MODEL 5200 and 5210 CARBURETOR

The model 5200 and 5210 Holley Carburetors are "staged" two venturi carburetors. (Fig. 1-2-3-4) The primary bore or stage is much smaller than the secondary stage or bore. The primary bore supplies the fuel for idle and low speed operation.

The secondary stage or bore is mechanically operated by linkage connecting the primary and secondary throttle levers. When the primary throttle valve reaches approximately 45° opening the secondary throttle valve begins to open.

The model 5200 will be found with an Autolite or Motorcraft name plate on the side as well as the Holley name plate. The model 5210 has the Holley name on top of the fuel inlet section of the bowl cover casting.

The model 5200 was first built in the U.S. in 1970 for application on the 1971 Pinto. The model 5210 was first built in 1972 for use on the 1973 model Vega.

The Holley model 5200 and 5210 is manufactured under license from Weber Carburetor, S.P.A. Bologna, Italy. The parent design has been used in Europe for some time.

Most screws and threads are metric. Some screws have U.S. heads and metric threads. It is important that each carburetor is disassembled and cleaned by itself. NOTE: DO NOT place parts from 2 or more carburetors in one cleaning basket or attempt to interchange screws or parts unless they are from the identical part number. It is important that the correct Holley PEP KIT is used when rebuilding model 5200 or 5210

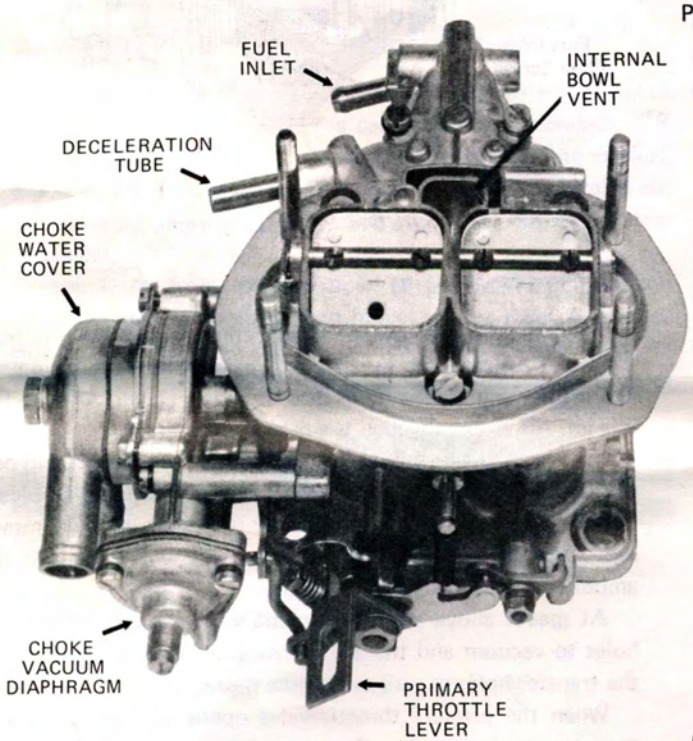


Figure 1 — Model 5200

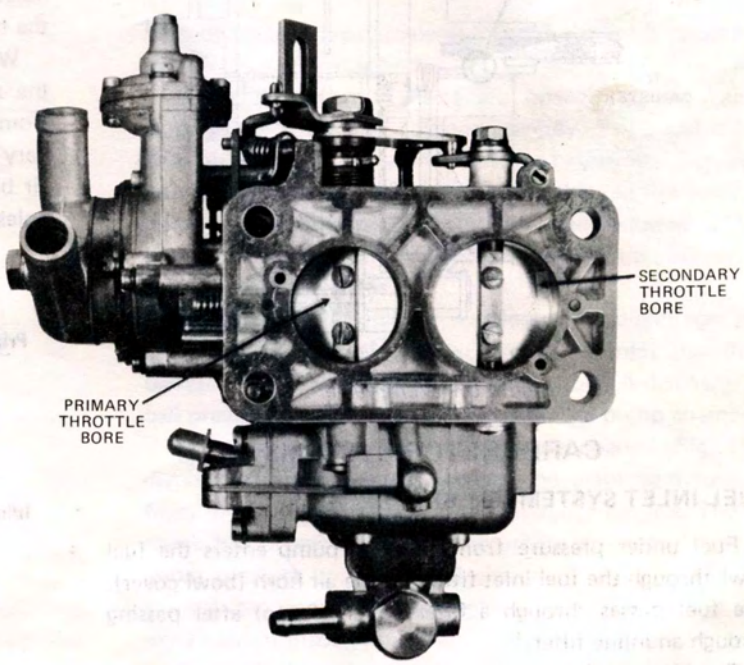


Figure 3 — Model 5200

carburetors.

All of these carburetors for all applications include emission controls and must be adjusted in keeping with emission laws and requirements.

Attempting to bypass emission requirements could result in a poor running engine and higher fuel consumption.

GENERAL DESCRIPTION

The carburetor includes 3 major castings. The carburetor body, the bowl cover and the choke housing.

The primary stage includes a curb idle and transfer system, diaphragm type accelerator pump system, main metering system and power enrichment system.

The secondary stage includes a transfer system, main metering system, and power system. Both the primary and secondary venturi draw fuel from a common fuel bowl.

The two models include a water heated automatic choke system that includes a bimetal thermostatic housing and in some 1974 applications an electric heated choke assist. This provides for choke pull off in a short time after engine start at higher temperatures.

Ford applications include a deceleration system and some applications include a vapor return line. Chevrolet applications use a vent valve (a vapor line with a horizontal valve in the bowl cover). A hose connects the vent fitting to the canister. (Fig. 5)

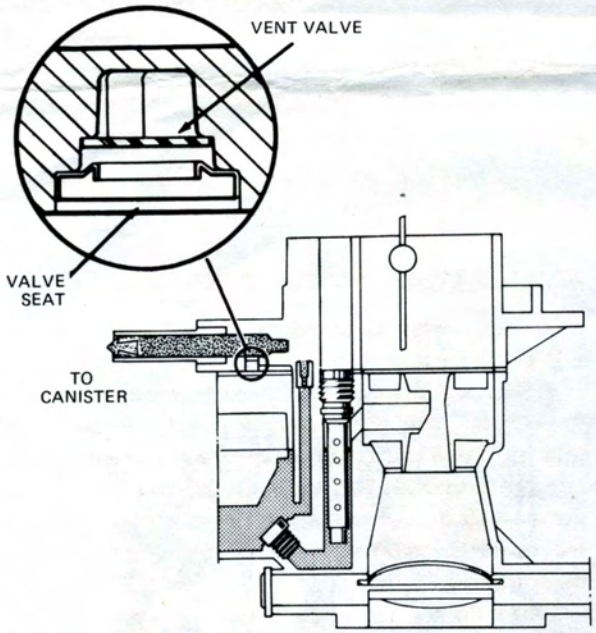


Figure 5 – Vent valve.

CARBURETOR SYSTEMS

FUEL INLET SYSTEM (Fig. 6)

Fuel under pressure from the fuel pump enters the fuel bowl through the fuel inlet fitting in the air horn (bowl cover). The fuel passes through a filter screen (Pinto) after passing through an inline filter.

The Vega application has a typical General Motors filter in the fuel inlet. (see Fig. 4)

The fuel inlet needle is controlled by a nitrophyl, double pontoon float. A fuel inlet needle clip hooks over the float lever to insure the needle is pulled off the seat when the float drops. A float drop tang contacts the side of the fuel inlet seat and prevents the float rubbing the bottom of the fuel bowl.

On a limited number of 1971 applications a small bumper spring was installed between the float shaft stanchions.

The fuel bowl is vented to the air horn. On some air conditioned applications there is a vapor return connection just above the fuel line. Vapors generated after the engine is turned off are vented to the fuel tank.

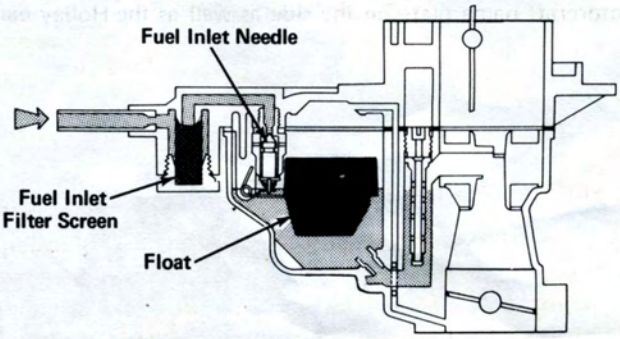


Figure 6 – Fuel inlet system.

IDLE SYSTEM (Fig. 7)

Fuel for idle and low speed operation (figure 7) flows from the fuel bowl through the primary main jet into the main well. From the main well it flows into the idle well and through the idle jet. Air enters through the primary idle air bleed.

This air-fuel mixture moves down the idle passages and past the idle transfer holes. These holes serve as additional air bleeds during curb idle operation. The air-fuel mixture then moves past the idle mixture adjusting screw tip which controls the amount of the mixture at curb idle.

At speeds above idle the throttle valve exposes the transfer holes to vacuum and the air-fuel mixture is discharged out of the transfer holes as well as the idle passage.

When the primary throttle valve opens approximately 45° the secondary throttle valve starts to open. Fuel then flows from the secondary well through the idle channel and secondary idle jet where it is mixed with air from the secondary idle air bleed and is then discharged through the secondary transfer holes (fig. 8)

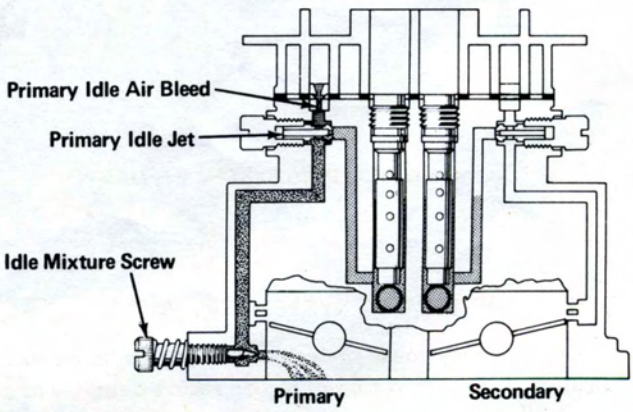


Figure 7 – Idle system.

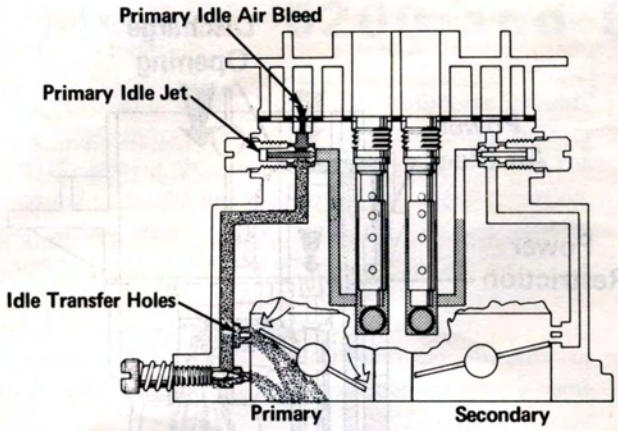


Figure 8 – Idle transfer.

MAIN METERING SYSTEM (Fig. 9)

As the throttle valves continue opening and engine speed increases, air flow through the carburetor also increases. The increased air flow creates a low pressure area in the venturi, this causes the main metering system to begin discharging air-fuel mixture. As a result the discharge from the idle system tapers off.

Fuel flows from the fuel bowl through the main jets and into the main wells. Fuel then moves up the main well tubes where it is mixed with air. Air, controlled by the high speed air bleeds, mixes with the fuel through small holes in the sides of the main well tubes. As venturi vacuum increases, the mixture of air and fuel also increases to maintain a calibrated air-fuel ratio. This mixture of air and fuel tends to atomize more readily than liquid fuel. The main discharge nozzle is located in the center of the booster venturi.

The secondary main metering system is similar to the primary main metering system.

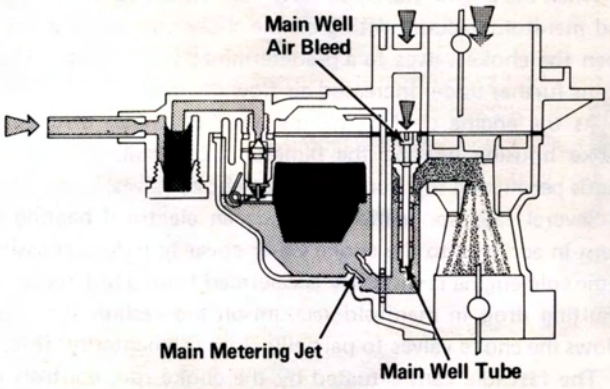


Figure 9 – Main metering system.

POWER ENRICHMENT SYSTEM (Fig. 10)

During heavy loads or high speed operation, air-fuel ratio must be increased to sustain higher engine output. The power enrichment system is controlled by manifold vacuum and supplies additional fuel during this period.

