

NOTE: Do not push the linkage or the shaft of the motor itself, as this will actuate the modulator spring.

- If the motor does not fully retract with vacuum, test the pulldown motor diaphragm for leakage.
- If the vacuum pulldown motor diaphragm is leaking and the motor will not retract fully with vacuum, replace the motor.

Warning: Insure that the choke plate linkage is not interfered with or erroneous measurement may result.

8. Use a drill of the proper diameter to check the clearance between the choke plate lower edge and the air horn wall (Fig. 9).
9. To adjust choke plate pulldown clearance, bend the choke pulldown linkage as required to obtain proper clearance.
10. Reset bi-metal cap to proper index.
11. Replace air cleaner assembly.

FAST IDLE CAM SETTING

1. Position the fast idle screw on the kickdown step of the fast idle cam against the shoulder of the high step (Fig. 7).
2. Adjust by bending the choke plate connecting rod to obtain the specified clearance between lower edge of the choke plate and the carburetor bore.

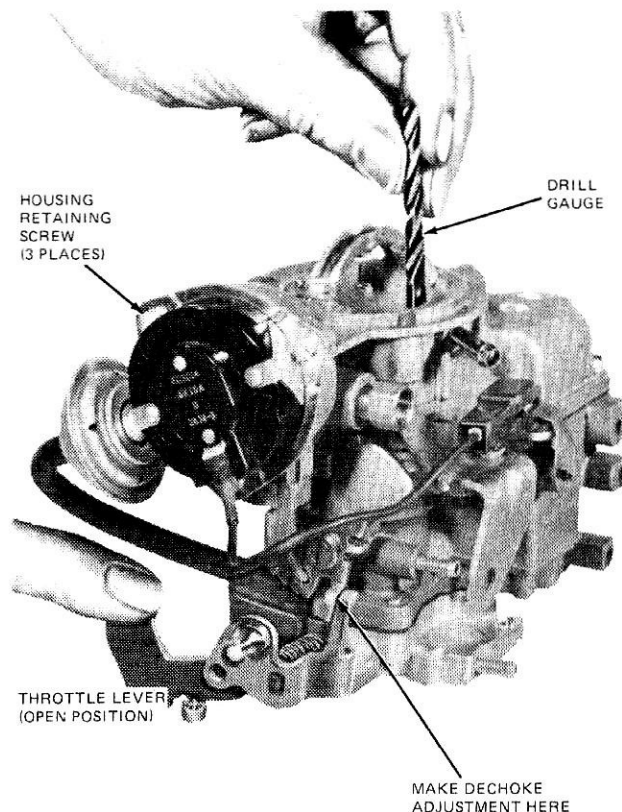
METERING ROD ADJUSTMENT

1. Remove the carburetor air horn and gasket from the carburetor.
2. Back out the idle speed adjusting screw until the throttle plate is closed tight in the throttle bore.
3. Press down on the end of the pump diaphragm shaft until the assembly bottoms.
4. To adjust the metering rod, hold the diaphragm assembly as in Step 3, then, turn the rod adjustment screw counterclockwise (Fig. 10) until the metering rod just bottoms in the body casting.
5. Turn the metering rod adjustment screw in (clockwise) **one additional turn** for the final adjustment.
6. Install the carburetor air horn with a new gasket on the carburetor.

