INSTALLATION

This Service Manual has been prepared to include all Model 2110 dual downdraft carburetors.

New engineering advancements plus those time-proven features have made these models a dependable and efficient carburetor. One of the most noticeable features is the "Booster Venturi" Nozzle Bars, which not only minimizes percolation but supplies the venturi with additional strength for more positive distribution during all phases of engine operations.

Instructions and suggestions in this Service Manual should prove a helpful guide to efficient carburetor service.

MODEL 2110-EEC
MODEL 2110-EE
MODEL 2110-FF
MODEL 2110-G

CARBURETOR MODEL 2110 SERIES
DESCRIPTION

1. DESIGN

Holley Carburetor Model 2110 Series are all dual downdraft carburetors. These dual carburetors can be considered as two carburetors built side by side into one unit, but utilizing the same carburetor air inlet. Each side has its own idle system, main metering system, and throttle plate.

All air bleeds and vents are supplied with filtered air from the air cleaner, giving added protection against the accumulation of foreign matter in the carburetor passages.

The main jets and idle tubes are individually flow tested to insure precise calibration, and meter all fuel used during part throttle conditions. The accelerating pump system provides the added fuel for acceleration. An "override" spring feature of the accelerating pump, prolongs the discharge of fuel for smoother acceleration. The added supply of fuel necessary for high speed or full power operation is delivered by a fully automatic power enrichment system actuated by pressure differential acting across the economizer diaphragm.

The booster venturi nozzle bars minimize percolation effects by providing a larger main well with a long vertical rise. Percolation occurs on hot days after the engine has been shut down. The fuel in the bottom of the main well is heated, forming vapor bubbles which trap raw fuel between them as they rise. This action drains the fuel from the carburetor and deposits raw fuel in the intake manifold, making it difficult to start the engine. By incorporating larger main wells and longer passages, the bubbles break as they rise. No liquid fuel, therefore, is carried into the horizontal passage leading to the main discharge nozzle.

2. APPLICATION

The application for these carburetors are as follows:

- 2110-EEC Passenger Cars with Automatic Choke
- 2110-EE Trucks
- 2110-FF Trucks
- 2110-G Trucks

NOTE

Carburetor part numbers and other information applicable to specific vehicles are listed in the Holley Carburetor Parts Catalog, under the specific user.
3. **MAJOR SUBASSEMBLIES**

Carburetor Model 2110 Series is composed of three major subassemblies: the air horn assembly, the main body assembly, and the throttle body assembly. The air horn contains the choke mechanism, the balance tube for venting the float chamber to the carburetor air inlet, and the float assembly which actuates the fuel inlet valve. The die cast main body contains the float chamber, the accelerating pump, the diaphragm type power valve, and the removable fuel metering parts, such as the main jets, idle tubes, and booster venturi nozzle bars. The cast iron throttle body contains the throttle plates and the idle speed and mixture adjusting screws. Carburetors used with automatic transmission engines have a bracket fastened under the air horn screws on which to mount the dashpot assembly. Model 2110-EE and 2110-FF Carburetors have a choke bracket or a throttle control bracket. Carburetor Model 2110-EEC has an automatic choke which is an integral part of the carburetor. Model 2110-G has a built-in Centri-Vac governor.

**OPERATION**

To meet the requirements of modern automotive engines, the carburetor must supply the proper fuel-air mixture during all phases of operation. The Holley Carburetor Model 2110 Series, to provide the correct mixture, is equipped with four basic metering systems. They are the idle system, the accelerating pump system, the main metering system, and the power enrichment system. These four systems are individually calibrated to deliver an economical mixture for normal cruising conditions; a richer mixture when high power output is desired, and a still richer mixture for smooth idle and low speed performance, also the accelerating pump provides fuel for instant acceleration.

In addition, there is a fuel inlet system, which provides the four basic metering systems with a constant supply of fuel, and also a choke which provides a means of temporarily enriching the mixture to aid in starting and running a cold engine.

When the engine is running, differences in air pressure within the carburetor provide the proper discharge of fuel for the various engine speed and load conditions, as explained in the following paragraphs. In the explanation of the basic fuel metering systems, the air in the carburetor float chamber will be considered as being at normal atmospheric pressure. It may actually be at a pressure very slightly less than atmospheric, due to the restriction of the air flow through the air cleaner. However, to simplify the explanation of the function of the fuel metering systems, this factor will be disregarded and the pressure will be considered as being atmospheric.

1. **FUEL INLET SYSTEM**

All of the fuel, for the four basic metering systems, enters the carburetor through the fuel inlet valve. This valve is frequently referred to as the fuel inlet needle and seat assembly. The amount of fuel entering the carburetor is determined by the amount of space between the tip of the needle and its seat. Movement of the needle in relation to the seat is controlled by the float and lever assembly. Movement of the float and lever assembly is in turn regulated by fluctuations in the fuel level. Even a slight drop in the fuel level causes the lowering of the float to open the needle valve, allowing more fuel to enter the float chamber. When the fuel in the float chamber reaches a specified level, the needle valve is forced upward by action of the float thus restricting
the flow of fuel. Sufficient fuel to replace the fuel that is used will then be the only fuel admitted. Thus, any change in the fuel level, causes a corresponding movement in the float, opening or closing the fuel inlet needle valve to immediately restore the proper fuel level. The specified level of fuel is maintained because the four basic fuel metering systems are calibrated to deliver the proper mixture only when the fuel is at the level.

2. CHOKE

The Model 2110 Truck Carburetors are equipped with a manual choke, the Model 2110-EEC Passenger Carburetors are equipped with an automatic choke. The choke supplies the richer fuel-air mixture required for starting and operating a cold engine. Most of the vaporized fuel from the carburetor condenses to a liquid upon contact with the cold surfaces of the intake manifold. This fuel in liquid form burns too slowly and incompletely in the cylinders, causing loss of power and stalling. The choke plate, which is closed during the warm-up and choking period, confines the manifold vacuum below the plate. This greater vacuum causes both the main metering and idle system to discharge fuel into cylinders. Sufficient fuel is then supplied to the cylinders.

The automatic choke is mounted on the air horn and is linked to the choke shaft. It controls the air flow into the carburetor.

The bi-metallic thermostat spring in the choke control mechanism will expand when cold, loosening and unwinding its coils. When warm, it will contract, winding the coils tighter. When the engine is cold, the thermostat spring expands, holding the choke plate in the closed position. When the engine is started, manifold vacuum acts directly on the choke plate, and a vacuum piston located in the choke housing, immediately moving against the tension of the thermostat spring to partially open the choke plate to prevent stalling. The choke shaft does not pass through the center of the choke plate. Instead, it is offset, thus exposing a much larger area at one side of the closed choke plate to manifold vacuum. When the engine is started or at idle, manifold vacuum is not sufficiently strong to open the choke plates, but the impact of air against the choke plate partially opens the plate.

Manifold vacuum channeled through a passage in the choke control mechanism acts to draw the choke vacuum piston downward, thus exerting another opening force upon the choke plate. These two features allow enough air to enter the engine to enable it to run smoothly.

As the engine continues to run, the vacuum acting on the choke vacuum piston draws air from under the intake manifold through the heat tube in the manifold where the air is warmed by the engine heat, and then through the thermostat housing where the air warms the thermostat spring, causing it to contract. This gradually decreases the tension of the thermostat spring as manifold temperature rises, permitting the vacuum acting on thechoke vacuum piston to further open the choke plate. The air then flows through the manifold vacuum passage in the carburetor and is exhausted into the air stream in the throttle body.

When the engine reaches its normal operating temperature, the thermostat spring no longer exerts an opposing tension on the choke vacuum piston, allowing the vacuum piston to pull the choke plate to the full open position.

In the full open position the vacuum piston is in its lowest position in the cylinder. Slots in the cylinder wall permit sufficient air to bleed past the piston and into the intake manifold to allow a continual flow of warm air to pass through the thermostat housing. This keeps the thermostat spring warm and the choke plate fully open until the engine is shut down and allowed to cool.

During the warm-up period, the air flow past the partially opened offset choke plate acts upon the plate in much the same manner as manifold vacuum does upon starting. As air flow increases with increased engine speed, the engine requires less choking and the force of the increased air flow holds the choke plate closer to the open position. The offset choke plate, vacuum piston, and thermostat spring are engineered to provide the correct degree of choking for all conditions of engine speed, power output, and temperature.