Manifold vacuum is applied to the power valve diaphragm from a passage in the base of the carburetor body. The passage connects to the air horn and the top of the power valve diaphragm.

During idle and normal driving conditions, manifold vacuum is high enough to overcome the power valve spring tension, and the valve remains closed. When manifold vacuum drops below a predetermined level the diaphragm spring overcomes the vacuum and the diaphragm stem depresses the power valve stem. Fuel then flows from the fuel bowl through the power valve and into passages leading to the main wells. This fuel is added to the fuel entering through the main jets to enrich the mixture.

As engine load requirements decrease, manifold vacuum increases and overcomes the diaphragm spring. The spring in the power valve assembly then closes the valve.

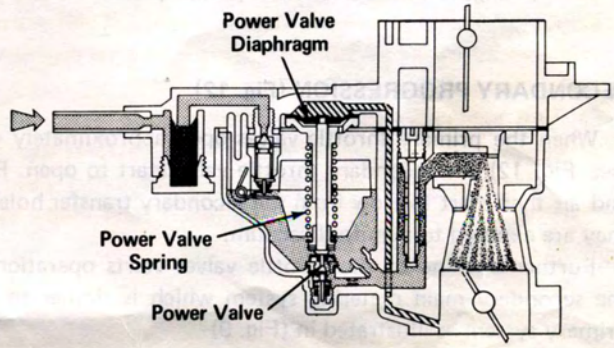


Figure 10 – Power enrichment system.

ACCELERATOR PUMP SYSTEM (Fig. 11)

A diaphragm type accelerator pump system is located in the side of the carburetor body.

When the throttle valves are opened quickly, air flow through the carburetor responds rapidly. Since fuel is heavier than air, there is a very brief time lag before fuel flow can sustain the proper air-fuel ratio. During this lag the accelerating pump system mechanically supplies the required additional fuel, until the proper air-fuel ratio can be maintained by the other metering systems.

When the throttle valves are closed, the diaphragm returns against its cover. Fuel is drawn through the inlet, past the inlet ball check valve and into the pump chamber. A discharge check ball prevents air from being drawn into the pump chamber.

The moment the throttle valves are opened (Fig. 11), the diaphragm rod is pushed inward, the diaphragm forces fuel from the pump chamber into the discharge passage. The intake check ball prevents fuel from returning to the fuel bowl. Fuel under pressure unseats the discharge check ball and is forced through the pump discharge valve where it sprays into the primary venturi through the pump discharge nozzle.

Excess fuel and pump chamber vapors are discharged back into the fuel bowl through a restriction.

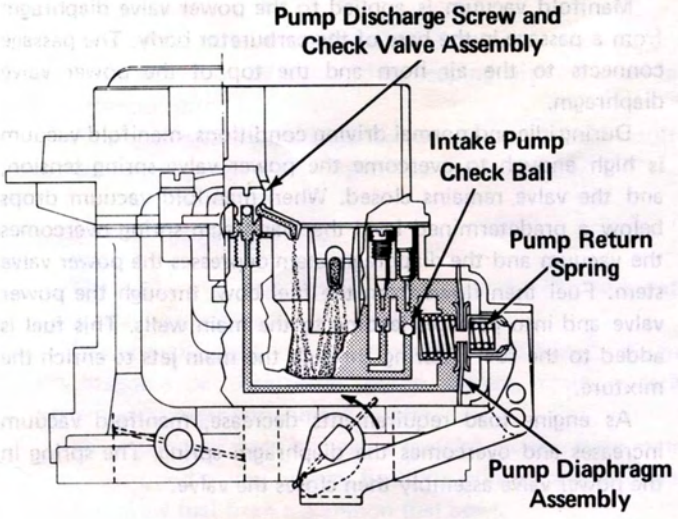


Figure 11 – Accelerator pump system.

SECONDARY PROGRESSION (Fig. 12)

When the primary throttle valves open approximately 45° (see Fig. 12) the secondary throttle valve start to open. Fuel and air then start to flow from the secondary transfer holes as they are exposed to manifold vacuum.

Further opening of the throttle valves starts operation of the secondary main metering system which is similar to the primary system as illustrated in (Fig. 9)

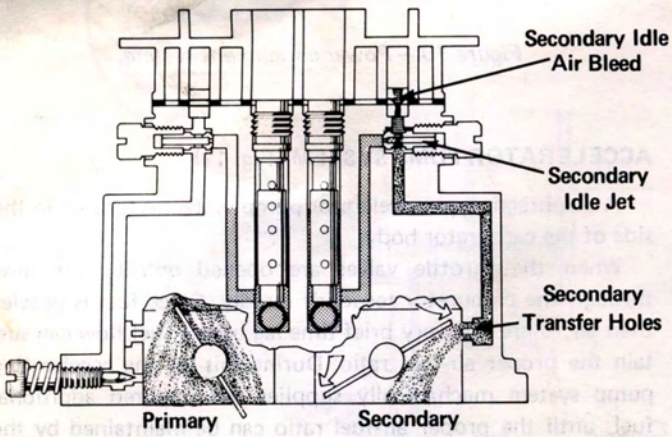


Figure 12 – Secondary progression system.

SECONDARY POWER ENRICHMENT SYSTEM (Fig. 13)

The secondary system is also provided with an air velocity operated power system for full power operation. (See Fig. 13)

As the secondary throttle valve approaches wide open position, air velocity through the secondary venturi creates a low pressure at the discharge port. Fuel flows from the bowl through a restricted vertical channel. As this occurs, air enters through a calibrated air bleed and mixes with the fuel. This mixture is discharged through the discharge passage.

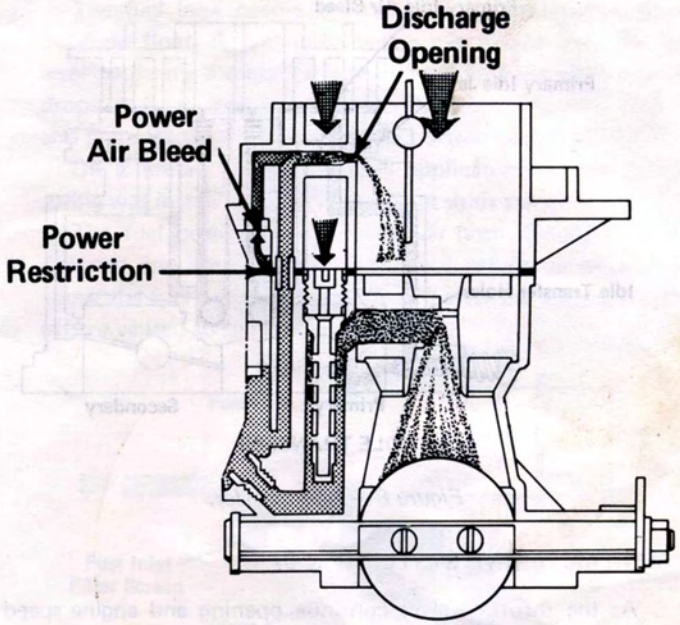


Figure 13 – Secondary power enrichment system.

AUTOMATIC CHOKE SYSTEM (Fig. 14-15)

The automatic choke assembly is mounted on the carburetor body. It has a bimetal thermostatic coil which closes the choke when cold and opens the choke when hot. Vacuum and a spring control the initial operation of the choke. Engine coolant flowing through a choke water cover heats the bimetal coil and controls the final choke opening.

To start the engine the accelerator pedal is depressed, closing the choke valves. This causes fuel to flow from the main metering system as well as the idle system, because both systems are now subject to vacuum.

When the engine starts, air flow past the off-set choke valves and manifold vacuum acting on the choke vacuum diaphragm, open the choke valves to a predetermined position. The choke opens further under increased air-flow demand.

As the engine coolant warms up it circulates through the choke housing heating the bimetal choke coil. The coil unwinds permitting full opening of the choke valves.

Several late applications include an electrical heating element in addition to the choke water cover to reduce emissions. If the cold engine is suddenly accelerated from a low speed, the resulting drop in manifold vacuum on the vacuum diaphragm allows the choke valves to partially close momentarily. (Fig.14)

The fast idle cam actuated by the choke rod, controls idle speed during engine warm up. When the choke valves are fully opened, the fast idle cam rotates free of the fast idle screw. (Fig. 15) An unloader tang on the throttle lever partially opens the choke valves when the accelerator is fully depressed. This permits unloading or breathing of a flooded engine.

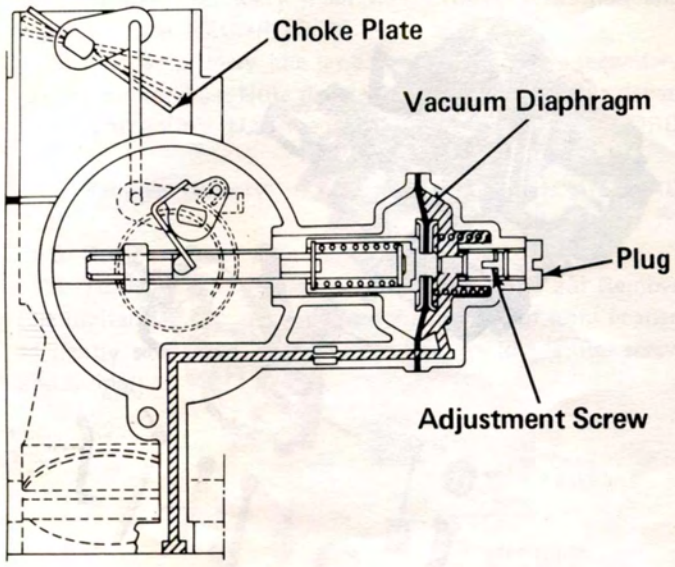


Figure 14 – Automatic choke system.

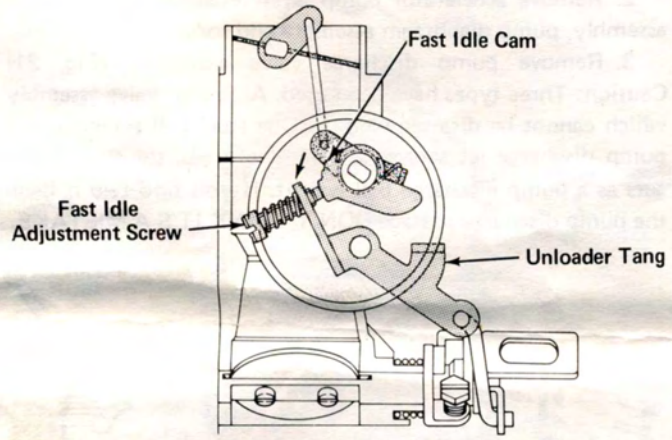


Figure 15 – Fast idle and choke unloader linkage.

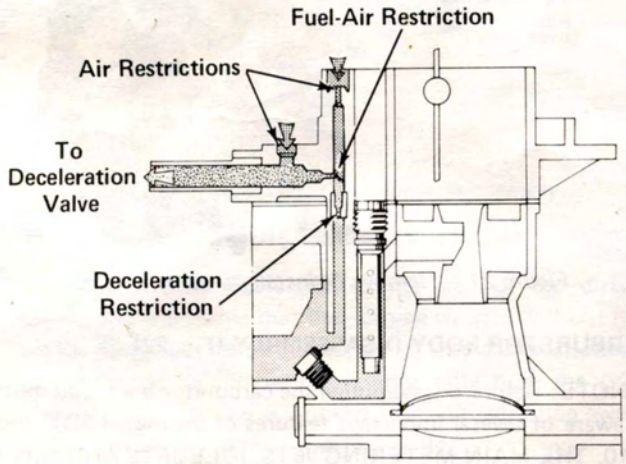


Figure 16 – Deceleration system.

is mixed with air from another calibrated restriction. (See Fig. 16) This mixture passes through a horizontal passage where it is mixed with a larger quantity of air and then flows through a vacuum operated deceleration valve into the intake manifold. This system helps to reduce exhaust emissions during deceleration when the throttle is closed.

CARBURETOR REMOVAL

Unless the choke water housing is damaged or corroded DO NOT remove center screw, this will eliminate draining of coolant. Remove 3 choke bimetal retaining screws.

DISASSEMBLY AND COMPLETE OVERHAUL

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

However, in many cases service adjustments of individual systems may be completed without removing the carburetor from the engine. Refer to service adjustment procedures at the end of the section.

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

DISASSEMBLY

AIRHORN DISASSEMBLY (Fig. 17)

Remove retainer clips and choke operating rod. Then remove the 5 air horn (bowl cover) retaining screws and lock washers. Now, remove air horn assembly, fuel inlet filter plug and filter screen assembly (filter on model 5210). Remove float shaft, float and fuel inlet needle. (push float shaft out from crimped end). Remove the three power valve diaphragm assembly screws, washers and diaphragm. Remove the fuel inlet seat and gasket. Remove choke rod seal and retainer (if retainer is used). (Fig. 18)

NOTE: Unless the choke plates, shaft or lever are damaged no further disassembly is necessary.