FLOAT LEVEL ADJUSTMENT

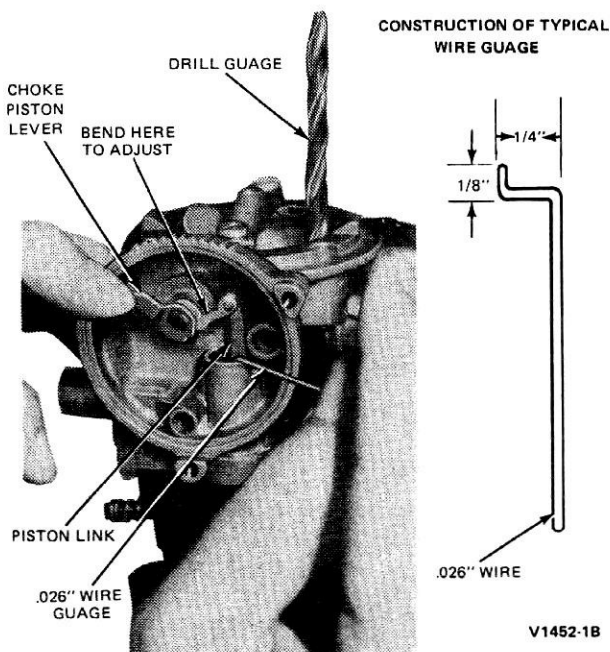
The dry float fuel level adjustment is a final float or fuel level adjustment.

1. Remove the carburetor air horn and gasket from the carburetor. Refer to Air Horn to Main Body Gasket Replacement for the proper procedure.
2. Fabricate a float level gauge (Fig. 11) to the specified float level dimension.
3. Invert the air horn assembly, and check the clearance from the float indentation on the top of the float to the bottom of the air horn with the float level gauge (gasket removed) (Fig. 11). Hold the air horn at eye level when gauging the float level. The float arm (lever) should be resting on the needle pin. **Do not load the needle when adjusting the float.** Bend the float arm as necessary to adjust the



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FIG. 8 Choke Plate Clearance Adjustment

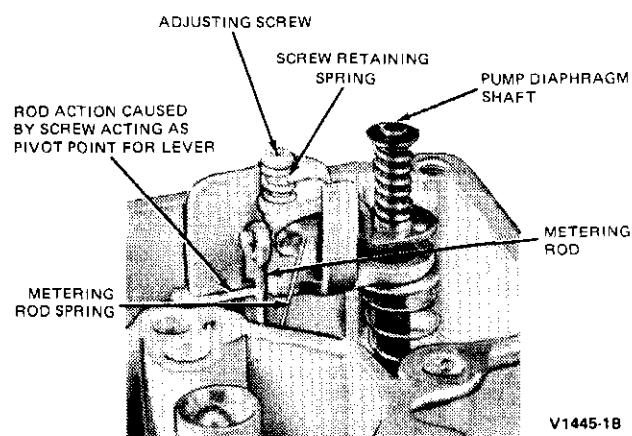


V1452-1B

FIG. 9 Pull down Clearance Adjustment—Model YFA 1-V

float level (clearance). **Do not bend the tab at the end of the float arm.** It prevents the fuel inlet needle from becoming disengaged.

4. Install the carburetor air horn and a new gasket on the carburetor. Refer to Carburetor Air Horn to



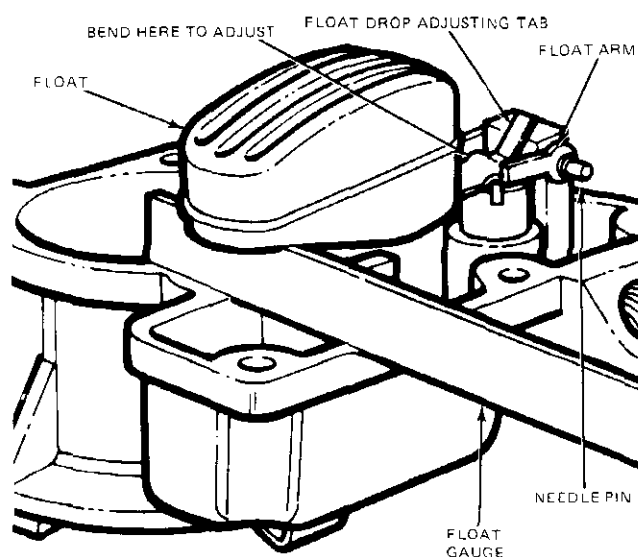
V1445-1B

FIG. 10 Metering Rod Adjustment

Main Body Gasket Replacement for the proper procedure.

