphragm housing assembly.

(10) Remove metering rod jet and low speed jet.

(11) Remove retaining screws and separate throttle body flange assembly from main body casting. Remove body flange gasket.

(12) Remove throttle plate retaining screws. File staked ends and use new screws upon assembly. Slide throttle shaft and lever assembly out of throttle body flange assembly. Note the location of the ends of the torsion spring on the throttle shaft for proper assembly. When removing idle mixture limiter cap, be sure to note the position of the tab. After removing the limiter cap, count the number of turns to lightly seat the needle. This information will be used in assembly.

Cleaning and Inspection

Dirt, gum, water or carbon contamination in the carburetor or the exterior moving parts of the carburetor are often responsible for unsatisfactory performance. For this reason, efficient carburetion depends upon careful cleaning and inspection.

The cleaning and inspection of only those parts not included in the carburetor overhaul repair kit are covered here. All gaskets and parts included in the repair kit should be installed when the carburetor is assembled and the old gaskets and parts should be discarded.

Wash all the carburetor parts (except the accelerating pump diaphragm and the anti-stall dashpot assembly) in clean commercial carburetor cleaning solvent. If a commercial solvent is not available, lacquer thinner or denatured alcohol may be used.

Rinse the parts in kerosene to remove all traces of the cleaning solvent, then dry them with compressed air. Wipe all parts that cannot be immersed in solvent with a clean, soft, dry cloth. Be sure all dirt, gum, carbon, and other foreign matter are removed from all parts.

Force compressed air through all passages of the carburetor.

CAUTION: *Do not use a wire brush to clean any parts or a drill or wire to clean out any openings or passages in the carburetor. A drill or wire may enlarge the hole or passage, changing the calibration of the carburetor.*

Check the choke shaft for grooves, wear, and excessive looseness or binding. Inspect the choke plate for nicked edges and for ease of operation. Make sure all carbon and foreign material have been removed from the automatic choke housing and the piston. Check the operation of the choke piston in the choke housing to be sure it has free movement. Check the throttle shafts in the bores for excessive looseness or binding and check the throttle plates for burrs which prevent proper closure. Inspect the main body, throttle body, air horn, choke housing, and thermostatic spring housing for cracks.

Replace the float if the arm needle contact surface is grooved. If the float is serviceable, polish the needle contact surface of the arm with crocus cloth or steel wool. Replace the float pin if worn. Replace all screws and nuts that have stripped threads. Replace all distorted or broken springs. Inspect all gasket mating surfaces for nicks and burrs. Repair or replace any parts that have a damaged gasket surface. Inspect the rubber boot of the anti-stall dashpot for proper installation in the groove of the stem bushing. Check the stem movement for smooth operation. Do not lubricate the stem. Replace the assembly if it is damaged.

Assembly

(1) Install throttle shaft and lever assembly with torsion throttle return spring and bushing in the throttle body flange.

(2) Position throttle plate on throttle shaft with notch in plate aligned with slotted idle port in the throttle body flange (fig. 4-24).

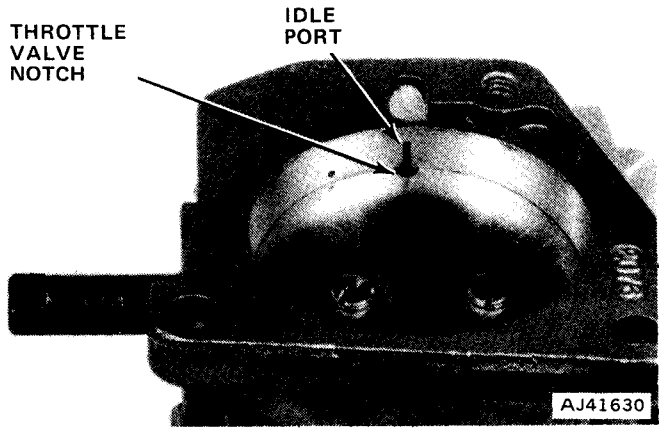


Fig. 4-24 Throttle Valve Alignment

(3) Install throttle plate attaching screws, but do not tighten. Move the shaft back and forth and rotate it to be sure the throttle plate does not bind in the flange bore.

NOTE: *It is necessary that the throttle plate should close tightly in the bore; therefore, idle speed screw should be backed out sufficiently to be sure it does not contact the throttle stop.*

(4) Reposition plate if necessary and tighten and stake (or peen) screws in place.

(5) Place new body flange gasket and main body casting on throttle body flange and install attaching screws and tighten evenly.

(6) Install low speed jet and metering rod jet (fig. 4-25).

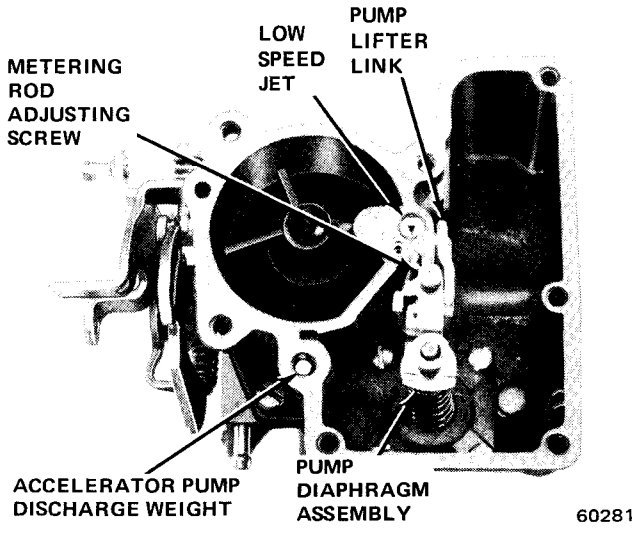


Fig. 4-25 Interior View of Fuel Bowl

(7) Install pump diaphragm in pump diaphragm housing.

(a) Position pump diaphgram spring on diaphragm shaft and housing assembly.

(b) Install spring shim washers.

(c) Install spring retainer, pump lifter link, metering rod arm and spring assembly, and upper pump spring on diaphragm shaft.

(d) Depress spring and install upper pump spring retainer.

(8) Install metering rod on the metering rod arm and place looped end of metering arm spring on metering rod (fig. 4-23).

(9) Align pump diaphragm with diaphragm housing (make sure the holes are aligned) and install housing attaching screws.

(10) Align pump housing, pump lifter link, and metering rod with main body casting.

(11) Install assembly in main body casting, being careful to engage pump lifter link with main body and to insert metering rod in metering rod jet.

(12) Install pump housing attaching screws but do not tighten. Push down on diaphragm shaft to compress diaphragm and tighten attaching screws.

(13) Adjust metering rod, following procedure under Metering Rod Adjustment.

(14) Install fast idle cam and shoulder screw. Install throttle shaft arm and pump connector link or throttle shaft and pump lifter link. Tighten lock screw.

(15) Assemble choke piston and pin to choke piston lever and link assembly. Install choke shaft assembly in the air horn and position piston (fig. 4-21).

(16) Align piston with cylinder and rotate shaft assembly clockwise until piston pin is inside piston cylinder.

(17) Position choke plate on choke shaft and install screws. Do not tighten screws.

(a) Check choke plate movement to be sure it does not bind.

(b) Tighten and stake (or peen) screws to prevent loosening.

(c) Install choke link lever and tighten attaching screw.

(18) Install needle seat and gasket in air horn. With air horn inverted, install needle, pin spring, needle pin, float and lever assembly, and float pin. Adjust float level to specifications.

(19) Place pump check ball and weight in main body casting.

(a) Position new air horn gasket, air horn assembly, and dashpot or solenoid bracket on main body.

(b) Install and tighten attaching screws.

(20) Install thermostatic coil housing, gasket and baffle plate, identification mark facing outward, with gasket between baffle and coil housing.

NOTE: *Be sure thermostatic spring engages choke lever tang.*

(21) Install retainers and housing screws. Set coil housing index to specifications and tighten screws.

(22) Install air cleaner bracket and choke connector rod.

SERVICE ADJUSTMENT PROCEDURES

Float Level Adjustment

(1) Remove carburetor air horn and gasket from carburetor.

(2) Invert air horn assembly, and check clearance from top of float to bottom of air horn with float level gauge (fig. 4-26). Hold air horn at eye level when gauging float level. The float arm (lever) should be resting on the needle pin.

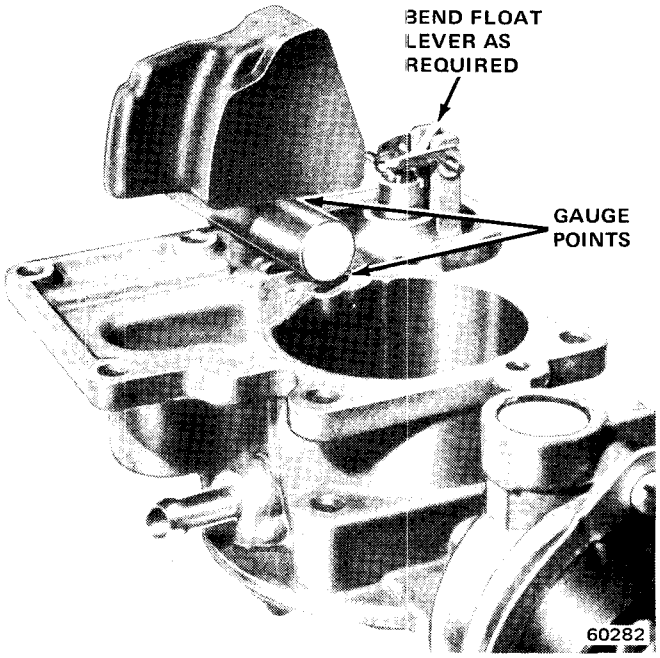


Fig. 4-26 Float Level Adjustment

CAUTION: *Do not load the needle when adjusting the float. Bend float arm as necessary to adjust the float level (refer to Carburetor Service Specifications for proper clearance).*

NOTE: *Do not bend the tab at the end of the float arm. It prevents the float from striking the bottom of the fuel bowl when empty.*

(3) Install carburetor air horn and a new gasket on the carburetor.

Float Drop Adjustment

(1) Remove carburetor air horn and gasket from carburetor.

(2) Hold air horn upright and let float hang free. Measure the maximum clearance from top of float to bottom of air horn with float drop gauge. (Refer to Carburetor Service Specifications for proper clearance.) Hold air horn at eye level when gauging dimension (fig. 4-27).

(3) Bend tab at end of float arm to obtain specified setting.

(4) Install carburetor air horn and new gasket on carburetor.

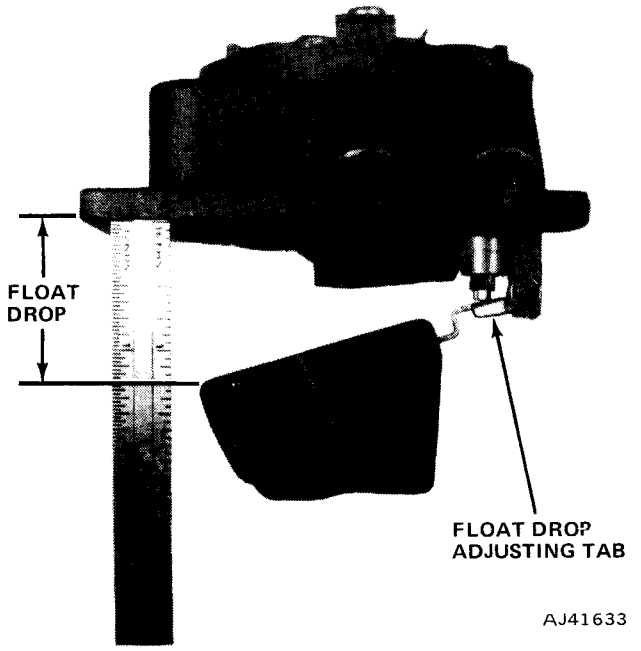


Fig. 4-27 Float Drop Adjustment

Metering Rod Adjustment

(1) Remove carburetor air horn and gasket from carburetor.

(2) Back out idle speed adjusting screw until throttle plate is closed tight in throttle bore.

(3) Press down on end of pump diaphragm shaft until assembly bottoms.

(4) To adjust metering rod, hold diaphragm assembly as in step (3), above, then turn rod adjustment screw until metering rod just bottoms in body casting (fig. 4-28).

NOTE: *It may be helpful to scribe a line on the metering rod so that you can accurately determine when the rod is bottomed.*

(5) Turn metering rod adjustment screw clockwise one turn for final adjustment.

(6) Install carburetor air horn and new gasket on carburetor.

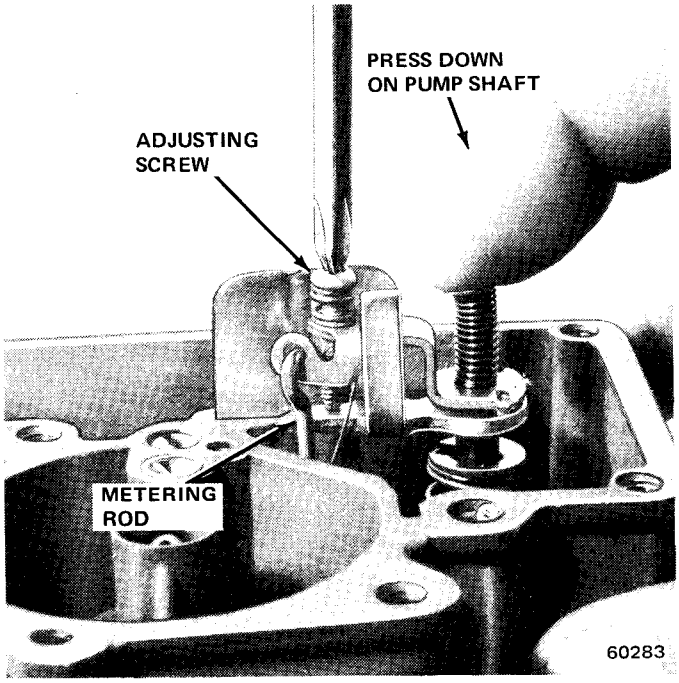


Fig. 4-28 Metering Rod Adjustment

Initial Choke Valve Clearance Adjustment

(1) Bend a 0.025-inch wire gauge at a 90° angle approximately 1/8 inch from end. Partially open throttle and close choke valve to position choke piston at top of its bore.

(2) Holding choke valve fully closed, release throttle and insert wire gauge into piston slot and against outboard side (right side of choke shaft) of piston bore. Push piston downward with gauge until bent end of gauge enters slot in piston bore. With gauge in place, push on choke shaft bimetal lever in counterclockwise direction to move piston upward, locking gauge in place (fig. 4-29).

(3) Measure clearance between lower edge of choke valve and air horn wall (refer to Carburetor Service Specifications for the correct setting).

NOTE: *It is not necessary to remove air cleaner bracket when measuring clearance between choke valve and air horn wall, simply position gauge next to bracket.*

(4) Adjust clearance by carefully bending choke piston lever with a pair of needlenose pliers.

NOTE: *Decrease clearance by bending toward piston and increase clearance by bending away from piston.*

(5) Install choke baffle plate (embossed cross outward), coil housing gasket, and coil housing. Be sure that the thermostatic coil properly engages the bimetal lever.

(6) Install coil housing retainers and retaining screws, but do not tighten. Adjust choke as outlined under Automatic Choke Adjustment.

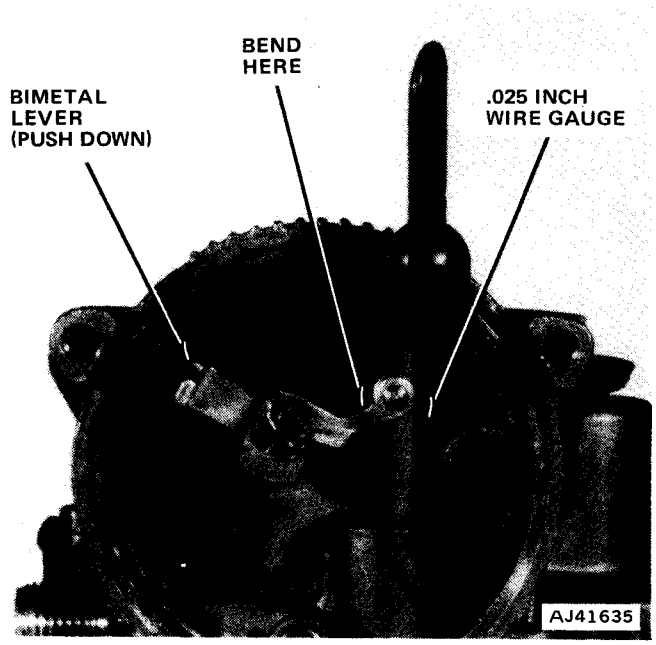


Fig. 4-29 Initial Choke Valve Clearance Adjustment

Fast Idle Cam Linkage Adjustment (On or OFF Vehicle)

(1) Position fast idle screw on second step of fast idle cam against shoulder of high step (fig. 4-30).

(2) Adjust by bending choke plate connecting rod to obtain specified clearance between lower edge of choke plate and air horn wall. (Refer to Carburetor Service Specifications for proper clearance.)

NOTE: *It is not necessary to remove air cleaner bracket when measuring clearance between choke valve and air horn wall, simply position gauge next to bracket.*

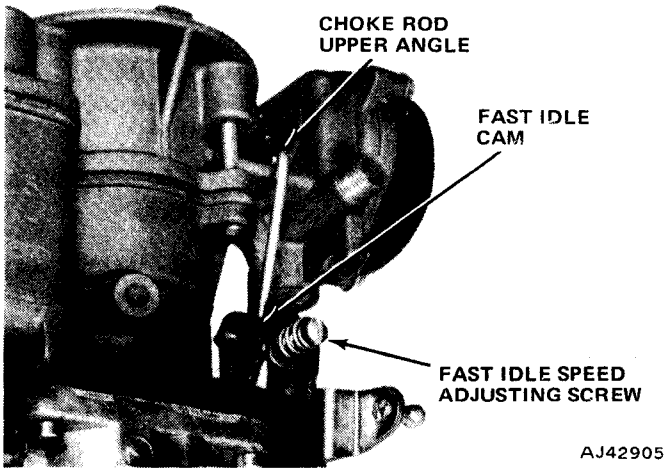


Fig. 4-30 Fast Idle Cam Linkage Adjustment

Choke Unloader Adjustment (On or OFF Vehicle)

(1) Hold throttle fully open and apply pressure on choke valve toward closed position.

(2) Measure clearance between lower edge of choke valve and air horn wall. (Refer to Carburetor Service Specifications for correct setting.)

NOTE: *It is not necessary to remove air cleaner bracket when measuring clearance between choke valve and air horn wall simply position gauge next to bracket.*

(3) Adjust by bending unloader tang which contacts the fast idle cam as shown in figure 4-31.