The choke lever at the carburetor actuates a fast idle cam during choking. Designed to increase the idle rpm for smoother running when the engine is cold, the fast idle cam has a series of steps on one edge. As the choke lever is moved through its range of travel from the closed position to the fast idle cam rotates, presenting successive steps to a throttle stop screw. Each step permits a slower idle rpm as engine temperature rises and choking is reduced.
If the engine should approach a stall at any time during the warm-up period, manifold vacuum will become weak. The tension of the thermostat spring then overcomes the reduced force acting on the vacuum piston and the choke plate will be moved toward the closed position, providing a richer mixture to allow the engine to "catch" and run smoothly again.

**NOTE**

Inasmuch as this dual carburetor has two identically functioning barrels, only one side will be considered in the following explanations of the four basic fuel metering systems.

![Automatic Choke Diagram]

3. **IDLE SYSTEM**

At idle and low speeds, the engine does not draw sufficient air through the venturi to create a vacuum strong enough to operate the main metering system. Because of the almost closed throttle plates which greatly restrict air flow into the manifold at idle and low speeds, manifold vacuum is high. This high manifold vacuum provides a pressure differential which operates the idle system.

At idle, the greatly reduced pressure area below the throttle plates causes the fuel to flow from the float chamber through the idle system. From the float chamber, the fuel proceeds through the main jet into the main well, and then into the idle tube. The fuel moves upward through the idle tubes and flows through holes in the side of the head of the tube into the horizontal channel of the nozzle bar. The calibrated restriction, in the lower tip of the idle tube, meters the flow of fuel into the idle system. Air is added to the raw fuel by means of the idle air bleed in the horizontal channel. The booster venturi is circular and the fuel can flow through the channels on either side. After leaving the nozzle bar, the fuel-air mixture continues down the idle passage in the throttle body past the idle transfer holes which act as additional air bleeds when the throttle plate is in the curb idle position. The fuel then passes through the idle discharge hole into the strong manifold vacuum below the throttle plates. The idle discharge hole is equipped with an idle adjusting needle to control the mixture delivered at idle.

During off idle operation, the throttle plate is moved slightly past the idle transfer holes, causing them to cease functioning as air bleeds, and begin to discharge fuel because of being exposed to manifold vacuum. As the throttle plate is opened still wider and the engine speed increases, the air flow through the carburetor is also increased. This creates a pressure differential in the venturi strong enough to bring the main metering system into operation. The flow from the idle system tapers off as the main metering system begins discharging fuel. The two systems are engineered to provide a smooth even transition from idle to cruising speeds.
4. ACCELERATING PUMP SYSTEM

As the throttle opening is suddenly increased for acceleration, the air flow through the carburetor responds almost immediately. Since fuel, however, is heavier than air, there is a brief interval before fuel flow responds to the increase in the throttle opening. During that short period, since the desired balance of fuel and air cannot be maintained by the other fuel metering systems, the accelerating pump becomes functional, supplying fuel until the other metering systems can provide the proper mixture.

The accelerating pump, connected to the throttle lever by the pump link, is actuated by throttle movement. When the throttle is moved toward the closed position, the pump piston is raised by the linkage, charging the accelerating pump well with fuel. This upward movement of the piston draws fuel from the float chamber through the pump inlet and into the pump well. The pump inlet check valve opens to permit fuel to enter the pump well and closes to prevent a reverse flow of fuel when the pump is in operation. As the throttle is opened, the pump rod is drawn downward by the pump link. When the pump rod moves downward, the horizontal arm in its upper end slides down in the slot in the piston stem, compressing the pump spring. This over-riding feature of the pump discharge valve provides a prolonged, even discharge of fuel, for smooth acceleration. The pressure of the compressed spring moves the pump piston downward. This forces the fuel, in the bottom of the pump well, out through the pump discharge passage, raising the pump discharge needle valve. The fuel flows around the needle and is metered through the calibrated pump discharge nozzle into the air stream entering the venturi. The pump discharge valve prevents the syphoning of fuel from the pump well at high speeds, also prevents air from entering the pump chamber on the loading stroke.

A larger or smaller accelerating pump discharge, to compensate for climatic conditions, can be obtained by varying the position of the pump link pin in the holes provided in the throttle lever.

5. MAIN METERING SYSTEM

As the engine is running, the intake stroke of each piston draws the air through the carburetor venturi and booster venturi. The air, passing through the reduced area of the venturi, creates a low pressure commonly called a vacuum. The strength of this low pressure is determined primarily by the velocity of the air flowing through the venturi. This, in turn, is regulated by the speed and power output of the engine. The difference, between the pressure in the venturi and the normal air pressure in the float chamber,
causes fuel to flow through the main metering system. The fuel moves up the main well, passed main well air bleed where air is added, the amount of air increasing proportionally as the speed increases. This mixture of fuel and air, being lighter than raw fuel, has a quicker response to changes in the venturi pressure, and also vaporizes more readily than raw fuel when discharged into the venturi air stream. The mixture of fuel and air flows through the horizontal channel and out the discharge nozzle into the booster venturi and then into the air stream in the carburetor venturi. The throttle plates control the amount of fuel air mixture to the intake manifold, regulating the speed and power output of the engine in accordance with accelerator pedal movement.

6. POWER ENRICHMENT SYSTEM

During high power operation, the carburetor must provide a mixture richer than is needed when the engine is running at cruising speed under no great power requirements. The added fuel for power operation is supplied by the power enrichment system, sometimes referred to as the economizer system.

This system is controlled by manifold vacuum which gives an accurate indication of the power demands placed upon the engine. Manifold vacuum is strongest at idle and decreases as the load on the engine increases. As the load on the engine is increased, the throttle plate must be opened wider to maintain a given speed. Manifold vacuum is thus reduced because the opened throttle plate offers less restriction to air entering the intake manifold.

A vacuum passage in the throttle body transmits manifold vacuum to the power valve diaphragm in the vacuum chamber. The manifold vacuum, acting on the diaphragm at idle or normal load conditions, is strong enough to hold the diaphragm down, overcoming the tension of the power valve spring on the stem. This holds the valve closed. When high power demands place a greater load on the engine and manifold vacuum drops below a predetermined point, the power valve spring overcomes the reduced vacuum and expands, opening the power valve. Fuel from the float chamber flows through the valve and out the small holes in the sides of the valve into the passages leading to both main wells. A restriction in the passage leading to each main well controls the amount of fuel the power valve meters, thus insuring an even distribution of fuel. In each main well, the fuel joins the fuel flow in the main metering system, enriching the mixture.

As engine power demands are reduced, manifold vacuum increases. The increased vacuum acts on the diaphragm, and the diaphragm overcoming the tension of the power valve spring, moves downward. This closes the power valve and shuts off the added supply of fuel which is no longer required.

7. SPARK CONTROL VALVE – MODELS 2110-EE AND 2110-ECC

The spark control valve which is located in the throttle body provides an efficient degree of spark during periods of acceleration by momentarily providing an intermediate spark advance curve between a fully retarded spark and the normal spark advance which would be excessively retarded when the engine is suddenly accelerated. The spark control valve accomplishes this by controlling the manifold vacuum admitted to the distributor vacuum line which would bleed off the higher, venturi vacuum at wide open throttle.

All manifold vacuum to the distributor passes through the spark control valve. Under normal road conditions, the spark valve is held open by a combination of pressure; atmospheric outside the diaphragm, and manifold vacuum from within. The combined forces act against the tension of a preset factory calibrated spring. When the manifold
vacuum drops below a predetermined point, the spring overcomes the reduced pressure on the diaphragm and closes the spark valve. Closing the spark valve prevents excessive spark retard.

As engine speed approaches the throttle setting, manifold vacuum increases and the spark valve opens, resulting in a higher vacuum to operate the distributor. In addition to preventing detonation when changing from part throttle to full throttle conditions, the intermediate spark advance also avoids the sluggishness of wide-open throttle spark advance.

8. DASHPO T

Engines, equipped with automatic transmissions, use an anti-stall device called a dashpot. The dashpot affords protection against loading the engine when the accelerator pedal is suddenly released. The dashpot acts to retard the closing rate of the throttle as it approaches the idle position. This gives the engine time to dissipate the raw fuel discharged into the intake manifold, thus overcoming the hazard of stalling.