FLOAT DROP ADJUSTMENT

1. Remove the carburetor air horn and gasket from the carburetor. Refer to Air Horn to Main Body Gasket Replacement for the proper procedure.
2. Fabricate a float drop gauge to the specified dimension.
3. Hold the air horn upright and let the float hang free. Measure the maximum clearance from the top of the float to the bottom of the



V2079-1B

FIG. 11 Fuel Level Float Adjustment

air horn gasket a(gasket removed) with the float drop gauge. Hold the air horn at eye level when gauging the dimension.

4. To adjust, bend the tab (Fig. 11) at the end of the float arm to obtain the specified setting.
5. Install the carburetor air horn and a new gasket on the carburetor as described in this Part.

REMOVAL AND INSTALLATION

AIR HORN TO MAIN BODY GASKET

Removal

1. Remove the air cleaner.
2. Disconnect the choke heat tube at the carburetor air horn. Disconnect the fuel inlet line at the carburetor. Disconnect the choke clean air hose at the carburetor. Disconnect the external vent hose.
3. Disconnect the solenoid wire at the connector. Disconnect the electric choke wire at the connector.
4. Remove the clip retaining the link joining the choke shaft lever to the fast idle cam and remove the link.
5. Remove the air horn assembly attaching screws, solenoid throttle positioner and air horn gasket. Discard the gasket.

Installation

1. Install a new air horn to main body gasket. **Make sure all holes in the new gasket have been properly punched and that no foreign material has adhered to the gasket.** Install the air horn assembly, making sure the bowl vent rod engages the forked vent actuating lever. Install the solenoid throttle positioner and air horn attaching screws. Position the link joining the fast idle cam to the choke shaft lever and retain in place with a wire clip.
2. Connect the fuel inlet line, choke heat tube and choke clean air hose and external vent hose (if equipped) to the carburetor air horn.

3. Connect the solenoid wire and electric choke wire (if equipped).
4. Install the air cleaner. Start the engine, check for fuel leaks and run it until normal operating temperature is reached. Install the air cleaner. Adjust the idle fuel mixture and idle speed.

FLOAT OR NEEDLE VALVE

Removal

1. Remove the carburetor air horn and gasket. Follow instructions under Air Horn to Main Body Gasket Replacement.
2. Hold the air horn assembly bottom side up, and remove the float pin and float and lever assembly. Turn the air horn assembly over and catch the needle pin, spring and needle.
3. Remove the needle seat, inlet screen and gasket.

Installation

1. Replace the float if the needle pin contact surface is grooved. If the float is serviceable, polish the needle pin contact surface with crocus cloth or steel wool. Replace the float pin if it is worn.
2. Install the needle seat, gasket and inlet screen in the air horn. With the air horn inverted, install the

needle, pin spring, needle pin, float and lever assembly and float pin (Fig. 15).

3. Adjust the float level to specifications.
4. Install the carburetor air horn and gasket.

CARBURETOR ASSEMBLY

Removal

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

1. Remove the air cleaner.
2. Remove the throttle cable or rod from the throttle lever. Disconnect the EGR vacuum line, distributor vacuum line, fuel line and choke heat tube at the carburetor.
3. Disconnect the solenoid wire at the connector (if equipped). Disconnect the electric choke wire at the connector (if equipped).
4. Disconnect the choke clean air hose and the external vent hose from the air horn.
5. Remove the carburetor retaining nuts; then remove the carburetor. Remove the carburetor mounting gasket, spacer (if equipped) and lower gasket, from the intake manifold.

Installation

1. Clean the gasket mounting surfaces of the spacer and carburetor. Place the spacer between two new gaskets and position the spacer and gaskets on the intake manifold. Position the carburetor on the spacer and gasket and secure it with the attaching nuts.