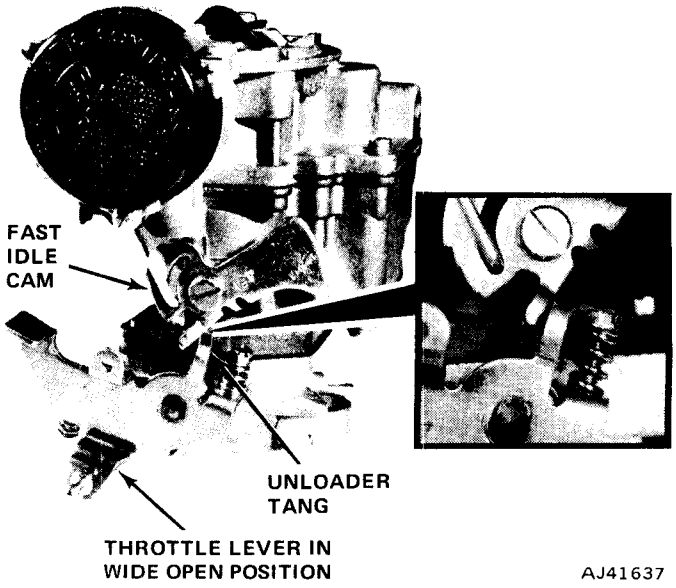


Fig. 4-31 Choke Unloader Adjustment

NOTE: *Bend toward cam to increase clearance and away from cam to decrease clearance.*

CAUTION: *Do not bend the unloader tang downward from a horizontal plane. After making the adjustment, be sure that the unloader tang has at least 0.070-inch clearance from the main body flange when the throttle is fully open (fig. 4-32).*

(4) Operate throttle and check unloader tang to be sure it does not bind, contact, or stick on any part of carburetor casting or linkage. After carburetor installation, check for full throttle opening when throttle is operated from **inside** the vehicle.

NOTE: *If full throttle opening is not obtainable, it may be necessary to remove excess padding under floormat or reposition throttle cable bracket located on the engine.*

the main metering (high speed) circuit provides an economical mixture for normal cruising speeds; the pump circuit provides additional fuel during low speed acceleration; and the power enrichment circuit provides a rich mixture when high power output is needed.

In addition to these four basic metering circuits, the carburetor contains a float (fuel inlet) and choke circuit.

Float (Fuel Inlet) Circuit

Fuel under pressure enters the fuel bowl through the fuel inlet fitting in the main body.

The Viton tipped fuel inlet needle is controlled by the float and lever assembly which is hinged on the float shaft. A wire retainer is hooked over grooves on opposite ends of the float shaft and into a groove behind the fuel inlet needle seat. The retainer holds the float shaft firmly in the fuel bowl guides and also centers the float assembly in the fuel bowl.

An integral retaining clip is hooked over the end of the float lever and attached to the fuel inlet needle. This assures reaction of the fuel inlet needle during downward movement of the float (fig. 4-36).

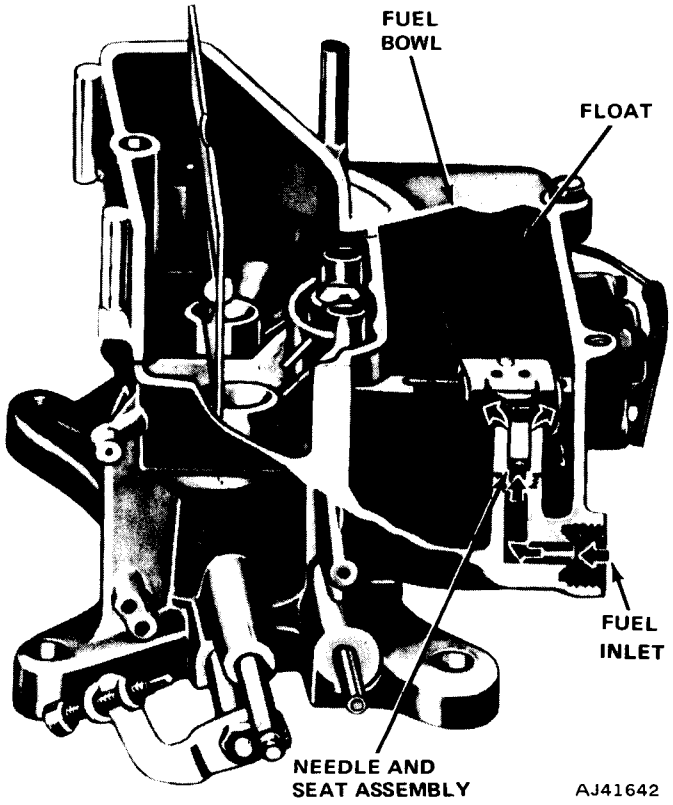


Fig. 4-36 Float Circuit

The float circuit maintains a specified fuel level in the bowl, enabling the basic fuel metering circuits to deliver the proper mixture to the engine. The amount of fuel entering the bowl is regulated by the distance the fuel inlet needle is raised off its seat. The float drops as the fuel level drops and raises the fuel inlet needle off its seat. This permits additional fuel to enter the bowl past the fuel inlet needle. When the fuel reaches a preset level, the fuel inlet needle drops and only enough fuel is admitted to replace that being used.

Idle (Low Speed) Circuit

Fuel for idle and low speed operation flows from the fuel bowl through the main jets into the main wells. From the main wells, the fuel is metered as it passes through calibrated restrictions at the lower end of the idle tubes. After flowing through the idle tubes, the fuel enters diagonal passages above the tubes. The fuel is metered again as it flows downward through restrictions at the lower end of the diagonal passages and then enters the idle passages in the main body (fig. 4-37).

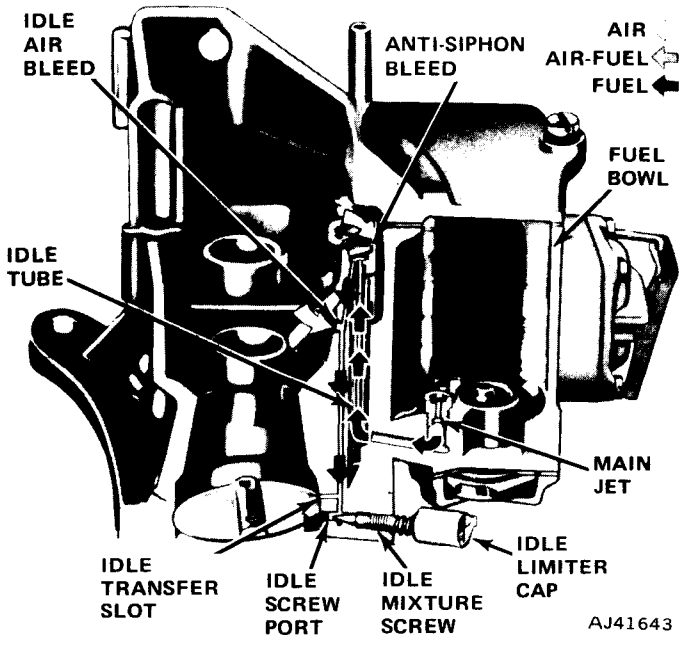


Fig. 4-37 Idle Circuit

Air enters the idle system through air bleeds which are located in the main body directly below the booster venturi. The air bleeds serve as anti-siphon vents during off-idle, high speed operation, and when the engine is stopped.

The fuel-air mixture moves down the idle passages past the idle transfer slots which serve as additional

CARBURETOR MODEL 2100—2 VENTURI

GENERAL

The Model 2100 carburetor is a two-venturi carburetor which incorporates two lightweight aluminum assemblies, the air horn and the main body.

The air horn assembly serves as the main body cover and also contains the choke assembly and fuel bowl vents.

The throttle shaft assembly and all units of the fuel metering systems are contained in the main body assembly. The automatic choke assembly and the dashpot are attached to the main body (fig. 4-34).

Identification

The carburetor is identified by a code number and build date which is stamped on the identification tag. Each carburetor build month is coded alphabetically beginning with the letter A in January and ending with the letter M in December (the letter I is not used). The tag is attached to the carburetor and must remain with the carburetor to assure proper identification (fig. 4-35).

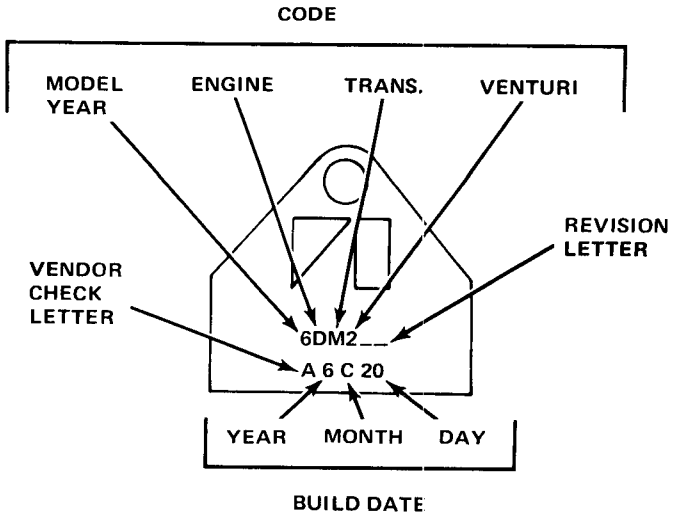
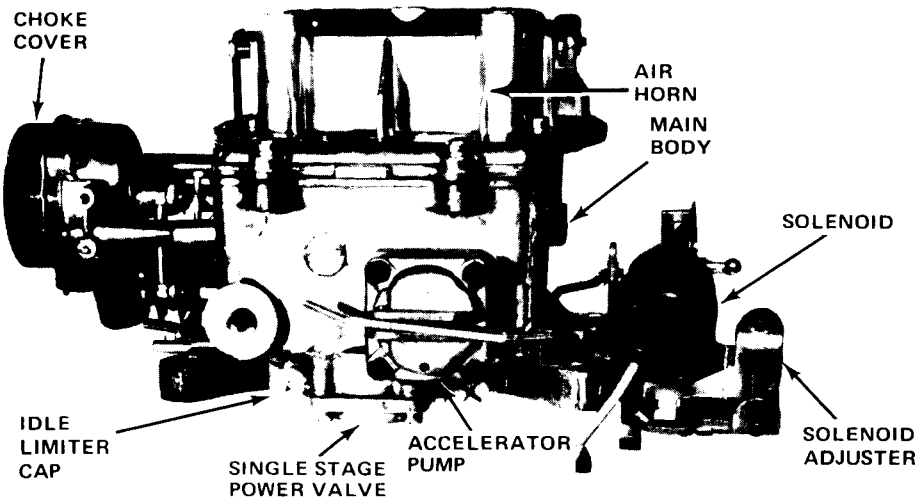


Fig. 4-35 Identification Tag

CARBURETOR CIRCUITS

The Model 2100 carburetor utilizes four basic fuel metering circuits: the idle (low speed) circuit provides a fuel-air mixture for idle and low speed performance;



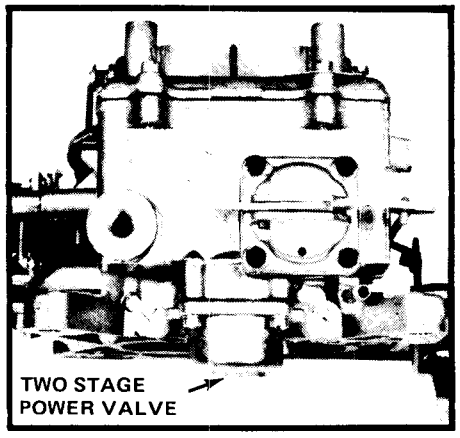


Fig. 4-34 Model 2100 Carburetor Assembly

When the throttle valves are opened, the diaphragm rod is pushed inward forcing fuel from the pump chamber into the discharge passages. The Elastomer valve seals the inlet hole during pump operation preventing fuel from returning to the fuel bowl. Fuel under pressure unseats the discharge check ball and weight and is forced through the pump discharge screw. The fuel is then sprayed into the main venturi through discharge ports.

An air bleed is provided in the pump chamber to prevent vapor accumulation and pressure buildup.

Power Enrichment Circuit

During heavy load conditions or high speed operation, the fuel-air ratio must be increased for higher engine output. The power enrichment circuit supplies extra fuel during this period and is controlled by intake manifold vacuum (fig. 4-40).

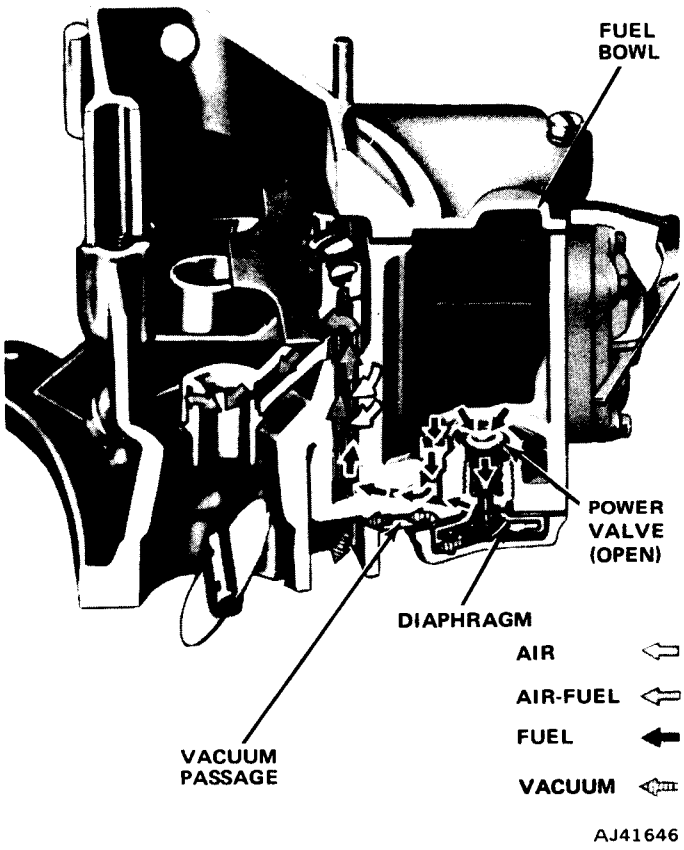


Fig. 4-40 Power Enrichment Circuit

Choke Circuit

The choke valve, located in the air horn assembly, provides a high vacuum above as well as below the throttle valves when closed. During cranking, vacuum above the throttle valves causes fuel to flow from the main metering and idle circuits. This provides the richer fuel-air mixture required for cold engine starting.

Manifold vacuum is applied to the power valve diaphragm from an opening in the base of the main body, through a passage in the main body and power valve chamber to the power valve diaphragm. During idle and normal driving conditions, manifold vacuum is high enough to overcome the power valve spring tension and hold the valve closed. When higher engine output is required, the increased load on the engine results in decreased manifold vacuum. The power valve spring opens the first stage of the power valve when manifold vacuum drops below a predetermined value and a small amount of fuel flows through the valve.

When manifold vacuum drops to a lower value, the power valve spring opens the second stage of the power valve and allows a greater amount of fuel to flow through the valve.

The fuel which flows through the power valve is added to the fuel in the main metering circuit to enrich the mixture. As engine load requirements decrease, manifold vacuum increases and overcomes the tension of the power valve spring, closing the power valve.

The choke shaft is connected by linkage to a thermostatic coil which winds up when cold and unwinds when warm.

The position of the choke valve is controlled by the action of a two-stage vacuum modulator exerting force against the tension of the thermostatic coil (fig. 4-41).

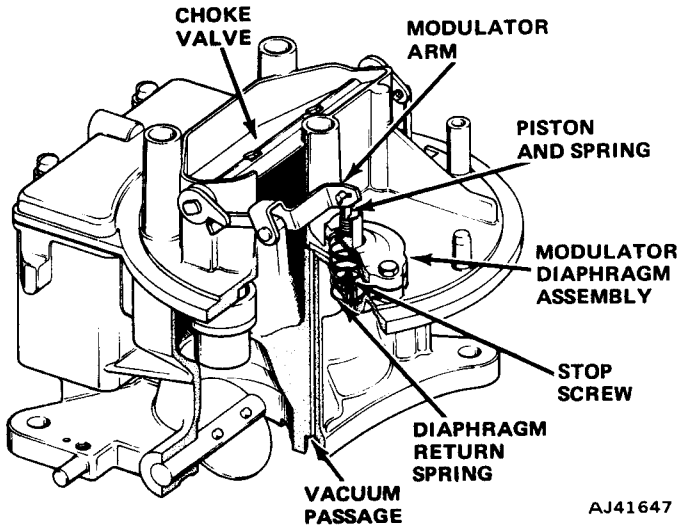


Fig. 4-41 Choke Circuit

Position carburetor on spacer and gasket and install nuts. To prevent leakage, distortion, or damage to the carburetor body flange, snug the nuts; then, alternately tighten each nut in a criss-cross pattern to 13 foot-pounds torque.

(2) Connect in-line fuel filter, throttle cable, choke heat tube, PCV hose, pullback spring, solenoid wire (if equipped), transmission throttle linkage (if equipped), choke clean air tube, vacuum hoses, and distributor vacuum line.

(3) Adjust engine idle speed, idle fuel mixture, and anti-stall dashpot if equipped (refer to Section 4A—Emission Controls—Exhaust Systems).

Disassembly

(1) Remove air cleaner anchor screw (fig. 4-42).

(2) Remove automatic choke rod retainer from thermostatic choke shaft lever.

(3) Remove air horn attaching screws, lockwashers, and carburetor identification tag. Remove air horn and air horn gasket.

(4) Remove choke rod by loosening screw that secures choke shaft lever to choke shaft. Remove rod from air horn. Slide plastic dust seal out of air horn.

(5) Remove choke modulator assembly (fig. 4-43).

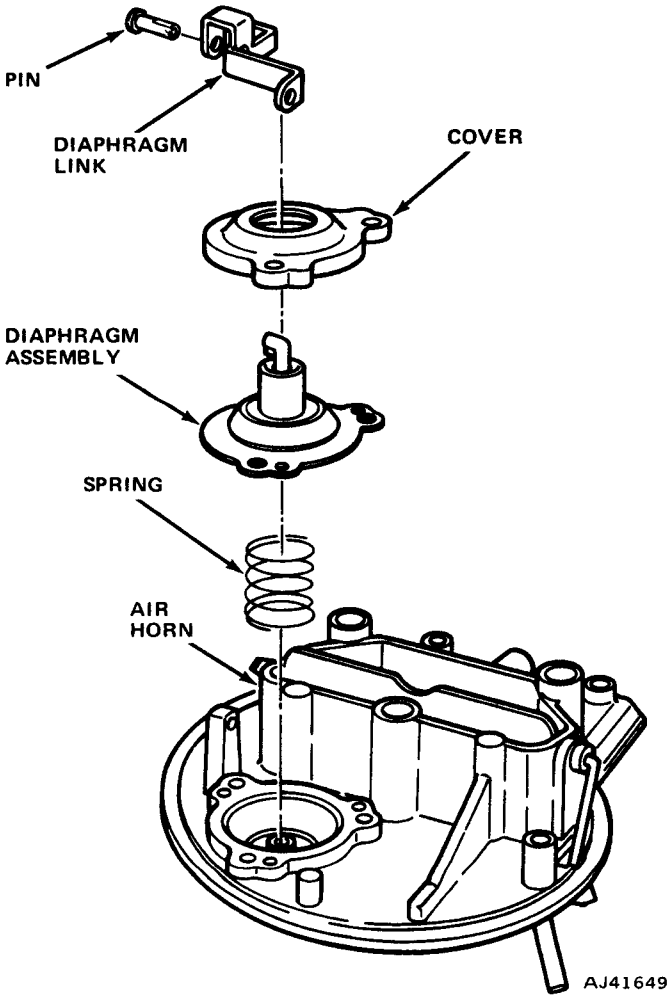


Fig. 4-43 Choke Modulator Assembly

(6) Remove choke plate attaching screws. Remove choke plate by sliding it out of the shaft from top of air horn. Slide choke shaft out of air horn.

NOTE: *File off flared portion of choke plate screws to prevent damage to the threads in the shaft.*

(7) Remove fast idle cam retainer (fig. 4-44).