If filter screen nut or filter nut is tight it might be simpler to loosen them before carburetor is disassembled.

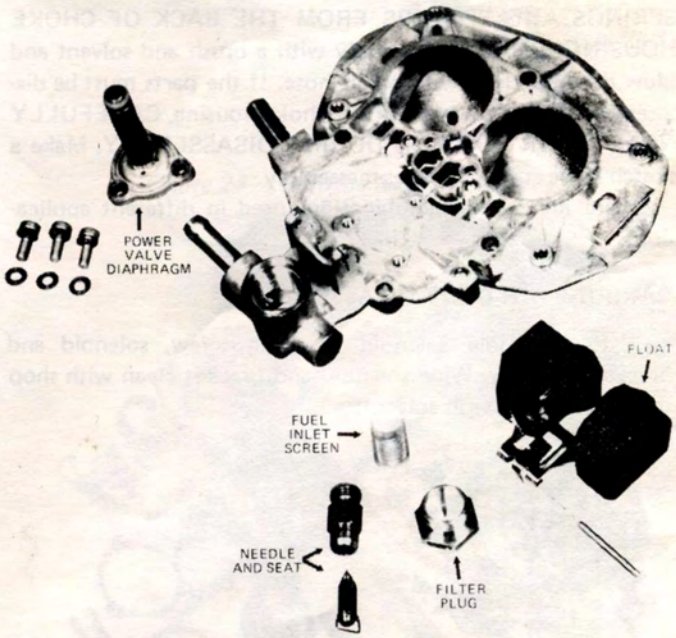


Figure 17 – Air horn disassembly.

CHOKE DISASSEMBLY

Remove choke water housing retaining screw, washer, housing and gasket. Remove 3 choke bimetal retaining screws, (if not previously removed), retainer choke bimetal housing

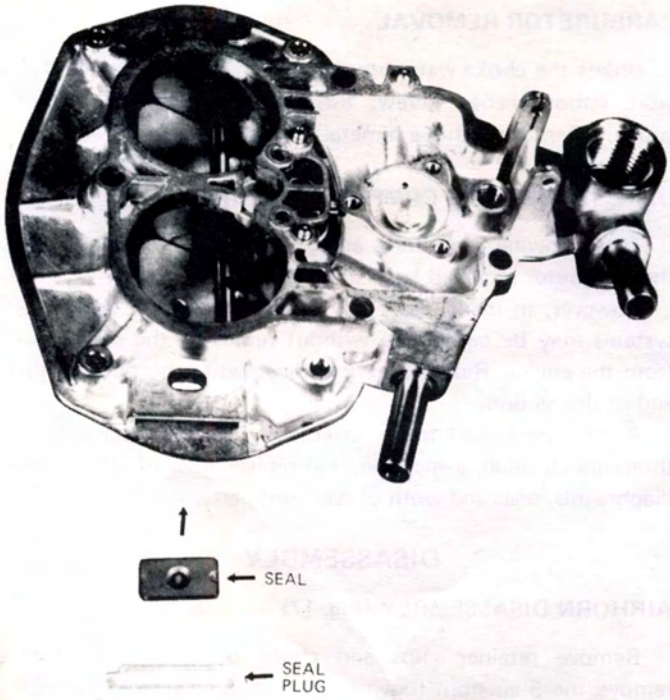


Figure 18 – Choke rod seal.

and housing gasket as shown in figure 19. Next, remove three choke housing assembly screws and slip housing away from carburetor body. As you remove the housing, disengage the fast idle rod. NOTE LOCATION OF LONG SCREW. Remove "O" ring from vacuum passage (Fig. 20). Remove 3 choke diaphragm cover screws and cover assembly. Rotate choke housing shaft and remove choke diaphragm assembly and return spring. NOTE: IF YOU ARE JUST A BEGINNER OR HAVE TROUBLE INSTALLING SPRINGS PROPERLY, DO NOT REMOVE THE FAST IDLE CAM, FAST IDLE LEVER SPRINGS AND SPACERS FROM THE BACK OF CHOKE HOUSING. Clean the assembly with a brush and solvent and blow dry and clean with an air hose. If the parts must be disassembled from the back of the choke housing, CAREFULLY NOTE THEIR POSITION DURING DISASSEMBLY. Make a sketch to be sure of correct reassembly.

There are several combinations used in different applications.

CARBURETOR BODY DISASSEMBLY

1. Remove idle solenoid retaining screw, solenoid and bracket assembly. Wipe solenoid and bracket clean with shop towel dampened with solvent.

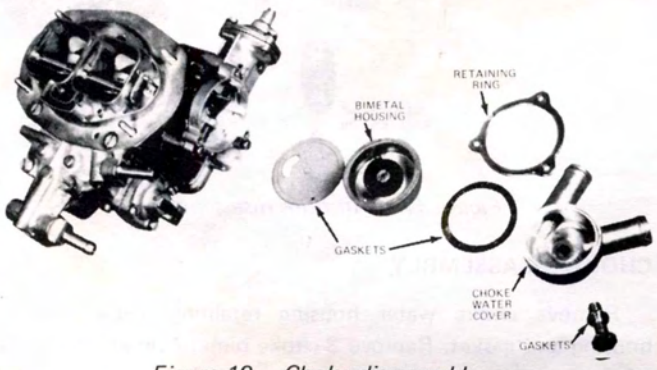


Figure 19 – Choke disassembly.

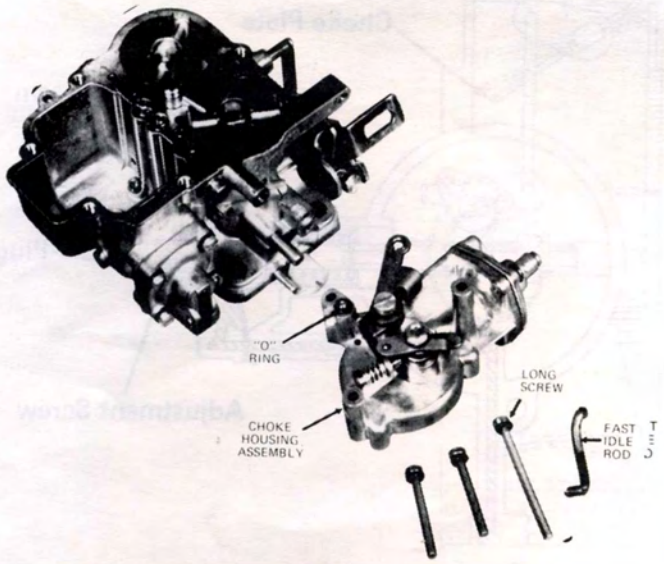


Figure 20 – Removal of choke housing.

2. Remove accelerator pump lever retaining screws, cover assembly, pump diaphragm assembly and spring.

3. Remove pump discharge valve assembly. (Fig. 21) Caution; Three types have been used. A. A cage valve assembly which cannot be disassembled. B. One steel ball retained by a pump discharge jet screw. C. Two steel balls, the second ball acts as a pump discharge ball weight. If you find two balls in the pump discharge passage DON'T THINK IT'S A MISTAKE.

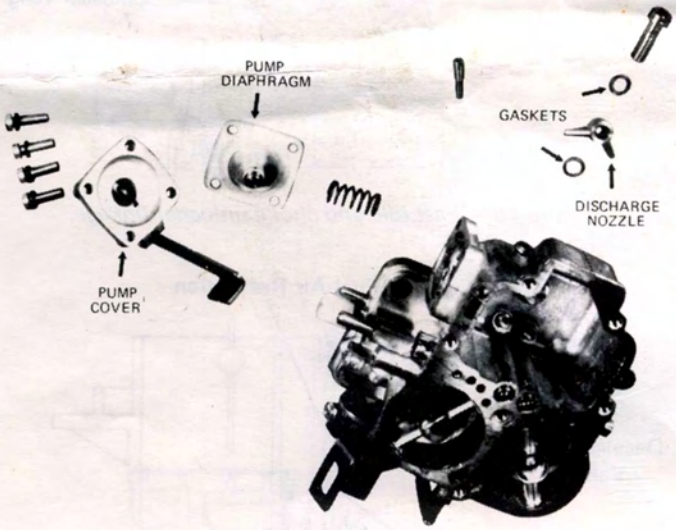


Figure 21 – Remove or install pump assembly.

CARBURETOR BODY DISASSEMBLY (Fig. 22)

NOTE: Before disassembling the carburetor body you must be aware of several important features of the model 5200 and 5210. THE MAIN METERING JETS, IDLE JETS AND HIGH SPEED BLEED RESTRICTIONS ARE DIFFERENT SIZES ON THE PRIMARY AND SECONDARY SIDES.

All of these parts are stamped with the size of the restriction. Have a piece of note paper handy and RECORD the size of each PRIMARY and SECONDARY jet or bleed as it is removed.

1. Remove primary main well air bleed restriction and main well tube. RECORD SIZE.

2. Remove secondary main well airbleed restriction and main well tube. RECORD SIZE.

3. Remove primary idle jet and retainer, remove secondary idle jet and retainer. Note that replaceable idle jets are a departure from normal U.S. manufacturing procedure. RECORD SIZE.

4. Remove primary and secondary main jets. RECORD SIZE.

5. Remove power valve and gasket. Discard gasket.

6. Turn idle limiter cap in to pin stop. (Fig. 23) Remove idle limiter cap. Count and record the number of turns needed to lightly seat idle mixture screw. Remove idle limiter screw and spring.

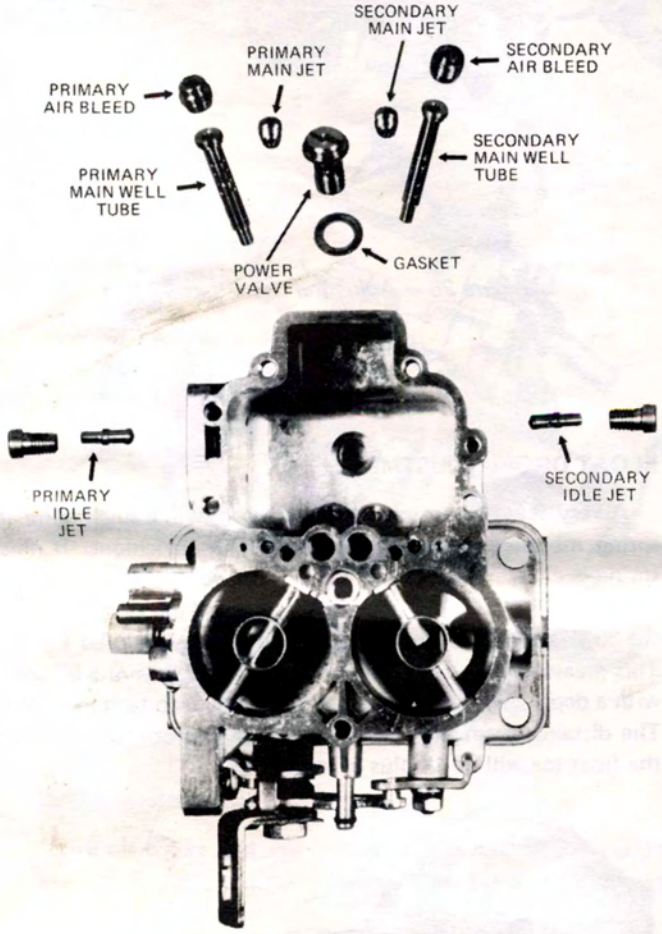


Figure 22 – Carburetor body disassembly.

THROTTLE LEVER DISASSEMBLY (Fig. 24)

If the throttle levers and springs are not too dirty and gummed it is possible that they can be cleaned without removing the parts from the carburetor body. (See choke disassembly) If they must be removed, carefully note how the primary throttle return spring is hooked over idle adjusting lever and body as shown by stub arrows in Fig. 24.

Most model 5210 carburetors do not use the small coil secondary return spring shown in Fig. 24A. On early model 5200's the secondary throttle return spring hanger was pressed in instead of threaded.

NOTE: Unless the primary or secondary throttle valves or shafts are nicked or damaged, the carubretor may be properly cleaned without further disassembly. The throttle valves should not be removed.

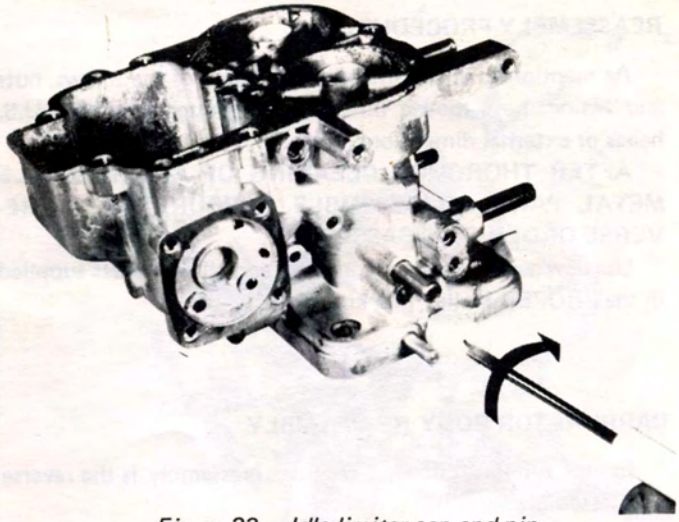


Figure 23 – Idle limiter cap and pin.