The dashpot slows down the final phases of the throttle plate closing by means of a spring-loaded air trap diaphragm. When the accelerator pedal is released, the throttle return spring, in the throttle linkage, acts to close the throttle plates simultaneously with the release of the accelerator pedal. As the throttle plates move to the closed or idle position, a tab on the throttle lever contacts one end of the dashpot lever, causing the head of the dashpot adjusting screw in the dashpot lever to press on the diaphragm stem. As the stem is moved into the dashpot, the tapered step of the rod engages the diaphragm washer. While the rod continues to move, it causes the diaphragm to move, thus compressing the air in the diaphragm chamber. The compressed air, bleeds out slowly from the diaphragm chamber through the passage in the diaphragm washer, This allows the throttle lever to close completely, and also retards the closing speed of the throttle plate.

When the throttle is again opened, pressure is removed from the dashpot diaphragm stem allowing the dashpot return spring to move the rod off its seat in the diaphragm washer. After moving the stem off its seat, the spring returns the rod and diaphragm to their original position, permitting air to flow back again into the diaphragm chamber.

9. GOVERNOR - 2110-G

A Holley Centri-Vac vacuum-operated engine speed governor is incorporated in this carburetor as a positive means of controlling engine speed. The governor contains a throttle actuating mechanism attached to the throttle shaft of the carburetor. The throttle actuating mechanism consists of a diaphragm assembly, governor spring, and governor lever assembly.

Below governing speeds, the operator, through a simple clutch arrangement on the throttle body
of the carburetor, controls the throttle plates in the usual manner. When governing speed is reached, a combination of venturi and manifold vacuum acts on the governor diaphragm to close the throttle plates. Two calibrated by-pass jets in the vacuum passages meter the vacuum from the venturi and the manifold to provide the correct balance for proper operation of the governor. At speeds below governing rpm, this vacuum is weakened by air bleeding through the governor valve so that no premature governing action will occur. Filtered air from the carburetor air cleaner enters the governor system through the governor vent tube. The air flows through an air line to the housing enclosing the governor rotor. A combination of low pressure from the venturi and manifold transmitted through the governor system passages, draws the air past the governor valve and through another air line to the throttle actuating unit on the carburetor. In the controlling unit, centrifugal force acting on the rotor, which has kept pace with engine speed, overcomes the tension of the valve spring and tends to close the governor valve when governing speed is reached. This greatly restricts the amount of air bleeding through to the diaphragm on the carburetor, thus allowing the combined venturi and manifold pressure differential to operate the diaphragm.

As the pressure differential across the diaphragm increases, the diaphragm moves the governor lever against the tension of the governor spring to close the throttle plates. The governed engine speed is held for constant load by centrifugal force on the valve balanced against the tension of the valve spring. Any slight change in engine speed due to load restriction will cause the governor valve to react immediately, either increasing or decreasing the amount of air bleeding through the governor valve orifice. A change in the amount of air bleed will, in turn, cause an instant response from the diaphragm to increase or decrease the throttle plate opening. When the accelerator is released, control is taken from the governor by the external throttle lever and the return spring in the accelerator pedal linkage closes the throttle plates to bring the engine to any desired lower speed.

Although the entire governor system is described, only the throttle actuating mechanism on the carburetor is included in the overhaul procedure presented in this manual. This portion of the governor can be cleaned and serviced readily, also the governor rotor can be serviced independently. See Holley Manual B-183 for servicing of governor control valve.

### OVERHAUL

<table>
<thead>
<tr>
<th>Tool Name</th>
<th>Kent-Moore Tool Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel Inlet Seat Socket</td>
<td>10-183</td>
</tr>
<tr>
<td>Main Jet Socket</td>
<td>10-174</td>
</tr>
<tr>
<td>Snap Ring Hook</td>
<td>10-188</td>
</tr>
<tr>
<td>Economizer Socket Gage</td>
<td>10-175</td>
</tr>
<tr>
<td>Governor Diaphragm Gage</td>
<td>10-187</td>
</tr>
<tr>
<td>Float Setting Gage</td>
<td>Consult Holley Catalog Sheets for Carburetor being overhauled for correct gage.</td>
</tr>
</tbody>
</table>

### 3. MASTER REPAIR KITS

Master Repair Kits contain Holley replacements for parts which are subject to wear or may be damaged in disassembly. The disassembly procedure includes instructions to discard all gasket and parts which have replacements in the Master Repair Kits. The proper kit for each carburetor is listed in the current Holley Carburetor Parts Catalog.
4. DISASSEMBLY

A. PREPARATION

Separate containers should be used for parts and castings of the three major sub-assemblies: the air horn assembly, the main body assembly, and the throttle body assembly. The use of separate containers will facilitate cleaning, inspection, and reassembly.

B. DISASSEMBLY - THREE MAJOR SUBASSEMBLIES MODELS 2110-EE, 2110-EEC AND 2110-FF

These carburetors consist of three major sub-assemblies: the air horn assembly, the main body assembly, and the throttle body assembly. Separation of these major sub-assemblies is the first step in the disassembly procedure.

<table>
<thead>
<tr>
<th>PART NAME</th>
<th>SHEET SET</th>
<th>NUMBER OF ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1 Fast idle cam retainer (2) Automatic</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2 2 Fast idle cam rod (Model 2110-EEC)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>1 3 Air horn to main body screws and lockwashers (5)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1 4 Dashpot bracket - Automatic transmission only</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1 5 Carburetor body gasket</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1 6 Pump link assembly</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1 7 Pump link assembly</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1 8 Main body to throttle body screws and lockwashers (3)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1 9 Choke bracket or control rod bracket (Models 2110-EE and 2110-FF)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>1 10 Throttle body gasket</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

1. Remove the two fast idle cam rod retainers and the fast idle cam rod. (Models 2110-EE)

Figure 1. Disassembly - Major Subassemblies Models 2110-EE, 2110-EEC and 2110-FF

The following list contains all parts to be removed in separating the three major sub-assemblies. During disassembly discard all gaskets, also all parts which have replacements in the Master Repair Kit.

2. Remove the five air horn to main body screws and lockwashers. Remove the dashpot bracket and dashpot assembly if included.

Figure 2. Removing Fast Idle Cam Rod
3. While holding the throttle kicker assembly back (Models 2110-EE and 2110-FF) separate the air horn assembly from the main body assembly. Remove and discard the carburetor body gasket.

4. Remove the two pump link retainers and lift out the pump link assembly.

5. Remove the three throttle body to main body screws and lockwashers, also the control rod bracket or the choke bracket. (Models 2110-EE and 2110-FF)

6. Separate the main body assembly from the throttle body assembly and discard the throttle body gasket.

C. DISASSEMBLY – THREE MAJOR SUB-ASSEMBLIES (MODEL 2110-G)

The following list contains all parts to be removed in separating the three major sub-assemblies. During disassembly discard all gaskets, also parts which have replacements in the Master Repair Kits.

<table>
<thead>
<tr>
<th>PART NAME</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Air horn to main body screws and lockwashers (5)</td>
<td>4</td>
</tr>
<tr>
<td>2. Identification tag</td>
<td>3</td>
</tr>
<tr>
<td>3. Dashpot bracket and dashpot assembly</td>
<td>3</td>
</tr>
<tr>
<td>4. Carburetor body gasket</td>
<td>3</td>
</tr>
<tr>
<td>5. Cotter pin</td>
<td>3</td>
</tr>
<tr>
<td>6. Pump link assembly</td>
<td>3</td>
</tr>
<tr>
<td>7. Throttle body to main body screws and lockwashers (3)</td>
<td>3</td>
</tr>
<tr>
<td>8. Throttle body gasket</td>
<td>3</td>
</tr>
</tbody>
</table>

1. Remove the five air horn to main body screws and lockwashers and identification tag.

![Figure 4. Removing Air Horn Screws](image)

2. Remove dashpot bracket and dashpot assembly if included.

3. Separate the air horn from main body and discard the gasket.

4. Remove pump cotter pin and pump link assembly.

5. Remove the three throttle body to main body screws and lockwashers.

6. Separate the main body from throttle body and discard the gasket.

![Figure 3. Disassembly - Major Subassemblies Model 2110-G](image)
D. DISASSEMBLY - AIR HORN ASSEMBLY MODELS 2110-EE, 2110-EEC AND 2110-FF

The following list contains all parts to be removed in disassembling the air horn assembly. During disassembly discard all gaskets, also all parts which have replacements in the Master Repair Kit.