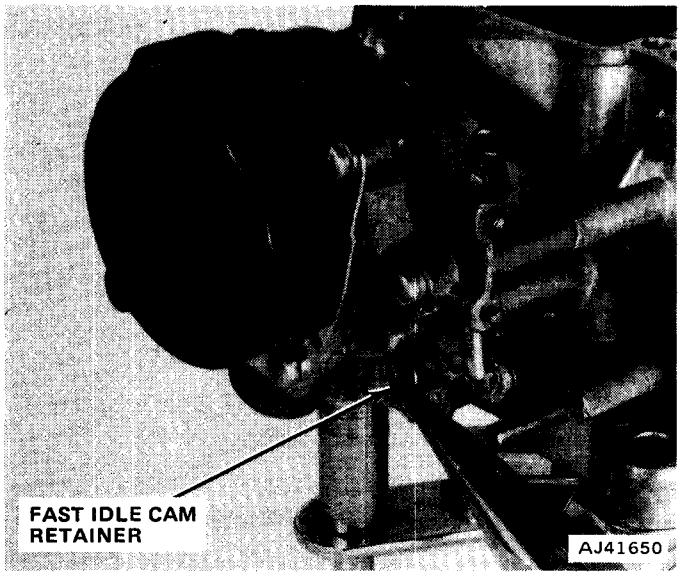


Fig. 4-44 Removing Fast Idle Cam Retainer

(8) Remove choke shield.

(9) Remove thermostatic choke spring housing retaining screws and clamp, housing, and gasket.

(10) Remove fast idle cam rod from fast idle cam lever.

(11) Remove choke housing assembly retaining screws, housing assembly, and gasket.

(12) Remove thermostat lever retaining screw and washer. Remove thermostatic choke shaft and fast idle cam lever from the choke housing.

(13) Pry float shaft retainer from fuel inlet seat (fig. 4-45). Remove float, float shaft retainer, and fuel inlet needle assembly. Remove retainer and float shaft from float lever.

(14) Remove fuel inlet needle seat and gasket. Remove main jets with Main Metering Jet Wrench J-10174-01 (fig. 4-46).

(15) Remove accelerator pump discharge screw, air distribution plate, booster venturi and gasket (fig. 4-47). Invert main body and let accelerating pump discharge weight and ball fall into hand.

(16) Disconnect accelerator pump operating rod from overtravel lever. Remove rod and retainer.

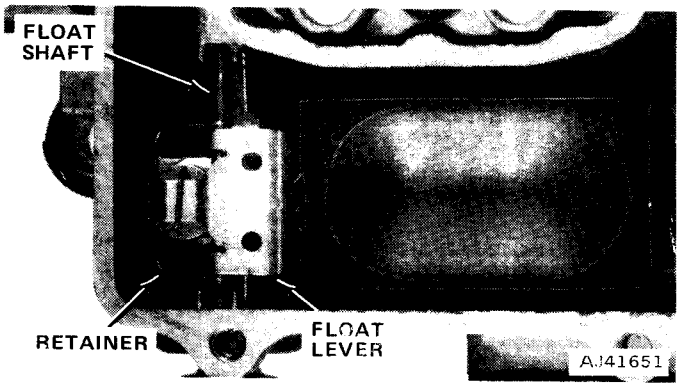


Fig. 4-45 Float Assembly

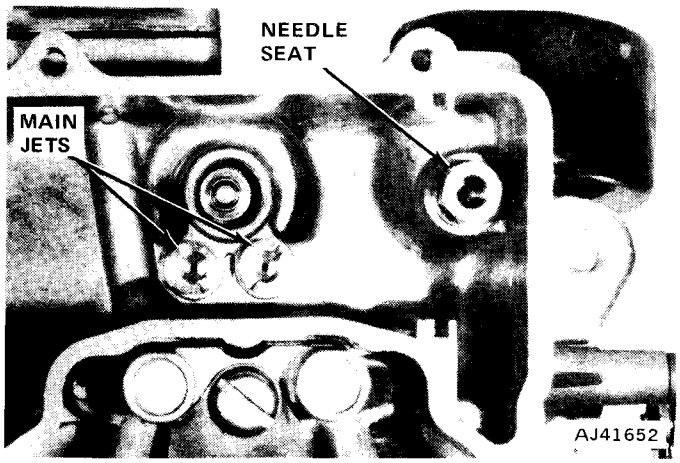


Fig. 4-46 Interior View of Fuel Bowl

(17) Remove accelerating pump cover attaching screws. Remove accelerating pump cover, diaphragm assembly, and spring (fig. 4-48).

(18) Remove Elastomer valve by grasping firmly and pulling out.

NOTE: *If the Elastomer valve tip broke off during removal, be sure to remove the tip from the fuel bowl. Elastomer valve must be replaced whenever it has been removed from the carburetor.*

(19) Invert main body and remove power valve cover, gasket, and power valve with Power Valve Socket Tool J-10175 (fig. 4-49). Remove and discard power valve gasket.

(20) Remove idle mixture adjusting screws and springs. Remove limiter caps from adjusting screws.

(21) Remove nut and washer securing fast idle lever assembly to throttle shaft and remove lever assembly. Remove fast idle speed adjusting screw and spring from fast idle lever.

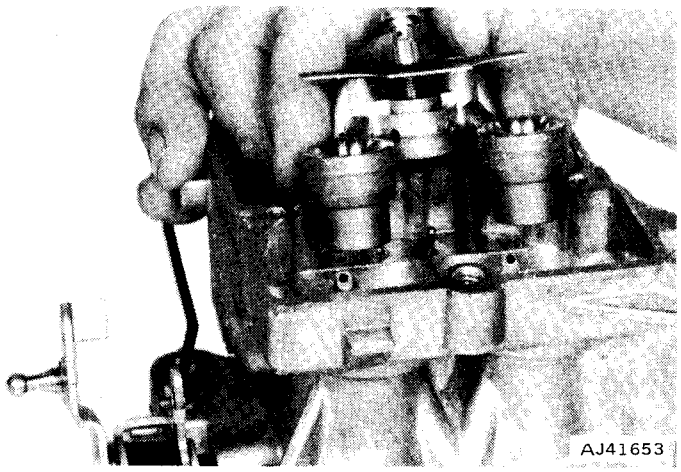


Fig. 4-47 Removing Booster Venturi Assembly

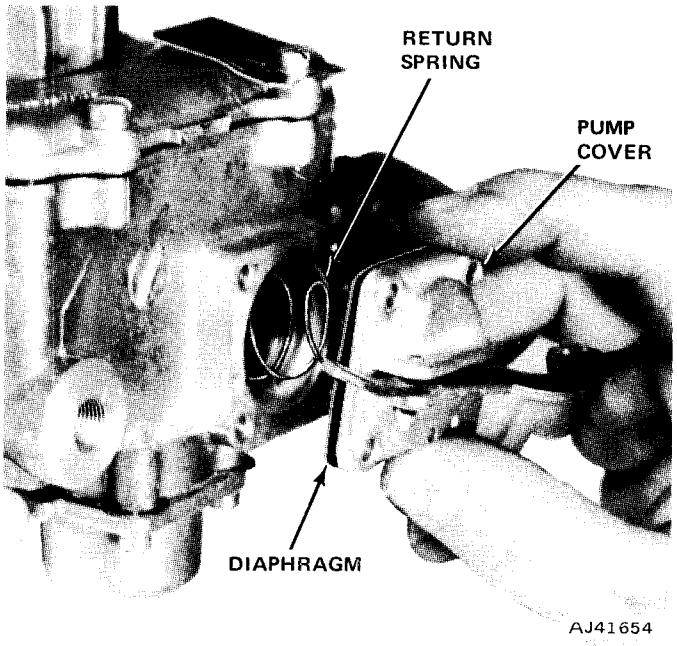


Fig. 4-48 Removing Accelerator Pump Assembly

(22) Remove dashpot or electric solenoid.

(23) If it is necessary to remove the throttle plates, lightly scribe a line on the throttle plates along throttle shaft, and mark each plate and its corresponding bore with a number or letter for proper assembly.

(24) Slide the throttle shaft out of the main body.

Cleaning and Inspection

Dirt, gum, water, or carbon contamination in the carburetor or the exterior moving parts of the carburetor are often responsible for unsatisfactory performance. For this reason, efficient carburetion depends upon careful cleaning and inspection.

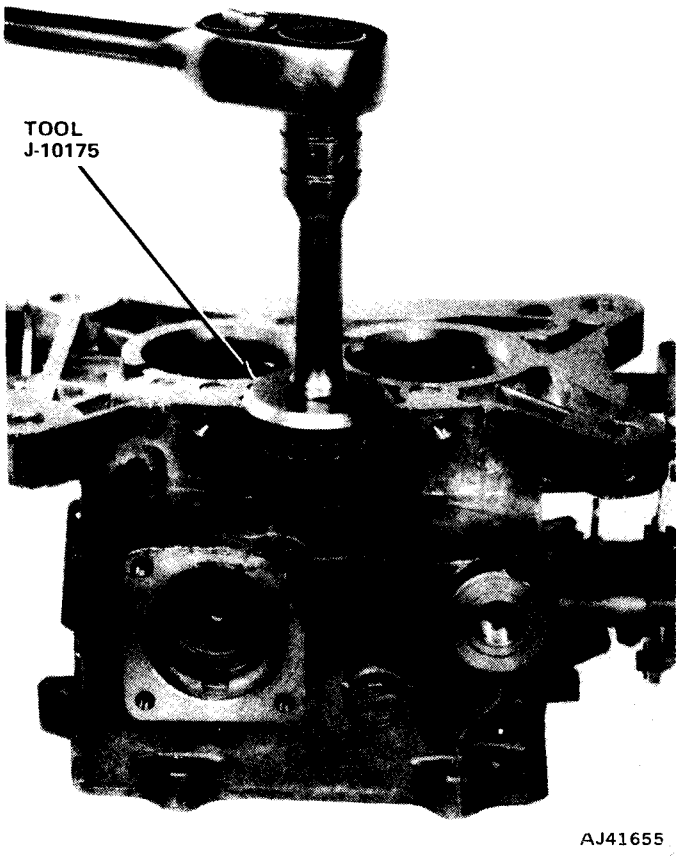


Fig. 4-49 Removing Power Valve

The cleaning and inspection of only those parts not included in the carburetor overhaul repair kit are covered here. All gaskets and parts included in the repair kit should be installed when the carburetor is assembled and the old gaskets and parts should be discarded.

Wash all the carburetor parts (except accelerating pump diaphragm, power valve, modulator diaphragm, and the dashpot assembly) in clean commercial carburetor cleaning solvent. If a commercial solvent is not available, lacquer thinner or denatured alcohol may be used. Rinse the parts in kerosene to remove all traces of the cleaning solvent, then dry them with compressed air. Wipe all parts that cannot be immersed in solvent with a clean, soft, dry cloth. Be sure all dirt, gum, carbon, and other foreign matter are removed from all parts.

Force compressed air through all passages of the carburetor.

CAUTION: *Do not use a wire brush to clean any parts or a drill or wire to clean out any openings or passages in the carburetor. A drill or wire may enlarge the hole or passage, changing the calibration of the carburetor.*

Check the choke shaft for grooves, wear, and excessive looseness or binding. Inspect the choke plate for nicked edges and for ease of operation and free it if necessary. Be sure all carbon and foreign material has been removed from the automatic choke housing. Check the throttle shafts in the bores for excessive looseness or binding and check the throttle plates for burrs which prevent proper closure. Inspect the main body, air horn, booster venturi assemblies, choke housing and choke cover, power valve cover and accelerating pump cover for cracks. Replace the float if the arm needle contact surface is grooved. If the float is serviceable, polish the needle contact surface of the arm with crocus cloth or steel wool. Replace float shaft if worn. Replace all screws and nuts that have stripped threads. Replace all distorted or broken springs. Inspect all gasket mating surfaces for nicks and burrs. Repair or replace any parts that have a damaged gasket surface.

Assembly

Be sure all holes in the new gaskets have been properly punched and that no foreign material has adhered to the gaskets. Inspect accelerating pump diaphragm for tears or cuts.

(1) Slide throttle shaft assembly into main body.

(2) Refer to lines scribed on throttle plates and install throttle plates in their proper location with the screws snug, but not tightened.

(3) Close throttle plates.

(4) Invert main body and hold it up to the light.

NOTE: *Little or no light should show between the throttle plates and the throttle bores.*

(5) Tap plates lightly with a screwdriver handle to test them. Hold the throttle plates closed and tighten attaching screws.

(6) Install fast idle speed adjusting screw and spring on fast idle lever.

(7) Install dashpot or electric solenoid.

(8) Place fast idle lever assembly on throttle shaft and install retaining washer and nut.

(9) Lubricate tip of new Elastomer valve and insert tip into accelerator pump cavity center hole.

(a) Using a pair of needlenose pliers, reach into fuel bowl and grasp valve tip.

(b) Pull valve in until it seats in pump cavity wall and cut off tip forward of retaining shoulder.

(c) Remove tip from bowl.

(10) Install accelerator pump diaphragm return spring on boss in chamber. Insert the diaphragm assembly in cover, place cover and diaphragm assembly into position on main body and install cover screws.

(11) Insert accelerating pump operating rod into inboard hole of accelerating pump actuating lever.

(12) Position accelerating pump operating rod retainer over correct hole in the overtravel lever. (Refer to Accelerating Pump Stroke Adjustment).

(13) Invert main body and install power valve and new gasket. Tighten valve securely.

(14) Install idle mixture adjusting screws and springs. Turn needles in gently with fingers until they just touch seat, then back them off two turns for a preliminary idle fuel mixture adjustment.

NOTE: *Do not install idle mixture limiters at this time.*

(15) Install power valve cover and new gasket.

NOTE: *The power valve cover must be installed with the limiter stops on the cover in position to provide a positive stop for the tabs on the idle adjusting limiters.*

(16) Install main jets, fuel inlet seat, and new gasket.

NOTE: *Be sure the correct jets are installed.*

(17) Install fuel inlet needle assembly in fuel inlet seat.

NOTE: *Fuel inlet needles and seats are matched assemblies. Be sure the correct needle and seat are assembled together.*

(18) Slide float shaft into float lever. Position float shaft retainer on float shaft.

(19) Install float dampener spring with short wire under float lever (fig. 4-50).

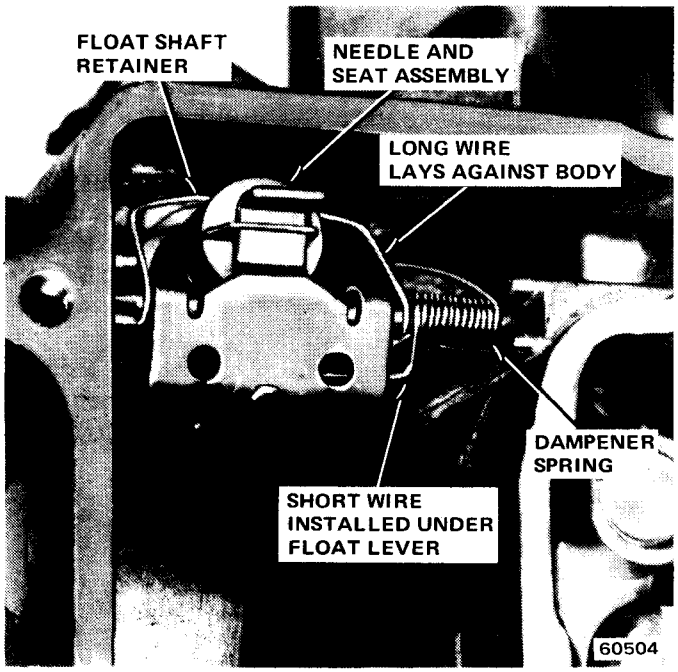


Fig. 4-50 Dampener Spring Installation

(20) Insert float assembly into fuel bowl and hook float lever tab under fuel inlet needle assembly. Insert float shaft into its guides at sides of fuel bowl.

(21) Press float shaft retainer in groove on fuel inlet needle seat and check float setting.

(22) Drop accelerating pump discharge ball into passage in main body.

(a) Drop accelerating pump discharge weight on top of ball.

(b) Position new booster venturi gasket and booster venturi in main body.

(c) Install air distribution plate and accelerator pump discharge screw and tighten screw.

(23) Position fast idle cam lever on thermostatic choke shaft.

NOTE: *The bottom of the fast idle cam lever adjusting screw must rest against the tang on the choke shaft.*

(a) Insert choke shaft into the rear of choke housing.

(b) Position choke shaft so that choke hole in shaft is to left side of choke housing.

(24) Install fast idle cam rod on fast idle cam lever.

(25) Place choke housing vacuum pickup port to main body gasket on choke housing flange.

(26) Position choke housing on main body and at the same time, install the fast idle cam on the hub on main body.

(27) Position gasket and install choke housing attaching screws.

(28) Install thermostat lever.

(29) Install fast idle cam retainer and choke cover.

(30) Install choke shield.

(31) If choke plate shaft was removed, position shaft in air horn, then install choke plate rod on end of choke shaft.

(32) If choke plate was removed, insert choke plate into choke plate shaft.

(a) Install choke plate screws but do not tighten.

(b) Check for proper plate fit, binding in air horn and free rotation of shaft by moving plate from closed to open position. If necessary, remove choke plate and grind or file plate edge where it is binding or scraping on air horn wall. If choke plate and shaft moves freely, tighten choke plate screws while holding choke in fully closed position.

(33) Position main body gasket and choke rod plastic seal on main body.

(34) Position air horn on main body and gasket so that choke plate rod fits through the seal and opening in the main body.

(35) Insert end of choke plate rod into choke plate lever.

(36) Install air horn attaching screws and carburetor identification tag, and tighten attaching screws.

(37) Attach choke plate rod and retainer to thermostatic choke shaft lever.

(38) Install air cleaner anchor screw. Tighten to 9 foot-pounds torque.

(39) Install modulator diaphragm return spring in recess of air horn. Position modulator cover over diaphragm assembly and engage piston rod with keyed slot of modulator arm. Place diaphragm and cover over return spring and install cover retaining screws.

SERVICE ADJUSTMENT PROCEDURES

Float Level Adjustment—Dry

(1) Remove air horn assembly and gasket. Raise float by pressing down on float tab until fuel inlet needle is lightly seated.

(2) Using a T-scale, measure distance from the fuel bowl machined surface to the flat surface of either corner of the float, at the free end (refer to Carburetor Service Specifications for the correct setting).

(3) Bend float tab to adjust and hold fuel inlet needle off its seat while adjusting, to prevent damage to the Viton tipped needle (fig. 4-51).

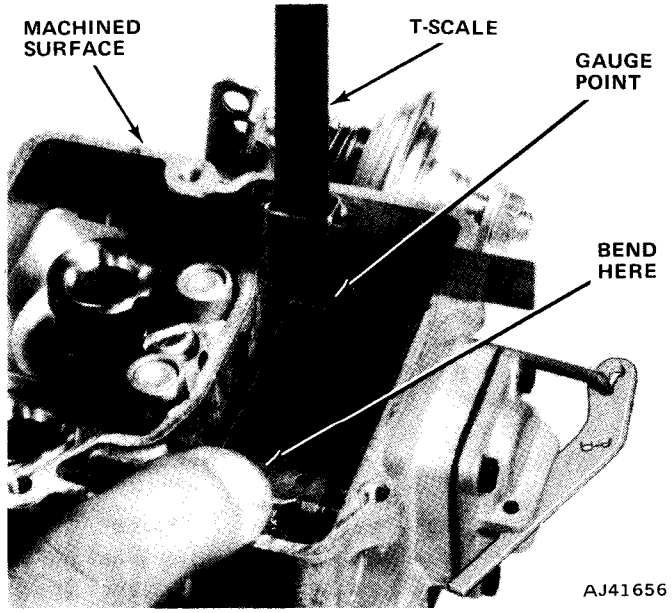


Fig. 4-51 Dry Float Adjustment

Float Level Adjustment—Wet

(1) With vehicle on a flat, level surface and engine at normal operating temperature, remove carburetor air cleaner assembly, and anchor screw.

