CHEVROLET

SERVICE NEWS

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CONTENTS

CORVETTE SERVICE OPERATIONS

This issue of the Service News completes the service information to be issued on the Corvette. In a good many cases, the service procedures which appear in the 1953 Passenger Shop Manual can be utilized for Corvette Service Operations. Special Corvette information now available to the field is comprised of three separate booklets, the April and May Service News and the Corvette Plastic Body Repair and Refinishing book. These special issues on the Corvette cover those operations which differ and should be used to supplement information in the 1953 Passenger Shop Manual.

CARBURETOR

Removal

It is not advisable to remove the three carburetors from the manifold as a unit, as the carburetor linkage may be damaged during the removal operation.

1. Loosen set screw "A" retaining the air intake extension to the carburetor and remove extension (fig. 1).
2. Loosen choke wire attaching screw in swivel and remove wire from swivel.
3. Loosen screw retaining choke cable in choke tube bracket assembly and remove choke cable and wire assembly.
4. If the center carburetor is being removed, disconnect the accelerator front control rod

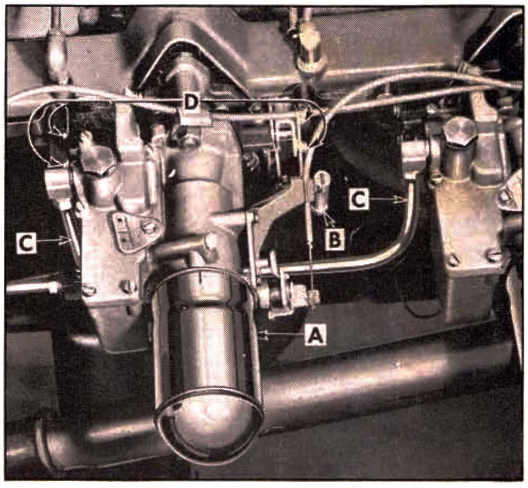


Fig. 1

at "B". In addition, the distributor to carburetor flange body vacuum line must be disconnected.

5. Disconnect the gas lines "C".

   NOTE: *If the front carburetor is being removed, all gas lines must be disconnected. If the center carburetor is being removed, the gas line at rear carburetor must also be disconnected.*

6. Remove the four coupling link screws "D" at the front and rear of the carburetor.

7. Remove the three nuts and flat washers retaining the carburetor to the manifold. Also remove choke rod retaining clip.

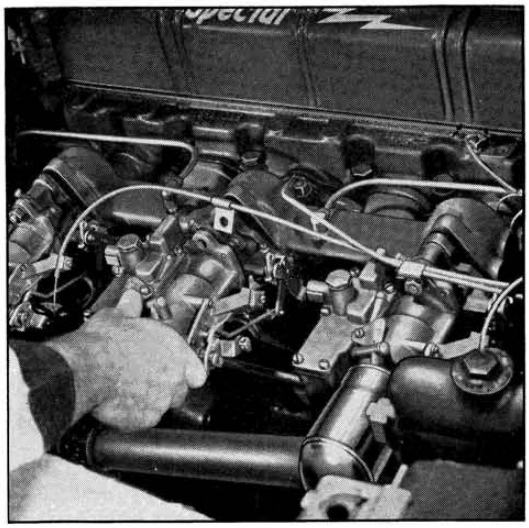


Fig. 2

8. Remove carburetor from intake manifold (fig. 2).

9. Remove carburetor to manifold insulator.

Disassembly

1. Remove six screws retaining bowl cover and screen assembly and remove assembly "A" (fig. 3).

2. Loosen Allen screw or machine screw retaining coupling bracket "B" to throttle shaft and remove bracket.

3. Loosen screw retaining throttle shaft arm assembly "C" and remove assembly.

4. Remove three screws and lock washers "D" retaining carburetor body flange. Disconnect

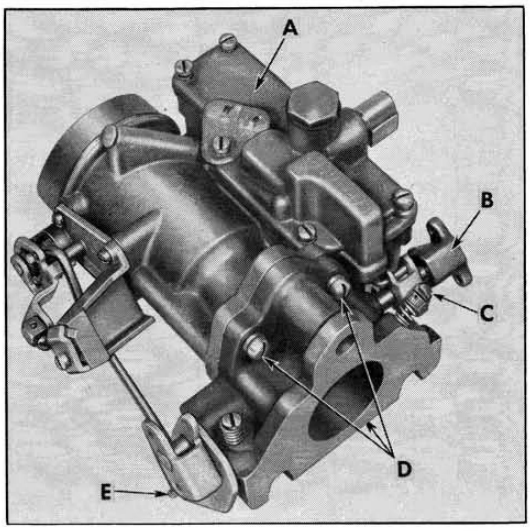


Fig. 3

choke connector rod by slipping retainer "E" out of position, then remove the flange assembly.

5. Remove bowl cover gasket, then remove dampener spring retainer "F" and dampener spring (fig. 4).

6. Raise the pump lifter link and metering rod arm assembly "H" from the carburetor bowl. Remove the pump lifter connector link from the lifter link at the same time.

7. Unhook the metering rod spring from the

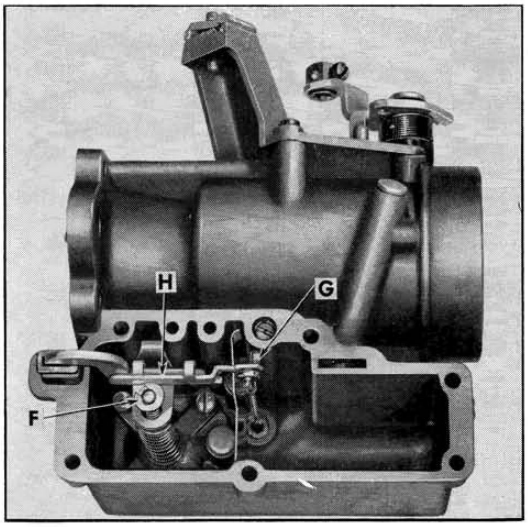


Fig. 4

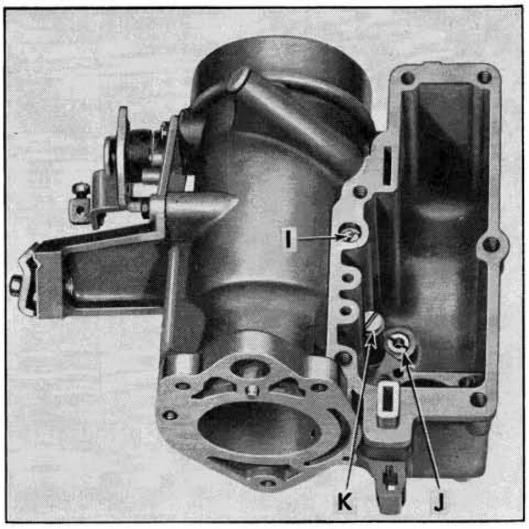


Fig. 5

metering rod, remove the horseshoe clip and rod from the metering rod arm pin.

8. Remove fuel baffle from fuel bowl.
9. Remove the pump diaphragm spring retainer and spring from the pump diaphragm stem.
10. Remove four screws retaining the pump diaphragm assembly in the bowl and remove assembly.
11. Remove low speed jet "I" metering rod jet "J" and discharge check valve assembly "K" consisting of a cap, spring and ball (fig. 5). Do not remove the pump jet – it is not replaceable.
12. Remove the float lever pin and float from the bowl cover, and the fuel control needle assembly. Remove strainer nut, gasket and strainer from cover (fig. 6).

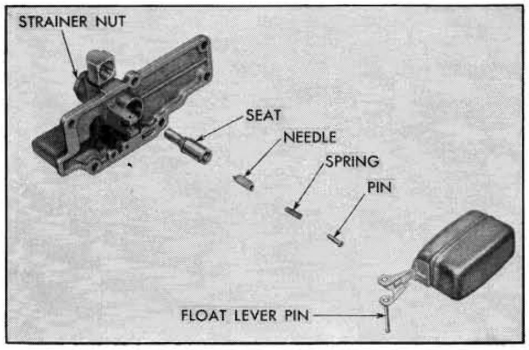


Fig. 6

Inspection

Figure 7 shows layout of Corvette carburetor.

1. Wash all parts thoroughly in cleaning solvent.
2. Remove any carbon deposits from ports in carburetor.
3. Blow out all drilled passages with compressed air.
4. Blow out low speed jet and metering rod jet. make sure metering holes are clean.
5. Check operation of the pump intake and discharge check valves.
6. Inspect fuel pump diaphragm assembly; if damaged in any way replace.
7. Inspect metering rod.
8. Inspect float for dents or wear on lip.
9. Check fuel control needle, pin spring and seat. If needle shows groove, replace entire assembly.
10. Check throttle and choke shafts for excessive looseness or wear.
11. Inspect choke and throttle levers for wear.
12. Check operation of choke and valve in carburetor.
13. Check operation of choke valve spring.
14. Inspect fuel strainer.
15. Inspect screens in air intake extensions.
16. Make sure the vent hole (approx. .020″) drilled in the diaphragm housing into the discharge passage is open.
17. Replace all damaged or worn parts.