<table>
<thead>
<tr>
<th>PART NAME</th>
<th>PART NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Float shaft</td>
<td>8 Choke shaft nut, lock-washer and spacer</td>
</tr>
<tr>
<td>2 Float and lever assembly</td>
<td>8-9 Thermostat lever, link and piston assembly</td>
</tr>
<tr>
<td>3 Fuel inlet valve and seat assembly</td>
<td>9-10 Choke housing screws and lockwashers (2)</td>
</tr>
<tr>
<td>4 Thermostat housing and clamps (3)</td>
<td>11 Choke housing assembly</td>
</tr>
<tr>
<td>5 Thermostat housing (Models 2110-EEC)</td>
<td></td>
</tr>
<tr>
<td>5-6 Thermostat housing gasket</td>
<td>12 Choke housing gasket</td>
</tr>
<tr>
<td>7 Choke housing plate</td>
<td>13 Choke lever, swivel screw and lockwasher</td>
</tr>
<tr>
<td></td>
<td>14 Choke lever and swivel assembly</td>
</tr>
<tr>
<td></td>
<td>15 Choke lever plunger and plunger spring</td>
</tr>
<tr>
<td></td>
<td>16 Choke plate screws (2)</td>
</tr>
<tr>
<td></td>
<td>17 Choke plate</td>
</tr>
<tr>
<td></td>
<td>18 Choke shaft assembly</td>
</tr>
<tr>
<td></td>
<td>19 Choke shaft spring - Trucks only (Model 2110-EE and 2110-FF)</td>
</tr>
<tr>
<td></td>
<td>20 Fitting and gasket</td>
</tr>
<tr>
<td></td>
<td>21 Dashpot bracket nut and lockwasher</td>
</tr>
<tr>
<td></td>
<td>22 Dashpot lockwasher (Automatic)</td>
</tr>
<tr>
<td></td>
<td>23 Dashpot Transmission</td>
</tr>
</tbody>
</table>
1. Slide the float shaft out of the float lever bracket and remove the float and lever assembly.

![Image 6: Removing Float Shaft and Float Assembly](image)

2. Using Kent-Moore Tool No. 10-183 remove the fuel inlet valve and seat assembly. Discard the gasket.

![Image 7: Removing Fuel Inlet Valve and Seat Assembly](image)

**NOTE**

The fuel inlet valve and seat assembly is a matched assembly, and it is not interchangeable.

**NOTE:** The next 4 steps pertain only to Models 2110-EEC.

3. Remove the three thermostat housing screws and clamps and lift the thermostat housing cover off the choke housing.

![Image 8: Thermostat Cover Removed](image)

4. Remove the thermostat housing gasket and the choke housing plate.

5. Remove the choke shaft nut, lockwasher and spacer and lift the thermostat lever, link and piston assembly out of the housing.

![Image 9: Removing Choke Housing Screws](image)

**NOTE:** The next 2 steps pertain only to Models 2110-EE and 2110-FF.

6. Remove the two choke housing screws and lockwashers and lift the choke housing assembly off the choke shaft. Remove and discard the choke housing gasket.

7. Remove the choke lever and swivel screw and lockwasher and lift off the choke lever and swivel assembly.
8. Remove the choke lever plunger and spring.

9. Remove the two choke plate screws and remove the choke plate.

10. Slide the choke shaft assembly out of the air horn. Models 2110-EE and 2110-FF (Trucks) also have choke shaft spring.

11. Remove the connection fitting and gasket, discard the gasket.

12. Disassemble the dashpot from dashpot bracket - AUTOMATIC TRANSMISSION.

E. DISASSEMBLY - AIR HORN ASSEMBLY (MODEL 2110-G)

The following list contains all parts to be removed in disassembling the air horn assembly. During disassembly discard all gaskets, also parts which have replacements in the Master Repair Kits.

<table>
<thead>
<tr>
<th>PART NAME</th>
<th>MODEL NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Float shaft</td>
<td>2110-EEC</td>
</tr>
<tr>
<td>2. Float and lever assembly</td>
<td></td>
</tr>
<tr>
<td>3. Fuel inlet needle</td>
<td></td>
</tr>
<tr>
<td>4. Float spring</td>
<td></td>
</tr>
<tr>
<td>5. Float spring retainer (2)</td>
<td></td>
</tr>
<tr>
<td>6. Fuel inlet valve and seat assembly</td>
<td></td>
</tr>
<tr>
<td>7. Choke lever clamp screw and nut</td>
<td></td>
</tr>
<tr>
<td>8. Choke lever clamp assembly</td>
<td></td>
</tr>
<tr>
<td>9. Choke wire clamp screw</td>
<td></td>
</tr>
<tr>
<td>10. Choke wire bracket screw and lock washer</td>
<td></td>
</tr>
<tr>
<td>11. Throttle lever spring bracket</td>
<td></td>
</tr>
<tr>
<td>12. Choke wire bracket assembly</td>
<td></td>
</tr>
<tr>
<td>13. Choke plate screws (2)</td>
<td></td>
</tr>
<tr>
<td>14. Choke plate</td>
<td></td>
</tr>
<tr>
<td>15. Choke shaft</td>
<td></td>
</tr>
<tr>
<td>16. Fuel inlet connection</td>
<td></td>
</tr>
<tr>
<td>17. Governor line connection</td>
<td></td>
</tr>
</tbody>
</table>
1. Slide the float shaft out of the float lever bracket and remove float and lever assembly.

2. Remove the fuel inlet needle, float spring and float spring retainers.


**NOTE**

The fuel inlet needle and the seat is a matched assembly. This set is not to be broken. Replacements should be made only with a new factory-matched set.

4. Remove the choke lever clamp screw and nut. Slide the choke lever clamp off the choke shaft. (Note position of choke lever; will assist in reassembly.)

5. Remove the choke wire clamp screw and nut. Remove choke wire bracket screw and lockwasher and remove the throttle lever spring bracket. Lift choke wire bracket assembly from choke shaft.

6. Remove the two choke plate screws and remove the choke plate.

7. Remove choke shaft. (Note position of screw hole for correct reassembly.)

8. Remove fuel inlet connection and the governor line connection.

---

The following list contains all parts to be removed in disassembling the main body assembly. During disassembly discard all gaskets, also all parts which have replacements in the Master Repair Kit.

---

Figure 14. Removing Float Shaft and Float Assembly

Figure 15. Removing Choke Lever Clamp Screw

Figure 16. Disassembly - Main Body Assembly
1. Remove the pump rod stud.

2. Slide the accelerating pump assembly out of the main body and disassemble. Slide the accelerating pump spring off the operating rod. Depress the pump return spring and remove the operating rod from the pump piston assembly. Remove the washer and spring from the piston assembly.

3. Remove the throttle kicker screw and lockwasher, the throttle kicker and spring. (Models 2110-EE and 2110-FF)

4. Remove the two long screws and lockwashers and two short screws from the nozzle bar clamps and lift out the two nozzle bar clamps.
5. Remove the two nozzle bars and discard the four gaskets.

6. Remove the idle tube assemblies from the nozzle bars.

7. Remove the pump discharge nozzle and discard the gasket. Invert the main body and slide out the pump discharge valve.

8. Remove the two main jet passage plugs and discard the gaskets. Using Kent-Moore Tool No. 10-174, remove the two main jets.

9. Using Kent-Moore Tool No. 10-175, remove the economizer valve assembly. Remove and discard the gasket.

10. Using Kent-Moore Tool No. 10-188, remove the pump check valve retainer. Invert the main body and shake out the pump check valve.

11. Remove and discard the pump operating rod lubricator washer and the pump operating rod lubricator ring.

12. Remove and discard the pump operating shaft washer and the pump operating shaft felt seal.

G. DISASSEMBLY - THROTTLE BODY ASSEMBLY MODELS 2110-EE, 2110-EEC AND 2110-FF

The following list contains all parts to be removed in disassembling the throttle body assembly. During disassembly discard all gaskets, also all parts which have replacements in the Master Repair Kits.
1. Remove the two idle adjusting needles and springs.
2. Remove the spark valve assembly and gasket. (If included.) Discard the gasket.
3. Remove the fast idle cam retainer out of the fast idle cam stud. Slide the fast idle cam off the stud - Model 2110-EEC only.
4. Depress the hand throttle lever collar and turn until the shaft end slips into the notch, this will cause collar to come off. Remove the hand throttle lever spring and lever - Model 2110-EE. (If included.)
5. Remove the throttle stop screw and spring.
6. Remove the dashpot adjusting screw and nut. (If included.)
7. Lightly scribe both throttle plates along the throttle shaft and mark each throttle plate and its corresponding bore with a number or letter to insure proper replacement.
8. Remove the four throttle plate screws and slide the throttle plates out of the shaft.
9. Slide the throttle shaft out of the throttle body. (Note position of shaft for correct reassembly).