(2) Remove air horn attaching screws and carburetor identification tag. Temporarily place air horn and gasket in position on carburetor main body and start engine. Let engine idle for a few minutes, then rotate air horn out of way and remove air horn gasket to provide access to the float assembly.

(3) While the engine is idling, use a T-scale to measure the vertical distance from the top machined surface of the carburetor main body to the level of the fuel in the fuel bowl (fig. 4-52). The measurement should be made at least 1/4 inch away from any vertical surface to assure an accurate reading, because the surface of the fuel is concave (higher at the edges than in the center). Care must be exercised to measure the fuel level at the point of contact with the float with the fuel (refer to Carburetor Service Specifications for the correct fuel level (wet) setting).

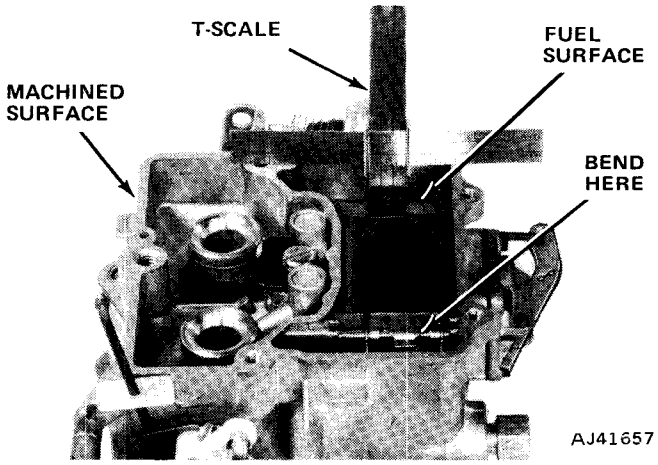


Fig. 4-52 Wet Float Level Adjustment

(4) If any adjustment is required, stop engine to minimize hazard of fire due to fuel spray when float setting is disturbed. To adjust the fuel level, bend the float tab (contacting the fuel inlet valve) upward in relation to the original position to raise the fuel level, and downward to lower it. Each time an adjustment is made to the float tab to alter the fuel level, the engine must be started and permitted to idle for a few minutes to stabilize the fuel level. Check the fuel level after each adjustment until the specified level is obtained.

(5) Install a new air horn gasket, the air horn assembly, carburetor identification tag and the attaching screws. Be sure plastic dust seal on choke operating rod is positioned correctly and does not cause rod to bind. Tighten the screws. Install the air cleaner anchor screw and tighten to 7 to 12 foot-pounds torque.

(6) Check the idle fuel mixture, idle speed adjustments and the carburetor dashpot adjustment (if equipped). Adjust the carburetor as required (refer to Carburetor Service Specifications).

(7) Install air cleaner.

Initial Choke Valve Clearance Adjustment

(1) Loosen choke cover retaining screws to allow movement of cover. Rotate choke cover 1/4-turn counterclockwise (rich) from index and tighten the retaining screws.

(2) Disconnect choke heat inlet tube. Align fast idle speed adjusting screw with the second step (index) of the fast idle cam.

(3) Start engine without moving accelerator linkage. Turn fast idle cam lever adjusting screw out (counterclockwise) three (3) full turns. Measure clearance between the lower edge of choke valve and air horn wall (refer to Carburetor Service Specifications for correct setting).

CAUTION: *Use extreme care while twisting the modulator arm to avoid damaging the nylon piston rod of the modulator assembly.*

(4) Adjust by grasping modulator arm securely with a pair of pliers at point A and twisting the arm at point B with a second pair of pliers. Twist toward the front of the carburetor to increase clearance and toward the rear of the carburetor to decrease clearance (fig. 4-53).

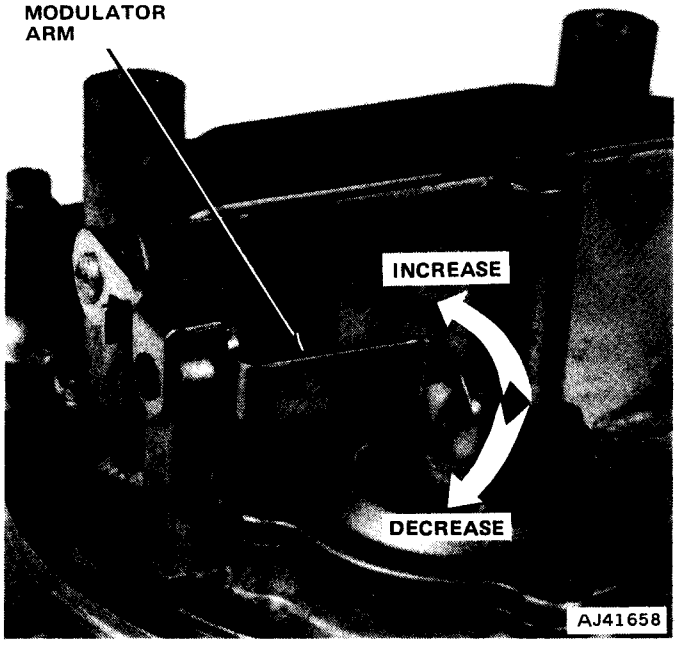


Fig. 4-53 Initial Choke Valve Clearance Adjustment

(5) After completing adjustment, stop engine and connect choke heat tube. Turn the fast idle cam lever adjusting screw in (clockwise) three full turns. Do not reset the choke cover until the fast idle cam linkage adjustment has been performed.

Fast Idle Cam Linkage Adjustment

(1) Push down on fast idle cam lever until fast idle speed adjusting screw is in contact with the second step (index) and against the shoulder of the high step.

(2) Measure clearance between the lower edge of choke valve and air horn wall (fig. 4-54). Refer to Carburetor Service Specifications for the correct setting.

(3) Adjust by turning the fast idle cam lever screw.

(4) Loosen the choke cover retaining screws and adjust the choke as outlined under Automatic Choke Adjustment.

(5) Install choke shield clamp and retaining screws.

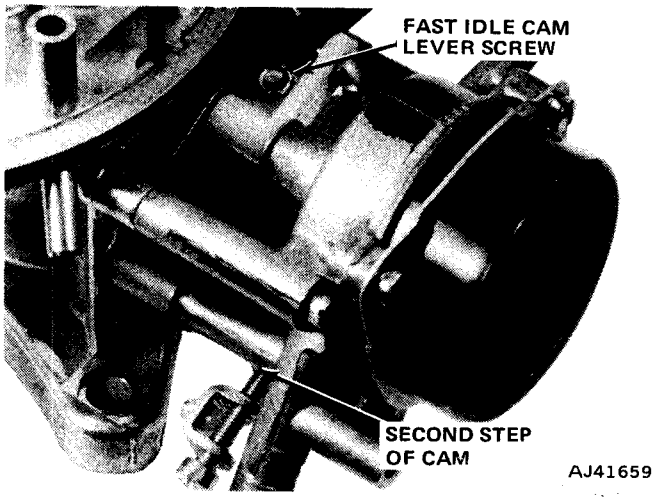


Fig. 4-54 Fast Idle Cam Linkage Adjustment

Choke Unloader Adjustment

(1) Hold throttle fully open and apply pressure on the choke valve toward the closed position.

(2) Measure the clearance between the lower edge of choke valve and air horn wall. Refer to Carburetor Service Specifications for correct setting.

CAUTION: Do not bend *the unloader tang downward from a horizontal plane.*

(3) Adjust by bending the unloader tang which contacts the fast idle cam as shown in figure 4-55. **Bend toward the cam to increase the clearance and away from the cam to decrease the clearance.**

(4) After making the adjustment, open the throttle until the unloader tang is directly below the fast idle cam pivot. **There must be exactly 0.070-inch clearance between the unloader tang and the edge of the fast idle cam (fig. 4-56).**

(5) Operate the throttle and check unloader tang to make sure it does not bind, contact, or stick on any part of carburetor casting or linkage. After carburetor installation, check for full throttle opening when the throttle is operated from inside the vehicle. If full throttle opening is not obtainable, it may be necessary to remove excess padding under the floormat or reposition the throttle cable bracket located on the engine.

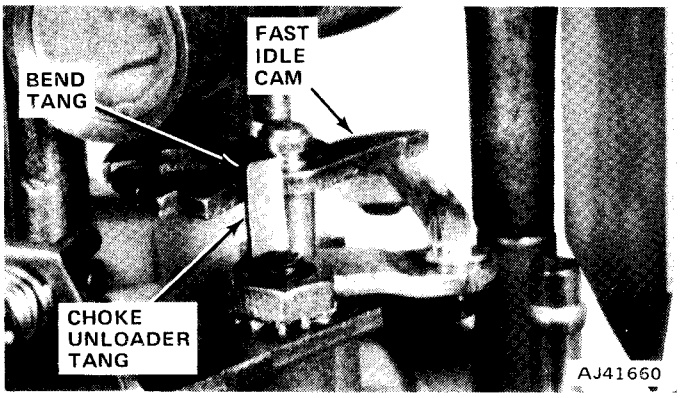


Fig. 4-55 Unloader Adjustment

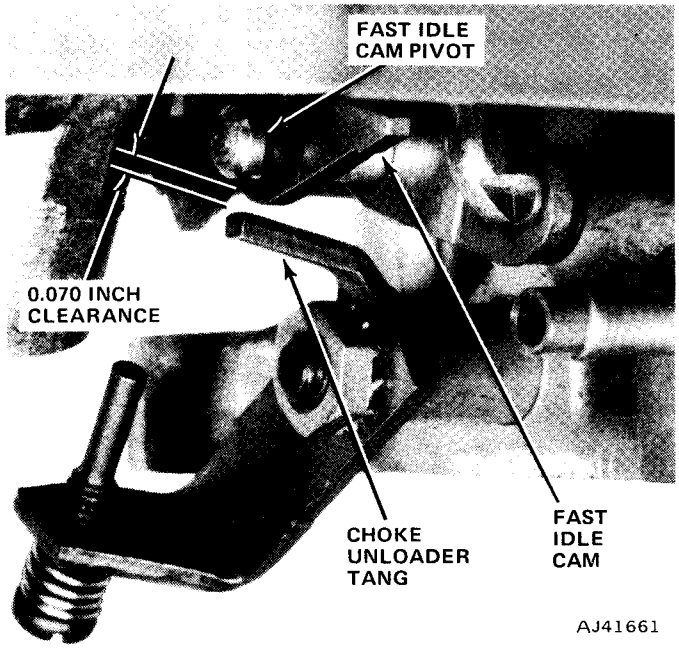


Fig. 4-56 Unloader-to-Fast-Idle-Cam Clearance

Automatic Choke Adjustment

Loosen choke cover retaining screws and rotate cover in the desired direction as indicated by an arrow on the face of the cover (refer to Carburetor Service Specifications for the correct setting). The specified setting will be satisfactory for most driving conditions. However, in the event that stumbles or stalls occur on acceleration during engine warmup, the choke may be set richer or leaner using the tolerance provided to meet individual engine requirements.

Accelerating Pump Stroke Adjustment

The accelerating pump stroke has been set to help keep the exhaust emission level of the engine within the specified limits. The additional holes provided for pump stroke adjustment are for adjusting the stroke for specific engine and climate applications. The primary throttle shaft lever (overtravel lever) has four holes and the accelerating pump link has two holes to control the accelerating pump stroke (fig. 4-57).

For normal operating conditions, the accelerating pump operating rod should be in the third hole in the overtravel lever (for all carburetors except the 6DM2J which should be in the second hole) and the inboard hole (hole closest to the pump plunger) in the accelerating pump link. In extremely hot climate regions, the pump stroke may be shortened to provide smoother acceleration by placing the pump rod in the second hole of the overtravel lever. In extremely cold climates, the pump stroke may be increased to provide smoother acceleration by placing the pump rod in the fourth hole of the overtravel lever.

The accelerating pump operating rod should be in the third hole in the overtravel lever and the inboard hole (hole closest to the pump plunger) in the accelerating pump link.

(1) Remove operating rod from retaining clip.

(2) Position clip over the specified hole in overtravel lever. Insert operating rod through clip and overtravel lever. Snap release clip over rod.

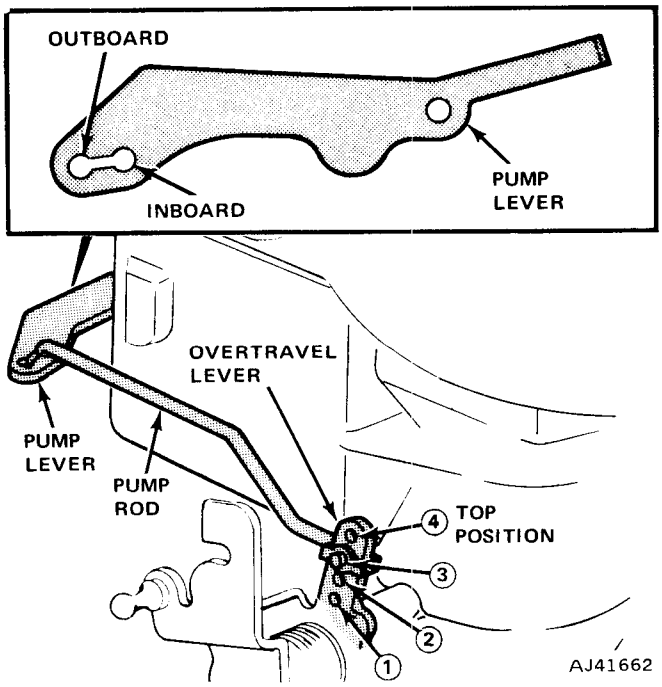


Fig. 4-57 Accelerating Pump Stroke Adjustment

Idle Speed and Mixture Adjustment

Refer to Engine Idle Setting Procedures in Emission Control section.

Dashpot Adjustment (On Vehicle)

With the throttle set at curb idle position, fully depress the dashpot stem and measure the clearance between the stem and the throttle lever (fig. 4-58).

Refer to Carburetor Service Specifications for correct setting. Adjust by loosening the locknut and turning the dashpot.

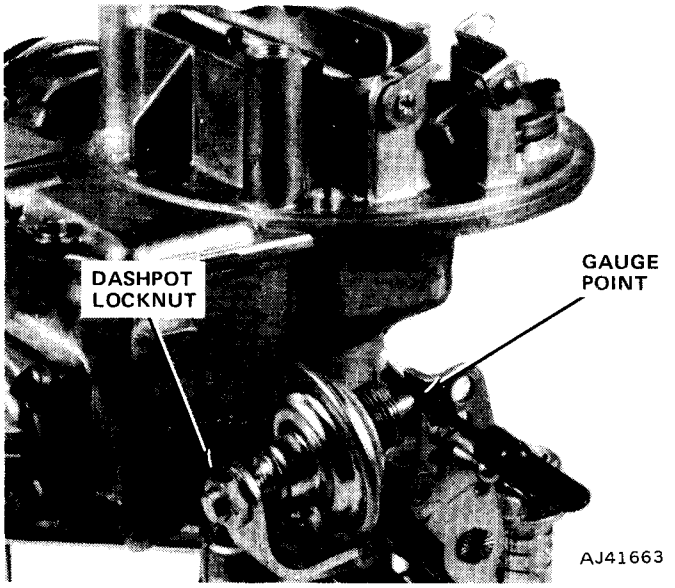


Fig. 4-58 Dashpot Adjustment

Fast Idle Speed Adjustment (On Vehicle)

Set the fast idle speed with the engine at operating temperature and the fast idle speed adjusting screw against the index mark (second step) of the fast idle cam (refer to Carburetor Service Specifications for the correct rpm setting). Adjust by turning the fast idle speed adjusting screw.

NOTE: *When adjusting fast idle speed, plug EGR port and spark port.*

Model 2100 Carburetor Calibrations

	6DM2J	6RHM2	6DA2J	6DM2	6RHA2
Throttle Bore Size	1.562	1.562	1.562	1.562	1.562
Main Venturi Size	1.080	1.080	1.080	1.080	1.080
Fuel Inlet Diameter	0.101	0.101	0.101	0.101	0.101
Low Speed Jet (Tube)	0.028	0.031	0.032	0.031	0.029
Economizer	0.046	0.055	0.043	0.046	0.055
Idle Air Bleed	0.106	0.101	0.101	0.106	0.110
Main Jet Number	47	47	48	47	47
High Speed Bleed	0.052	0.031	0.052	0.052	0.031
Power Valve Timing (Inches of Hg)					
First Stage	10.00	8.00	10.00	10.00	8.00
Second Stage	5.50	3.50	5.50	5.50	3.50
Accelerator Pump Jet	0.028	0.024	0.024	0.032	0.024
Vacuum Spark Port					
Height	0.050	0.050	0.050	0.050	0.050
Width	0.085	0.085	0.085	0.085	0.085
Choke Heat Bypass	0.114	0.114	0.114	0.114	0.114
Choke Heat Inlet Restriction	0.076	0.076	0.076	0.076	0.076
Choke Vacuum Restriction	0.082	0.082	0.089	0.082	0.082

60575

CARBURETOR MODEL 4350—4 VENTURI

GENERAL

The Model 4350 carburetor consists of three main assemblies: air horn, main body, and throttle body (fig. 4-59).

The air horn assembly also serves as the fuel bowl cover and contains the choke valve and shaft, accelerator pump linkage, fuel inlet needle and seat, auxiliary fuel inlet valve, float and lever, secondary air valve, booster venturi, and internal fuel bowl vents.

The main body assembly contains fuel passages for the metering systems, main metering jets, accelerator pump, accelerator pump inlet, discharge check valves, and secondary air valve damper piston.