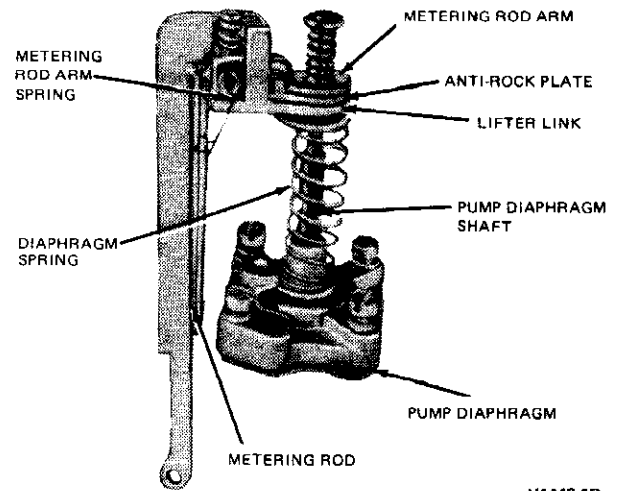
To prevent leakage, distortion or damage to the carburetor body flange, snug the nuts; then, alternately tighten each nut to the specified torque.

2. Connect the fuel line, throttle cable, choke heat tube, distributor vacuum line and EGR vacuum line.
3. Connect the choke clean air hose and external vent hose to the air horn. Connect the solenoid wire and electric choke wire (if equipped).
4. Install the air cleaner.
5. Adjust the engine idle speed, the idle fuel mixture and anti-stall dashpot (if so equipped).

MAIN METERING JET, LOW-SPEED JET, METERING ROD AND ACCELERATOR PUMP

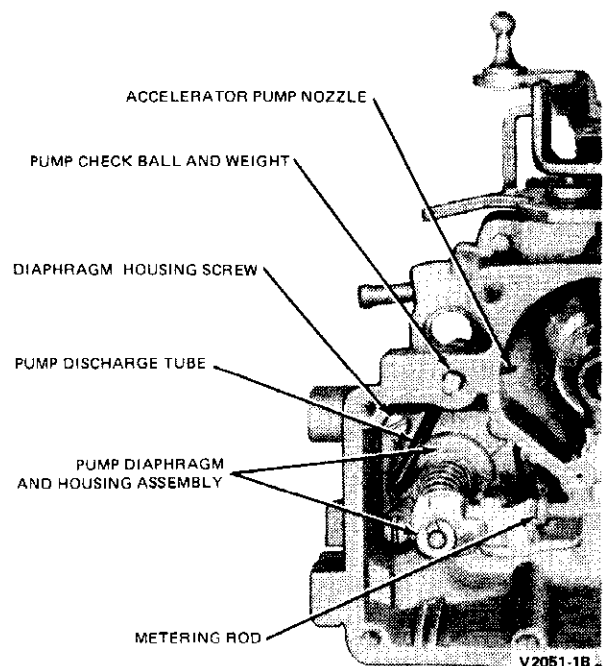
Removal

1. Remove the carburetor from the engine as described in this Part.
2. Remove the carburetor air horn and gasket by following the instructions under Air Horn to Main Body Gasket Replacement.
3. Turn the main body casting upside down and catch the accelerating pump check ball and weight and the hot idle compensator (if equipped).



V1448-1D

FIG. 12 Accelerating Pump and Lifter Link Assembly



V2051-1B

FIG. 13 Pump Diaphragm and Housing Installation

4. Remove the mechanical bowl vent operating lever screw, lever, wave washer, actuating lever, spacer and E-clip from the throttle shaft.
5. Loosen the throttle shaft arm screw, and remove the arm and the pump connector link.
6. Remove the accelerator pump diaphragm housing screws. Remove the accelerator pump discharge tube. Lift out the pump diaphragm assembly, the pump lifter link, seal, and the metering rod as a unit (Figs. 12 and 13).
7. Disengage the metering rod arm spring from the metering rod, and remove the metering rod from the metering rod arm assembly. **Note the location of any washers shimming either spring for proper reassembly.** Compress the upper pump spring, and remove the spring retainer. Remove the

pump spring, the metering rod arm assembly, the anti-rock plate and the pump lifter link from the pump diaphragm shaft. Compress the pump diaphragm spring. Remove the pump diaphragm spring retainer, spring and pump diaphragm assembly from the pump diaphragm housing assembly (Fig. 12).