REPAIRS

Throttle Valve

1. Remove flange body from carburetor.
2. Remove choke connector rod from fast idle arm.
3. Remove coupling bracket and throttle shaft arm.
4. File off upset ends of throttle valve to shaft screws.
5. Remove screws retaining valve to shaft and remove valve.
6. Remove throttle valve shaft retaining spring ring and remove throttle shaft.
7. Remove fast idle arm and coupling bracket from throttle shaft.

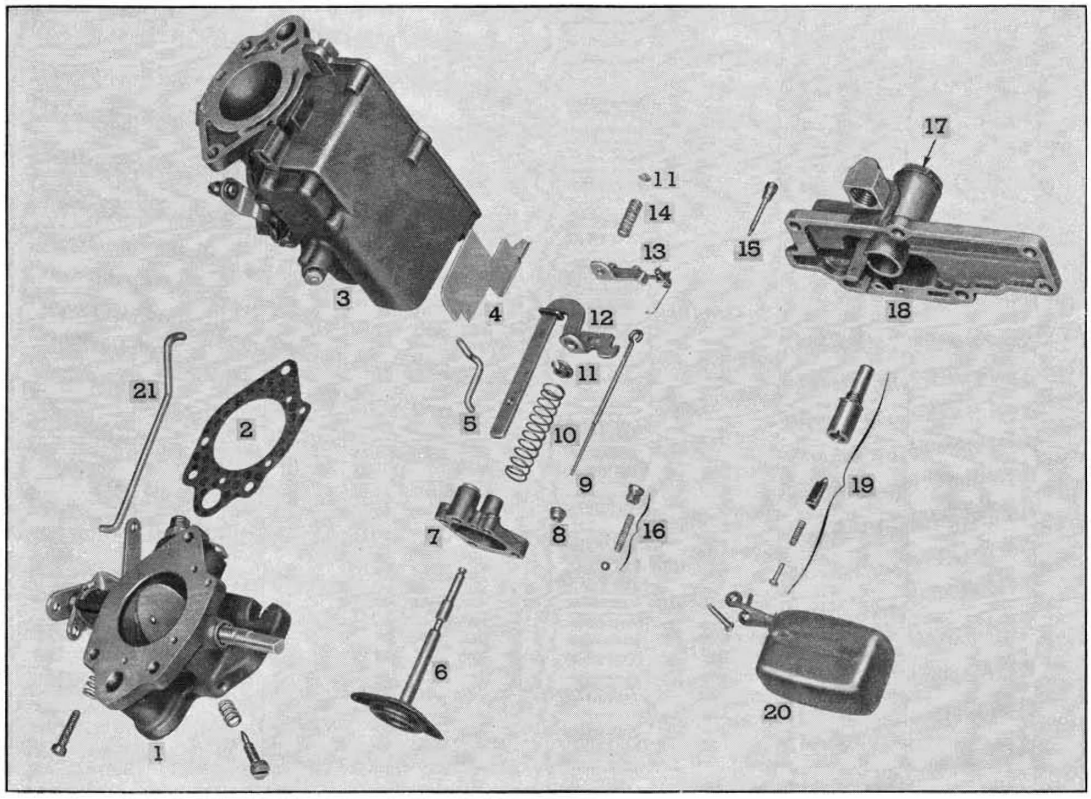


Fig. 7

1. Body Flange Assembly
2. Body Flange Gasket
3. Carburetor Body Assembly
4. Fuel Bowl Baffle Plate
5. Connector Link
6. Pump Diaphragm Assembly
7. Pump Diaphragm Housing Assembly
8. Metering Rod Jet
9. Metering Rod
10. Pump Diaphragm Spring
11. Spring Retainer
12. Pump Lifter Link
13. Metering Rod Arm Assembly
14. Dampener Spring
15. Low Speed Jet Assembly
16. Discharge Check Valve Assembly
17. Fuel Assembly Strainer
18. Bowl Cover
19. Needle Assembly
20. Float and Lever Assembly
21. Choke Connector Rod

8. Reassemble coupling bracket and fast idle arm to throttle shaft and install shaft in flange body. Install retaining spring ring on shaft.

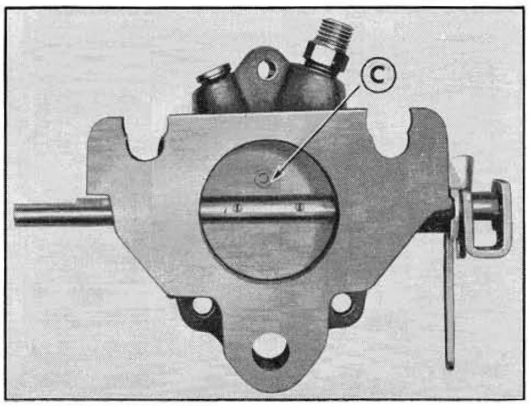


Fig. 8

9. Install throttle shaft arm and coupling bracket.
10. Place throttle valve on shaft with letter "C" stamped on the valve facing away from the carburetor body (fig. 8).
11. Install new valve to shaft screws, tighten securely and upset ends so screws will not loosen.

Choke Valve

1. File off upset ends of choke valve to shaft screws, and remove screws and choke valve "A" (fig. 9).
2. Remove three screws from choke tube bracket assembly and remove bracket and choke shaft assembly "F" from carburetor body.

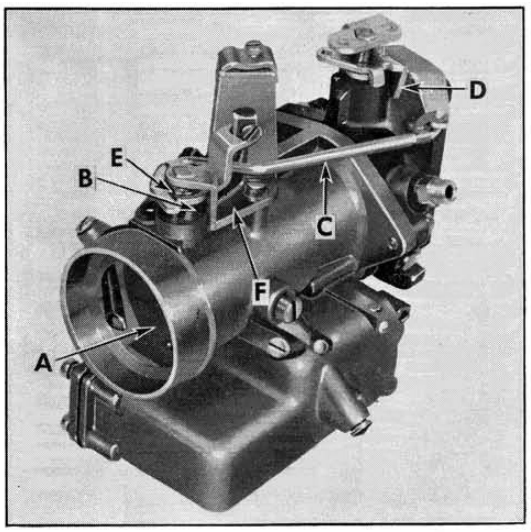


Fig. 9

3. Remove choke coiled spring "B" from outer choke lever and remove lever and shaft assembly.
4. Remove snap ring "E" retaining choke inner lever to choke tube bracket and remove inner lever and spring.
5. Remove horseshoe clip from connector rod and remove rod "C".
6. Replace all damaged or worn parts.
7. Place inner lever and choke spring on choke tube bracket and install bracket on carburetor body and install retaining ring.
8. Install choke outer lever and shaft to carburetor and attach choke spring to inner and outer levers.
9. Place choke valve in position with stamped "C" on valve facing toward air intake.
10. Install new valve to shaft screws securely and upset ends so they will not loosen.
11. Install connector link with horseshoe clip to inner lever.

Assembly

1. Install fuel strainer, gasket and nut to bowl cover assembly.
2. Install gasket and fuel control assembly to bowl cover, then install float and float lever pin. Check float adjustment.
3. Install low speed jet, metering rod jet and discharge check valve assembly into carburetor bowl.
4. Install pump diaphragm and housing with four screws into pump bowl (fig. 10). Tighten screws securely.

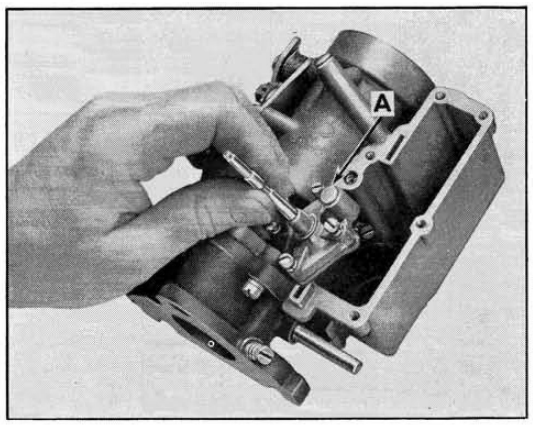


Fig. 10

NOTE: *The intake check ball valve is incorporated in the diaphragm housing at "A".*

5. Install diaphragm spring and spring retainer over diaphragm stem.
6. Install fuel baffle into fuel bowl.
7. Assemble the metering rod arm assembly to the pump lifter link, then assemble the metering rod to the arm pin, snap rod spring into place and intall horseshoe clip.

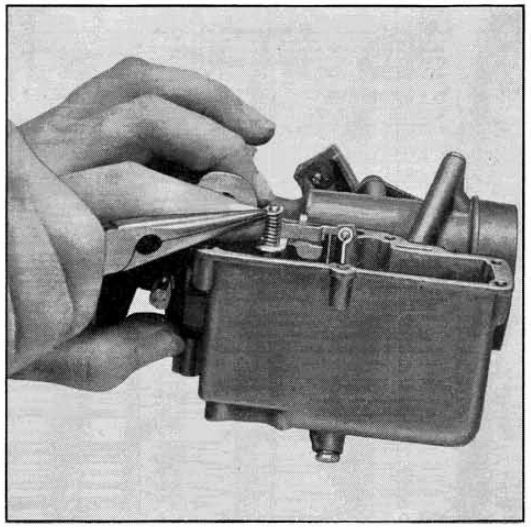


Fig. 11

8. Install lifter link and metering arm assembly over the diaphragm stem in the bowl. Align the metering rod with the jet and install the lifter link as the assembly is lowered to place.
9. Install dampener spring and retainer on diaphragm stem (fig. 11).
10. Install bowl cover assembly and tighten six screws securely.
11. Install body flange to carburetor body gasket (fig. 12) making sure holes are aligned. then install flange. Tighten screws securely.
12. Install throttle shaft arm assembly and insert lifter link into place.