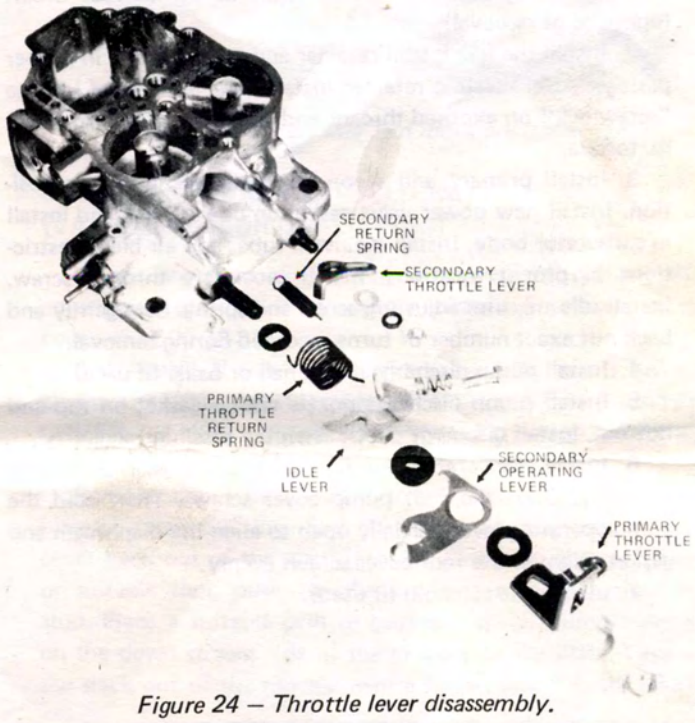


Figure 24 – Throttle lever disassembly.

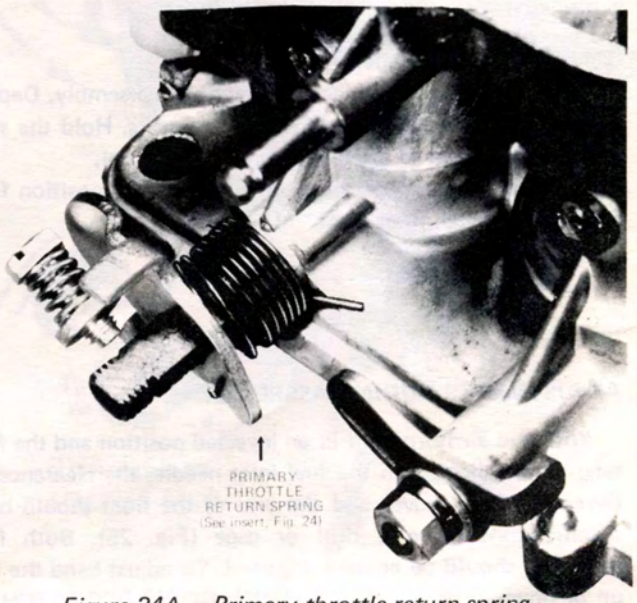


Figure 24A – Primary throttle return spring.

REASSEMBLY PROCEDURES

As mentioned in the introduction many of the screws, nuts and fittings have metric threads; even though they have U.S. heads or external dimensions.

AFTER THOROUGH CLEANING OF ALL REUSABLE METAL PARTS, REASSEMBLE CARBURETOR IN REVERSE ORDER OF DISASSEMBLY.

Use new gaskets, seals, diaphragms and all new parts supplied in the PROPER Holley pep kit.

CARBURETOR BODY REASSEMBLY

Except for the following cautions reassembly is the reverse of disassembly.

1. If throttle levers and springs have been removed for cleaning or replacement, install them in the correct order. (opposite of removal)
2. Install the idle jets in retainer and start retainer in proper passage. After starting retainer install small amount of Loctite "screwlock" on exposed threads and tighten retainers to 15 in. lb. torque.
3. Install primary and secondary main jets in proper position. Install new power valve gasket on power valve and install in carburetor body. Install mainwell tubes and air bleed restrictions in proper locations. Install secondary throttle screw. Install idle mixture adjusting screw and spring. Seat gently and back out exact number of turns recorded during removal.
4. Install pump discharge check ball or balls. (if used)
5. Install pump discharge nozzle with a gasket on top and bottom. Install discharge check assembly retaining screw.
6. Install accelerator pump return spring and diaphragm assembly. Start the four pump cover screws. Then hold the pump operating lever partially open to align the diaphragm and gasket. Tighten the four cover screws evenly.
7. Install idle solenoid (if used).

BOWL COVER AIRHORN REASSEMBLY

1. Install the fuel inlet seat and gasket.
2. Install power valve vacuum diaphragm assembly. Depress spring and install the screws with the fingers. Hold the stem partially depressed so the diaphragm is horizontal.
3. Install float needle clip on float tab and position float and needle. Install float shaft.

ADJUSTMENTS DURING ASSEMBLY

With the air horn held in an inverted position and the float tang resting lightly on the fuel inlet needle, the clearance between the bowl cover and the end of the float should be to specifications using a drill or gage (Fig. 25). Both float pontoons should be equally adjusted. To adjust bend the tang up or down as necessary. CAUTION: DO NOT SCRATCH OR DAMAGE FLOAT TANG WHERE IT CONTACTS NEEDLE. DO NOT PERMIT TANG TO PRESS ON FUEL INLET NEEDLE WHILE ADJUSTING.

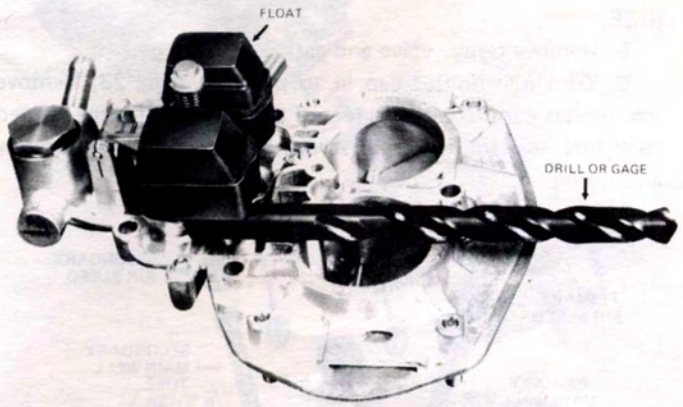


Figure 25 – Adjusting Dry Float Setting.

FLOAT DROP ADJUSTMENT

A very few carburetors were produced with a small bumper spring mounted between the float shaft stanchions. If this spring is encountered it can be removed. (Fig. 26 & 27) With the bowl cover held in it's normal position the distance from the bowl cover to the lowest part of the float should be 1-7/8". This measurement can be made with a depth gage or a 6" scale with a depth gage clip. To adjust, bend the drop tang in or out. The distance from the gasket surface or air horn to the top of the float toe will be 1" plus or minus 1/8".

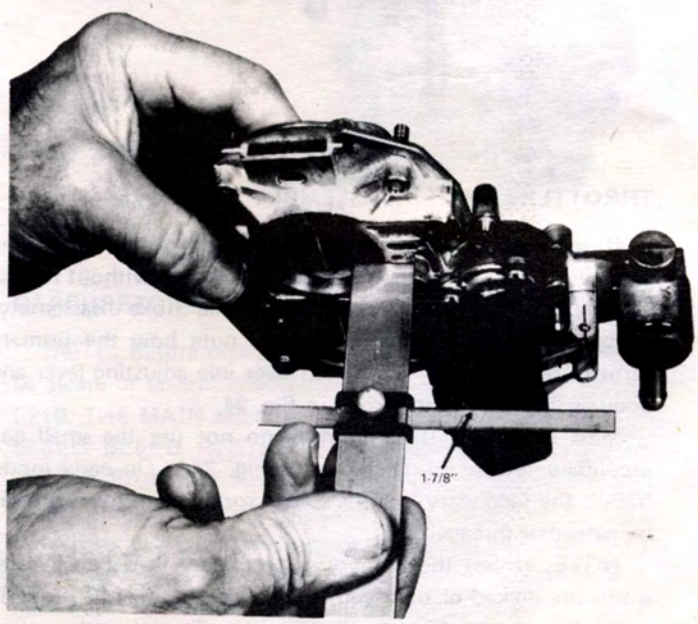


Figure 26 – Adjusting float drop tang. No bumper spring.

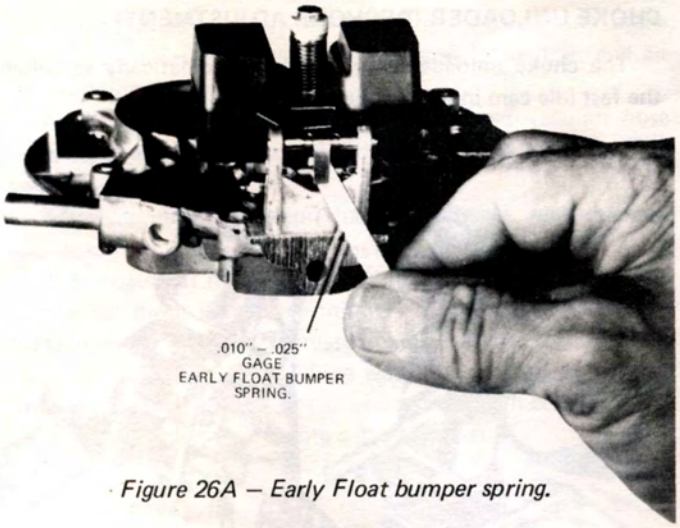


Figure 26A – Early Float bumper spring.

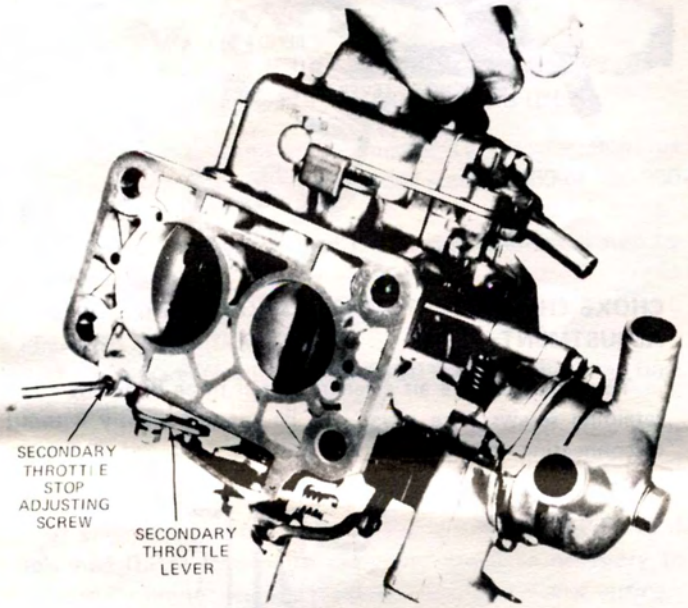


Figure 27 – Secondary throttle stop screw.

INSTALL AIR HORN

Install choke rod seal. Install choke link through seal and into choke lever. Install retaining clip. Install choke rod seal retainer if used.

Install air horn gasket. Install air horn and five air horn screws and torque evenly, in stages.

ADJUSTMENTS AFTER ASSEMBLY OR ON THE CAR

SECONDARY THROTTLE STOP SCREW

Back off throttle stop screw as shown in Fig. 27 until the secondary throttle valve seats in the bore. Turn the screw in until it touches the tab on the secondary throttle lever. Turn the screw in 1/4 additional turn.

FAST IDLE CAM INDEX ADJUSTMENT

Place the fast idle screw on idle cam and against the shoulder of the first step. Place a drill or gage (.150") on the down stream side of the choke valve. To adjust, bend the choke lever tang. (Fig. 28)

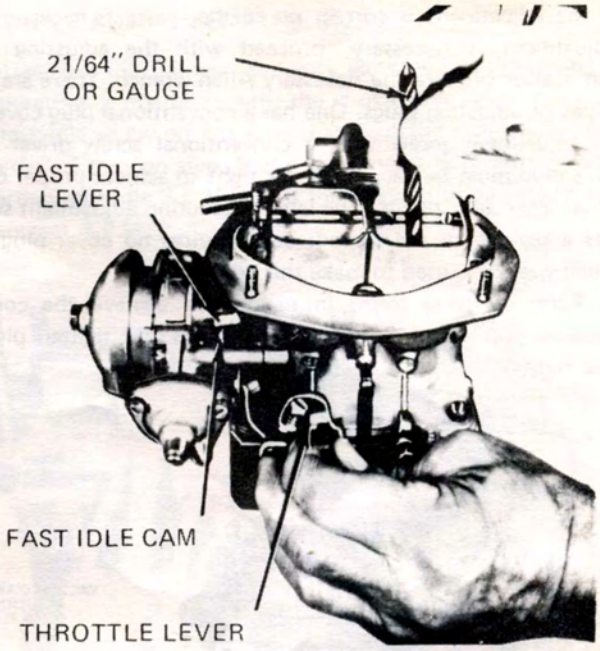


Figure 28 – Fast idle cam index adjustment.