H. DISASSEMBLY - THROTTLE BODY ASSEMBLY MODEL 2110-G

The following list contains all parts to be removed in disassembling the throttle body assembly. During disassembly discard all gaskets, also parts which have replacements in the Master Repair Kits.
Figure 27. Removing Throttle Lever and Collar

<table>
<thead>
<tr>
<th>PART NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>29 1</td>
</tr>
<tr>
<td>29 2</td>
</tr>
</tbody>
</table>

Figure 28. Scribing and Marking Throttle Plates

29 3 Governor cover screws and lockwashers (4)
29 4 Governor cover
29 5 Governor cover gasket
30 6 Governor spring
30 7 Governor lever nut and lockwasher
30 8 Diaphragm rod cotter pin
30 9 Governor lever
30 10 Governor to throttle body screws and lockwashers (3)
29 11 Governor housing
31 12 Governor and throttle shaft seal
31 13 Throttle shaft seal retainer
31 14 Throttle shaft bearing retainer spring
31 15 Governor to throttle body gasket
29 16 Diaphragm cover safety wire and seal
29 17 Diaphragm cover screws and lockwashers (8)
29 18 Diaphragm cover

Figure 29. Disassembly - Throttle Body Assembly
<table>
<thead>
<tr>
<th>PART NAME</th>
<th>QUICK CODE</th>
<th>ITEM NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diaphragm and rod assembly</td>
<td>29</td>
<td>19</td>
</tr>
<tr>
<td>Governor by-pass jets (2)</td>
<td>29</td>
<td>20</td>
</tr>
<tr>
<td>Idle adjusting needles (2)</td>
<td>29</td>
<td>21</td>
</tr>
<tr>
<td>Idle adjusting needle spring (2)</td>
<td>29</td>
<td>22</td>
</tr>
<tr>
<td>Dashpot adjusting screw and nut - Automatic transmission</td>
<td>29</td>
<td>23</td>
</tr>
<tr>
<td>Throttle lever clamp screw and nut</td>
<td>29</td>
<td>24</td>
</tr>
<tr>
<td>Throttle lever and ball assembly</td>
<td>29</td>
<td>25</td>
</tr>
<tr>
<td>Throttle operating housing screws and lockwashers (2)</td>
<td>29</td>
<td>26</td>
</tr>
<tr>
<td>Throttle operating housing and shaft assembly</td>
<td>29</td>
<td>27</td>
</tr>
<tr>
<td>Throttle bearing cover gasket</td>
<td>29</td>
<td>28</td>
</tr>
<tr>
<td>Throttle operating shaft assembly</td>
<td>29</td>
<td>29</td>
</tr>
<tr>
<td>Throttle stop screw and spring</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>Throttle shaft retainer spring</td>
<td>29</td>
<td>31</td>
</tr>
<tr>
<td>Throttle plate screws (4)</td>
<td>29</td>
<td>32</td>
</tr>
<tr>
<td>Throttle plates (2)</td>
<td>29</td>
<td>33</td>
</tr>
<tr>
<td>Throttle shaft and bearing assembly</td>
<td>29</td>
<td>34</td>
</tr>
<tr>
<td>Throttle shaft bearing</td>
<td>29</td>
<td>35</td>
</tr>
<tr>
<td>Governor spring post</td>
<td>29</td>
<td>36</td>
</tr>
</tbody>
</table>

1. Remove the vacuum connection fitting.

2. Remove the governor cover safety wire and seal. Remove the four governor cover screws and lockwashers. Remove the governor cover and discard the gasket.

3. Ease the governor spring off the posts. Do not distort the spring in any way during removal, as the governor operation may be impaired.

**NOTE**

The governor spring post in the governor housing should not be removed (Figure No. 36). If it is necessary to replace this post, make sure the new post is installed in the proper position listed on the Holley Catalog sheets.

4. Remove the governor lever nut and lockwasher. Remove the diaphragm rod cotter pin. Slide the governor lever off the throttle shaft.

5. Remove the three governor to throttle body screws and lockwashers.

6. Remove the governor housing, gasket, throttle shaft seal, seal retainer, and bearing retainer spring. Discard the gasket and leather seal.

Figure 31. Governor Housing Removed

7. Remove the diaphragm cover safety wire and seal. Remove the eight diaphragm cover screws and lockwashers. Remove the diaphragm cover and the diaphragm and rod assembly.

8. Remove the two governor by-pass jets.

9. Remove idle adjusting needles and springs.

10. Remove dashpot adjusting screw and nut from throttle lever clamp -- automatic transmission.

11. Remove throttle lever clamp screw and nut, and the throttle lever. Remove the two throttle operating shaft housing screws and lockwashers, the throttle operating shaft and housing assembly and discard the gasket.

Figure 30. Governor Cover Removed
12. Slide the throttle operating shaft out of the housing. Remove the throttle stop screw and spring.

13. Using Kent-Moore Tool No. 10-188, lift the wire throttle shaft retainer spring out of the slot in the throttle body.

14. Lightly scribe both throttle plates along the throttle shaft and mark each throttle plate and its corresponding bore with a number or letter to insure proper replacement.

15. Remove the four throttle plate screws, and slide the throttle plates out of the throttle shaft. Remove the throttle shaft and bearing assembly from the throttle body. (Note position of shaft for correct reassembly.) Remove the remaining bearing from governor side of the throttle body.

5. CLEANING AND INSPECTION

A. CLEANING

1. Soak all castings and metal parts, except the dashpot assembly and nozzle bars, in a cleaning solution until all foreign deposits are loosened. If a commercial cleaning solvent is not available, lacquer thinner or denatured alcohol may be used. Place the parts to be cleaned in a metal basket suspended in the solution and agitate. Avoid lowering the basket into the sediment which collects in the bottom of the container. After the parts have soaked sufficiently, they are to be rinsed in hot water to remove all traces of the cleaning solution. Scrub away all remaining foreign matter with a stiff bristle brush while rinsing the parts and castings. Only inlet end of the nozzle bars should be immersed in the cleaning solvent. DO NOT place the circular booster venturi in the solution.

2. Parts and castings should be thoroughly dried with compressed air. Compressed air should also be directed through all passages in the castings and through the jets and nozzle bars.

CAUTION

Carburetor jets and passages should never be cleaned with a wire, a drill, or similar abrasive objects. This method of cleaning may distort the jets and passages and greatly
affect carburetor performance. Do not use a buffing wheel, wire brush, file, or sharp instrument to remove carbon deposits. These methods may remove the protective plating on the part and expose the bare metal to corrosion.

B. INSPECTION

1. Major Castings

Examine all major castings for cracks, stripped threads, damaged gasket mating surfaces, and for other damage. All passages in the castings should be checked with compressed air to make sure they are free of obstructions. (Refer to the "Operation" Section for location of passages in the castings.) If irregularities are found, the casting should be replaced.

2. Choke Shaft and Choke Plates

Carefully examine the shaft for distortion and to see if the shaft is bent. Check choke plates for burrs or corrosion. If any irregularities are found, replacements should be made.

3. Throttle Shaft and Throttle Plates

Check the throttle shaft for worn surfaces, distortion or bent shaft. Make sure the plates are not burred or corroded. The complete throttle body assembly should be discarded if any irregularities are found.

4. Float and Lever Assembly

The float and lever assembly is to be discarded and replaced if the float leaks, or if the assembly is corroded or damaged in any way. Shake the float to determine if fuel has leaked into it.

5. Nozzle Bar

Discard and replace the nozzle bars if the fuel discharge passages or the holes in the lower flanges of the nozzles are distorted, damaged, or obstructed. All threads are to be checked.

6. Pump Discharge Nozzle

Examine the pump discharge for obstructions or damage. Replace the part if it does not meet inspection.

7. Fuel Inlet Valve and Seat

The fuel inlet needle and seat are matched at the factory to insure a precise fit. Replacements should always be made with a new factory matched set.

8. Springs

Broken or distorted springs must be replaced.

9. Screws, Lockwashers and Nuts

If stripped threads, distortion, or other damage is found in screws, lockwashers, and nuts, discard them and replace with new parts.

10. Dashpot

Discard and replace if any distortion is noted.

11. Governor

Check for cracks in the housing and stripped thread. If any irregularities appear, the governor should be replaced.