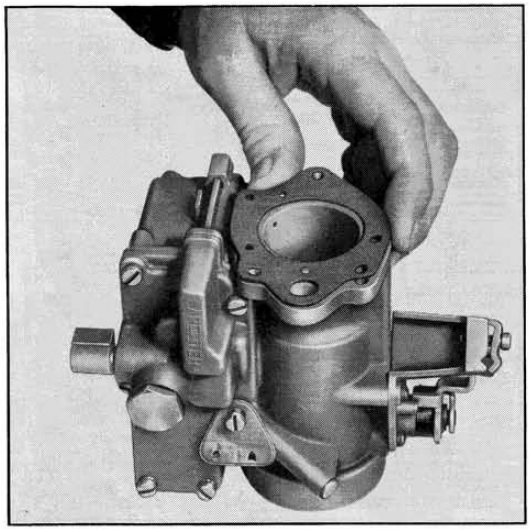


Fig. 12

13. Install coupling bracket and tighten Allen screw or machine screw.
14. Install choke connector rod and anchor with retaining clip.

Installation

To facilitate the replacement of the carburetor, remove the top retaining stud from the intake manifold.

1. Install the insulator "A" with the side marked top at the top stud location and with the beveled perimeter of the insulator facing out from the manifold (fig. 13).
2. Loosely install the carburetor two lower retaining nuts and flatwashers on the studs.
3. Align the cutouts in the body flange with the lower studs and lower the carburetor into place. Align the gas line with its fitting at the same time.

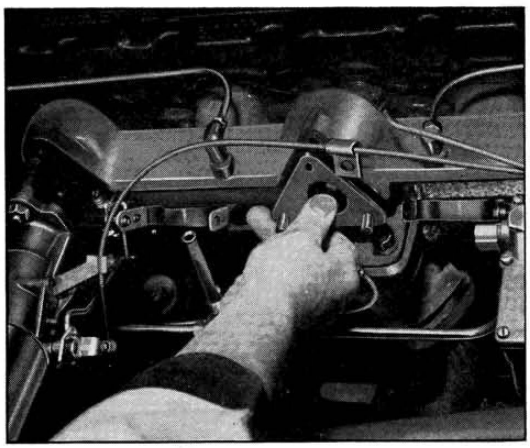


Fig. 13

4. Install top retaining stud through carburetor flange into intake manifold. Tighten stud securely. Install nut and flatwasher (choke cable retainer if necessary) and tighten all retaining nuts securely.
5. Attach all gas lines and tighten fittings snugly. Install vacuum line and tighten securely (center carburetor only).

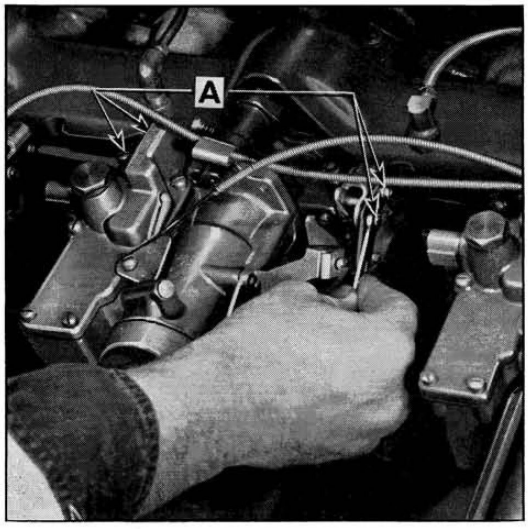


Fig. 14

6. Install four coupling screws "A" loosely, then while holding the throttle valve closed tighten coupling screws securely (fig. 14).

NOTE: *On center carburetor replacement operation, replace the accelerator front control rod.*

7. Install choke wire and cable assembly.
8. Install carburetor air intake extension. Align scribe mark with boss on carburetor body and secure with set screw.

CORVETTE CARBURETOR SPECIFICATIONS

G. M. Part No. 3706989

Carter Nos. Y H Horizontal 2066S-2066SA

Dimensions:

Flange size 1¼" (3 bolt).

Primary venturi $^{11}/_{32}$" I D

Secondary venturi $^{11}/_{16}$" I D

Main venturi $1^{5}/_{16}$" I D

GASOLINE INTAKE—Spring loaded needle. Size No. 46 (.081 inch) drill in needle seat.

LOW SPEED JET TUBE—Jet size No. 70 (.028 inch) drill. By-pass in body, size .0492 inch diameter. Economizer, in bowl cover size No. 54 (.055 inch) drill. Idle bleed, in bowl cover, size No. 58 (.042 inch) drill.

IDLE PORT—Upper port, slot type, length .162 inch, width .030 inch.

IDLE PORT OPENING—Top of port .124 to .128 inch above top edge of valve with valve tightly closed.

SET IDLE ADJUSTMENT SCREW—½ to 1½ turns open. For richer mixture turn screw out. Idle engine 450 rpm., gear shift lever in drive position.

MAIN NOZZLE—Permanently installed. Do not remove.

METERING ROD—Economy step .061 inch diameter. Power step .058 inch diameter.

METERING ROD JET—Size No. 45 (.082 inch) drill.

ACCELERATING PUMP—Diaphragm Type—Vacuum and mechanically operated. Intake check ball seat size .115-.120 inch diameter. Discharge check ball seat size in body .115-.120 inch diameter. Pump bleed in diaphragm housing, size No. 73 (.024 inch) drill. Vacuum passage restriction in body, size No. 46 (.081 inch) drill. Vacuum bleed, to throttle bore, size No. 65 (.035 inch) drill. Pump jet—permanently installed, do not remove.

CHOKE—Manual, interconnected with throttle.

VACUUM SPARK PORT—Slot type, size .125 x .041 inch (2066S-2066SA early production). Bottom of port .026 to .036 inch (2066SA late production). Top of port to be .016 to .026 inch above top edge of valve with valve tightly closed.

PUMP ADJUSTMENT—None.

METERING ROD ADJUSTMENT—See Carburetor Adjustment.

FLOAT LEVEL ADJUSTMENT—See Carburetor Adjustment.

FAST IDLE ADJUSTMENT—See Carburetor Adjustment.

VALVE TIMING

The valve timing procedure described in the 1953 Passenger Car Shop Manual is the same procedure to be used on the Corvette. However, it is necessary, due to the high lift cams, when checking the Corvette to set the dial indicator to .090", then crank the engine until the indicator hand stops moving, at this point the indicator should read zero plus or minus .007".

INTAKE MANIFOLD

The intake manifold is made of cast aluminum and designed to accommodate the three side mounted carburetors. It contains an internal surge tube which connects the three passage ports. The surge tube maintains a balanced idle fuel-air charge to each cylinder as required during engine operation, resulting in smooth and efficient engine operation and increased horsepower.

The basic exhaust manifold design consists of two outlets instead of one, divided by an internal wall at the rear of the heat box. When using the manifold heat control valve, the exhaust gases from the front three cylinders are directed to the heat valve in the heat box. Part of these gases are then directed by the valve to the intake manifold to preheat the incoming charge during warm-up. This portion of the gases then rejoins the original stream to be expelled through the front exhaust pipe, right hand muffler and tail pipe. The exhaust gases from the rear three cylinders are carried away by the rear outlet and expelled through the left hand tail pipe. However, it has been determined that manifold heat control valve operation is neither necessary nor desirable under normal temperature and operating conditions encountered with the Corvette. Consequently a manifold heat shield has been installed between the exhaust and intake manifolds to direct exhaust gases from the front three cylinders away from the intake manifold, thus eliminating preheating of the incoming charge. Also, the heat control valve spring has been reversed so as to hold the valve continuously in a "heat-off" position. If preheating of the incoming charge is desired for extreme cold weather operation, it will be necessary to remove the heat shield and reverse the heat control valve spring.

VALVE ADJUSTMENT

Before adjusting the valve stem to rocker arm clearance, it is extremely important that the engine be thoroughly warmed up to normalize the expansion of all parts. This is very important because the valve clearances will change considerably during the warm-up period. Adjusting the valves during or before this warm-up period will produce clearances which will be far from correct after the engine reaches normal operating temperature.

Tests have shown that valve clearances will vary as much as .005" from a cold check through the normalizing range. To normalize all parts properly, the engine should be run approximately 30 minutes.

Covering the radiator will not materially hasten this normalizing process because even with the water temperature quickly raised to 185°, the rate at which the oil temperature increases or the engine parts become normalized does not change appreciably.

The actual temperature of the oil is not as important as stabilizing the oil temperature. The expansion or contraction of the valves, rocker arm supports, push rods, cylinder head and cylinder block are relative to this oil temperature. Therefore, only after the oil temperature is stabilized do these parts stop expanding and valve clearances cease to change.