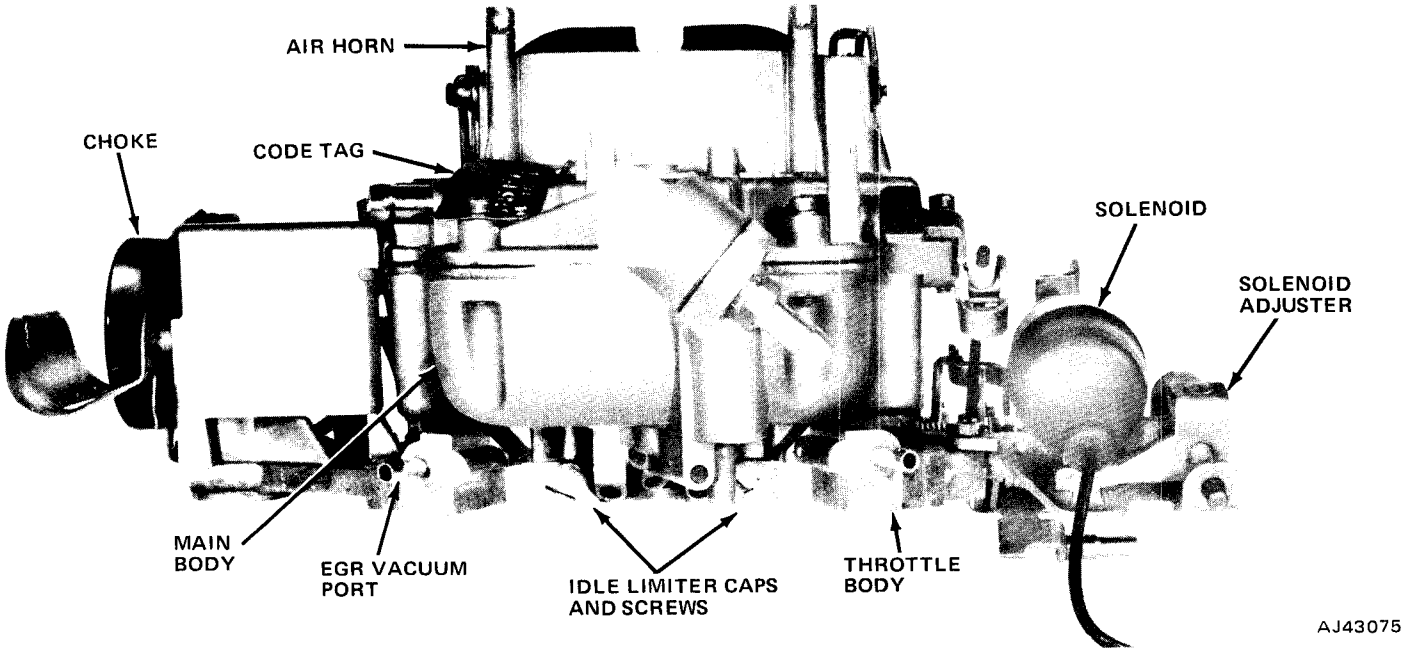


Fig. 4-59 Model 4350 Carburetor Assembly

The throttle body assembly contains the primary and secondary throttle shaft and lever assemblies, curb idle solenoid, fast idle adjusting screw, idle mixture adjusting screws, and the automatic choke assembly.

Identification

The carburetor is identified by a code number and build date which is stamped on the identification tag. Each carburetor build month is coded alphabetically beginning with the letter A in January and ending with the letter M in December (the letter I is not used). The tag is attached to the carburetor and must remain with the carburetor to assure proper identification (fig. 4-60).

CARBURETOR CIRCUITS

The Model 4350 carburetor incorporates five basic fuel metering circuits: idle (low speed), primary main metering, secondary main metering, pump, and power enrichment circuit. In addition to the basic fuel metering circuits, the float (fuel inlet) and choke circuits are used.

Float (Fuel Inlet) Circuit

Fuel under pressure enters the carburetor through the fuel inlet passage located in the air horn assembly. The amount of fuel entering the fuel bowl is regulated by the distance the fuel inlet needle is moved off its seat. A dual float and lever assembly controls the movement of the fuel inlet needle and reacts to any change in the fuel level. When the fuel level drops, the fuel inlet needle, which rests against the float lever, drops away from its seat and admits the proper amount of fuel to maintain the specified level (fig. 4-61).

An auxiliary fuel inlet valve is provided to supplement the normal fuel supply during heavy road load or high speed operation. When the float drops to a certain level, the float lever presses against the auxiliary valve plunger and opens the valve to provide an additional fuel supply to the bowl.

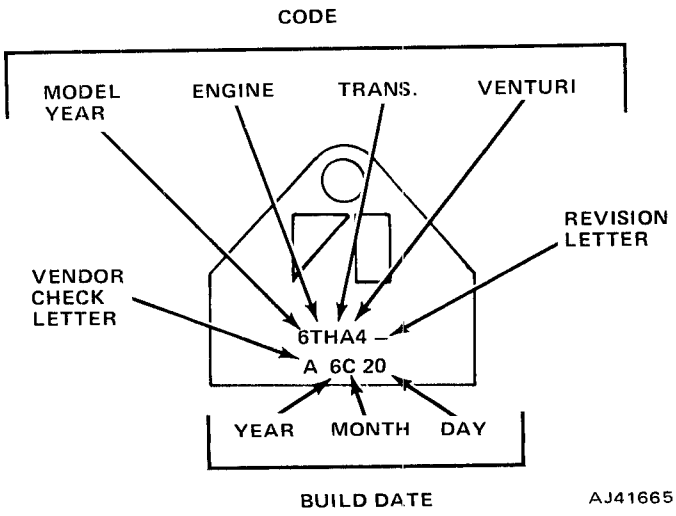


Fig. 4-60 Identification Tag

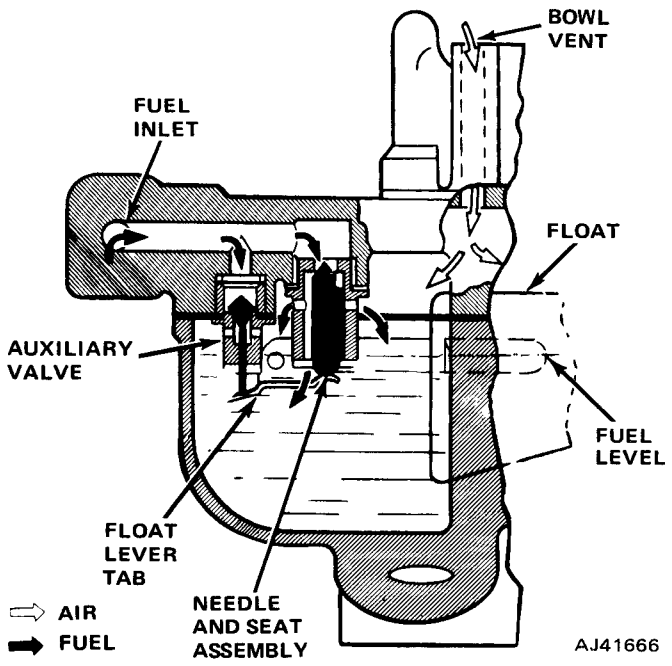


Fig. 4-61 Float Circuit

Idle (Low Speed) Circuit

Fuel for idle and low speed operation is supplied through the idle circuit. When the throttle valves are in the curb idle or early part-throttle position, manifold vacuum, or low pressure, is applied to the idle discharge ports and idle transfer slots. The pressure difference between atmospheric pressure in the fuel bowl and manifold vacuum causes fuel to flow through the idle circuit.

Fuel is forced from the fuel bowl through the main jets into the main wells. From the main wells, the fuel passes through the idle tubes which are located inside of the main well tubes. The fuel is metered as it flows through restrictions at the lower end of the idle tubes. The fuel then flows upward through the idle tubes and is routed through short diagonal passages to the downward idle channels which terminate at the idle transfer slots and idle discharge ports (fig. 4-62).

Filtered air enters through calibrated idle air bleeds and mixes with the fuel as it flows downward through the idle channels. The idle air bleeds also prevent siphoning through the idle system during high speed operation or engine shutdown.

The fuel-air mixture is discharged through the idle discharge ports and the bottom of the idle transfer slots when the throttle valves are in the curb idle position. The top of the idle transfer slots serve as additional air bleeds at this time to further atomize the idle fuel-air mixture. As the throttle valves are opened slightly above the curb idle position, the entire idle transfer slots are exposed to the manifold vacuum. This provides a richer fuel-air mixture and prevents a flat spot during the transition from idle to primary main metering circuit.

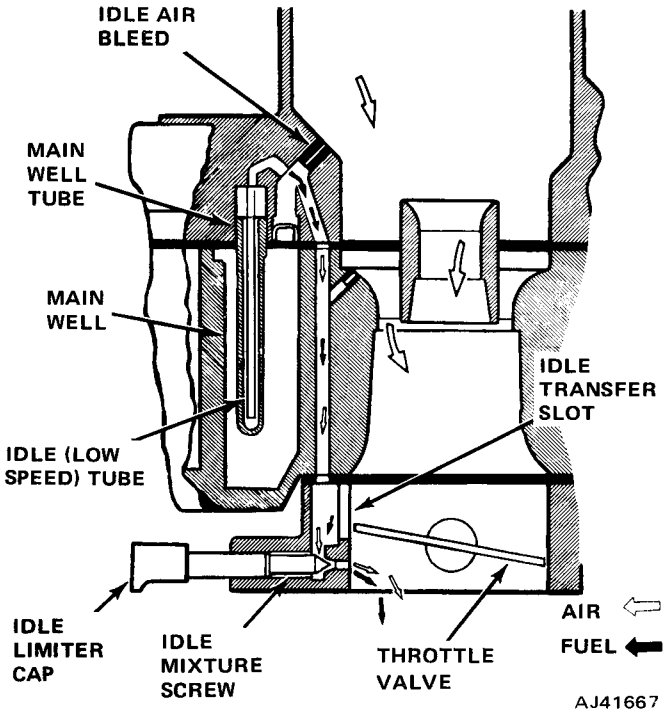


Fig. 4-62 Idle Circuit

Primary Main Metering Circuit

Fuel for part throttle or cruising speeds is provided by the primary main metering circuit in response to the primary throttle opening.

As the primary throttle opening is increased, manifold vacuum decreases at the idle discharge ports and transfer slots causing the idle circuit discharge to diminish. However, the increased throttle opening develops an airflow through the main and booster venturi and creates a vacuum or pressure drop at the main discharge nozzle openings, which are located within the booster venturi. Fuel flows through the main metering circuit due to pressure being higher in the fuel bowl than at the discharge nozzles. The pressure drop at the booster venturi is proportionately greater as the throttle opening is increased, resulting in an increased fuel flow for higher engine speeds.

Fuel is forced from the fuel bowl through the main metering jets and into the main wells. The fuel then flows through the main well tubes. As the fuel flows upward through the main well tubes, it is mixed with air supplied by the high speed air bleeds. The air enters through small holes in the sides of the main well

tubes. The fuel-air mixture flows from the main well tubes to the main discharge nozzles and is discharged into the air stream within the booster venturi (fig. 4-63).

The high speed air bleeds meter an increasing amount of air as booster venturi vacuum (pressure drop) increases, thereby maintaining the proper fuel-air ratio. The high speed air bleeds serve as anti-siphon vents at reduced speeds and also act as vents for the main wells to help reduce percolation during a hot engine shutdown.

For 1976, a vacuum-operated throttle kicker assembly is used on some models to reduce hydrocarbon emissions when the throttle is closed rapidly. As the throttle closes, the resulting increase in manifold vacuum causes a vacuum diaphragm to retract linkage to open the primary throttle plate slightly.

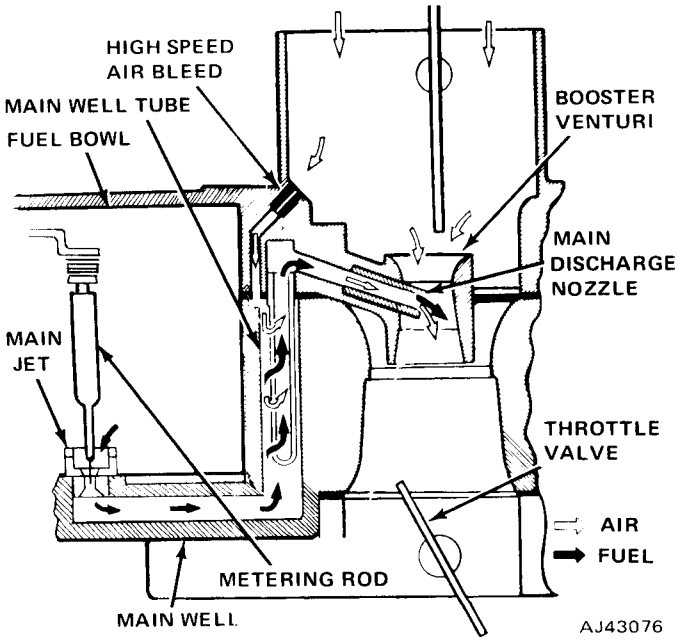


Fig. 4-63 Primary Main Metering Circuit

Secondary Main Metering Circuit

When maximum power demands are made on the engine, an additional volume of fuel-air mixture is supplied by the secondary main metering circuit to supplement the primary main metering circuit discharge.

The secondary throttle is mechanically linked to the primary throttle and begins to open when the primary throttle is 3/4 open. Both throttles reach wide-open position at the same time. During the engine warmup period (choke on), the secondary throttles are prevented from opening by the secondary throttle lockout lever to avoid an excessive load on a cold engine.

A single air valve plate is located in the air horn above the secondary main discharge nozzles and is linked to a damper piston. A spring located on the damper piston is calibrated to hold the air valve closed until air velocity is sufficient to overcome the spring tension. The damper spring also counteracts sudden movements of the air valve to provide smoother engine operation.

When the secondary throttle valves are opened slightly, manifold vacuum is introduced into the secondary openings below the air valve.

Secondary main metering jets located just below the air valve plate sense the pressure drop and fuel begins to flow through the secondary fuel system. The air valve also reacts to the pressure drop and begins to open. The amount of opening is controlled by air flowing through the secondaries and the opposing force of the air valve piston damper spring. The amount of fuel flowing through the secondary metering system is controlled by the secondary metering jets and the secondary metering rods. The secondary metering rods are connected to the air valve so that the size of the main metering jets and the corresponding fuel flow is in direct proportion to the air valve opening and the volume of air required to produce the opening.

Fuel in the secondary main wells is maintained at the same level as the primary main wells by a small constant feed passage located at the rear of the fuel bowl (fig. 4-64). An anti-siphon bleed is located on top of the secondary feed passage. The anti-siphon bleed also acts as a vent for the secondary main wells during curb idle and hot engine shutdown to help reduce percolation. This same bleed becomes a cranking jet during cold weather start-up and helps richen the mixture for fast starts.

When the primary throttle plates began to close on deceleration the secondary throttle plates are closed mechanically. As airflow through the secondaries diminishes, the air valve plate is closed by the force of the damper piston spring. The secondary throttle shaft is made of two shafts coupled loosely in the center to permit some movement. This allows each secondary plate to seat independently of its own bore. There are two secondary return springs, one on each of the two secondary throttle shafts.

Pump Circuit

When accelerating rapidly from low speeds, a momentary fuel lag occurs in the idle and primary main metering circuits. The increased air velocity resulting from the rapid opening of the throttle tends to lean out the fuel-air mixture. To compensate for this lean condition, the pump circuit delivers an additional quantity of fuel which is discharged into the air stream to maintain the proper fuel-air ratio.

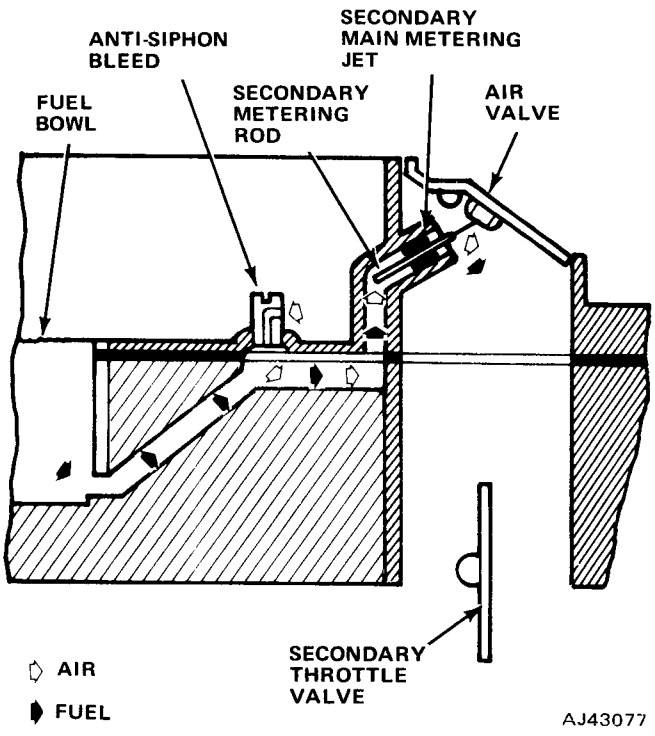


Fig. 4-64 Secondary Main Metering Circuit

When the throttle is closed, the accelerator pump plunger is pulled upward by the pump link and compresses the pump spring. Fuel is drawn from the fuel bowl past the inlet check valve and into the pump chamber. The pump discharge needle is seated at this time to prevent air from entering the pump chamber (fig. 4-65).

When the throttle is opened, the pump plunger is moved downward by spring action, causing the inlet check valve to seat, and forcing fuel into the discharge passage. The seating of the inlet check valve prevents fuel escaping back to the fuel bowl. The pressure of the fuel in the discharge passage lifts the discharge needle off its seat and sprays the fuel out the discharge nozzles. When the pump plunger has completed its travel downward, the discharge needle seats to prevent air entering the discharge passage, assuring a solid fuel supply for the next pump stroke.

At high speeds a vacuum develops at the pump discharge nozzles. The pump air bleed (check ball) provides a vent to the discharge nozzles and prevents siphoning of fuel from the discharge passage. The air bleed is sealed by fuel pressure during the discharge stroke.

Power Enrichment Circuit

During heavy road load or high speed operation, the fuel-air ratio must be richened to provide increased engine power.

Power enrichment is accomplished by means of two calibrated metering rods yoked to a single manifold vacuum actuated piston (fig. 4-66). The metering rod piston rides on a calibrated spring which attempts to keep the piston at the top of its cylinder. This allows the smallest diameter of the tapered metering rods to extend into the main metering jets and permits maximum fuel flow through the jets to the main well cavities.

At idle, part throttle, or cruise conditions when manifold vacuum is high, the piston will be drawn down into the vacuum cylinder, overcome calibrated spring tension, and the larger diameter of the metering rods will extend into the main metering jets, restricting the fuel flow to the main well cavities. An additional control is provided by the vacuum piston limiter lever which is linked to the throttle lever by the accelerator pump rod. This provides a direct relationship between metering rod position and throttle plate opening.