CHOKE PLATE VACUUM PULLDOWN (VACUUM KICK OR QUALIFYING)

If you are assembling a complete overhaul, perform this adjustment prior to installing the bimetal cover and water cover. (Fig. 29-30-31)

CAUTION: If you are checking this adjustment on the engine; DO NOT LOOSEN CENTER SCREW OF THE WATER COVER OR YOU WILL LOOSE COOLANT AND MAY GET COOLANT IN THE ENGINE.

Remove the 3 hex headed screws and loosen the choke bimetal retaining ring. Pull the water housing and bimetal cover back out of the way. (Fig. 32) With a small screw driver or suitable tool, push the diaphragm stem back against the stop. Place a suitable drill or gage (per specification manual) on the down stream side of the primary choke plate. Take all the slack out of the linkage with a finger. (see Fig. 29-30-31)

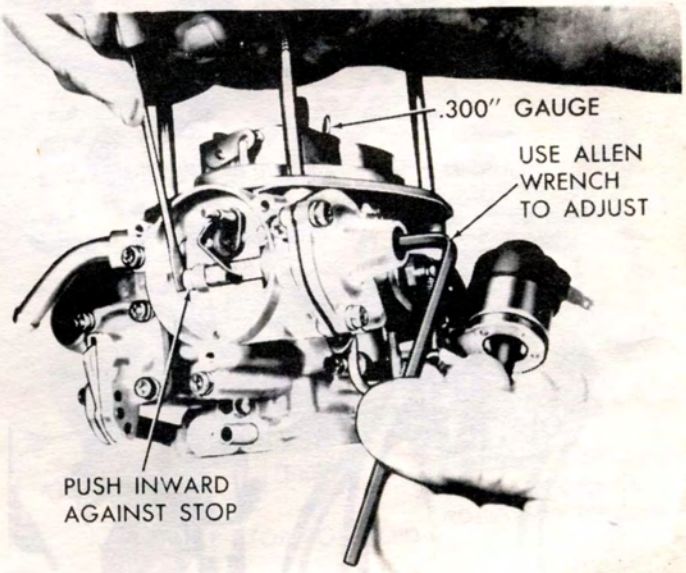


Figure 29 – Choke vacuum pull down.

If the adjustment is correct no further work is necessary. If adjustment is necessary, proceed with the adjusting plug removal or procure the necessary Allen wrench. There are two types of adjusting plugs. One has a conventional plug covering an adjustment screw with a conventional screw driver slot. This plug must be vacuum or air tight to achieve proper operation after adjustment. The later production adjustment screw has a sealant on the threads and requires no cover plug. An Allen wrench is used to make this adjustment.

Turn adjusting screw in or out to achieve the correct vacuum pull down specification; replace and tighten plug if one is used.

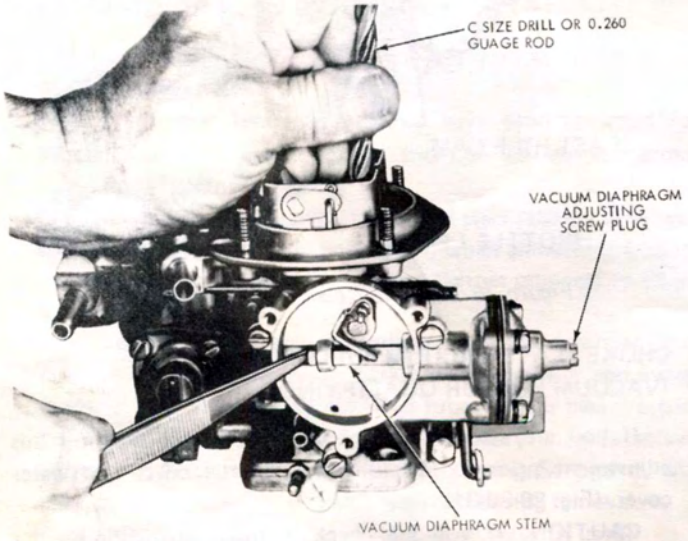


Figure 30 – Choke vacuum pull down.

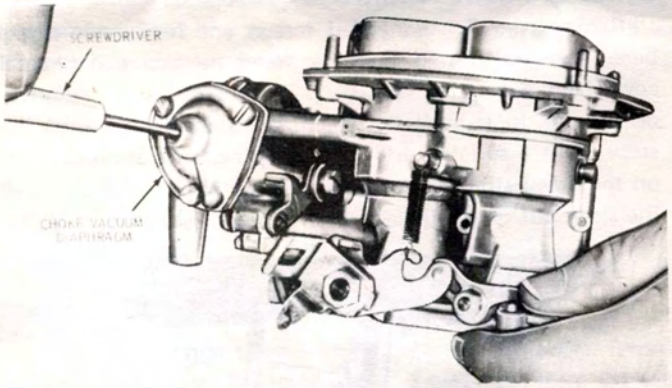


Figure 31 – Choke vacuum pull down.

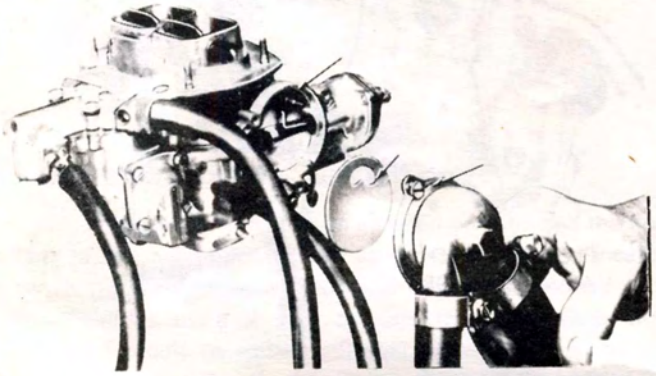


Figure 32 – Water housing removed from carburetor.

CHOKE UNLOADER (DECHOKE ADJUSTMENT)

The choke unloader adjustment is automatically set when the fast idle cam index is adjusted. (Fig. 33)

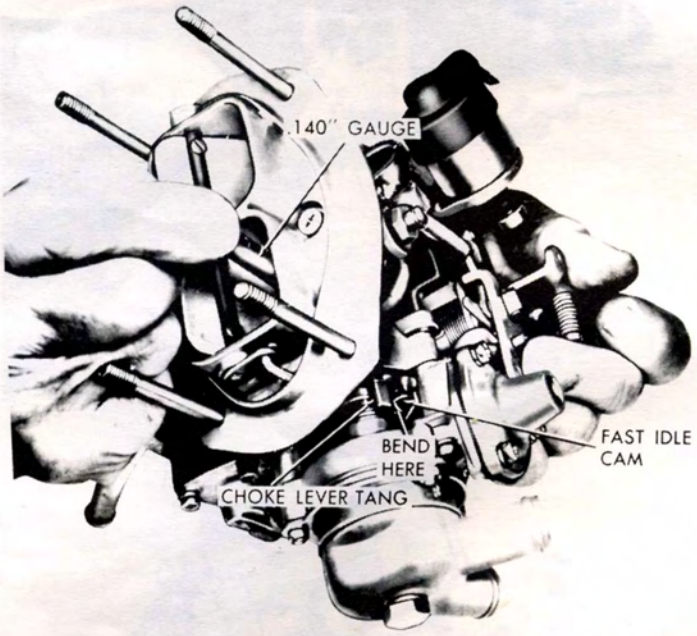


Figure 33 – Choke unloader.

CHOKE THERMOSTATIC SPRING HOUSING ADJUSTMENT

To adjust, remove air cleaner, loosen three bimetalic cover retaining screws. The cover can be rotated slightly without disconnecting the choke water housing. (Fig. 34) Retighten screws.

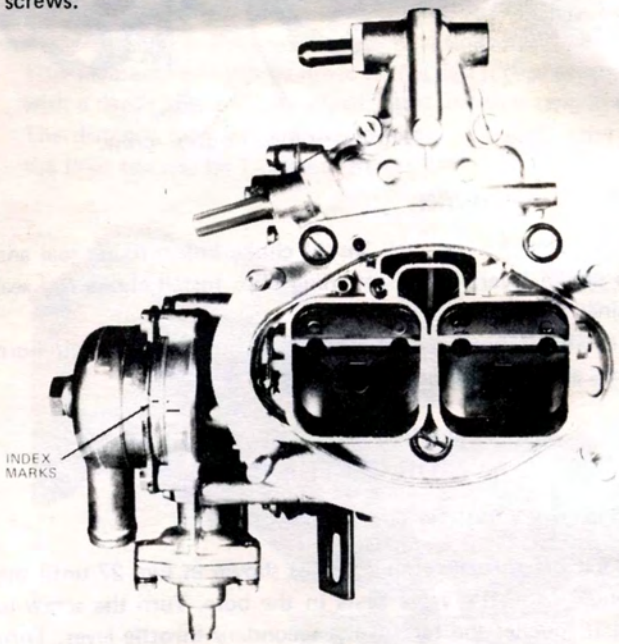


Figure 34 – Adjusting thermostatic housing.

ALL IDLE ADJUSTMENTS (FAST IDLE CURB OR SOLENOID IDLE)

SPEEDS AND IDLE MIXTURE ADJUSTMENTS

Idle speed and fuel mixture adjustments must be made with

the engine at normal operating temperature, parking brake applied, air cleaner in place, transmission in neutral, and air conditioning "off".

When making idle adjustments disconnect vacuum hose from vapor storage canister and distributor vacuum hose. Plug end of both hoses.

After all idle adjustments have been made, remove plugs and reconnect hoses.

With engine at normal operating temperature DO NOT idle engine for more than three minutes at one time. After each three minutes of idling, increase engine speed to 2000 R.P.M. for 1 minute. Continuous idling will increase coolant temperature and may activate high temperature vacuum control valve. This will affect ignition timing and idle speed.

ADJUSTMENT PROCEDURE WITHOUT EXHAUST GAS ANALYZER (SPEED DROP METHOD) CURB IDLE

1. Connect tachometer to engine. Tachometer must be 1—2% accurate and have an expanded scale 1-1000 or 400-800 R.P.M.
2. Adjust idle mixture screw full rich against tab stop by turning screw "out" (counter-clockwise).
3. Be sure engine is thoroughly warmed up. Adjust curb idle speed to specifications.
4. Increase engine idle speed 25-30 R.P.M. higher than final specifications using idle speed screw.
5. Adjust idle mixture slowly until final idle R.P.M. is obtained. Turn screw "in" (clockwise). The resulting idle fuel air ratio is near optimum for exhaust emission control.

If engine runs rough after obtaining specified R.P.M. or if specified R.P.M. cannot be obtained, it will be necessary to remove the limiter cap and readjust mixture to proper setting.

1. Remove limiter cap. DO NOT PRY. Use a puller or cut through the side of the cap with a piece of hack saw blade.
2. With engine operating at normal temperature adjust idle mixture screw to lean best idle at specified R.P.M. (Lean best idle is the point at which engine speed drops approximately 10 R.P.M. due to leanness).
3. Install new limiter cap with tab fully counter-clockwise against stop.
4. Make idle speed adjustment per steps 1-5 above.

IDLE ADJUSTMENT PROCEDURE WITH ANALYZER

There are several different makes of infra-red and ultra-violet exhaust gas analyzers in use in all areas.

Instructions for the use of this equipment varies by manufacturer. It is recommended that the test equipment manufacturers instructions be followed for all idle adjustments. All model 5200 and 5210 carburetors are calibrated for emission controls.

It is the tendency of most mechanics to adjust the idle mixture of all late model cars too rich if idle adjustment instructions are not followed.

FAST IDLE ADJUSTMENT (Fig. 35)

After curb idle has been properly adjusted and the engine is at operating temperature with the choke wide open, position the fast idle screw on the second step of the cam against the shoulder of the top step. If the tachometer does not indicate the proper fast idle R.P.M. adjust the screw in or out to achieve the correct R.P.M.

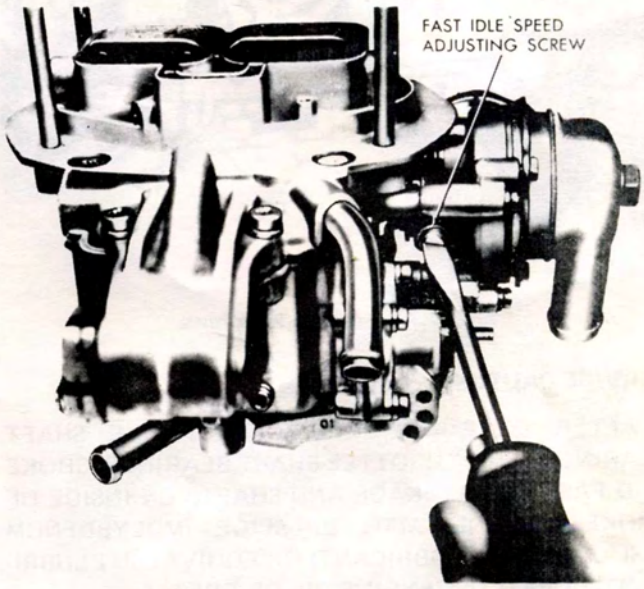


Figure 35 — Fast idle adjustment.