8. With the proper size jet tool or screwdriver, remove the low speed jet and the main metering jet (Fig. 15).

Installation

1. With the proper size jet tool (or screwdriver) install the low speed jet and the main metering jet (Fig. 15).
2. Install the pump diaphragm in the pump diaphragm housing. Position the pump diaphragm spring on the diaphragm shaft and housing assembly. **Install the spring shim washers (if equipped) in the proper locations.** Install the spring retainer. Install the pump lifter link, the anti-rock plate, metering rod arm and spring assembly and the upper pump spring on the diaphragm shaft. Depress the spring and install the upper pump spring retainer.

3. Install the metering rod on the metering rod arm and place the looped end of the metering rod arm spring on the metering rod as shown in Fig. 10. Align the pump diaphragm with the diaphragm housing; make sure holes are aligned. Install the housing attaching screws to keep the diaphragm and housing aligned. Install the accelerator pump discharge tube.
4. Install the throttle shaft arm and link to the end of the throttle shaft.
5. Adjust metering rod as described in this Part.
6. Install the E-clip, spacer, bowl vent actuating lever, wave washer and vent operating lever. Tighten the retaining screw. Replace the hot idle compensator valve and the accelerator pump check ball and weight.
7. Install the carburetor air horn and gasket as described under Air Horn to Main Body Gasket Replacement.
8. Install the carburetor on the engine as described in this Part.

DISASSEMBLY AND ASSEMBLY

Refer to Part 24-01 for Cleaning and Inspection procedures.

CARBURETOR ASSEMBLY

Disassembly

Use a separate container for the component parts of the various assemblies to facilitate cleaning, inspection and assembly.

The following is a step-by-step sequence of operations for completely overhauling the carburetor; however, certain components of the carburetor may be serviced without a disassembly of the entire unit.

1. Remove carburetor as outlined under Removal and Installation.
2. Remove the two retaining screws, disconnect the choke pulldown link and remove the pulldown motor assembly. Disengage the link from the choke shaft lever.
3. Remove the choke retaining screws and housing retainers, the thermostatic spring housing assembly, spring housing gasket, spring housing baffle plate and fast idle link.
4. Remove the air horn assembly attaching screws, solenoid bracket assembly(s), air horn assembly, and air horn gasket (Fig. 15).
5. Hold the air horn assembly bottom side up and remove the float pin and float and lever assembly. Turn the air horn assembly over and catch the needle pin, spring and needle.
6. Remove the needle seat and gasket.
7. Remove the air cleaner bracket. Remove the choke plate attaching screws. File the staked ends, if necessary, and use new screws upon reassembly. Remove the choke plate from the air horn assembly;

remove the choke link lever and attaching screw. Remove the assembly from the air horn.

8. Turn main body casting upside down and catch the accelerating pump check ball and weight and hot idle compensator (if equipped).
9. Remove the mechanical bowl vent operating lever screw, lever, wave washer, actuating lever, spacer and E-clip from the throttle shaft.
10. Loosen the throttle shaft arm screw, and remove the arm and pump connector link.
11. Remove the fast idle cam and shoulder screw.
12. Remove the accelerating pump diaphragm housing screws. Lift out the pump diaphragm assembly, the pump lifter link, seal and the metering rod as a unit.
13. Disengage the metering rod arm spring from the metering rod, and remove the metering rod from the metering rod arm assembly. **Note the location of any washers shimming either spring for proper reassembly.** Compress the upper pump spring, and remove the spring retainer. Remove the upper spring, the metering rod arm assembly and the pump lifter link from the pump diaphragm shaft. Compress the pump diaphragm spring, and remove the pump diaphragm spring retainer, spring, and pump diaphragm assembly from the pump diaphragm housing assembly.
14. With the proper size jet tool or screwdriver, remove the main metering rod jet and the low speed jet (Figs. 13 and 14).
15. With a sharp punch or an awl, remove the temperature compensated accelerator pump bleed