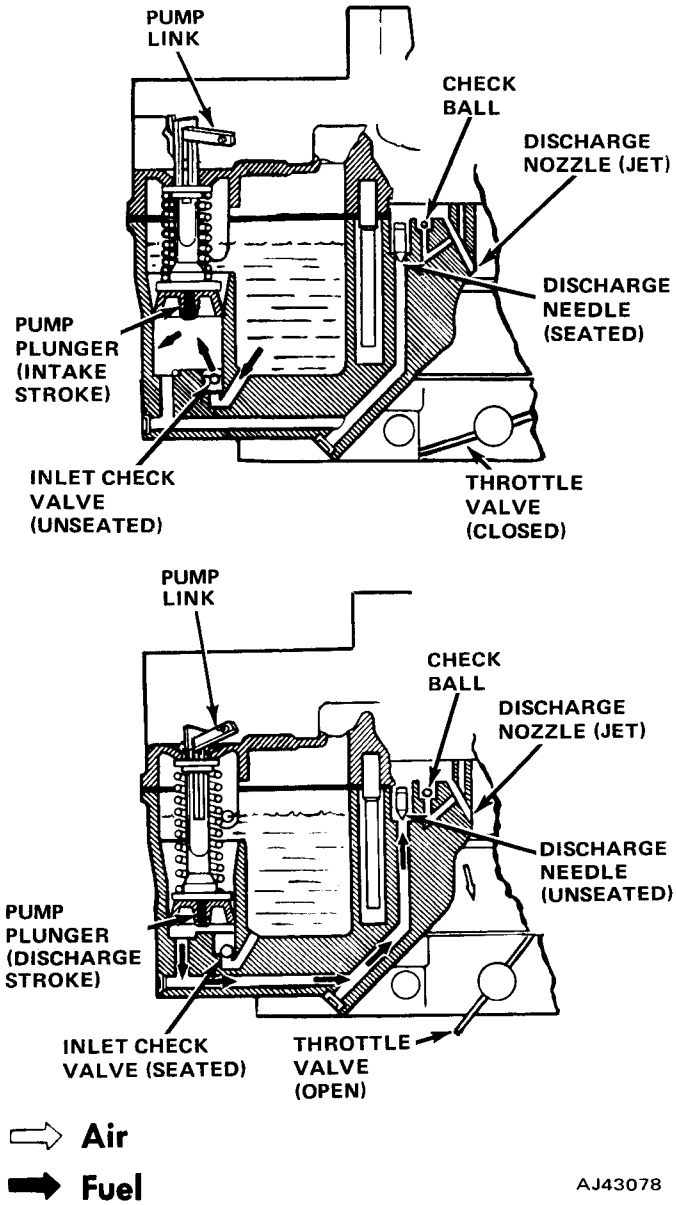


Fig. 4-65 Pump Circuit

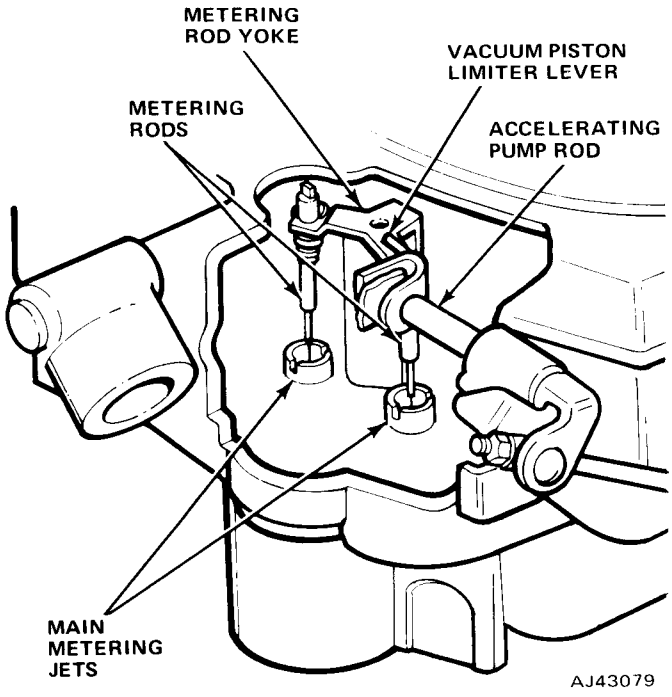


Fig. 4-66 Power Enrichment Circuit

Choke Circuit

A cold engine requires a richer fuel-air mixture for quick starting and satisfactory performance during the warmup period. The choke circuit automatically regulates the position of the choke valve in the air horn to provide the proper mixture throughout the entire cold engine operation.

When the engine is cold, the thermostatic coil in the choke cover exerts force against its lever and rotates the thermostatic choke shaft. This action causes the choke valve to close (fig. 4-67).

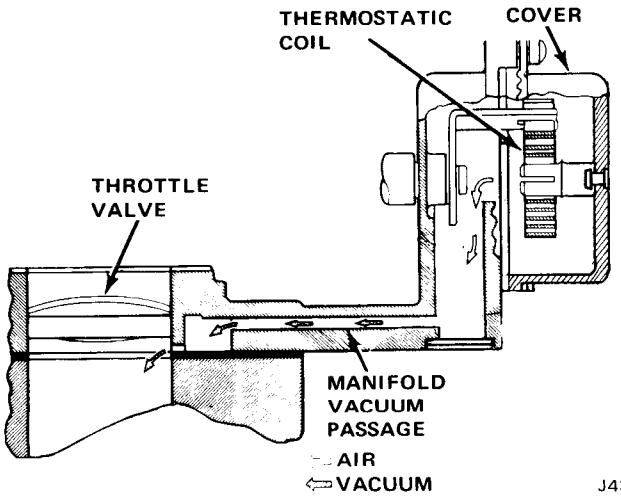


Fig. 4-67 Choke Circuit

During cranking, manifold vacuum is applied to the primary openings below the choke valve and causes fuel to flow through the idle and primary main metering circuits to start the engine. In addition to the fuel flow from the main metering circuit, a cranking jet, located in the air horn assembly between the primary venturi, provides additional fuel for cold engine starts (fig. 4-68). Fuel flows from the secondary feed passage, through the cranking jet, and into the primary throttle bores when the choke valve is closed.

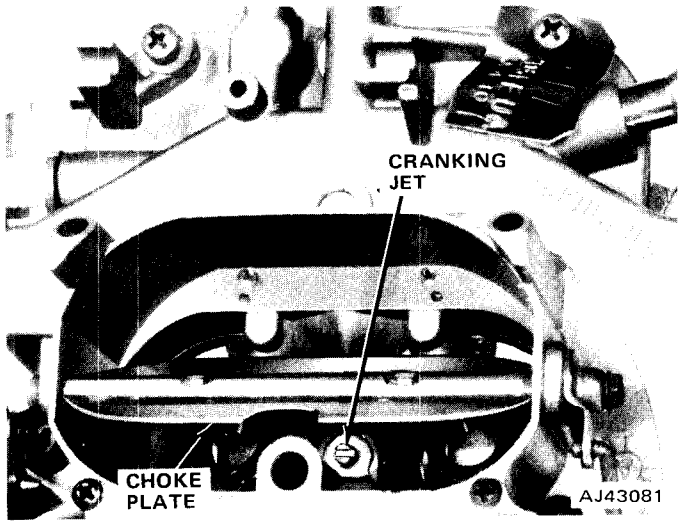


Fig. 4-68 Cranking Jet

When the engine starts, manifold vacuum is channeled to the choke vacuum diaphragm which is attached to the throttle body. As the diaphragm is pulled in, linkage opens the choke plate a specified distance. The action of the diaphragm, combined with atmospheric pressure against the offset choke valve, opposes the tension of the thermostatic coil and causes the choke valve to open slightly to prevent flooding of the engine. This opening of the choke valve is referred to as the initial choke valve clearance.

As the engine warms up, a chamber in the exhaust manifold crossover passage heats filtered air being drawn through the choke heat tube to the choke housing by manifold vacuum. A thermostatic bypass valve, which is integral with the choke heat tube, helps prevent premature choke valve opening during the early part of the warmup period. The valve regulates the temperature of the hot airflow to the choke housing by allowing outside unheated air to enter the heat tube. A thermostatic disc is incorporated in the valve which is calibrated to close the valve at 75°F and open it at 55°F.

The volume of air entering the choke housing is controlled by calibrated restrictions in the carburetor. The heated air entering the choke housing causes the thermostatic coil to gradually lose its tension and unwind.

During the warmup period, a fast idle must be provided to prevent engine stalling. The fast idle cam is rotated into position against the fast idle screw by the thermostatic choke shaft and lever assembly and results in increased engine speed in proportion to the choke valve opening. When the choke valve is fully open, the fast idle cam rotates free of the fast idle screw, allowing the engine to return to curb idle.

If the engine is accelerated during the warmup period, the resulting drop in manifold vacuum decreases the pull of the choke piston against the tension of the thermostatic coil and allows the choke valve to move toward the closed position. This provides the richer mixture required to prevent engine stalling.

Should the engine become flooded during the starting period, the choke can be mechanically opened a specified distance by depressing the accelerator pedal to the floor. A tang on the primary throttle lever will then contact the fast idle cam and partially open the choke valve through connecting linkage. This is referred to as the unloader.

To avoid overloading a cold engine, a secondary lockout lever engages a tang on the secondary throttle stop lever and prevents secondary throttle operation during the warmup period. The lockout lever releases the secondary throttle only after the choke is fully open.

CARBURETOR OVERHAUL

The following procedure applies to complete overhaul with the carburetor removed from the engine.

A complete disassembly is not necessary when performing adjustments. In most cases, service adjustments of individual systems may be completed without removing the carburetor from the engine (refer to Service Adjustment Procedures).

A complete carburetor overhaul includes disassembly, thorough cleaning, inspection and replacement of all gaskets and worn or damaged parts. Refer to figure 4-69 for parts identification.

NOTE: *When using an overhaul kit, use all parts included in kit.*

Carburetor Removal

Flooding, stumble on acceleration, and other performance complaints are, in many instances, caused by the presence of dirt, water or other foreign matter in the carburetor. To aid in diagnosing the cause of complaint, the carburetor should be carefully removed from the engine without removing the fuel from the bowl. The contents of the bowl then may be examined for contamination as the carburetor is disassembled.

(1) Remove air cleaner.

(2) Remove throttle cable from throttle lever. Disconnect distributor vacuum line, PCV hose, EGR vacuum line,, in-line fuel filter and the choke heat tube at the carburetor.

(3) Disconect choke clean air line from air horn.

(4) Remove carburetor retaining nuts and remove carburetor. Remove carburetor mounting gasket, spacer, and lower gasket from intake manifold.

Carburetor Installation

(1) Clean gasket mounting surfaces of spacer and carburetor. Place spacer between two new gaskets and position spacer and gaskets on intake manifold. Position carburetor on spacer and gasket and secure it with retaining nuts. To prevent leakage, distortion or damage to the carburetor body flange, snug the nuts, and then alternately tighten each nut in a criss-cross pattern to 13 foot-pounds torque.

(2) Connect in-line fuel filter throttle cable, choke heat tube, distributor vacuum line, EGR vacuum line, and PCV hose.

(3) Connect choke clean air line to the air horn.

(4) Adjust engine idle speed, idle fuel mixture, and antistall dashpot (if equipped). Install air cleaner.

Disassembly

(1) Remove fuel inlet line from fuel filter.

(2) Remove choke clean-air pickup connecting tube from air horn.

(3) Remove choke control rod retainer from automatic choke lever. Separate rod from lever.

(4) Remove accelerator pump throttle link retainer from throttle lever assembly. Separate link from lever assembly.

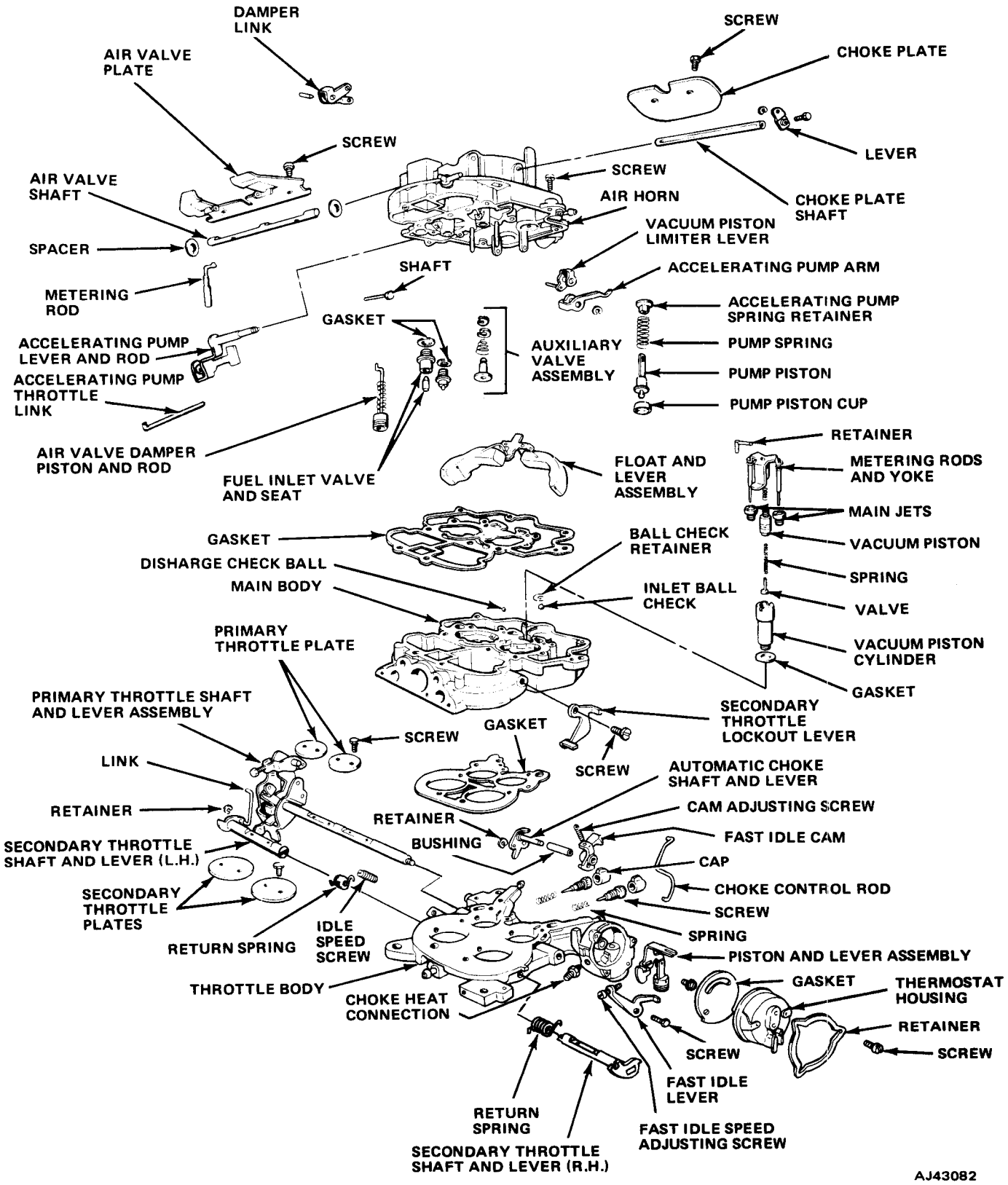


Fig. 4-69 Carburetor Model 4350—Exploded View

(5) Remove air cleaner anchor screw and remove air-horn-to-fuel-bowl attaching screws (fig. 4-70).

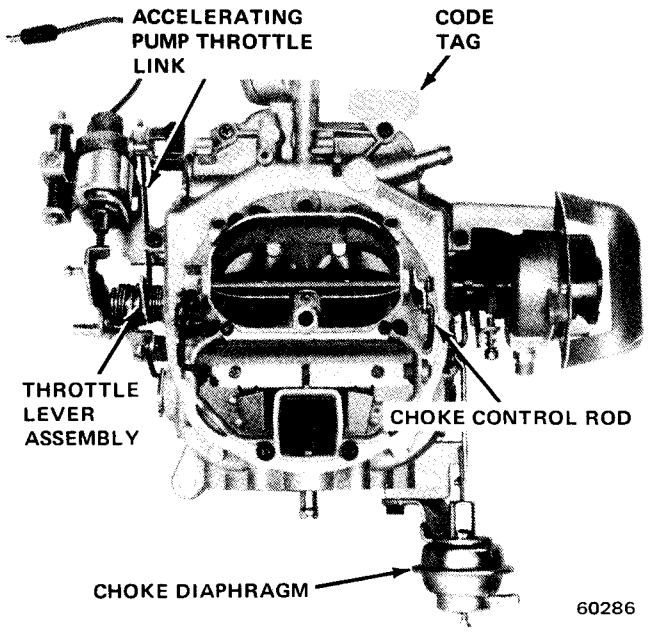


Fig. 4-70 Model 4350 Carburetor—Top View

(6) Lift air horn off main body.

(7) Pull float pivot pin and remove float assembly.

(8) Remove auxiliary fuel inlet valve with Tool J-10185 and fuel inlet needle seat with a 1/2-12 point socket (fig. 4-71).

(9) Remove secondary air valve damper link pivot pin and remove rod from link.

(10) Remove air valve damper piston, rod, and spring.

(11) If it is necessary to remove secondary air valve plate or shaft, remove the air valve plate attaching screws. Remove plate, then slide shaft out of the air horn.

(12) Remove attaching screws if it is necessary to remove choke plate or choke shaft.

(13) Remove choke plate, then slide choke shaft and lever out of air horn.

NOTE: *Choke lever is attached to shaft with a left-hand thread screw.*

(14) Remove accelerating pump arm retainer and slide accelerating pump lever and rod from air horn.

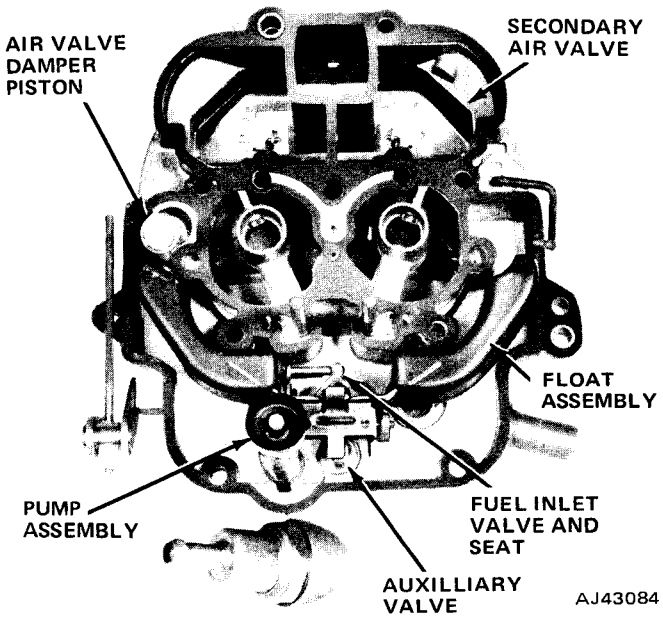


Fig. 4-71 Air Horn—Bottom View

(15) Remove accelerating pump from pump arm.

(16) Turn main body upside down and catch accelerating pump discharge needle and check ball (fig. 4-72).

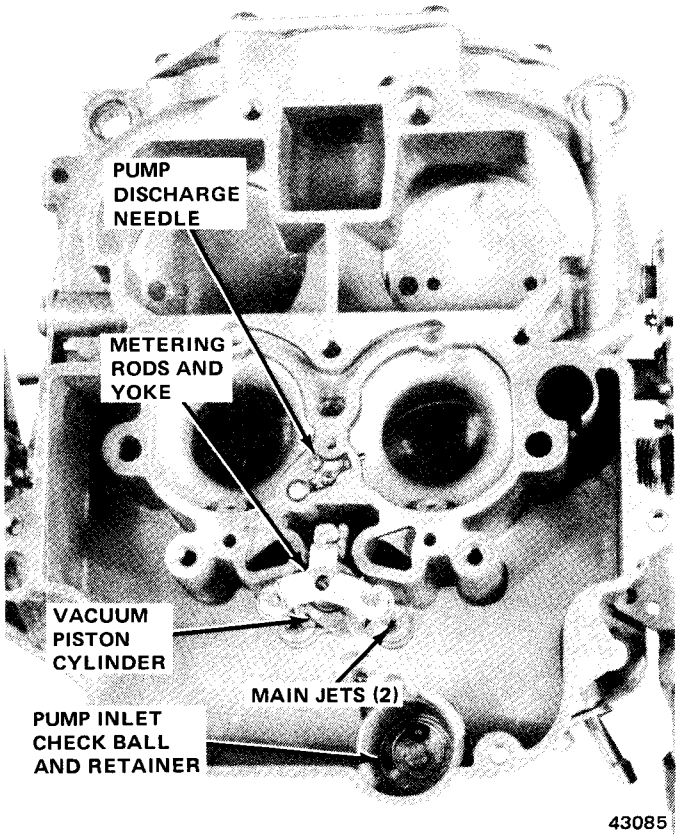


Fig. 4-72 Fuel Bowl Interior

(17) Remove main metering jets.

(18) Remove accelerating pump inlet check ball retainer, then turn main body over and catch ball from pump well.

(19) Remove throttle body to main body screws from bottom of throttle body (fig. 4-73) and separate the two castings.

(20) Remove choke housing cover screws, cover, gasket and thermostatic spring.

(21) Remove choke diaphragm assembly.