ADJUSTING LOW IDLE SOLENOID ADJUSTMENT (Fig. 36)

After curb idle adjustments are made, disconnect electrical lead to solenoid. With tachometer still connected adjust low idle screw to specifications. Operate throttle several times to determine if engine returns to a consistent idle. (Fig. 37)

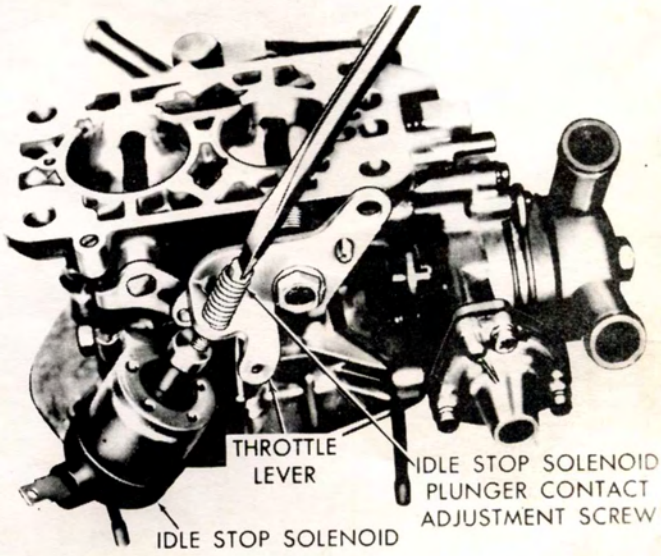


Figure 36 — Idle solenoid adjustment.

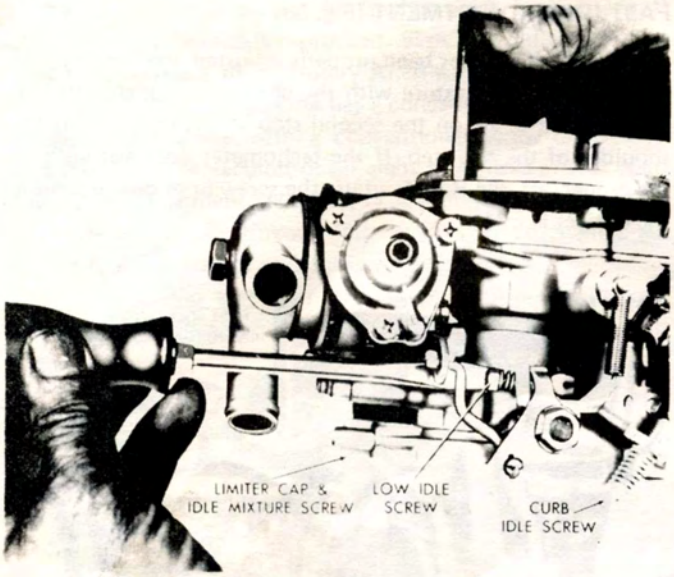


Figure 37 – Idle speed screws.

SERVICE CAUTION

AFTER OVERHAUL, LUBRICATE CHOKE SHAFT BEARINGS, BOTH THROTTLE SHAFT BEARINGS, CHOKE AND FAST IDLE LINKAGE AND SHAFTS ON INSIDE OF CHOKE HOUSING WITH DRI-SLIDE (MOLYBDENUM DISULFIDE BASE LUBRICANT) OR EQUIVALENT LUBRICANT. DO NOT USE ENGINE OIL OR GREASE.

TROUBLE SHOOTING

PROPER CARBURETOR OPERATION REQUIRES THE FOLLOWING.

1. Fuel Supply
2. Linkage and emission control systems.
3. Engine compression
4. Ignition system firing voltage
5. Ignition spark timing
6. Secure intake manifold
7. Engine temperature
8. Carburetor adjustments

ANY PROBLEMS IN THE ABOVE AREAS CAN CAUSE THE FOLLOWING.

1. No start or hard starting – (hot or cold)
2. Rough engine idle and stalling
3. Hesitation on acceleration
4. Loss of power on acceleration and top speed
5. Engine to run uneven or surge
6. Poor fuel economy
7. Excessive emissions

BEFORE PROCEEDING WITH CARBURETOR, CHECK THE ABOVE ITEMS FIRST.

NOTE – Make sure all emission control units are installed and operating properly. This includes all emission system solenoids and connecting hoses.

Carburetor problems cannot be isolated effectively unless all other engine systems are operating correctly and the engine is properly tuned.

Problem:

ENGINE CRANKS (TURNS OVER) BUT WILL NOT START OR STARTS HARD WHEN COLD

POSSIBLE CAUSE	CORRECTIVE ACTION
Improper starting procedure used.	Check to determine if proper starting procedure is used, AS OUTLINED in the owner's manual.
No fuel in gas tank	Add fuel. Check fuel gauge for proper operation.
Choke valve not closing sufficiently when cold.	Adjust the index of the choke thermostatic (Bi-metal) coil.
Choke valve or linkage binding or sticking.	Realign the choke valve or linkage as necessary. If caused by dirt and gum, clean with automatic choke cleaner. DO NOT OIL CHOKE LINKAGE. If parts are replaced readjust to specifications.
No fuel in carburetor.	1. Remove fuel line at carburetor. Connect hose to fuel line and run into metal container. Remove the high tension coil wire from center tower on distributor cap and ground. Crank over engine – if there is no fuel discharge from the fuel line, check for kinked or bent lines. Disconnect fuel line at tank and blow out with air hose, reconnect line and check again for fuel discharge. If none, replace fuel pump. Check pump for adequate flow, as outlined in service manual. 2. If fuel supply is o.k., check the following: a. Inspect fuel filter(s). If plugged replace. b. If filters are o.k., remove air horn or fuel bowl and check for a bind in the float mechanism or a sticking float needle. If o.k., adjust float as specified.

Engine Flooded. NOTE: To check for flooding remove the air cleaner. With the engine off look into the carburetor bores. Fuel will be dripping off nozzles and/or the carburetor will be very wet.	Check to determine if customer is using proper carburetor unloading procedure. Depress the accelerator to the floor and check the carburetor to determine if the choke valve is opening. If not, adjust the throttle linkage and unloader, as specified.
Carburetor flooding.	NOTE: Before removing the carburetor air horn, use the following procedure which may eliminate the flooding. 1. Remove the fuel line at the carburetor and plug. Crank and run the engine until the fuel bowl runs dry. Turn off the engine and connect fuel line. Then re-start and run engine. This will often flush dirt past the carburetor float needle and seat. 2. If dirt is in fuel system, clean the system and replace fuel filter(s) as necessary. If excessive dirt is found, remove the carburetor unit. Disassemble and clean. 3. Check float needle and seat for proper seal. If the needle is defective, replace with a Holley matched set. 4. Check float for being loaded with fuel, bent float hanger or binding of the float arm. 5. Adjust float to specifications.

Problem:

ENGINE STARTS HARD WHEN HOT

POSSIBLE CAUSE	CORRECTIVE ACTION
Choke valve not opening completely.	1. Check for binding choke valve and/or linkage. Clean and free-up or replace parts as necessary. DO NOT OIL CHOKE LINKAGE. 2. Check and adjust choke thermostatic coil. 3. Check for choke thermostatic coil binding in well or housing. 4. Check for vacuum leak with integral choke system.
Engine flooded - Carburetor flooding.	See procedure under "Engine cranks, will not start".
No fuel in carburetor.	1. Check fuel pump. Run pressure and volume test. 2. Check float needle for sticking in seat, or binding float.
Leaking float bowl.	Fill bowl with fuel and check for leaks.
Fuel percolation.	Open throttle wide and operate starter to relieve over rich condition.

Problem:

ENGINE STARTS AND STALLS

POSSIBLE CAUSE	CORRECTIVE ACTION
Engine does not have enough fast idle speed when cold.	Check and re-set the fast idle setting and fast idle cam.
Choke vacuum diaphragm unit is not adjusted to specification or unit is defective.	1. Adjust vacuum break to specification. 2. If adjusted O.K., check the vacuum opening for proper operation as follows. On externally mounted vacuum diaphragm unit, connect a piece of hose to fitting on the vacuum diaphragm unit and apply suction preferably by hand vacuum pump or another vehicle. Plunger should move inward and hold vacuum. If not, replace the unit. On the integral vacuum piston unit, remove cover and visually check piston and vacuum channel. If piston is corroded or sticking replace assembly. NOTE: Always check the fast idle cam adjustment before adjusting vacuum unit.

Choke coil rod out of adjustment.	Adjust choke coil rod.
Choke valve and/or linkage sticking or binding.	1. Clean and align choke valve and linkage. Replace if necessary. 2. Re-adjust if part replacement is necessary.
Idle speed setting.	Adjust idle speed to specifications on decal in engine compartment.
Not enough fuel in carburetor.	1. Check fuel pump pressure and volume. 2. Check for partially plugged fuel inlet filter. Replace if dirty. 3. Remove air horn or fuel bowl and check float adjustments.
Carburetor flooding.	1. Check float needle and seat for proper seal. If needle is defective, replace with a Holley matched set. 2. Check float for being loaded with fuel, bent float hanger or binding of the float arm. 3. Check float adjustments. 4. If excessive dirt is found in the carburetor, clean the fuel system and carburetor. Replace fuel filters as necessary.

IGNITION TIMING — BOSCH 009 DISTRIBUTOR: STATIC 8° BTC., RUNNING 30° BTC.

Problem:

ENGINE IDLES ROUGH AND STALLS

POSSIBLE CAUSE	CORRECTIVE ACTION
Idle mixture adjustment.	Adjust idle mixture screws to lean best idle. Repeat the operation on 2 and 4 V carburetors. Now, turn mixture screws in until idle speed drops 25 R.P.M. on tachometer.
Idle speed setting.	Re-set idle speed per instructions on decal in engine compartment. Check solenoid operation.
Manifold vacuum hoses disconnected or improperly installed.	Check all vacuum hoses leading to the manifold or carburetor base for leaks, being disconnected or connected improperly. Install or replace as necessary.
Carburetor loose on intake manifold.	Torque carburetor to manifold bolts (100 in. lbs.).
Intake manifold is loose or gaskets are defective.	Using a pressure oil can, spray light oil or kerosene around manifold legs and carburetor base. If engine RPM changes, tighten or replace the manifold gaskets or carburetor base gaskets as necessary.
Hot idle compensator not operating (where used).	Normally the hot idle compensator should be closed when engine is running cold and open when engine is hot (approx. 140° F at comp.) replace if defective.
Carburetor flooding. NOTE: Check by using procedure outlined under "carburetor flooding".	1. Remove air horn and check float adjustment. 2. Check float needle and seat for proper seal. If the needle is defective, replace with a Holley matched set. 3. Check float for being loaded with fuel, bent float hanger or binding of the float arm. Adjust to specifications. 4. If excessive dirt is found in the carburetor, clean the fuel system and carburetor. Replace fuel filters as necessary.

Problem:

ENGINE RUNS UNEVEN OR SURGES

POSSIBLE CAUSE	CORRECTIVE ACTION
Fuel Restriction	Check all hoses and fuel lines for bends, kinks or leaks. Straighten and secure in position. Check all fuel filters. If plugged or dirty - replace.

Dirt or water in fuel system.	Clean fuel tank and lines. Remove and clean carburetor.
Fuel level	Adjust float. Check for free float and float needle valve operation.
Main metering jet defective, loose or incorrect part.	Replace as necessary. See Holley Parts and Specifications Manual 36-51.
Power system in carburetor not functioning properly.	Power valve or piston sticking in down position. Free up or replace as necessary. Power valve loose, incorrect gasket or leaking around threads – Tighten or replace as necessary. Leaking diaphragm – Test with Holley hand vacuum pump, replace as necessary.
Vacuum leaks.	It is absolutely necessary that all vacuum hoses and gaskets are properly installed, with no air leaks. The carburetor and manifold should be evenly tightened to specified torque.

IGNITION TIMING — BOSCH 009 DISTRIBUTOR: STATIC 8° BTC., RUNNING 30° BTC.