1. Remove the upper ignition shield.
2. Remove rocker arm cover attaching bolts and cover.
3. Tighten all manifold bolts (4 center clamp bolts 15-20 ft. lbs. torque; 2 end clamp bolts 25-30 ft. lbs. torque), rocker shaft support nuts and bolts (25-30 ft. lbs. torque) and cylinder head bolts (90-95 ft. lbs. torque) in sequence.
4. Lubricate valve stems with engine oil to insure free movement of valves in their guides.
5. With engine normalized, check the clearance between the rocker arms and the valve stems, adjust valves to obtain the following clearances: Intake .008" Exhaust .020"
6. Install rocker arm cover using a new gasket. Make sure cover seats properly on gasket and tighten retaining bolts. Check for oil leaks and install upper ignition shield.

DISTRIBUTOR POINTS

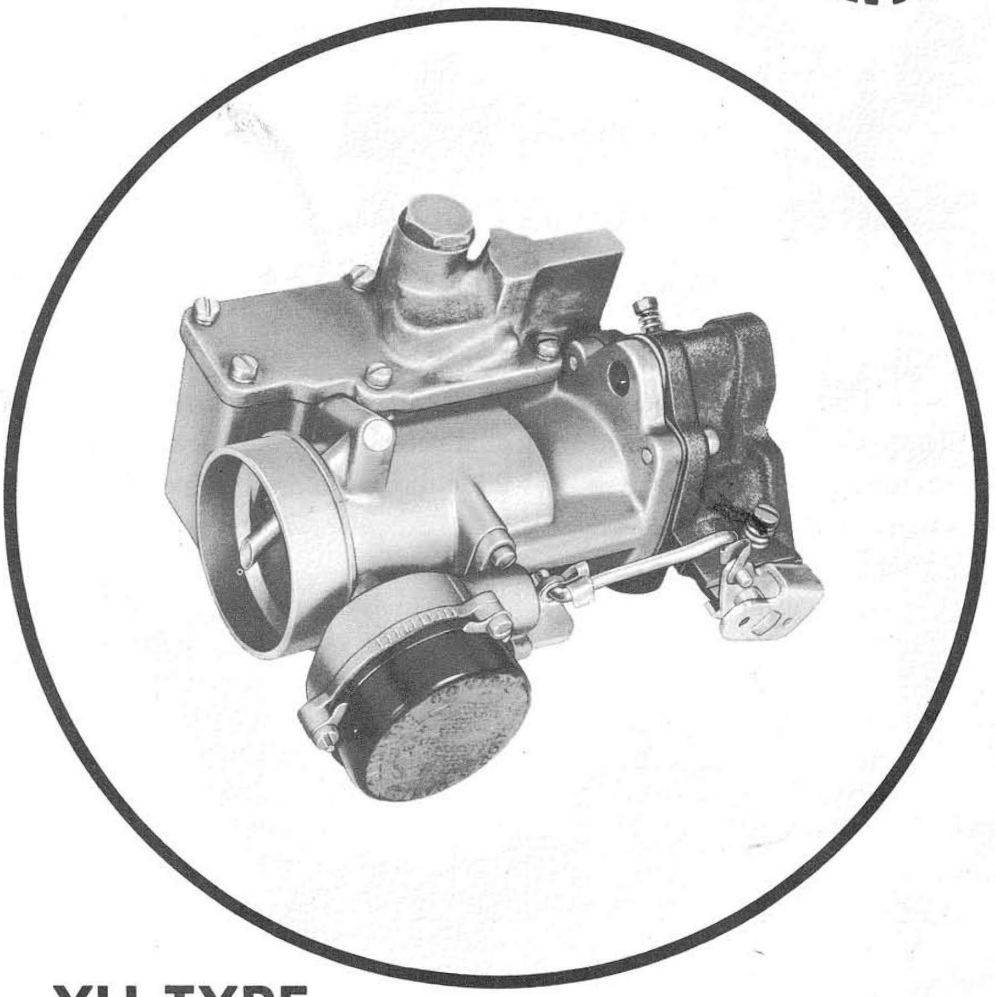
Correct distributor point gap is very important. If the condition of the distributor points is questioned, proceed as follows:

Inspection and Cleaning

1. Remove the upper ignition shield.
2. Remove spark plug wires from distributor cap and examine terminals for corrosion. The wires should be checked for damaged insulation and oil soaked condition.
3. Release the distributor cap clamps, remove cap and lift off rotor. Check cap and distributor rotor for cracks, burned, or pitted contacts.
4. Separate the points and inspect them for pitted or badly burned condition.
5. Clean the points with a breaker point file removing the high spots only. Do not use emery cloth or sandpaper to clean points. If the points do not clean up with a few strokes of the file, they should be replaced as described in following steps 6-10.
6. Loosen the inside terminal nut at the movable point spring and lift the point out.
7. Remove the stationary point lock screw and remove point and arm.
8. Carefully wipe the protective film of oil from the contact points of the new set.
9. Place the new stationary point and arm in position and install the lock screws.
10. Place the movable point on its shaft and position the spring on the terminal behind lock clip and tighten nut securely. Adjust points as described in following steps 11-15.
11. Crank the engine until the distributor point cam follower rests on the peak of the cam.
12. Check the point opening using a feeler gauge. Correct adjustment is .016" for used points and .019" for new points. If necessary to adjust the points, loosen the stationary point lock screw and turn the eccentric screw as necessary. This operation must be performed very accurately because it affects the point dwell or length of time the points remain closed in operation and, in turn, ignition coil performance.
13. Tighten lock screw and recheck point opening.
14. Check breaker arm tension. Crank engine until cam follower is located between cams. Using a distributor point scale, hook end of scale over movable point and pull steadily on the spring scale until the points just start to open. At this point the reading on the scale should be between 19 and 23 ounces. Adjust if necessary by loosening outside terminal nut on distributor and moving spring to give desired tension.
15. Install rotor, place cap on distributor and turn it until it drops into locking position. Clamp the cap in position and install spark plug wires to cap. Make sure that the terminal of the primary wire at the ignition coil and distributor are clean and tight. Replace upper ignition shield.

CARTER

POWER CENTER

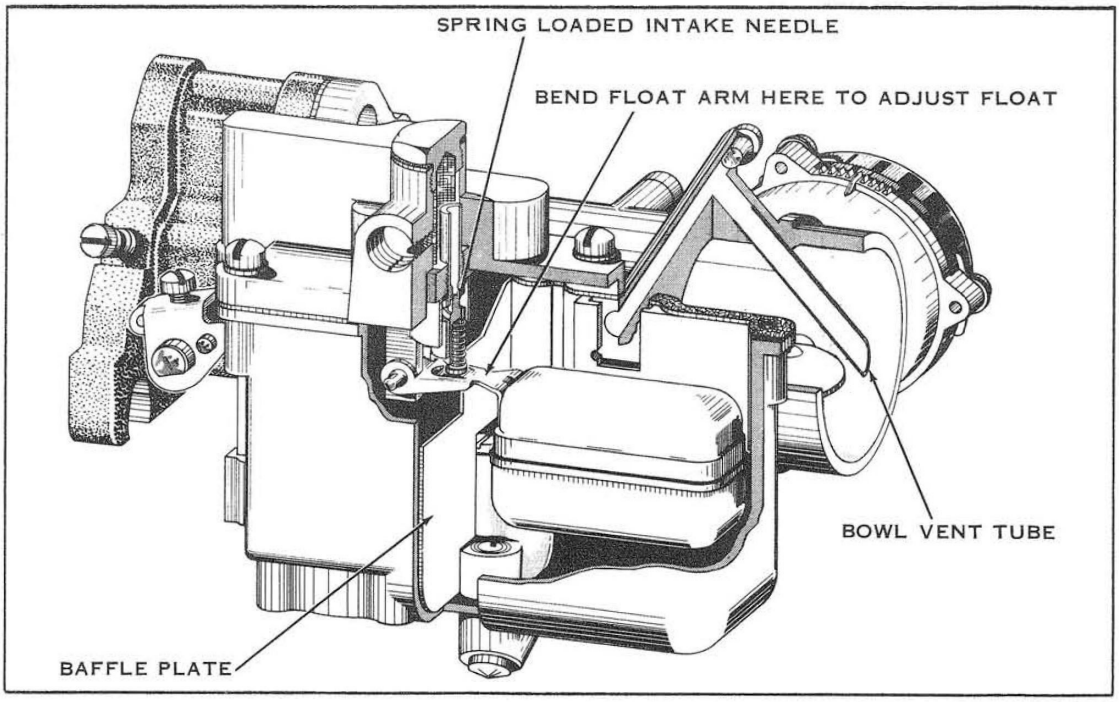


YH TYPE

CARBURETER

CARTER CARBURETOR CORPORATION, ST. LOUIS, MO., U. S. A.