6. REBUILDING

A. REASSEMBLY - THROTTLE BODY ASSEMBLY MODELS 2110-EE, 2110-EEC AND 2110-FF

1. Referring to the lines or figures scribed on the throttle plates during disassembly, install the throttle plates. Install the four throttle plate screws and run them down until they are snug but not tight. Close the throttle plates and hold the throttle body up to the light. Little or no light should show between the throttle plates and the walls of the throttle bores. If the throttle plates are properly installed and there is no binding when the throttle shaft is rotated, tighten the throttle plate screws. Stake the throttle plate screws using a suitable staking tool.

2. Place the hand throttle lever and spring in position on the throttle shaft. Press the hand throttle lever collar on the shaft, depressing the spring, turn the collar a quarter of a turn until it seats in the notch - Model 2110-EE (If included).
3. Install the dashpot adjusting screw and nut (if included).

4. Install the throttle stop screw and spring.

5. Slide the fast idle cam on the stud and install the fast idle cam retainer. - Model 2110-EEC.

6. Install the spark valve assembly with a new gasket. (If included).

7. Install the two idle adjusting springs and needles.

B. REASSEMBLY - THROTTLE BODY ASSEMBLY MODEL 2110-G

1. Install bearing on governor side of the throttle body. Slide the throttle shaft and bearing assembly into the throttle body, and install bearing retainer. (Correct position of shaft noted during disassembly.)

2. Referring to lines and figures scribed on the throttle plates during disassembly, install the throttle plates. Insert the four throttle plate screws snugly, but do not tighten. Close the throttle plates and hold the throttle body up to the light. Little or no light should show between throttle plates and the walls of the throttle bores. If the throttle plates are properly aligned, there will be no binding when throttle lever is operated. Using an approved staking tool, tighten the throttle plate screws. If it is necessary to use an impact type of staking tool, be sure to back up the heads of the throttle plate screws to prevent bending the throttle shaft when staking.

3. Install the throttle operating shaft assembly in throttle operating housing. Position the two screws and lockwashers in the housing. Place the new gasket over the ends of the screws and with the throttle plates held in the closed position, set the assembly in place on throttle body, making sure the throttle operating shaft lever assembly is in the open position. If the assembly is properly installed, the throttle plates will be closed when the throttle operating lever is up.

4. Install the dashpot adjusting screw and nut in the throttle lever clamp. (If included).

5. Install the throttle stop screw and spring. While holding the throttle plates almost closed, turn the screw in until its tip contacts the tab at the end of throttle operating shaft lever.

6. Slide the throttle lever assembly in place and insert throttle lever clamp screw and nut.

7. Install the two idle adjusting needles, with the original springs. Turn the needles by hand until they seat in the idle discharge holes. Then back them off one complete turn. Do not force the needle against its seat, as this will groove the tip of the needle, make it impossible to correctly adjust the idle mixture.

8. Place the diaphragm and rod assembly in the governor housing. Take care that all the holes in the diaphragm are aligned with the threaded holes in the rim of the governor housing. The bent end of the rod should point out. Place the diaphragm cover in position, making sure the vacuum passage holes in the governor housing, diaphragm and diaphragm cover are all correctly aligned. Insert the diaphragm cover screws and lockwashers, spacing evenly the three screws drilled for the safety wire. Turn the screws in until the flanges almost meet but do not tighten. Place the governor diaphragm gage (Kent-Moore Tool No. 10-187) on the governor housing as shown in the illustration. Hook the end of the diaphragm rod into the slot provided in the gage, and then tighten the eight diaphragm cover screws securely before removing the gage. This procedure will stretch the diaphragm sufficiently to insure full travel of the diaphragm for proper governor operation. Install a new safety wire and seal.

Figure 35. Installing Governor Diaphragm Cover
9. Place bearing retainer spring and seal retainer over the throttle shaft in the throttle body. Set new governor housing gasket in position on the throttle body, aligning the holes in the gasket and throttle body. Install leather seal (tips toward housing) in the governor housing and place governor in position. Align the holes in governor housing, governor housing gasket and the throttle body, and insert the three governor to throttle body screws and lockwashers, and tighten. Check to see if throttle shaft moves freely and does not bind.

10. Slide the governor lever over the throttle shaft and insert end of the diaphragm rod through governor lever. Install cotter pin in the diaphragm rod, bending both ends of the cotter pin back toward the head. Install the governor lever nut and lockwasher.

11. With the throttle plates open, loop one end of the governor spring to the governor lever spring pin, and snap the other loop of the spring to the stationary pin in the governor housing. Do not stretch the spring more than is necessary.

12. Install the governor cover with a new gasket. Insert the four governor cover screws and lockwashers. Install safety wire and seal.

13. Install the vacuum connection fitting.

C. REASSEMBLY - MAIN BODY ASSEMBLY ALL 2110-SERIES

1. Install a new pump operating shaft felt seal and secure with the washer.

2. Install a new pump operating rod lubricator ring and secure with the washer.

3. Install the accelerating pump inlet ball check valve. Place a small brass rod on the ball and tap lightly with a fiber mallet to insure proper seating of the ball. Care must be taken to prevent damage to the ball or seat. Check to see if ball is still movable. Install the check valve retainer in the accelerating pump well of the main body. The bent-in portion of the retainer holds the balls in place.

4. Install the economizer valve assembly and new gasket, using Kent-Moore Tool No. 10-175.

5. Using Kent-Moore Tool No. 10-174 install the two main jets. Install the two main jet passage plugs and new gaskets.

6. Insert the pump discharge valve in position and install the pump discharge nozzle and new gasket.

7. Install the idle tube assemblies into the nozzle bars.

8. Using four new gaskets, install the two nozzle bars.

9. Place the two nozzle bar clamps in position and install the four screws.

10. Place the throttle kicker spring and lever in position and install the screw and lockwasher. (Model 2110-EE and 2110-FF)

11. Reassemble the accelerating pump assembly. First place the pump spring on the pump piston assembly, then install the spring washer on the pump piston assembly. Compress the spring and slide the pump operating rod into the slot on the piston assembly until the notches in the washer engage the cutout in the arm. Place the pump return spring on the operating rod. Slide the accelerating pump assembly into place in the main body housing. Take care that the piston cup does not catch on the lip of the pump chamber.

12. Insert the pump rod stud in position.

D. REASSEMBLY - AIR HORN ASSEMBLY MODELS 2110-EE, 2110-EEC AND 2110-FF
1. Reassemble the dashpot assembly. Install the dashpot on bracket, with one lockwasher on either side of the bracket, secure the nut. (AUTOMATIC TRANSMISSIONS.)

2. Install the connection fitting and new gasket.

3. Slide the choke shaft assembly into the air horn, also install the choke shaft spring, if included.

4. Install the choke plate. Invert the air horn, and with the lug on the choke shaft assembly pointed upward, insert the choke plate in the slot on the choke shaft. Install the choke plate screws and run them down until they are snug but not tight. Close the choke plate and hold the air horn up to the light. Little or no light should show between the choke plate and the walls of the bore. If the choke plate is properly installed and there is no binding when it is operated, then tighten the choke plate screws. Using any suitable staking tool, stake the choke plate screws.

NOTE: The next 2 steps pertain only to Models 2110-EE and 2110-FF.

5. Insert the choke plunger spring and choke plunger.

6. Set the choke lever and swivel assembly in place and install the screw and lockwasher. The tab on the choke shaft lever should be positioned in the "V" shaped notch of the choke lever and swivel assembly.

NOTE: The next 5 steps pertain only to Models 2110-EEC.

7. Place the new choke housing gasket in position and install the choke housing with the two screws and lockwashers.

8. Insert the thermostat lever, link, and piston in its chamber with the end of the lever fitting on to the choke shaft. Position the choke shaft spacer, lockwasher and nut, tighten firmly.

9. Place the choke housing plate and thermostat housing gasket in position.

10. Place the thermostat housing in position, with the looped end of the thermostat spring on the thermostat lever.

11. Rotate the thermostat housing until the index mark on the rim of the cover is aligned with large center indicator on the choke housing. Install the three thermostat screws and clamps.


13. Holding the float and lever assembly in position, slide the float shaft into position. Place

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Figure 37. Gauging Float

Figure 38. Float Adjustments
the inverted air horn on a level surface so the float can be gauged (consult Holley catalog sheets for the proper float gage, part number and specifications.) Reset the gage on the float horizontal surface of the air horn with the gage just touching the float, but not lying across the soldered seam. Make adjustments by bending the rounded tab, which contacts the head of the fuel inlet needle (see "A" in Figure 38). When the properly closed float reading has been made, lift the float to the full open position. Any accurate depth gage may then be used to measure the distance from the float to the air horn. Adjustments on the float lever to limit the travel may be made only by bending the small tab which contacts the side of the fuel inlet seat (see "B" in Figure 38).