Problem:

ENGINE HESITATES ON ACCELERATION

POSSIBLE CAUSE	CORRECTIVE ACTION
Defective accelerator pump system. NOTE: A quick check of the pump system can be made as follows. With the engine off, remove air cleaner and look into the carburetor bores and observe pump stream, while briskly opening throttle valve. A full stream of fuel should emit from pump jet and strike near the center of the venturi area.	PISTON TYPE – 1. Remove air horn and check pump cup. If cracked, scored or distorted, replace the pump plunger. PISTON AND DIAPHRAGM TYPES – 2. Check the pump discharge ball for proper seating and location. The pump discharge ball is located in a cavity next to the pump well. To check for proper seating, remove air horn and gasket and fill cavity with fuel. No "leak down" should occur. Restake and replace check ball if leaking. Make sure discharge ball, spring and retainer are properly installed. DIAPHRAGM TYPE – Check pump discharge as above. Inspect diaphragm, replace if defective. Check pump inlet ball valve clearance. Adjust pump operating lever clearance.
Dirt in pump passages or pump jet.	Clean and Blow out with compressed air.
Fuel level.	Check for sticking float needle or binding float. Free up or replace parts as necessary. Check and reset float level to specification.
Leaking air horn to float bowl gasket.	Torque air horn to float bowl using proper tightening procedure.
Carburetor loose on manifold.	Torque carburetor to manifold bolts. (100 in. lbs.)

IGNITION TIMING — BOSCH 009 DISTRIBUTOR: STATIC 8° BTC., RUNNING 30° BTC.

Problem:

NO POWER ON HEAVY ACCELERATION OR AT HIGH SPEED

POSSIBLE CAUSE	CORRECTIVE ACTION
Carburetor throttle valve(s) not going wide open. (Check by pushing accelerator pedal to floor).	Adjust throttle linkage to obtain wide open throttle in carburetor.
Dirty or plugged fuel filter(s).	Replace with a new filter element.

Power system not operating.	PISTON TYPE – Check power piston for free up and down movement. If power piston is sticking check power piston and cavity for dirt, or scores. Check power piston spring for distortion. Clean or replace as necessary. PISTON AND DIAPHRAGM TYPES – Check power valve channel restrictions. Clean if necessary.
Float level too low.	1. Check and reset float level to specification.
Float not dropping far enough into float bowl.	Check for binding float hanger and for proper float alignment in float bowl.
Main metering jet(s) dirty, plugged or incorrect part.	1. If main metering jets are plugged or dirty and excessive dirt is in fuel bowl. Carburetor should be completely disassembled and cleaned. 2. Check the jet(s) for being the correct part. Consult the parts and specification manual 36-51 for proper usage. The last two digits stamped on the jet face are the same as the last two digits of the part number.

IGNITION TIMING —
BOSCH 009 DISTRIBUTOR:
STATIC 8° BTC., RUNNING 30° BTC.

Problem:

POOR FUEL ECONOMY

POSSIBLE CAUSE	CORRECTIVE ACTION
Engine needs complete tune-up.	Check engine compression. Examine spark plugs, (if dirty or improperly gapped clean and re-gap or replace). Check ignition point condition and dwell setting. Readjust ignition points if necessary and check and reset ignition timing. Clean or replace air cleaner element if dirty. Check for restricted exhaust system and intake manifold for leakage. Make sure all vacuum hoses are connected correctly. Make sure emission systems are operating properly.
Choke valve not fully opening.	1. Clean choke and free up linkage. 2. Check choke thermostatic (bi-metal) coil for proper adjustment. Reset to specifications.
Fuel leaks.	Check fuel tank, fuel lines and fuel pump for any fuel leakage.
Main metering jet defective, loose or incorrect part.	Replace as necessary.
Power system in carburetor not functioning properly. Power valve or piston sticking in up position.	Free up or replace as necessary.
High fuel level in carburetor or carburetor flooding.	1. Check for dirt in the needle and seat. If defective, replace needle and seat assembly with Holley matched set. 2. Check for fuel loaded float. 3. Re-set carburetor float to specifications. 4. If excessive dirt is present in the carburetor bowl, the carburetor should be cleaned.
Fuel being pulled from accelerator system into venturi through pump jet.	Run engine at RPM where nozzle is feeding fuel and observe pump jet. If fuel is feeding from jet, check pump discharge ball for proper seating. This is done by filling cavity above ball with fuel to level of casting. No "leak down" should occur with discharge ball in place. Re-stake or replace leaking check ball, defective spring or retainer as required.
Air bleeds or fuel passages in carburetor dirty or plugged.	1. Clean carburetor or overhaul as necessary. 2. If gum or varnish is present in idle or high speed air bleeds they can be cleaned with laquer thinner or choke solvent in a spray can.

Problem:

ENGINE BACKFIRES

POSSIBLE CAUSE	CORRECTIVE ACTION
Choke valve, fully or partially open, binding or sticking.	Free up with choke solvent. Realign or replace if bent.
Accelerator pump not operating properly.	1. Remove air cleaner and observe pump discharge. Replace pump cup or diaphragm. 2. Readjust pump to specifications. 3. Restake or replace pump intake or discharge valve.
Old or dirty (fouled) spark plugs.	Clean or replace spark plugs.
Old or cracked spark plug wires.	Test with a scope if possible or observe wires on dark night with engine running. Replace wires.
Partially clogged fuel filter.	Replace filter on regular maintenance schedule.
Backfire on deceleration. Defective air pump diverter valve.	Check hoses and fittings for tightness and leakage. Disconnect valve signal line. With engine running a vacuum must be felt. With engine idling, hold hand at exhaust port. No air should be felt. If valve or hoses defective then must be replaced.

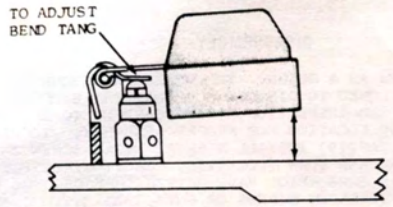
Problem:

SECONDARIES DON'T OPEN

POSSIBLE CAUSE	CORRECTIVE ACTION
Sticking Throttle Valves.	1. Readjust secondary throttle valve stop screw. 2. Throttle valves nicked or throttle shaft binding. 3. Repair or replace throttle valve. 4. Check throttle body for warpage. 5. Torque throttle body screws evenly.
Ruptured or leaking secondary diaphragm.	Inspect diaphragm. Replace or install properly.
Venturii vacuum ports plugged.	Try cleaning ports with choke solvent or lacquer thinner. It may be necessary to remove the diaphragm assembly and back blow into the venturi.

ADJUSTMENTS

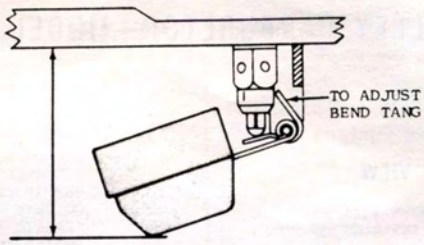
CAUTION: DO NOT EXERT PRESSURE ON RESILIENT NEEDLE VALVE.



BOWL COVER INVERTED MEASURE DISTANCE BETWEEN BOWL COVER AND END OF FLOAT. (CHECK BOTH FLOAT KIDNEYS)

7/16"

DRY FLOAT ADJUSTMENT Fig. 1



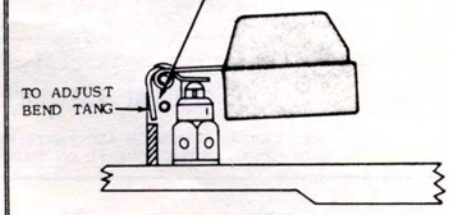
BOWL COVER HELD IN NORMAL POSITION WITH FLOAT HANGING FREELY. MEASURE DISTANCE FROM BOWL COVER TO LOWEST PART OF FLOAT.

1-7/8"

FLOAT DROP ADJUSTMENT WITHOUT BUMPER SPRING Fig. 2

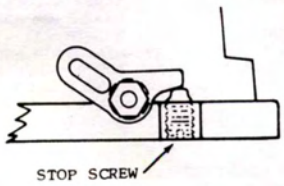
BOWL COVER INVERTED MEASURE DISTANCE BETWEEN TANG AND BUMPER SPRING.

.010-.025 CLEARANCE



FLOAT BUMPER SPRING ADJUSTMENT SOME MODELS Fig. 3

BACK OUT STOP SCREW UNTIL SECONDARY THROTTLE VALVE SEATS IN BORE. TURN SCREW IN UNTIL IT TOUCHES SECONDARY THROTTLE LEVER, THEN TURN IN AN ADDITIONAL 1/4 TURN.



SECONDARY THROTTLE STOP ADJUSTMENT Fig. 4

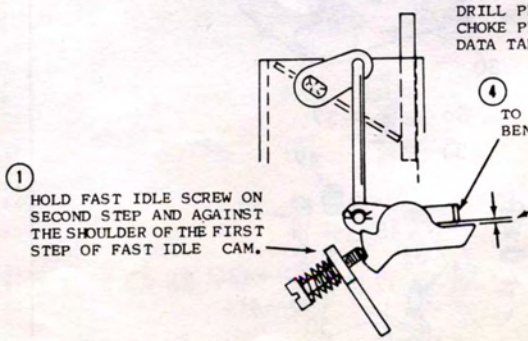
(2) HOLD CHOKE IN CLOSE POSITION AGAINST DRILL PLACED BETWEEN LOWER EDGE OF CHOKE PLATE AND AIR HORN WALL. (SEE DATA TABLE FOR DRILL SIZE.)

(4) TO ADJUST BEND TANG

(1) HOLD FAST IDLE SCREW ON SECOND STEP AND AGAINST THE SHOULDER OF THE FIRST STEP OF FAST IDLE CAM.

(3) MEASURE DISTANCE BETWEEN TANG ON CHOKE LEVER AND ARM OF FAST IDLE CAM.

(.010-MAX.CLEARANCE)



FAST IDLE CAM SETTING Fig. 5

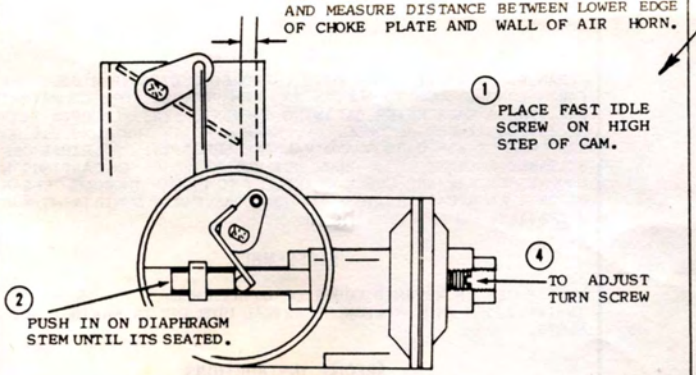
ELECTRIC CHOKE

(3) HOLD CHOKE VALVE TOWARD CLOSED POSITION AND MEASURE DISTANCE BETWEEN LOWER EDGE OF CHOKE PLATE AND WALL OF AIR HORN.

(1) PLACE FAST IDLE SCREW ON HIGH STEP OF CAM.

(4) TO ADJUST TURN SCREW

(2) PUSH IN ON DIAPHRAGM STEM UNTIL ITS SEATED.

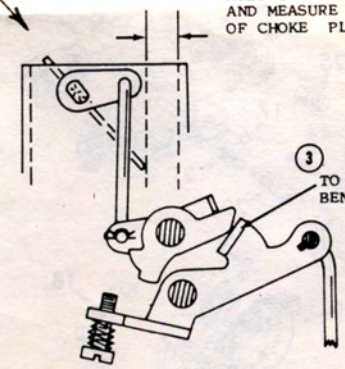


CHOKE PULLDOWN ADJUSTMENT Fig. 6

(2) HOLD CHOKE VALVE TOWARD CLOSED POSITION AND MEASURE DISTANCE BETWEEN LOWER EDGE OF CHOKE PLATE AND WALL OF AIR HORN.

(3) TO ADJUST BEND TANG

(1) HOLD THROTTLE LEVER IN WIDE OPEN POSITION



CHOKE UNLOADER ADJUSTMENT Fig. 7

USE FACTORY CAR MANUAL PROCEDURE FOR SETTING SLOW IDLE IF AVAILABLE, AND SPECIFICATIONS LISTED ON ENGINE DECAL.

SUPPLEMENT SLOW IDLE ADJUSTING PROCEDURE

1. SET IGNITION TIMING PER CAR FACTORY SPECIFICATIONS.
2. ENGINE AT OPERATING TEMPERATURE, CHOKE FULLY OPEN.
   A. AUTOMATIC TRANSMISSION IN DRIVE.
   B. HEADLIGHTS ON HIGH BEAM.
   C. AIR CONDITIONER ON.(1971-1972 ONLY)
3. USING A TACKOMETER SET CURB IDLE SPEED ON MANUAL AND AUTOMATIC TRANSMISSIONS WITHOUT AIR CONDITIONING USING IDLE SPEED SCREW. AUTOMATIC TRANSMISSION WITH AIR CONDITIONING SET CURB IDLE SPEED USING SOLENOID PLUNGER. NOTE: SOLENOID MUST BE ENERGIZED.
4. AIR CLEANER INSTALLED.
5. ADJUST IDLE MIXTURE NEEDLE TO OBTAIN THE HIGHEST R.P.M. AT THE LEANEST BEST IDLE SETTING.
6. READJUST IDLE SPEED IF NECESSARY. CAREFULLY OPERATE THROTTLE SEVERAL TIMES TO VERIFY IDLE R.P.M. ADJUSTMENT. NOTE: ON MODELS WITH SOLENOID, DISCONNECT SOLENOID THROTTLE POSITIONER AT CONNECTION, TRANSMISSION IN NEUTRAL AIR CONDITIONER OFF, ADJUST THROTTLE STOP SCREW FOR LOWER R.P.M., RECONNECT SOLENOID.
7. AFTER COMPLETING THE ABOVE, INSTALL THE LIMITER CAP ON THE IDLE MIXTURE NEEDLE IN THE EXTREME COUNTERCLOCKWISE POSITION AGAINST THE LIMITER STOP.
8. PLACE FAST IDLE SCREW ON THE 2ND STEP OF THE FAST IDLE CAM AND ADJUST TO SPECIFIED R.P.M.