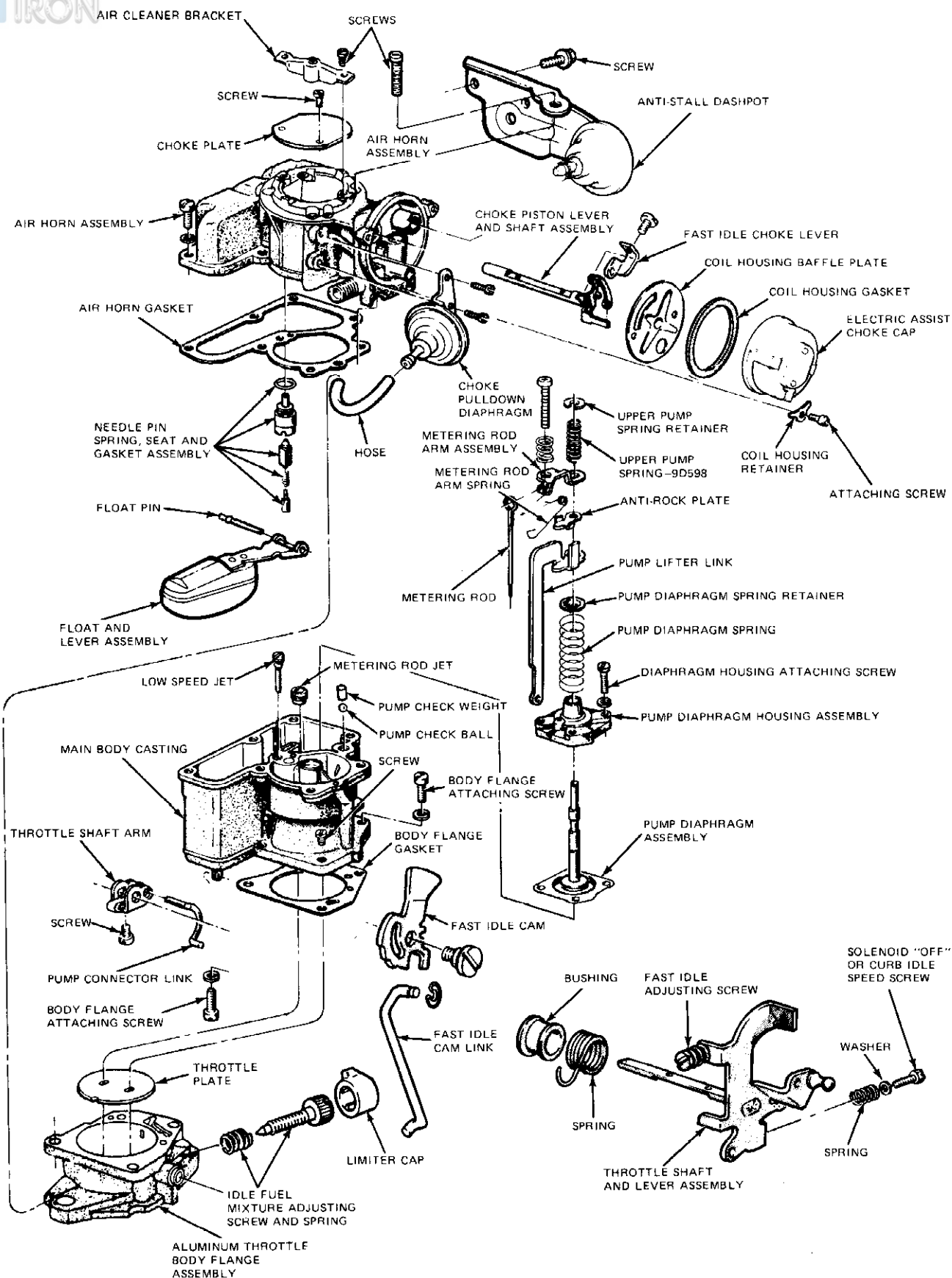


FIG. 14 Model YFA 1-V Carburetor Assembly

V1129-2N

valve plug from the (outside) main body casting. Loosen the bleed valve screw and remove the valve.