E. REASSEMBLY - AIR HORN ASSEMBLY
MODEL 2110-G

1. Slide choke shaft in position in the air horn. Insert the choke plate in slot of the choke shaft. (Correct shaft position noted during dis-assembly.) Install choke plate screws snugly but not tight. Rotate the choke shaft. If no binding occurs and little or no light appears between the plates and the walls of the bore when plates are closed, tighten the choke plate screws securely. Using a suitable staking tool, stake the choke plate screws.

2. Slide the choke wire bracket assembly on the choke shaft, place the throttle spring lever in position and install the screw and lockwasher. Place the choke lever clamp on the choke shaft in the correct position and install the screw and nut.

3. Install fuel inlet valve and seat assembly, using Kent-Moore Tool No. 10-183. Tighten securely to prevent leakage past the new gasket. Check to make certain the fuel inlet needle is inserted with the point up towards seating surface.

4. Install float spring and float spring retainer. Holding the float and lever assembly in position, slide the float shaft into position. Place the inverted air horn on a level surface so the float can be gaged. (Consult current Holley catalog sheets for proper float gage, part number, and specifications.) Reset the gage on the flat horizontal surface of the air horn with the gage just touching the float. Do not gage the float on the soldered seam. Adjustments should be made only by bending the rounded tab which contacts the fuel needle. (See "A" in Figure 38). After the proper closed setting has been made, lift the float to the full open position. Any accurate depth gage may be used to measure the distance from the float to the air horn. Adjustments on the float lever may be made to limit the travel of the float only by bending the small tab which contacts the side of the fuel inlet valve seat. (See "B" in Figure 38.)

5. Install the fuel inlet connection and the governor line connection fitting.

F. REASSEMBLY - THREE MAJOR SUBASSEMBLIES MODELS 2110-EE, 2110-EEC AND 2110-FF

1. Place a new throttle body gasket on the throttle body and align the holes. Set the main body on the throttle body, taking care that the holes in the gasket remain in alignment. Position the choke bracket or control rod bracket - if included. Insert the three throttle body to main body screws and lockwashers.

NOTE

Tighten the three screws alternately, a little at a time, to compress the gasket evenly.

2. Install the pump link. The three holes in the throttle lever permit adjustment of the accelerating pump discharge. The outer hole provides a maximum pump discharge for extreme cold weather operation, and the inner hole provides a minimum pump discharge for hot weather. However, for most driving conditions, the middle hole should be used. Install the two retainers.
3. Place the new carburetor body gasket in position aligning the holes. Depress the throttle kicker lever, if included, lower the air horn in position. Place the dashpot bracket in position, if included. Install the five air horn to main body screws and lockwashers.

NOTE

Be careful not to catch the float on the main body. If the float is bumped or disturbed in any way during assembly, the float setting may be upset.

4. Model 2110-EEC only, install the fast idle cam in position, one end in the fast idle cam slot and the other in the choke shaft lug. Install the two idle cam rod retainers.

G. REASSEMBLY - THREE MAJOR SUBASSEMBLIES MODEL 2110-G

1. Set a new throttle body gasket in position on the throttle body and align the holes.

INSTALLATION

1. PREPARATION

A. Before installing the carburetor, make a visual inspection of the unit for signs of damage due to mishandling or improper storage.

B. The air cleaner should be cleaned at this time to insure proper carburetor performance.

2. INSTALLATION ON VEHICLE

The carburetor mating surface of the intake manifold must be clean and free from burrs or damage. Then, using a new flange gasket, secure the carburetor to the intake manifold with the mounting nuts and lockwashers. Tighten the mounting nuts alternately, a little at a time, to evenly compress the flange gasket. The nuts must be drawn down tightly to prevent leakage between the carburetor and the intake manifold. Connect the fuel line, throttle, choke linkages, automatic choke heat tube, and distributor vacuum line. Check for loose or worn connections. Check the choke plate to insure that it opens fully when the choke control knob is pushed in on the manual choke. The choke plate should be closed when the adjustment has been made. The throttle must also have complete travel. Install the air cleaner, install main body on the throttle body and fasten the three main body to throttle body screws and lockwashers. Tighten the three screws, alternately, a little at a time, to compress the gasket evenly.

2. Install the pump link assembly with a cotter pin. The three holes in the throttle lever permit adjustment of the accelerating pump discharge. The outer hole provides a maximum pump discharge for extreme cold weather operation, while the inner one provides a minimum pump discharge for hot weather. However, for most driving conditions, the middle hole should be used.

3. Place new carburetor body gasket in position on the main body. Install the air horn on the main body. Caution must be used not to catch the float on the main body. If float is bumped or disturbed in any way during reassembly, the float setting may be upset. Install the five air horn to main body screws and lockwashers, and identification tag.

3. ADJUSTMENTS

A. ADJUSTING THE IDLE

1. Adjustments, to be precise and accurate, must be made when the vehicle is on level ground.

2. Seat the idle adjusting needles lightly and back each off a full turn if there is any doubt about this not having been done during reassembly.

NOTE

Care must be taken when seating the idle adjusting needle not to turn the screw tight against the seat, grooving the tip of the needle. If the needle becomes grooved, a smooth idle cannot be obtained.

3. Start the engine and allow the operating temperature to reach normal.

4. After the engine reaches its normal operating temperature, adjust the throttle stop adjusting screw to idle the engine at the rpm specified by the engine manufacturer.
5. First set one of the two idle adjusting needles for the highest steady manifold vacuum reading. If a vacuum gage is not available get the smoothest running maximum idle speed by turning the idle adjusting needle in until the rpm begins to drop off, then backing the needle off over the "high spot" until the rpm again drops off. Set the idle adjusting needle halfway between these two points for a satisfactory idle mixture setting. Then repeat the procedure with the other needle. Final fine adjustment may vary slightly from this setting but should not exceed 1/2 turn difference between the screws. Should these adjustments show an increase in idle rpm, reset the throttle stop screw to obtain the specified idle rpm and adjust the idle adjusting needles again.

B. ADJUSTING THE DASHPOT

The dashpot, on carburetors for engines equipped with automatic transmission, is to be adjusted after the idle speed and mixture settings have been completed. Close the throttle lever slowly to the idle position, with the choke fully open. Set the dashpot adjusting screw to conform to the clearance specified in the Holley Carburetor Company Parts Catalog.

C. ADJUSTING THE AUTOMATIC CHOKE

1. The automatic choke is accurately set at the factory to give the best possible all weather operation. To return the choke to the original setting, line up the index mark on the rim of the thermostat cover with the specified indicator on the choke housing.

2. If for some reason a richer or leaner mixture during the warm-up period is desired, it can be obtained by rotating the thermostat cover. Never set the index mark on the cover more than two graduations off the large center indicator on the housing.

D. ADJUSTING THE GOVERNOR

SERVICE HINTS

Carburetor service should be performed only with the use of proper equipment. Approved equipment includes float setting gages, together with other special carburetor tools. In addition, approved specification sheets must be utilized. Refer to the Holley Carburetor Catalog sheet for the carburetor being overhauled to find the proper engine and carburetor specifications.

1. INSPECTING THE VEHICLE
Road check the vehicle, if possible, before making any adjustments on the carburetor to improve performance. Dragging brakes, poor wheel alignment, low tire pressure, and other causes of undue friction tend to retard engine performance. Evidence of leakage or dents in the exhaust system can cause trouble. Check the color of the exhaust for indications of an over-rich mixture, for excessive oil consumption and compression loss. A rough running engine coupled with a strong odor of gasoline may result from a flooding carburetor. Improper engine temperature should be corrected. Many faults may be detected by a visual inspection of the engine in operation. Remedy loose or disconnected wiring, leaking fuel and water connections, possible short circuits, and other faults.

2. INSPECTING THE ENGINE

After a check has been made of the vehicle, examine the engine. Check or set the following in accordance with manufacturer's specifications: distributor breaker points, spark plug gap, ignition timing, condenser capacity, valve settings, intake manifold for leaks, compression, gaskets, carburetor body and flange screws, and inlet fuel pressure.