ADJUSTMENT DATA TABLE

YEAR	MAKE		DRY FLOAT LEVEL	FLOAT DROP SETTING	PUMP PIN POSITION	FAST IDLE CAM SETTING	CHOKE PULL DOWN SETTING	UNLOADER SETTING	AUTO CHOKE SETTING	SLOW IDLE R.P.M.	FAST IDLE R.P.M.
1971	PINTO	S/T	7/16"	1 7/8"	LOWER HOLE	5/32"	15/64"	1/4"	INDEX-1 RICH	750	1600
		A/T	7/16"	1 7/8"	LOWER HOLE	5/32"	15/64"	1/4"	INDEX-1 RICH	650	1800
		A/T W/AC	7/16"	1 7/8"	LOWER HOLE	5/32"	15/64"	1/4"	INDEX-1 RICH	650/500	1800
1972	PINTO	S/T	7/16"	1 7/8"	MIDDLE HOLE	3/32"	15/64"	1/4"	1-LEAN	750/500	1600
		A/T	7/16"	1 7/8"	LOWER HOLE	5/32"	15/64"	1/4"	INDEX-1 LEAN	650/500	1800
1973	CAPRI	S/T	7/16"	1 7/8"	MIDDLE HOLE	1/8"	15/64"	1/4"	1-LEAN	ENG./DECAL	1600
		A/T	7/16"	1 7/8"	MIDDLE HOLE	1/8"	15/64"	1/4"	INDEX	ENG./DECAL	1800
1973	PINTO	S/T	7/16"	1 7/8"	MIDDLE HOLE	1/8"	5/32"	1/4"	1-LEAN	ENG./DECAL	1600
		A/T	7/16"	1 7/8"	MIDDLE HOLE	5/32"	5/32"	1/4"	INDEX	ENG./DECAL	1800

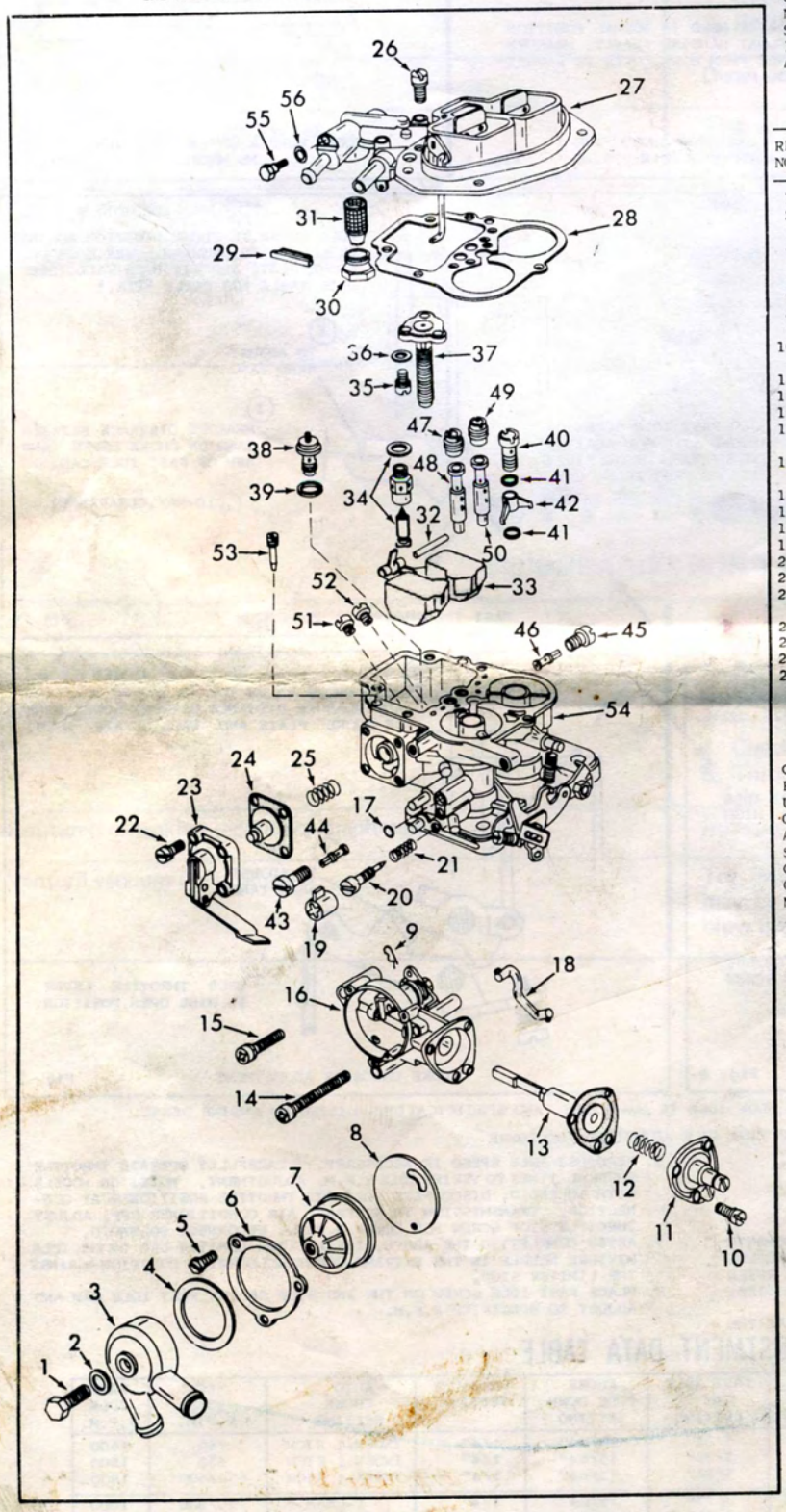
INSTRUCTION SHEET

50-415-2

HOLLEY CARBURETOR—MODEL 5200

GENERAL EXPLODED VIEW

THE GENERAL DESIGN AND PARTS SHOWN WILL VARY TO INDIVIDUAL UNITS COVERED ON THIS INSTRUCTION SHEET



DISASSEMBLY

USE EXPLODED VIEW AS A GUIDE. THE NUMERICAL SEQUENCE MAY GENERALLY BE FOLLOWED TO DISASSEMBLE UNIT FAR ENOUGH TO PERMIT CLEANING AND INSPECTION, BEING CAREFUL TO NOTE SIZES OF JETS AND THEIR LOCATION FOR PROPER ASSEMBLY. TO REMOVE PLASTIC LIMITER CAP(19) INSTALL A SHEET METAL SCREW IN THE CENTER OF THE CAP AND TURN CLOCKWISE. CAUTION: SCREWS AND NUTS USED IN THIS CARBURETOR HAVE METRIC THREADS. DO NOT SUBSTITUTE U.S. THREADED SCREWS OR NUTS. TAKE SPECIAL NOTICE IF CARBURETOR HAS (STAMPED BODY) ECONOMIZER DIAPHRAGM ASSEMBLY (37). AND FOLLOW SPECIAL INSTRUCTIONS CAREFULLY.

NOMENCLATURE

REF. NO.		REF. NO.	
1.	SCREW-CHOKE WATER HOUSING	27.	BOWL COVER ASSY.
2.	GASKET - HOUSING SCREW	28.	GASKET - BOWL COVER
3.	HOUSING - CHOKE WATER	29.	PLUG - CHOKE ROD SEAL
4.	GASKET - WATER HOUSING	30.	PLUG - FUEL FILTER
5.	SCREW (3) - RETAINING RING	31.	FILTER - FUEL
6.	RING - STAT RETAINING	32.	PIN - FLOAT HINGE
7.	CHOKE COVER & SPRING ASSY.	33.	FLOAT ASSY.
8.	GASKET - CHOKE COVER	34.	NEEDLE, SEAT & GASKET ASSEMBLY
9.	RETAINER - CHOKE ROD	35.	SCREW & LOCKWASHER (3) - DIAPHRAGM ASSY.
10.	SCREW & LOCKWASHER (3) - DIAPHRAGM COVER	36.	WASHER (3) - FLAT
11.	COVER ASSY. - DIAPHRAGM	37.	DIAPHRAGM ASSY.-ECONOMIZER
12.	SPRING - DIAPHRAGM RETURN	38.	POWER VALVE ASSY.
13.	DIAPHRAGM ASSY. - CHOKE	39.	GASKET - POWER VALVE
14.	SCREW & LOCKWASHER (1) - CHOKE HOUSING	40.	VALVE ASSY. - PUMP DISCHARGE
15.	SCREW & LOCKWASHER (2) - CHOKE HOUSING	41.	GASKET (2) - PUMP NOZZLE
16.	CHOKE HOUSING ASSY.	42.	NOZZLE - PUMP DISCHARGE
17.	O - RING - CHOKE HOUSING	43.	RETAINER - PRI. IDLE JET
18.	ROD - FAST IDLE	44.	JET - PRI. IDLE
19.	CAP - IDLE LIMITER	45.	RETAINER - SEC. IDLE JET
20.	NEEDLE - IDLE ADJUSTING	46.	JET - SEC. IDLE
21.	SPRING - IDLE NEEDLE	47.	JET-PRI. HIGH SPEED BLEED
22.	SCREW & LOCKWASHER (4) - PUMP COVER	48.	TUBE - PRI. MAIN WELL
23.	PUMP COVER ASSY.	49.	JET-SEC. HIGH SPEED BLEED
24.	DIAPHRAGM ASSY. - PUMP	50.	TUBE - SEC. MAIN WELL
25.	SPRING - PUMP RETURN	51.	JET - PRI. MAIN
26.	SCREW & LOCKWASHER (5) - BOWL COVER	52.	JET - SEC. MAIN
		53.	PLUG - PUMP CHANNEL
		54.	MAIN BODY ASSY.
		55.	PLUG
		56.	GASKET-PLUG

CLEANING

CLEANING MUST BE DONE WITH CARBURETOR DISASSEMBLED. SOAK PARTS LONG ENOUGH TO SOFTEN AND REMOVE ALL FOREIGN MATERIAL. USE (1) A CARBURETOR CLEANING SOLVENT, (2) LACQUER THINNER OR (3) DENATURED ALCOHOL. MAKE CERTAIN THE THROTTLE BORES ARE FREE OF ALL CARBON AND VARNISH DEPOSITS. RINSE OFF IN SUITABLE SOLVENT. BLOW OUT ALL PASSAGES IN CASTINGS WITH COMPRESSED AIR AND CHECK CAREFULLY TO INSURE THOROUGH CLEANING OF OBSCURE AREAS. CAUTION: DO NOT SOAK PARTS CONTAINING RUBBER MATERIALS.

REASSEMBLY

REASSEMBLE IN REVERSE ORDER OF DISASSEMBLY. NOTE SPECIAL INSTRUCTIONS AND FOLLOW NUMERICAL OUTLINE IN MAKING ADJUSTMENTS.

SPECIAL INSTRUCTIONS

ECONOMIZER DIAPHRAGM ASSY. REPLACEMENT.

1. WHEN REPLACING THE (CAST BODY) ECONOMIZER DIAPHRAGM ASSY. BE SURE TO RETAIN THE 3 OLD SCREWS AND USE OVER.
2. WHEN REPLACING THE (STAMPED BODY) ECONOMIZER DIAPHRAGM ASSY. WITH THE (CAST BODY) ECONOMIZER DIAPHRAGM ASSY. DISCARD THE 3 SHORT SCREWS. USE THE 3 LONG SCREWS CONTAINED IN THIS REPAIR KIT.

DIAPHRAGM INSTALLATIONS - CAREFULLY ALIGN HOLES IN DIAPHRAGM TO PREVENT DAMAGE WHILE INSTALLING SCREWS.

SPRING INSTALLATION - PUMP RETURN SPRING (25) IS HEAVIER THAN CHOKE DIAPHRAGM SPRING (12).

IDLE ADJUSTING NEEDLE (20) - TURN IN UNTIL SEATED, THEN BACK OUT 1½ TURNS. (DO NOT INSTALL LIMITER CAP AT THIS TIME.)

CHOKE COVER (7) INSTALLATION - BE SURE TO INSTALL STAT SPRING LOOP ON PIN OF LEVER.