(22) Remove retainers from secondary throttle-lever-to-primary-throttle connecting link, remove link.

(23) Remove throttle kicker assembly.

(24) If it is necessary to remove throttle plates or shafts from throttle body, remove throttle plate attaching screws and plates.

(25) Slide secondary throttle shafts and return springs out of throttle body.

(26) Remove screw from primary throttle shaft and remove fast idle lever and adjusting screw. Slide throttle shaft and primary throttle shaft and lever assembly out of throttle plate.

(27) Remove primary throttle lever assembly retainer, then slide lever and springs off shaft.

(28) If it is necessary to remove fast idle cam or bushing, carefully press bushing out of choke housing and bushing column.

NOTE: *The column may bend out of alignment or break without proper support to the column during bushing removal or installation. Make sure all holes in new gaskets have been properly punched and that no foreign material has adhered to gaskets. Gasket surfaces must be clean and flat and free of nicks or burrs.*

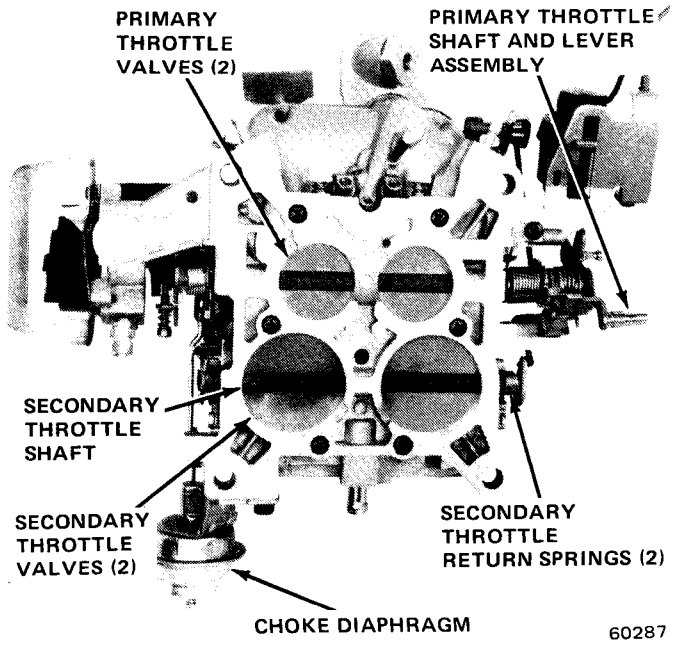


Fig. 4-73 Throttle Body—Bottom View

Cleaning and Inspection

Dirt, gum, water, or carbon contamination in the carburetor or the exterior moving parts of the carburetor are often responsible for unsatisfactory performance. For this reason, efficient carburetion depends upon careful cleaning and inspection.

The cleaning and inspection of only those parts not included in the carburetor overhaul kit are covered here. All gaskets and parts included in the repair kit should be installed when the carburetor is assembled and the old gaskets and parts should be discarded.

Wash all carburetor parts (except accelerating pump piston and dashpot assembly) in clean commercial carburetor cleaning solvent. If a commerical solvent is not available, lacquer thinner or denatured alcohol may be used.

Rinse the parts in kerosene to remove all traces of the cleaning solvent, then dry them with compressed air. Wipe all parts that cannot be immersed in solvent with a clean, soft, dry cloth. Be sure all dirt, gum, carbon, and other foreign matter are removed from all parts.

Force compressed air through all passages of the carburetor.

CAUTION: *Do not use a wire brush to clean any parts or a drill or wire to clean out any openings or passages in the carburetor. A drill or wire may enlarge the hole or passage, changing the calibration of the carburetor.*

Check the choke shaft for grooves, wear, and excessive looseness or binding. Inspect the choke plate for nicked edges and ease of operation and free it if necessary. Make sure all carbon and foreign material have been removed from the automatic choke housing and the piston. Check the throttle shafts in the bores for excessive looseness or binding and check the throttle plates for burrs which prevent proper closure. Inspect the main body, throttle body, air horn, choke housing, and thermostatic spring housing for cracks. Replace the float if the arm needle contact surface is grooved. If the floats are serviceable, polish the needle contact surface of the arm with crocus cloth or steel wool. Replace float shafts if worn. Replace all screws and nuts that have stripped threads. Replace all distorted or broken springs. Inspect all gasket mating surfaces for nicks and burrs. Repair or replace any parts that have a damaged gasket surface.

Assembly

(1) If throttle plates and shafts are removed, slide primary throttle return spring (coiled clockwise) on primary throttle shaft (flat milled) and slide shaft into primary shaft holes (mixture needle side of body).

(2) Slide secondary throttle shafts and spring assemblies into secondary shaft holes.

(3) Position secondary throttle plates (larger diameter) in secondary bores with ground flat edges of plates facing up.

(4) Install plate attaching screws snug but not tight.

(5) Position primary throttle plates (smaller diameter) in primary bores with ground flat edge of plates facing up and toward the idle mixture needles. Install plate attaching screws snug but not tight.

(6) Rotate primary and secondary throttle shafts to closed position and tap throttle plates lightly, with screwdriver handle or similar tool, so that plates are properly and fully seated in throttle bores (when viewed with a light behind the plates, little or no light should be observed). Tighten throttle plate screws.

(7) Install secondary throttle lockout lever.

(8) Install fast idle speed lever and adjusting screw.

(9) If the fast idle cam and bushing were removed, insert automatic choke shaft bushing through choke housing. Position fast idle cam between choke housing and bushing column. Slide bushing through fast idle cam. Press bushing in choke housing and into column. Clean bushing with 1/4-inch reamer.

(10) Insert automatic choke shaft and lever in bushing.

(11) Install choke diaphragm assembly.

(12) Insert secondary throttle to primary throttle connecting rod into throttle lever levers and install retainers.

(13) Install throttle kicker assembly.

(14) Position main body on a working surface with fuel bowl down.

(15) Position main body to throttle body gasket on main body.

(16) Position throttle body on main body and install attaching screws.

(17) Invert main body and throttle body so fuel bowl is upward.

(18) Install main jets.

(19) Install vacuum piston cylinder and new gasket.

(20) Adjust metering rods (refer to Metering Rod Adjustment).

(21) Install valve, spring, vacuum piston and metering rods and yoke assembly.

(22) Install choke-to-throttle lockout lever.

(23) Place accelerator pump check ball in pump inlet hole of pump chamber. Install check ball retaining ring.

(24) Place accelerator pump discharge needle into pump discharge cavity.

(25) Install auxiliary fuel inlet valve and gasket using Tool J-10185.

(26) Assemble accelerator pump and insert into air horn.

NOTE: *Accelerator pump diaphragm must be positioned on lower hole of pump plunger stem.*

(27) Compress pump plunger and insert accelerator pump arm into plunger stem.

(28) Place vacuum piston limiter lever over pump arm and install accelerating pump lever and rod assembly.

(29) Install accelerating pump arm retainer.

(30) If choke plate and shaft were removed, slide choke shaft through holes in air horn. Install choke shaft lever on end of shaft on automatic choke side.

NOTE: *The lever and shaft are tapered and the attaching screw has a left-hand thread. Insert choke plate into slot in choke shaft and install plate attaching screws snug but not tight.*

(31) Close choke plate and gently tap the plate to position plate in air horn. Tighten attaching screws.

(32) If air valve plate and shaft were removed, slide shaft through holes on secondary side of air horn

(33) Position air valve plate in air horn opening.

(34) Install plate attaching screws snug but not tight.

(35) Close air valve plate and tap lightly to properly position in air horn. Tighten attaching screws.

NOTE: *Be sure plate and shaft turn freely after assembly.*

(36) Insert fuel inlet needle into fuel inlet seat.

(37) Position float and lever assembly between hinge post and over fuel inlet valves. Insert float hinge pin through the post and float lever.

NOTE: *The pin must be inserted from the pump plunger side for self-retention.*

(38) Insert air valve damper piston, rod and spring assembly through air horn and attach rod end to damper link.

(39) Insert air valve damper rod into hole in air valve plate. Slide other end of rod into damper link.

(40) Position the air valve damper link on the air horn and install pivot pin.

(41) Set float level (refer to Float Adjustment).

(42) Position main body to air horn gasket on main body.

(43) Carefully position air horn assembly over main body. Guide accelerator pump plunger and air valve damper piston into their chambers as air horn is gently lowered into position.

(44) Install other air horn attaching screws.

(45) Install accelerating pump throttle link in lower hole of primary throttle lever assembly. Install link retainer.

(46) Insert choke control rod end into automatic choke lever. With long nose pliers, install retaining clip.

(47) Check choke gasket cover clearance.

(48) Install choke gasket cover and retainer.

SERVICE ADJUSTMENT PROCEDURES

Float Adjustment

(1) Invert air horn assembly and remove gasket.

(2) Measure distance from float pontoons to air horn casting using a T-scale. Position horizontal scale over flat surface of both float pontoons at the free ends, parallel to air horn casting. Hold lower end of the vertical scale in full contact with the smooth area of air horn casting, located midway between the main discharge nozzles (fig. 4-74).

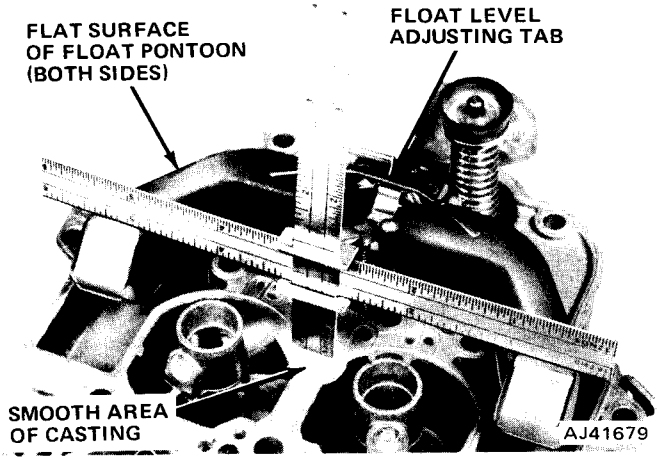


Fig. 4-74 Float Adjustment

IMPORTANT: *Do not allow the end of the vertical scale to come in contact with any gasket sealing ridge while measuring the float setting.*

(3) Refer to Carburetor Service Specifications for correct setting. The free end of each float pontoon should just touch the horizontal scale. If one pontoon is lower than the other, twist the float and lever assembly slightly to align.

(4) Adjust the float level by bending the tab which contacts the fuel inlet needle.

Auxiliary Inlet Valve Adjustment

(1) Turn air horn assembly upright, allowing the float to hang freely. Push up on the float until the primary fuel inlet needle lightly contacts its seat.

(2) While holding float in this position, measure clearance between float level auxiliary tab and auxiliary inlet valve plunger. Bend tab as required (fig. 4-75).

(3) Refer to Carburetor Service Specifications for correct setting.

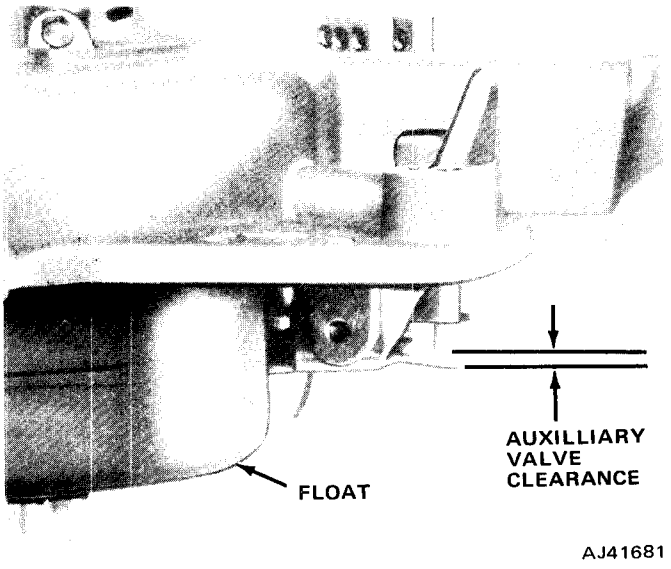


Fig. 4-75 Auxiliary Inlet Valve Adjustment

Metering Rod Adjustment

(1) Depress metering rod yoke. Using a small screwdriver, turn the vacuum piston adjusting screw counterclockwise until yoke is seated against the vacuum piston cylinder (fig. 4-76).

(2) Turn metering rod adjusting screws until large diameter of metering rods contact and seat in the main jets.

(3) Remove plastic yoke retainer.

(4) Remove metering rod and yoke assembly.

(5) Turn vacuum piston adjusting screw clockwise to move vacuum piston away from yoke until 0.120 (± 0.005) inch clearance is obtained (fig. 4-77).

(6) Install metering rod and yoke assembly.

(7) Install plastic yoke retainer.

Initial Choke Valve Clearance (On or Off Vehicle)

(1) Loosen choke cover screws.

(2) Open throttle and rotate choke cover until choke valve is held closed.

(3) Close throttle. Fast idle speed screw should be on top step of cam.

(4) Bottom choke diaphragm against setscrew. Do not press on links.

(5) Measure clearance between lower edge of choke valve and air horn (fig. 4-78).

(6) Adjust clearance by turning screw located at rear of diaphragm housing (fig. 4-79).

(7) Adjust fast idle cam linkage.

(8) Loosen choke cover screw and rotate cover to relieve tension on choke bimetallic coil. Set choke cover to specifications and tighten choke cover screws.

NOTE: *If vacuum is applied to the choke diaphragm with a hand pump, a vacuum leak may be noticed. This is normal.*

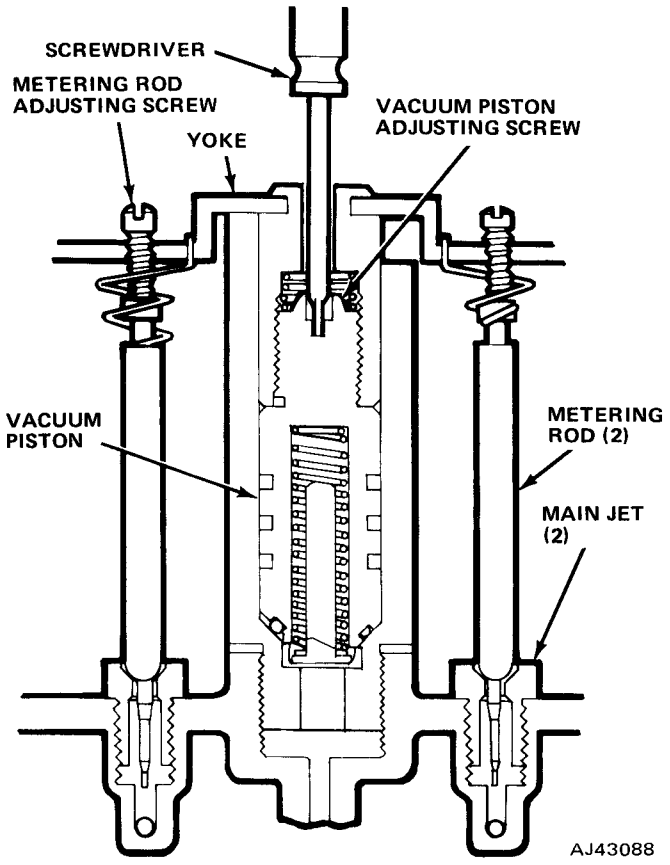


Fig. 4-76 Metering Rod Adjustment

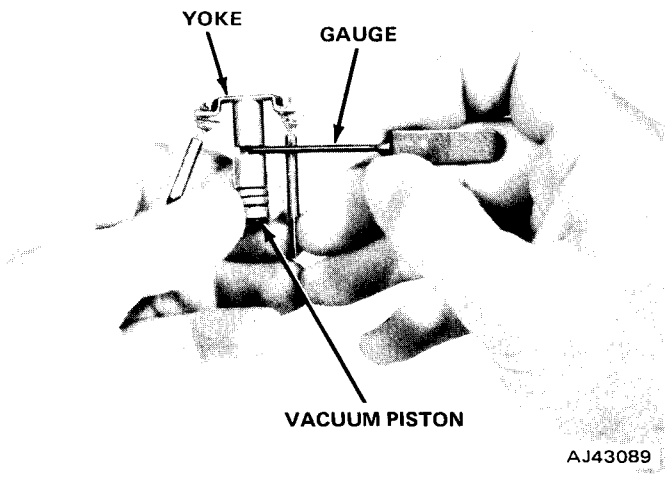


Fig. 4-77 Metering Rod Vacuum Piston Adjustment

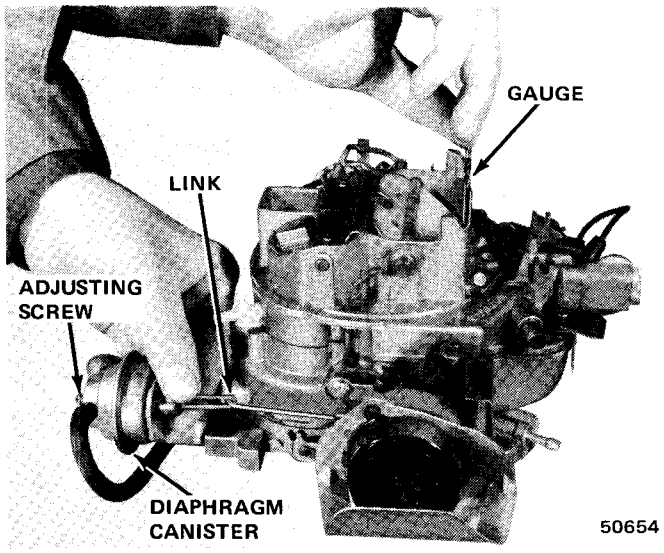


Fig. 4-78 Measuring Initial Choke Valve Clearance

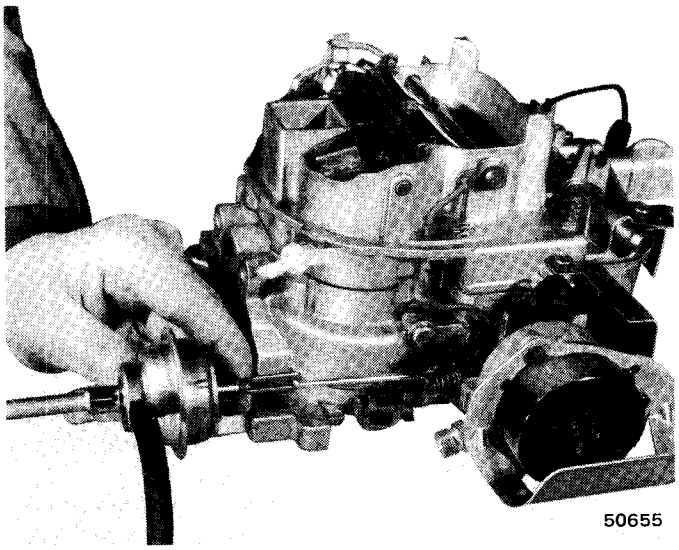


Fig. 4-79 Adjusting Initial Choke Valve Clearance

Choke Plate Indexing

This procedure is only necessary if the choke plate lever attaching screw has been loosened or removed.

(1) Loosen choke lever attaching screw (turn clockwise). Pry lever off choke shaft far enough to allow choke valve to turn.

(2) Back out cam index adjusting screw until screw no longer touches automatic choke shaft lever (fig. 4-80).

(3) Loosen choke cover attaching screws and rotate cover 90 degrees counterclockwise so that automatic choke shaft lever touches fast idle cam. Tighten one choke cover attaching screw.