3. INSPECTING THE FUEL SYSTEM

The fuel system should also be inspected. Examine all fuel lines for collapsed sections and other damage. Make a manual check of fuel line connections for looseness or leakage. Check the fuel tank vent for possible obstructions. Even a partially-clogged vent may cause the engine to cut out after a few minutes of high-speed operation. Clean the fuel pump sediment chamber and the fuel filter, if there is one. Using a vacuum gage, check the fuel pump for air leaks. Connect the gage to the line leading to the pump. A vacuum reading less than normal at the idle indicates an air leak or a faulty fuel pump. A careful check should be made of the fuel pump pressure. Excessive fuel pump pressure causes engine to flood resulting in poor fuel economy. Low pump pressure is associated with a lean mixture and poor performance.

4. INSPECTING THE CARBURETOR

Make a preliminary inspection of the carburetor after first removing the air cleaner. Check the position of the choke plate with the engine running. Throttle the engine down to idle, then completely close both idle adjusting needles. If the engine continues to run for even a short interval after this is done, it usually indicates one or two faults. The tips or seats of the idle adjusting needles may be damaged, or idle speed set too high, or else there are deposits of carbon in the throttle bores near the throttle plates.

To continue with the carburetor inspection, stop the engine and check the tightness of the carburetor to manifold, and manifold to engine connections. Inspect all carburetor connections and linkages. Examine the accelerating pump link to insure that it is correctly positioned.

If by now the trouble has not been located, remove the carburetor from the engine and disassemble. Thoroughly clean and inspect each part, using the procedure laid down in the Service Manual. The accompanying trouble shooting chart lists specific carburetor complaints and discusses the various parts which may be at fault. A rigorous cleaning and inspection, coupled with the replacement of faulty parts and care in reassembly, should prevent recurrence of the complaint.

NOTE

Many performance complaints attributed to the carburetor may be the result of poor driving habits, topography and/or weather conditions.
## TROUBLE SHOOTING CHART

<table>
<thead>
<tr>
<th>TROUBLE</th>
<th>PROBABLE CAUSE</th>
<th>CORRECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Hard starting.</td>
<td>(a) Incorrect choke thermostat adjustment.</td>
<td>(a) Adjust choke thermostat.</td>
</tr>
<tr>
<td></td>
<td>(b) Incorrect idle adjustments.</td>
<td>(b) Perform all idle adjustments.</td>
</tr>
<tr>
<td></td>
<td>(c) Binding linkage, choke plate, or choke piston.</td>
<td>(c) Repair or replace defective parts.</td>
</tr>
<tr>
<td></td>
<td>(d) Restricted choke vacuum and hot air passages.</td>
<td>(d) Clean carburetor with solvent and blow out passages with compressed air.</td>
</tr>
<tr>
<td></td>
<td>(e) Air leaks into vacuum and hot air passage.</td>
<td>(e) Replace defective gaskets.</td>
</tr>
<tr>
<td></td>
<td>(f) Improper fuel level.</td>
<td>(f) Adjust fuel level.</td>
</tr>
<tr>
<td>(2) Stalling when accelerator is released suddenly.</td>
<td>(a) Improperly adjusted dashpot.</td>
<td>(a) Perform all idle adjustments.</td>
</tr>
<tr>
<td></td>
<td>(b) Defective dashpot.</td>
<td>(b) Replace screws.</td>
</tr>
<tr>
<td></td>
<td>(c) Clogged air bleeds or idle passages.</td>
<td>(c) Clean with solvent and compressed air.</td>
</tr>
<tr>
<td></td>
<td>(d) Leaking intake manifold and carburetor gaskets.</td>
<td>(d) Replace leaking gaskets.</td>
</tr>
<tr>
<td>(3) Rough idle and stalling.</td>
<td>(a) Improper idle adjustments.</td>
<td>(a) Perform all idle adjustments.</td>
</tr>
<tr>
<td></td>
<td>(b) Damaged tip on idle mixture screws.</td>
<td>(b) Replace screws.</td>
</tr>
<tr>
<td></td>
<td>(c) Clogged air bleeds or idle passages.</td>
<td>(c) Clean with solvent and compressed air.</td>
</tr>
<tr>
<td></td>
<td>(d) Leaking intake manifold and carburetor gaskets.</td>
<td>(d) Replace leaking gaskets.</td>
</tr>
<tr>
<td></td>
<td>(e) Improper throttle stop adjustment.</td>
<td>(e) Adjust throttle stop screw.</td>
</tr>
<tr>
<td>TROUBLE</td>
<td>PROBABLE CAUSE</td>
<td>CORRECTION</td>
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<td>----------------------------------------</td>
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</tr>
<tr>
<td>(3) Rough idle and stalling. (Continued)</td>
<td>(g) Improper fuel level.</td>
<td>(g) Adjust fuel level.</td>
</tr>
<tr>
<td></td>
<td>(h) Improper fast idle cam adjustment.</td>
<td>(h) Perform all idle adjustments.</td>
</tr>
<tr>
<td></td>
<td>(i) Loose or damaged idle tube.</td>
<td>(i) Remove and inspect idle tubes.</td>
</tr>
<tr>
<td>(4) Poor low-speed operation.</td>
<td>(a) Idle adjusting screws unequally adjusted.</td>
<td>(a) Perform all idle adjustments.</td>
</tr>
<tr>
<td></td>
<td>(b) Clogged idle transfer holes.</td>
<td>(b) Remove and clean carburetor with solvent and blow out holes with compressed air.</td>
</tr>
<tr>
<td></td>
<td>(c) Restricted idle air bleeds and passages.</td>
<td>(c) Remove and clean carburetor with solvent. Blow out passages with compressed air.</td>
</tr>
<tr>
<td>(5) Faulty acceleration.</td>
<td>(a) Improper pump strokes.</td>
<td>(a) Adjust pump stroke.</td>
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<tr>
<td></td>
<td>(b) Inoperative pump discharge check ball.</td>
<td>(b) Clean or replace.</td>
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<tr>
<td></td>
<td>(c) Worn or damaged pump piston.</td>
<td>(c) Replace pump piston.</td>
</tr>
<tr>
<td></td>
<td>(d) Leaking throttle body gasket.</td>
<td>(d) Replace gasket.</td>
</tr>
<tr>
<td>(6) Surging (cruising speeds to top speeds).</td>
<td>(a) Clogged main jets.</td>
<td>(a) Clean main jets with solvent and blow out jets with compressed air.</td>
</tr>
<tr>
<td></td>
<td>(b) Undersize main jets.</td>
<td>(b) Replace main jets.</td>
</tr>
<tr>
<td></td>
<td>(c) Low fuel level.</td>
<td>(c) Adjust fuel level.</td>
</tr>
<tr>
<td></td>
<td>(d) Low fuel pump pressure or volume.</td>
<td>(d) Test fuel pump.</td>
</tr>
<tr>
<td></td>
<td>(e) Blocked air bleeds.</td>
<td>(e) Clean with solvent and blow out bleeds with compressed air.</td>
</tr>
<tr>
<td></td>
<td>(f) Clogged filter screen.</td>
<td>(f) Clean with solvent and compressed air.</td>
</tr>
<tr>
<td>(7) Reduced top speed.</td>
<td>(a) Low fuel pump volume.</td>
<td>(a) Test fuel pump.</td>
</tr>
<tr>
<td></td>
<td>(b) Clogged vacuum passage.</td>
<td>(b) Clean with solvent and blow out passage with compressed air.</td>
</tr>
<tr>
<td>TROUBLE</td>
<td>PROBABLE CAUSE</td>
<td>CORRECTION</td>
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<tr>
<td>(7) Reduced top speed, (Continued)</td>
<td>(c) Economizer valve stuck.</td>
<td>(c) Clean or replace.</td>
</tr>
<tr>
<td></td>
<td>(d) Improper size, or obstructed main jets.</td>
<td>(d) Clean or replace.</td>
</tr>
<tr>
<td></td>
<td>(e) Faulty choke operation.</td>
<td>(e) Check choke operation.</td>
</tr>
<tr>
<td>(8) No governor action.</td>
<td>(a) Damaged or leaky diaphragm.</td>
<td>(a) Replace diaphragm.</td>
</tr>
<tr>
<td></td>
<td>(b) Loose connections.</td>
<td>(b) Check all lines and connections.</td>
</tr>
<tr>
<td></td>
<td>(c) Spinner set to high.</td>
<td>(c) Reset spinner valve.</td>
</tr>
</tbody>
</table>