Form 3573



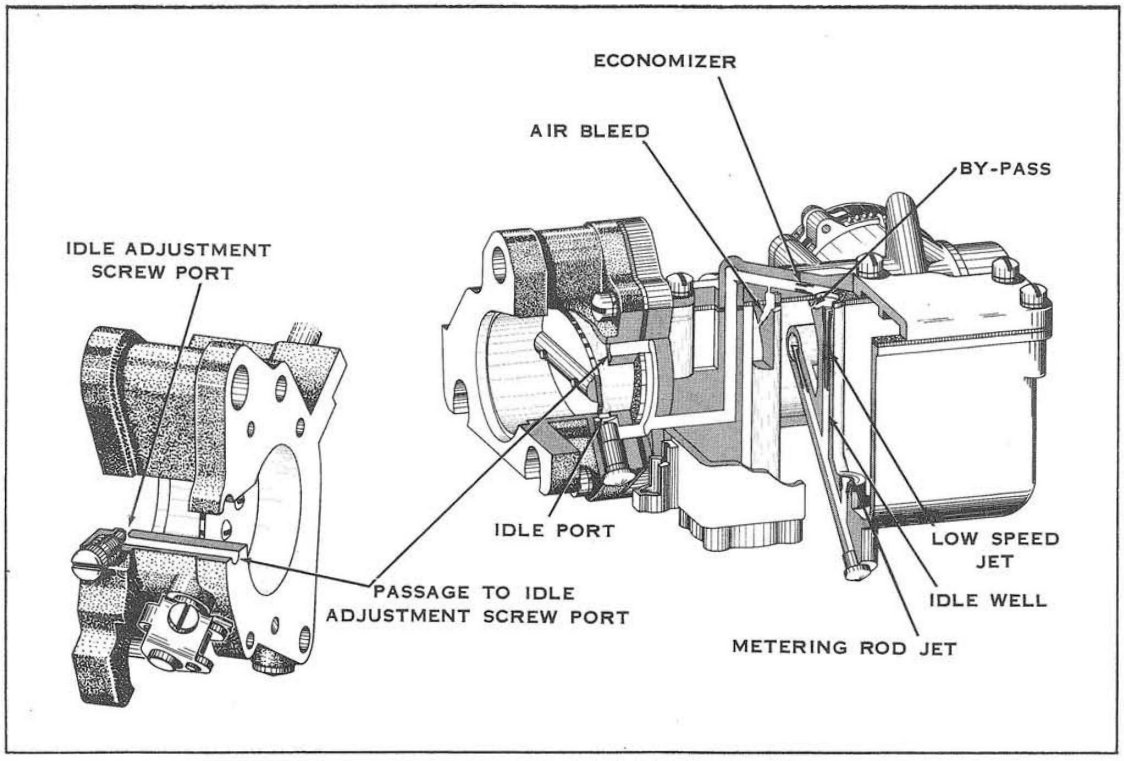
FLOAT CIRCUIT

The purpose of the float circuit is to maintain an adequate supply of fuel at the proper level in the bowl for use by the low-speed, high-speed, pump and choke circuits. The spring loaded intake needle and the fuel baffle plate is designed to provide a stable fuel supply under all operating conditions.

Setting the float to specifications assures an adequate supply of fuel in the bowl for all operating conditions. Float adjustment must be made with the bowl cover gasket removed and the bowl cover held inverted and level at eye height with the free weight of the float resting on the pin in the intake needle. An incorrect float setting will result if the bowl cover is not held level, or the float is depressed when gauging the float setting. Adjust the float by bending the float arm. To avoid placing unnecessary strain on the float do not grasp the float shell when bending the float arm.

Inspect the intake needle and seat, and float assembly for wear. The carbureter bowl and the intake strainer screen should be clean and free of dirt, gum, or other foreign matter.

The bowl is vented to the inside of the air horn. The bowl vent is calibrated to provide proper air pressure above the fuel at all times. To assure a positive seal, always use a new bowl cover gasket when reassembling. An air leak at this point can result in a mileage complaint.



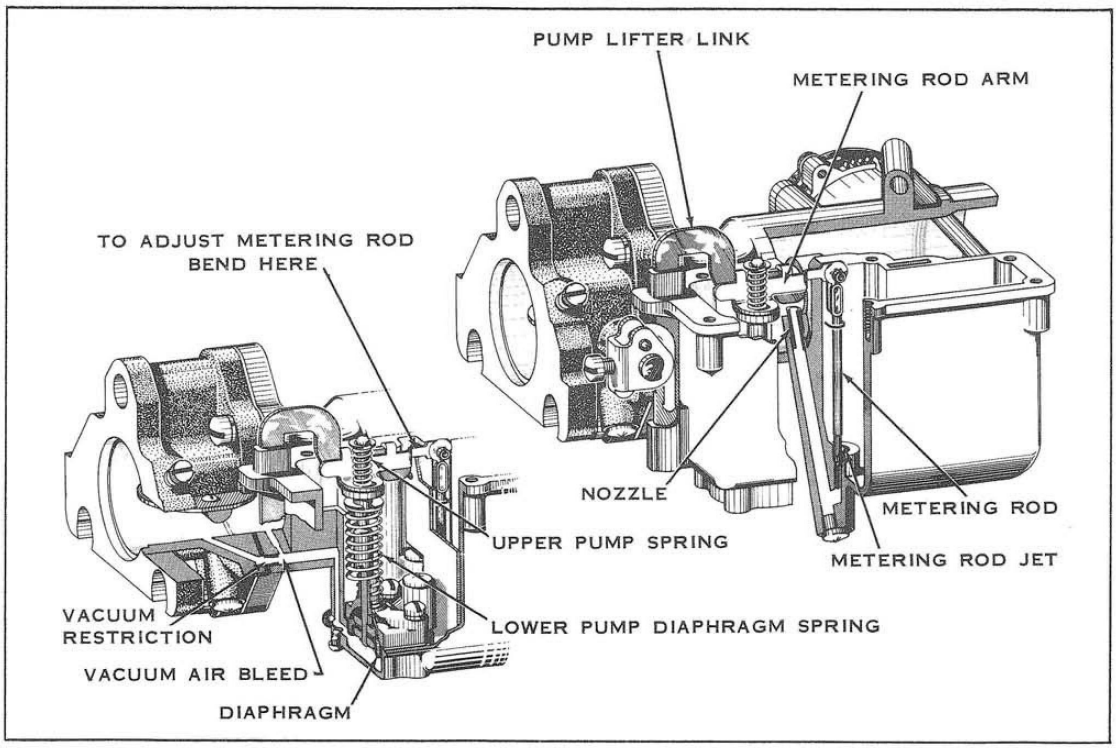
LOW-SPEED CIRCUIT

Fuel for idle and early part throttle operation is metered through the low-speed circuit.

Gasoline enters the idle well through the metering rod jet. The low-speed jet measures the amount of fuel for idle and early part throttle operation. The air by-pass, economizer, and idle air bleed are carefully calibrated and serve to break up the liquid fuel and mix it with air as it moves through the passage to the idle port and idle adjustment screw port. Turning the idle adjustment screw toward its seat reduces the quantity of fuel mixture supplied by the idle circuit.

The idle port is slot shaped. As the throttle valve is opened more of the idle port is uncovered allowing a greater quantity of gasoline and air mixture to enter the carbureter bore.

The by-pass, economizer, idle port, idle adjustment screw port, as well as the bore of the carbureter flange must be clean and free of carbon. Obstructions will cause poor low-speed engine operation. Worn or damaged idle adjustment screws or low-speed jets should be replaced.



HIGH-SPEED CIRCUIT

Fuel for part throttle and full throttle operation is supplied through the high-speed circuit.

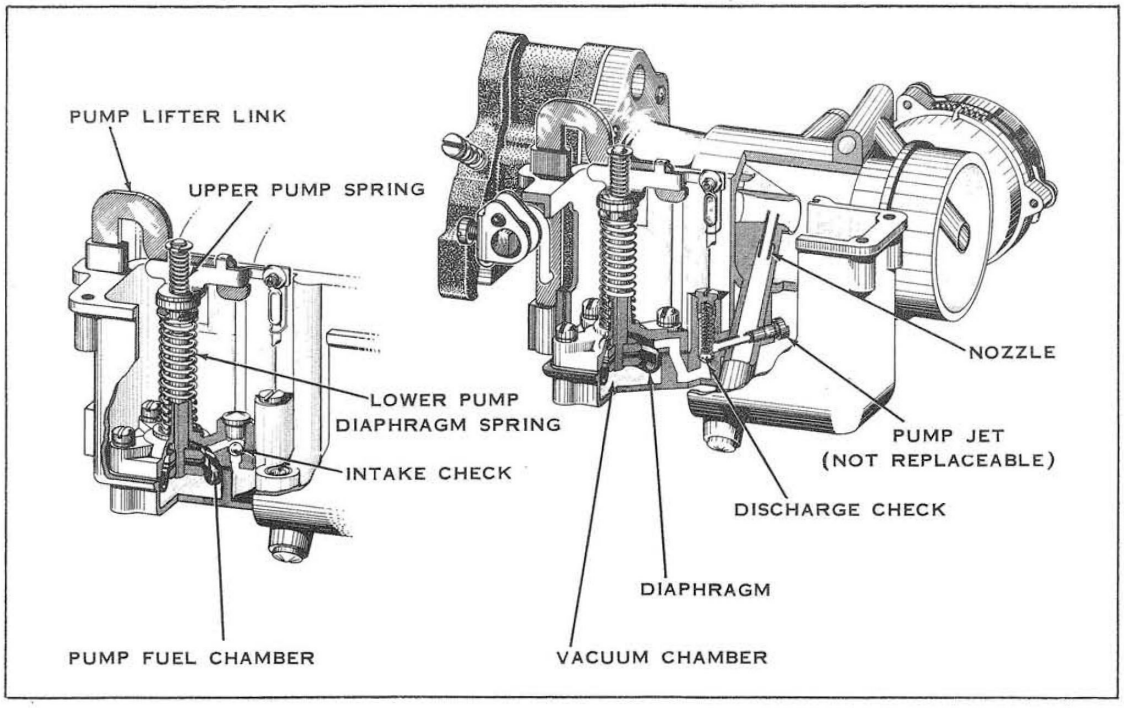
The position of the metering rod in the metering rod jet controls the amount of fuel admitted to the high-speed nozzle. The position of the metering rod is dual controlled, mechanically, by movement of the throttle and by manifold vacuum applied to the diaphragm.