(4) Turn cam index screw until it just touches the automatic choke shaft lever and then turn an additional 6 to 7 turns.

(5) Manually close choke plate and tighten choke shaft lever attaching screw.

(6) Adjust initial choke valve clearance and fast idle cam linkage.

(7) Set choke cover to specified setting and tighten attaching screws.

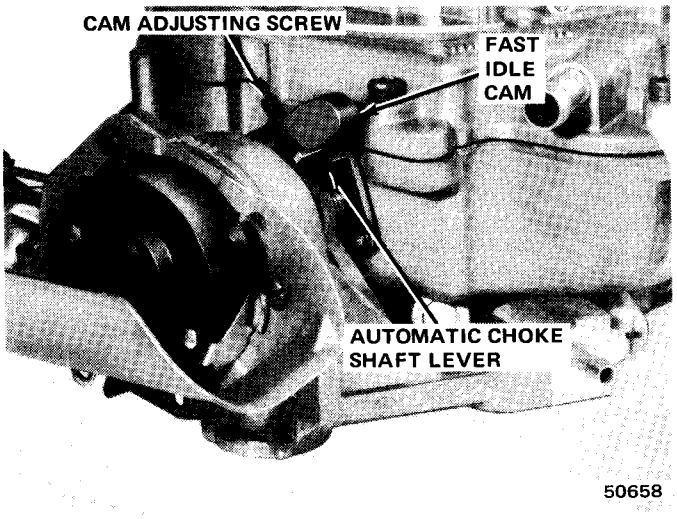


Fig. 4-80 Indexing Choke Plate

Fast Idle Cam Linkage Adjustment (On or Off Vehicle)

(1) Rotate choke cover 1/4-turn clockwise (rich) and tighten the retaining screws.

(2) Operate the throttle to allow the choke valve to close completely.

(3) Push down on the fast idle cam counterweight until screw is in contact with the second step (index) and against the shoulder of the high step.

(4) Measure the clearance between the lower edge of the choke valve and the air horn wall (fig. 4-81). Refer to Carburetor Service Specifications for the correct setting.

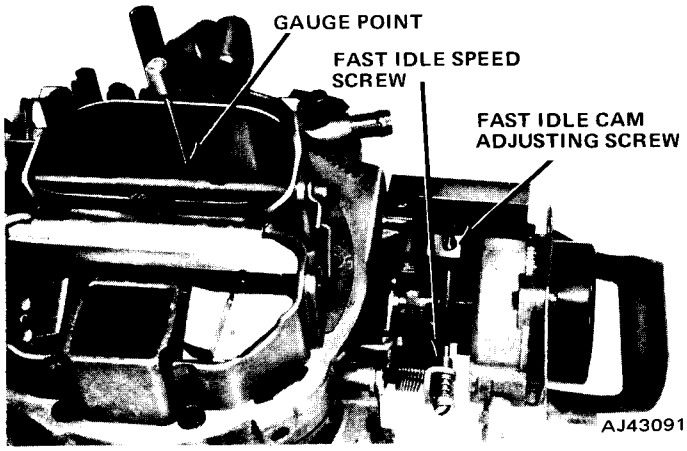


Fig. 4-81 Fast Idle Cam Linkage Adjustment

(5) Adjust by turning the fast idle cam adjusting screw.

(6) Loosen the choke cover retaining screws and adjust the choke as outlined under Automatic Choke Adjustment.

Choke Unloader Adjustment

(1) Hold throttle fully open and apply pressure on the choke valve toward the closed position.

(2) Measure the clearance between the lower edge of choke valve and air horn wall. Refer to Carburetor Service Specifications for correct setting.

CAUTION: *Do not bend the unloader tang downward from a horizontal plane.*

(3) Adjust by bending the unloader tang which contacts the fast idle cam as shown in figure 4-82. Bend toward the cam to increase the clearance and away from the cam to decrease the clearance. After making the adjustment, make certain the unloader tang has at least 0.070-inch clearance from the choke housing when the throttle is fully open (fig. 4-83).

(4) Operate throttle and check unloader tang to make sure it does not bind, contact, or stick on any part of carburetor casting or linkage. After carburetor installation, check for full throttle opening when the throttle is operated from inside the vehicle. If full throttle opening is not obtainable, it may be necessary to remove excess padding under the floormat or reposition the throttle cable bracket located on the engine.

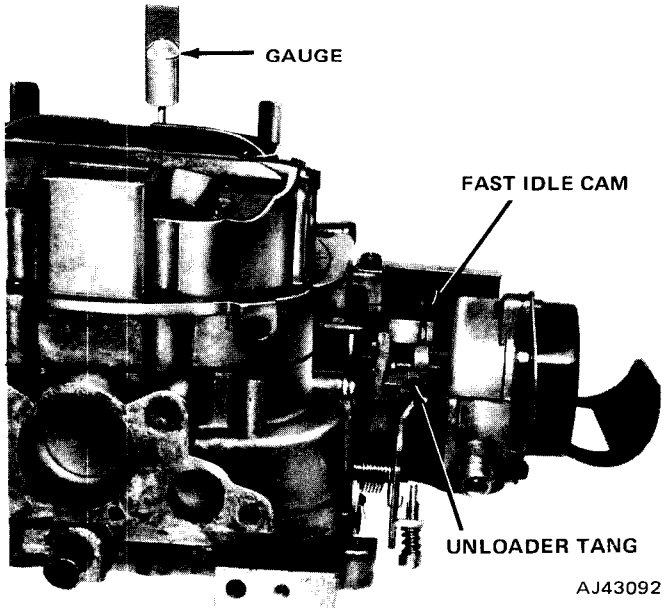


Fig. 4-82 Unloader Adjustment

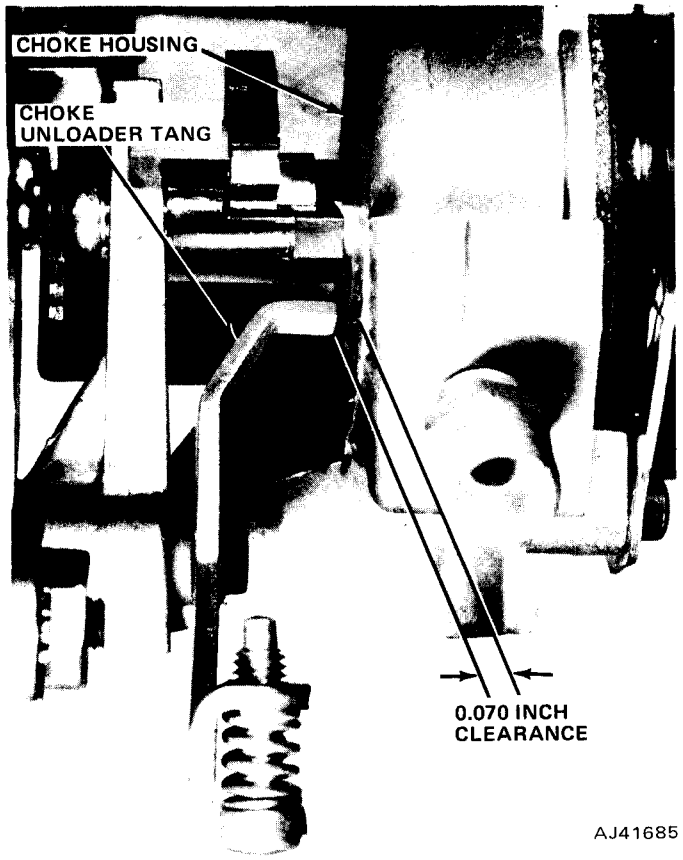


Fig. 4-83 Unloader-to-Choke Housing Clearance

Throttle Kicker Adjustment

First complete Fast Idle Cam Linkage Adjustment.

(1) Push down on the fast idle cam counterweight until screw is in contact with the second (index) step and aginst the shoulder of the high step.

(2) With a minimum of 15 inches of vacuum applied to diaphragm, turn adjusting screw on diaphragm until high idle cam just falls free of the cam screw.

Automatic Choke Adjustment (On or Off Vehicle)

Loosen the choke cover retaining screws and rotate the cover in the desired direction as indicated by arrow on face of cover. Refer to Carburetor Service Specification for the correct setting. The specified setting will be satisfactory for most driving conditions. However, in the event that stumbles or stalls occur on acceleration during engine warmup period, the choke may be set richer or leaner using the tolerance provided to meet individual engine requirements.

Accelerator Pump Adjustment

NOTE: *The accelerating pump throttle link must be installed in the lower hole of the throttle shaft lever assembly.*

(1) Back out idle speed screw until primary throttle plates seat in bore.

(2) Turn accelerating pump throttle link adjusting nut until the notch in the pump lever is aligned with the index mark on the air horn (fig. 4-84).

(3) Adjust by loosening the locknut and turning the dashpot.

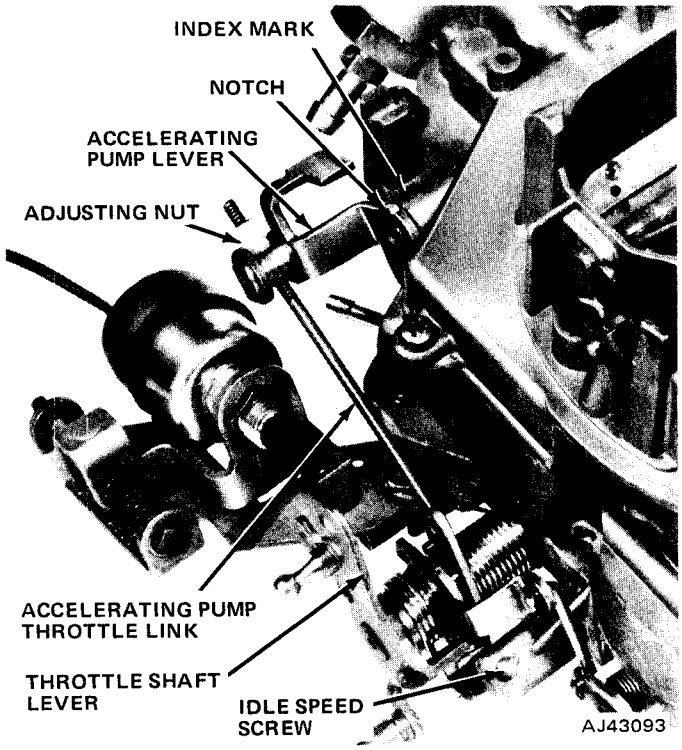


Fig. 4-84 Accelerating Pump Adjustment

Idle Speed and Mixture Adjustment (On Vehicle)

Refer to Engine Idle Setting Procedures in the Emission Control section.

Dashpot Adjustment (On Vehicle)

(1) Set throttle at curb idle position.

(2) Fully press the dashpot stem and measure the clearance between the stem and the throttle lever as shown in figure 4-85. Refer to Carburetor Service Specifications for the correct setting.

Fast Idle Speed Adjustment (On Vehicle)

Set the fast idle speed with the engine at operating temperature and the fast idle screw against the first kickdown step (middle step) of the fast idle cam. Refer to Carburetor Service Specifications for the correct rpm setting. Adjust by turning the fast idle screw.

NOTE: *When adjusting fast idle speed, disconnect and plug vacuum hose at EGR valve and spark port.*

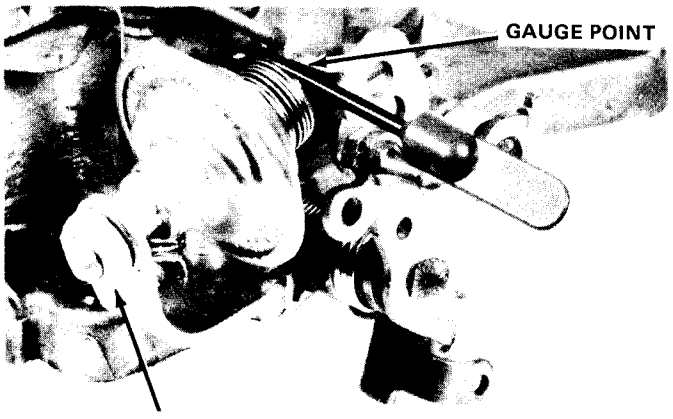


Fig. 4-85 Dashpot Adjustment

Model 4350 Carburetor Calibrations

	6THA4	6THM4	6THA4C
Primary Throttle Bore Size	1.440	1.440	1.440
Main Venturi Size	1.000	1.000	1.000
Secondary Throttle Bore Size	1.960	1.960	1.960
Fuel Inlet Diameter	0.098	0.098	0.098
Low Speed Jet	0.038	0.038	0.038
Idle Air Bleed (First)	0.049	0.049	0.049
Idle Air Bleed (Second)	0.029	0.029	0.029
Primary Metering Jet	0.072	0.072	0.072
Secondary Metering Jet	0.144	0.144	0.144
Cranking Jet	0.040	0.040	0.040
High Speed Bleed	0.063	0.063	0.063
Power Valve Timing (Inches of Hg)	8.000	8.000	8.000
Accelerator Pump Jet	0.026	0.026	0.026
Vacuum Spark Port	0.052	0.052	0.052
Choke Heat Inlet Restriction	0.089	0.089	0.089
Choke Vacuum Restriction	0.076	0.076	0.076

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Torque Specifications

Service Set-To Torques should be used when assembling components. Service In-Use Recheck Torques should be used for checking a pre-torqued item.

	Service Set-To Torque	Service In-Use Recheck Torque
Air Cleaner Stud (2100 Carb.)	10	7-12
Air Injection Tubes – V-8	38	30-45
6 Cyl.	15	10-18
Air Pump Mounting Bolts	20	15-22
Carburetor Holddown Nuts	14	12-15
Exhaust Manifold Bolts – V-8	25	20-30
Exhaust-Pipe-to-Manifold Nuts	23	18-28
Fuel Pump Screw	16	13-19
Intake and Exhaust Manifold Bolts and Nuts – 6 Cyl.	23	18-28
Intake Manifold Bolts – V-8	43	37-47

All torque values given in foot-pounds with dry fits unless otherwise specified.

Refer to the Standard Torque Specifications and Capscrew Markings Chart in Section A of this manual for any torque specifications not listed above.

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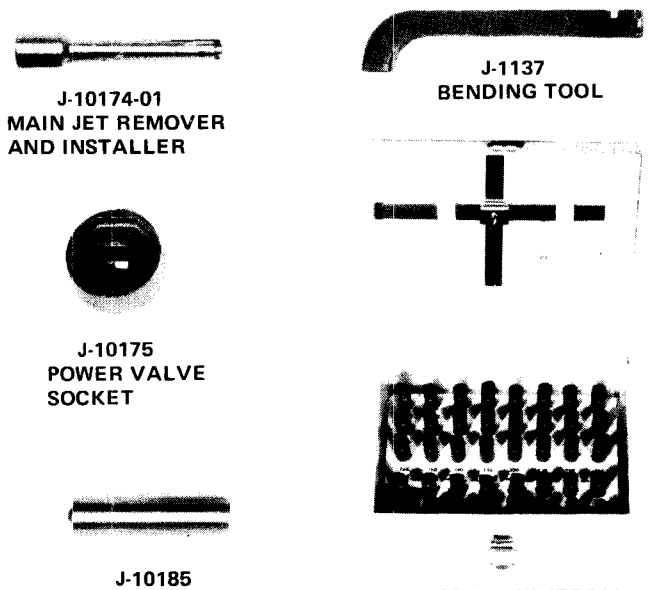

Fig. 4-86 Carburetor Tools

Carburetor Service Specifications

Carburetor Model / Carter YF	Application	Float Level Set-To	Float Level OK Range	Float Drop	Initial Choke Valve Clearance Set-To	Initial Choke Valve Clearance OK Range	Fast Idle Cam Setting Set-To	Fast Idle Cam Setting OK Range	Automatic Choke Cover Setting Set-To	Automatic Choke Cover Setting OK Range	Dashpot Set-To	Dashpot OK Range	Choke Unloader	Fast Idle Speed	Choke Cover ID
7088	258 J10, J20, CKE, Manual/Automatic	0.476	0.444-0.508	1 3/8	0.215	0.195-0.235	0.195	0.180-0.210	1 Notch Rich	1/2-1 1/2 Notches Rich	–	–	.275 Min.	1600 on 2nd step (hot with TCS Solenoid and EGR disconnected) OK Range 1550-1650	AA
7084	232/258 (Calif) CJ-5/7 Manual								2 Notches Rich	1 1/2-2 1/2 Notches Rich	0.075	0.043-0.107			EJ*
7109	232/258 CJ-5/7 Manual								2 Notches Rich	1 1/2-2 1/2 Notches Rich					EJ*
7083	258/CJ-7 Automatic								1 Notch Rich	1/2-1 1/2 Notches Rich					AA
7085	258/CJ-7 Automatic (Calif)								1 Notch Rich	1/2-1 1/2 Notches Rich					EK*

Motorcraft 2100	Application	Float Level Set-To	Float Level OK Range		Initial Choke Valve Clearance Set-To	Initial Choke Valve Clearance OK Range	Fast Idle Cam Setting Set-To	Fast Idle Cam Setting OK Range	Automatic Choke Cover Setting Set-To	Automatic Choke Cover Setting OK Range	Dashpot Set-To	Dashpot OK Range	Choke Unloader	Fast Idle Speed	Choke Cover ID
6RHM2	360 J10, J20, CKE Manual	0.555	0.493 0.617	Dry	0.136	0.113-0.159	0.115	0.100-0.130	2 Notches Rich	1 1/2–2 1/2 Notches Rich	–		.250 Min.	1600 on 2nd step (hot with TCS Solenoid and EGR disconnected) OK Range 1550-1650	TFA
		0.930	0.868-0.992	Wet											
6RHA2	360 J10,J20,CKE, WAG, Automatic	0.555	0.493-0.617	Dry											
		0.930	0.868-0.992	Wet											
6DM2	304 CJ5/7 Manual	0.555	0.493 0.617	Dry	0.132	0.109-0.155	0.120	0.105-0.135			0.075	0.061-0.125			
		0.930	0.868 0.992	Wet											
6DA2J	304 CJ-7 Automatic	0.555	0.493 0.617	Dry	0.136	0.113-0.159	0.126	0.111-0.141	1 Notch Rich	1/2-1 1/2 Notches Rich					
		0.930	0.868 0.992	Wet											
6DM2J	304 CJ-5/7 (Calif) Manual	0.555	0.493 0.617	Dry					1 Notch Rich	1/2-1 1/2 Notches Rich					
		0.930	0.868 0.992	Wet											

Motorcraft 4350	Application	Float Level Set-To	Float Level OK Range	Auxiliary Inlet	Initial Choke Valve Clearance Set-To	Initial Choke Valve Clearance OK Range	Fast Idle Cam Setting Set-To	Fast Idle Cam Setting OK Range	Automatic Choke Cover Setting Set-To	Automatic Choke Cover Setting OK Range	Dashpot	Choke Unloader	Fast Idle Speed	Choke Cover ID
6THA4	360/401 CKE, WAG, J10, J20 Automatic	0.900	0.850 0.950	.050	0.135	0.109 0.161	0.135	0.120 0.150	2 Notches Rich	1 1/2-2 1/2 Notches Rich	–	.325 Min.	1600 on 2nd step (hot with TCS Solenoid and EGR disconnected) OK Range 1550-1650	4TY
6THM4	360 CKE, J10, J20 Manual													
6THA4C	360 CKE, WAG, J10, J20, Automatic (California)													

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Note: For idle speed refer to Emission Control Section
***Electric Choke**

TECHNICAL BULLETIN REFERENCE

Date	TB No.	Subject	Changes Information on Page No.