During part throttle operation manifold vacuum pulls the diaphragm assembly down holding the metering rod arm against the pump lifter link. Movement of the metering rod will then be controlled by the pump lifter link, which is connected to the throttle shaft. This is true at all times that the vacuum under the diaphragm is strong enough to overcome the tension of the lower pump diaphragm spring. The upper pump spring serves as a bumper upon deceleration and a delayed action spring on acceleration.

Under any operating condition, when the tension of the lower pump diaphragm spring overcomes the pull of vacuum under the diaphragm, the metering rod will move toward the wide open throttle or power position.

The restriction and air bleed in the vacuum passage, provide a lower and more uniform vacuum condition in the chamber below the diaphragm.

The main nozzle is permanently installed and must not be removed in service.



PUMP CIRCUIT

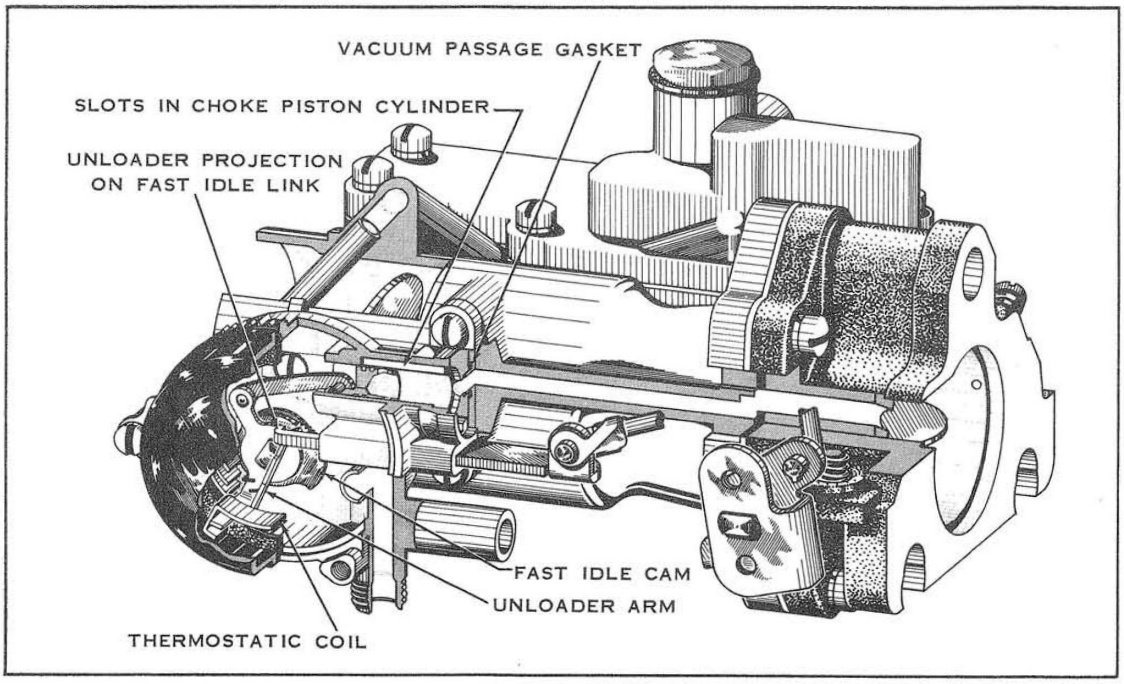
The accelerating pump circuit provides a measured amount of fuel, which is necessary to insure smooth engine operation for acceleration at speeds below approximately 30 MPH.

Accelerating pump action is controlled both mechanically and by manifold vacuum in the same manner as the metering rod. When the throttle is closed, the diaphragm moves downward and fuel is drawn into the pump fuel chamber through the intake check. The discharge check is seated at this time to prevent fuel from the nozzle passage being drawn into the pump chamber. When the throttle is opened, the diaphragm moves upward forcing fuel out through the discharge passage, past the discharge check, and out of the pump jet, which directs the fuel up the nozzle passage and out the end of the nozzle. When the diaphragm moves upward, the intake check is closed preventing fuel from being forced back into the bowl.

If the throttle is opened suddenly, the upper pump spring will be compressed resulting in a smoother pump discharge of longer duration.

Manifold vacuum is applied to the underside of the diaphragm at all times the engine is in operation. When manifold vacuum decreases to the point where the lower pump diaphragm spring overcomes the pull of vacuum, the diaphragm moves upward and a pump discharge results.

The pump jet is pressed into the casting during manufacture, and must not be removed in service. Be sure the diaphragm is in good condition and the intake and discharge checks are free of lint or other foreign matter.



CLIMATIC CONTROL CHOKE CIRCUIT

The climatic control circuit provides a correct mixture necessary for quick cold engine starting and warm up.

When the engine is cold, tension of the thermostatic coil spring holds the choke valve closed. When the engine is started, air velocity against the offset choke valve causes the valve to open slightly against the thermostatic spring tension. Intake manifold vacuum applied to the choke piston also tends to pull the choke valve open. The choke valve assumes a position where tension of the thermostatic spring is balanced by the pull of vacuum on the piston and force of air velocity on the offset valve.

When the engine starts, slots located in the sides of the choke piston cylinder are uncovered allowing intake manifold vacuum to draw warm air heated by the exhaust manifold, through the climatic control housing. The flow of warm air in turn heats the thermostatic spring and causes it to lose some of its tension. The thermostatic spring loses its tension gradually until the choke valve reaches full-open position.

If the engine is accelerated during the warm-up period, the corresponding drop in manifold vacuum allows the thermostatic spring to momentarily close the choke, providing a richer mixture.

During the warm-up period it is necessary to provide a fast idle speed to prevent engine stalling. This is accomplished by a fast idle cam connected to the choke shaft. The fast idle link attached to the throttle lever contacts the fast idle cam and prevents the throttle valve from returning to a normal warm engine idle position while the climatic control is in operation.

If during the starting period the engine becomes flooded, the choke valve may be opened manually to clean out any excessive fuel in the intake manifold. This may be accomplished by depressing the accelerator pedal to the floor mat and engaging the starter. The unloader projection on the fast idle link will contact the unloader arm on the choke shaft and in turn partially open the choke valve.

EXPLANATION OF CIRCUITS CARTER YH HORIZONTAL CLIMATIC CONTROL CARBURETER

The Carter Model YH carbureter may be compared with a Carter YF downdraft carbureter with the circuits rearranged to operate in a horizontal or sidedraft position. It has five (5) conventional circuits, as have been used in previous carbureters. They are:

Float Circuit
Low-Speed Circuit
High-Speed Circuit
Pump Circuit
Climatic Control (Choke) Circuit

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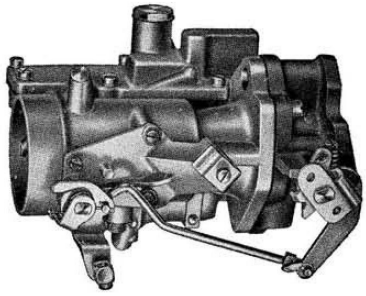
Three Carbureters
Per Engine



CHEVROLET
CORVETTE
1953-1955

Casting Number 1082 on Face of Flange

YH Horizontal **Carbureters Nos. 2066S-2066SA**

CARBURETER SPECIFICATIONS

For Chevrolet 6 Cylinder Engine: 3-9/16 Inch Bore, 3-15/16 Inch Stroke

Dimensions: Flange size, 1¼ inch 3 bolt.
Primary venturi, 11/32 inch I. D.
Secondary venturi, 11/16 inch I. D.
Main venturi, 1-5/16 inch I. D.

Float Level: See adjustments.

Vents: Outside, none. Inside, balance vent tube to air horn ahead of choke valve.

Gasoline Intake: Spring loaded needle. Size No. 46 (.081 inch) drill in needle seat.

Low Speed Jet Tube: Jet, size No. 70 (.028 inch) drill. By-pass in body, size .0492 inch diameter. Economizer, in bowl cover, size No. 54 (.055 inch) drill. Idle bleed, in bowl cover, size No. 58 (.042 inch) drill.

Idle Port: Upper port, slot type, length .162 inch; width .030 inch.

Idle Port Opening: Top of port to be .124 to .128 inch above top edge of valve with valve tightly closed.

Set Idle Adjustment Screw: ½ to 1½ turns open. For richer mixture turn screw out. Idle engine at 450 r.p.m. gear shift lever in Drive position.

Main Nozzle: Nozzle is installed permanently. Do not remove.

Metering Rod: Economy step, .061 inch diameter. Power step, .058 inch diameter.

Metering Rod Jet: Size No. 45 (.082 inch) drill.

Metering Rod Setting: See adjustments.

Accelerating Pump: Diaphragm type, vacuum and mechanically operated. Pump discharges into nozzle passage. Intake check ball seat, size .115-.120 inch diameter. Discharge check ball seat, in body, size .115-.120 inch diameter. Pump bleed, in diaphragm housing, size No. 73 (.024 inch) drill. Vacuum passage restriction, in body, size No. 46 (.081 inch) drill. Vacuum bleed, to throttle bore, size No. 65 (.035 inch) drill. **Pump jet is permanently installed, do not remove.**

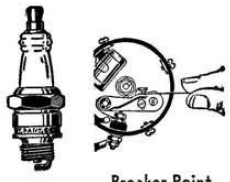
Pump Adjustment: None.

Choke: Manual, interconnected with throttle.

Vacuum Spark Port: Slot type, size .125 x .041 inch. (2066S-2066SA early prod.) Bottom of port to be .026 to .036; (2066SA late prod.). Top of port to be .016 to .026 inch above top edge of valve with valve tightly closed.

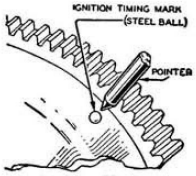
Motor Tune-Up—Be Accurate!

CAUTION: Change worn or leaky flange gaskets. Tighten manifold bolts and test compression before adjusting carbureter.



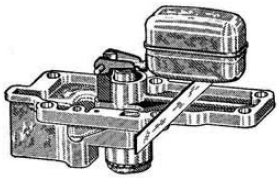
Spark Plug Gap .035"

Breaker Point Setting .018"

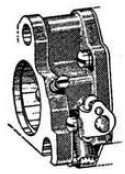


Ignition Timing Breaker Points to Open: T. D. C. (When Steel Ball on Flywheel is in Line with Pointer)

Valve Setting (Hot) Intake .010" Exhaust .020"



Float Setting ⅜ Inch (Use gauge T109-80)



Idle Adjustment Screw Setting ½ to 1½ Turns Open

CARBURETER ADJUSTMENTS

Float Adjustment: With gasket removed, bowl cover assembly inverted and float resting on pin in seated needle, the distance from the bowl cover to the top of float should be ⅜ inch (gauge T109-80). Do not depress float lip against spring loaded pin in needle, but let float rest of its own weight. Adjust by bending float lever. Float setting must be checked with bowl cover held at eye height in a level position.

Float Drop: With bowl cover assembly held in upright position, the distance between float seam (at free end) and bowl cover should be 2". Adjust by bending stop tab on float arm.

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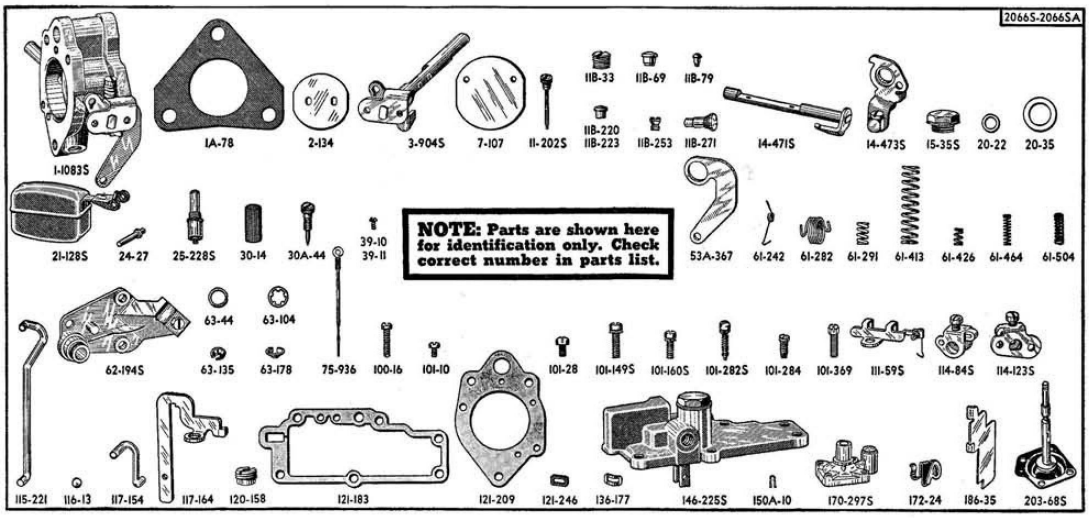
Metering Rod Adjustment: This adjustment is important and should be checked each time the carbureter is reassembled. Insert gauge (Tool T109-104) in place of metering rod, seating tapered end of gauge in metering rod jet. Hold gauge vertical to insure seating in jet. With throttle valve tightly closed, press down on diaphragm shaft until metering rod arm contacts lifter link at diaphragm stem. With diaphragm shaft held in this position, metering rod pin must rest lightly on metering rod gauge. To adjust, bend metering rod arm. Use bending tool T109-22.

Fast Idle Adjustment: With choke valve held tightly closed, there should be .020 inch (gauge T109-29) clearance between throttle valve and bore of carbureter (side opposite idle port). Adjust by bending offset portion of choke connector link (use bending tool T109-213).



Chevrolet 1953-1955—Carbureters Nos. 2066S-2066SA

WHEN SERVICING, USE GASKET ASSORTMENT No. 248; REPAIR PACKAGE No. 1771

PART NAMES IN CAPITAL LETTERS, LISTED BELOW, INDICATE CONTENTS OF REPAIR PACKAGE

Part No.	PART NAME
1-1083S	Body flange assembly
1A-78	FLANGE GASKET
2-134	Throttle valve
3-858S	Throttle shaft and lever assy. (2066S) (Sup. by 3-904S)
3-904S	Throttle shaft and lever assembly
7-107	Choke valve
11-202S	LOW SPEED JET ASSEMBLY
11B-33	Pipe plug
11B-69	Rivet plug
11B-79	Rivet plug (3)
11B-220	DIAPHRAGM HOUSING RIVET PLUG
11B-223	Nozzle passage rivet plug
11B-253	Pump discharge check plug
11B-271	Idle port rivet plug
14-471S	Choke shaft and lever assembly
14-473S	Choke lever assembly
15-35S	Strainer nut assembly
20-22	Needle seat gasket
20-35	BOWL STRAINER GASKET
21-128S	Float and lever assembly
24-27	Float lever pin
25-228S	NEEDLE, PIN, SPRING AND SEAT ASS'Y
30-14	BOWL
30A-44	Idle adjustment screw
39-10	Choke valve attaching screw (2)
39-11	Throttle valve attaching screw (2)
53A-367	Fast idle arm
61-242	Metering rod spring
61-282	Choke spring
61-291	Throttle lever adjusting screw spring
61-413	PUMP DIAPHRAGM SPRING
61-426	Idle adjustment screw spring
61-464	PUMP DISCHARGE CHECK SPRING
61-504	UPPER PUMP SPRING
62-194S	Choke tube bracket assembly
63-44	Choke lever retainer ring
63-104	Throttle shaft retaining ring

Part No.	PART NAME
63-135	Upper pump spring retainer
63-178	Diaphragm spring retainer
75-936	METERING ROD—STANDARD
100-16	Throttle lever adjusting screw
101-10	Wire clamp screw
101-28	Throttle shaft arm attaching screw
101-149S	Body flange attaching screw and washer assembly (3)
101-160S	Bowl cover attaching screw and washer assembly (6)
101-282S	Diaphragm housing attaching screw and washer assembly (4)
101-284	Choke tube bracket attaching screw (3)
101-361	Choke tube clamp attaching screw (2066S) (Sup. by 101-369)
101-369	Choke tube clamp attaching screw
111-59S	Metering rod arm assembly
114-84S	THROTTLE SHAFT ARM ASSEMBLY
114-123S	Throttle shaft arm assembly (For throttle linkage) (2066SA)
115-221	Choke connector rod
116-13	PUMP INTAKE AND DISCHARGE CHECK BALL (2)
117-154	THROTTLE SHAFT ARM CONNECTOR LINK
117-164	PUMP LIFTER LINK
120-158	METERING ROD JET
121-183	BOWL COVER GASKET
121-209	BODY FLANGE GASKET
121-246	PUMP LIFTER LINK GASKET
136-177	Pump lifter link washer
146-225S	Bowl cover and strainer assembly
150A-10	Pin spring (2)
170-297S	Pump diaphragm housing assembly
172-24	Choke connector rod retainer
186-35	Fuel bowl baffle plate
203-53S	Pump diaphragm assembly (2066S) (Sup. by 203-68S)
203-68S	PUMP DIAPHRAGM ASSEMBLY

NOTE: Figures in parentheses indicate number of pieces used in one carbureter. Where no figure is shown, only one is used.

1954 CHEVROLET CORVETTE
IDLE SPEED, IDLE MIXTURE AND THROTTLE LINKAGE ADJUSTMENTS

THE PURPOSE OF THIS PROCEDURE IS TO SYNCHRONIZE THE THROTTLE VALVE POSITIONS AND ADJUST THE IDLE MIXTURES OF THE FRONT, CENTER AND REAR CARBURETORS.

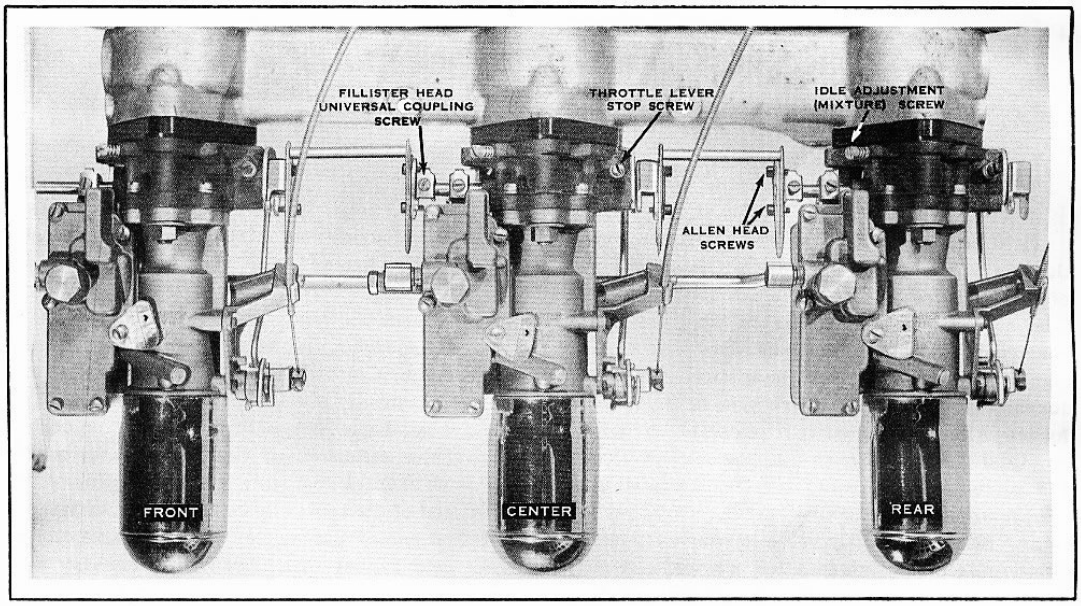


Figure 1

PRELIMINARY LINKAGE ADJUSTMENTS

To synchronize the three throttle valves, the throttle linkage must be adjusted until all three valves are seated in the bores of the carburetors. The following is the adjustment and checking procedure:

(1) Carburetor preliminary adjustments should be made with ignition off and all three choke valves in wide open position.

(2) Remove the three throttle lever stop screws and springs.

(3) Loosen the fillister head screws on the carburetor shaft universal couplings which secures the couplings to the throttle shafts at the forward end of the rear carburetor and the forward end of the center carburetor.

(4) Snap accelerator pedal several times to allow the couplings to seek their natural position so there is no end pressure on the throttle valves. Then tighten the two fillister head coupling screws.

(5) Loosen the two Allen head screws at the front end of rear carburetor. NOTE: To provide clearance for throttle valve adjustment, the holes in the flexible couplings are larger than the diameter of the Allen screw threaded section. The accelerator rod pull back spring assures positive closing of the throttle valve in center carburetor.

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(6) With the right hand, manually close the throttle valve in the rear carburetor. Hold valve tightly closed and tighten the two Allen screws on the flexible coupling at the front of rear carburetor.

(7) Loosen two Allen head screws at front end of center carburetor.

(8) With left hand, manually close throttle valve in front carburetor. Hold valve tightly closed and tighten the two Allen screws on the flexible coupling on the front of center carburetor.

CHECKING TO PERFECT SYNCHRONIZATION OF ALL THREE THROTTLE VALVES

(1) Check the closing off of center and rear throttle valves by twisting (closing) the rear lever of rear carburetor. There should not be any visible sign of rotating motion on the front end of rear carburetor throttle shaft. See Fig. 2. Any sign of rotation is a clear indication of need for correction. NOTE: If correction is necessary; loosen Allen screws on rear of center carburetor. Hold throttle valve in rear carburetor closed and tighten Allen screws. If rotation is still visible, loosen Allen screws at front of rear carburetor. Hold the throttle valve in rear carburetor tightly closed and tighten Allen screws.

(2) Check closing of center and front throttle valves by twisting (closing) the front lever of front carburetor. There should not be any visible sign of rotating motion on the rear end of front carburetor throttle shaft. Any sign of rotation is a clear indication for need of correction. NOTE: If correction is necessary; loosen Allen screws on rear of front carburetor. Hold throttle valve in front carburetor closed and tighten Allen screws. If rotation is still visible, loosen Allen screws on front of center carburetor. Hold the throttle valve in front carburetor tightly closed and tighten Allen screws.

(3) Check the center throttle valve synchronizing: Disconnect the accelerator rod at center carburetor. Close the throttle valve in rear carburetor manually at rear end of rear carburetor. Hold closed and press throttle lever on center carburetor and check for rotation of center throttle shaft at front end. Any visible rotation of the front end of the center throttle shaft is an indication that center carburetor throttle valve closes after rear carburetor. Correct if necessary with the four (4) Allen screws between center and rear carburetors.

(4) Close the throttle valve in front carburetor manually at front end of front carburetor. Hold closed and press throttle lever on center carburetor and check for rotation of center throttle shaft at front end. Correct if necessary with the four (4) Allen screws between front and center carburetors.

(5) Connect accelerator rod to throttle lever.

IDLE SPEED AND MIXTURE ADJUSTMENT

Use Tachometer and Vacuum Gauge

(1) Assemble throttle lever stop screw and spring on center carburetor only. Adjust so throttle valves are slightly open. Set idle adjusting (mixture) screws three-fourths turn open. Start engine and run until warm. Pull hand brake on and move transmission selector lever to park

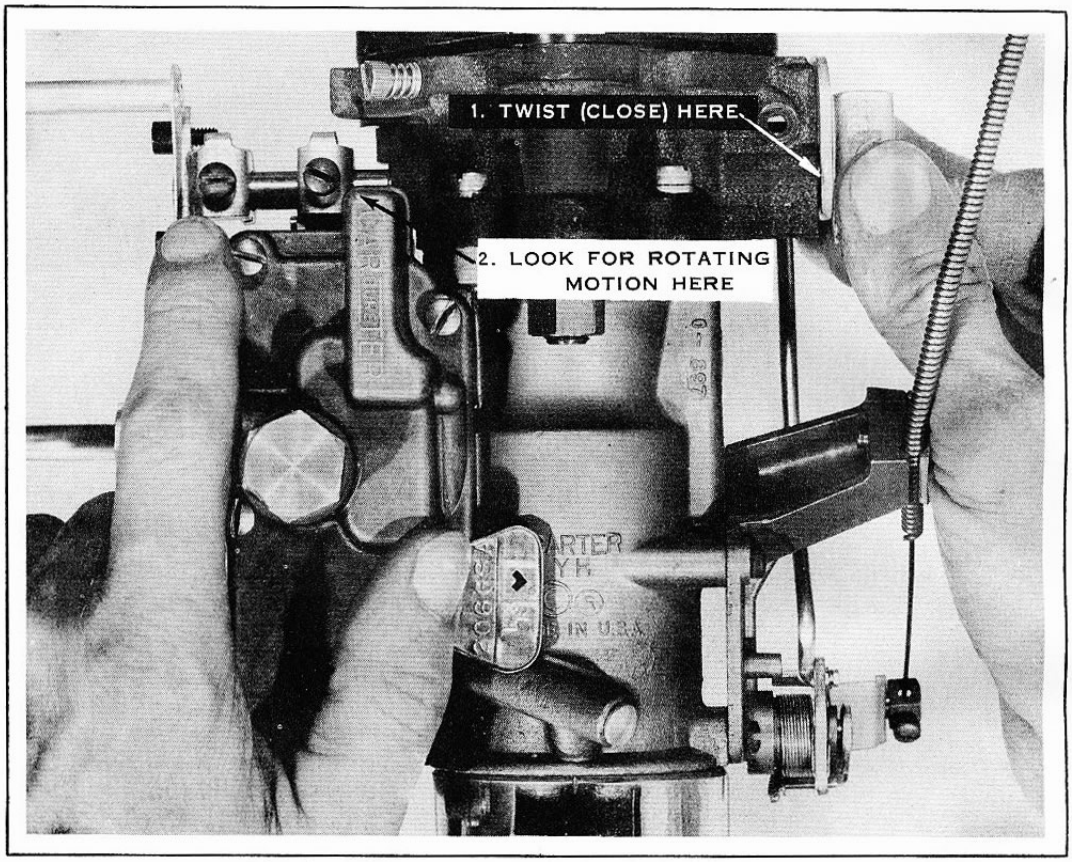

Figure 2

Checking to determine if throttle valve is seated

position. Adjust throttle lever stop screw on center carburetor until engine runs approximately 500 RPM.

(2) Turn idle adjusting screw (mixture) on the rear carburetor 1/8 turn right or left - no more, whichever increases the RPM or manifold vacuum. If no change, leave adjustment at 3/4 turn. Repeat same with center and front carburetors. If RPM is changed, correct speed adjustment on center carburetor. Now start again with the rear carburetor, center and front. This adjustment may have to be repeated several times.

(3) Assemble throttle lever stop screws and springs in front and rear carburetors. Turn front and rear throttle lever stop screw until engine speeds up slightly, then back off screw at least one full turn. The center throttle lever stop screw is the only one which should control the idle speed of the engine.