16. Remove the retaining screws and separate the throttle body flange assembly from the main body casting. Remove the body flange gasket.
17. Remove the throttle plate retaining screws. File the staked ends, if necessary, and use new screws upon assembly. Slide the throttle shaft and lever assembly out of the throttle body flange assembly. **Note the location of the ends of the torsion spring on the throttle shaft for proper reassembly. When removing the idle mixture limiter cap be sure to note the position of the tab. After removing the limiter cap count the number of turns to lightly seat the needle. This information will be used in reassembly.**

Assembly

1. Install the throttle shaft and lever assembly with torsion throttle return spring and bushing (Figs. 14 and 15) in the throttle body flange. Position the throttle plate on the throttle shaft with the notch in the plate aligned with the slotted idle port (Fig. 15) in the throttle body flange. Install the throttle plate attaching screws snug, but not tight. Move the shaft back and forth and rotate it to be sure the throttle plate does not bind in the flange bore. It is necessary that the throttle plate should close tight in the bore therefore the idle speed screw should be backed out sufficiently to insure it does not contact the throttle stop. Reposition the plate, if necessary. Tighten the screws and stake (or peen) the screws in place.

Install the idle mixture screw the same number of turns out from lightly seated. Install the limiter cap in the same position as removed.

NOTE: Final idle fuel mixture adjustments must be made according to procedures outlined in Part 50-29 of this Manual.

2. Place a new body flange gasket and the main body casting on the throttle body flange. Install the attaching screws and tighten them evenly.
3. With the proper size jet tool (or screwdriver) install the low speed jet and the main metering rod jet (Figs. 13 and 14).
4. Install the pump diaphragm in the pump diaphragm housing (Fig. 13). Position the pump diaphragm spring on the diaphragm shaft and housing assembly. Install the spring shim washers in the proper locations. Install the spring retainer. Install the pump lifter link, metering rod arm and spring assembly, and upper pump spring on the diaphragm shaft. Depress the spring and install the upper pump spring retainer.
5. Install the metering rod on the metering rod arm and place the looped end of the metering rod arm spring on the metering rod as shown in Fig. 12. Align the pump diaphragm with the diaphragm housing; make sure the holes are aligned. Install the housing attaching screws to keep the diaphragm and housing aligned.
6. Align the pump housing, pump lifter link, metering rod and baffle plate with the main body casting.

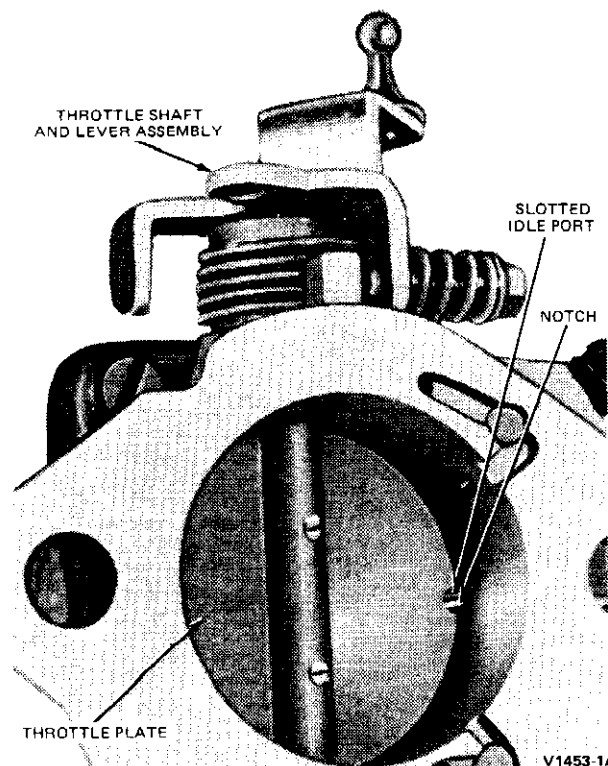


FIG. 15 Throttle Plate and Shaft Arm Installation

Be sure the vacuum passage in the diaphragm housing is aligned with the vacuum passage in the main body. Install the assembly in the main body casting being careful to engage the pump lifter link with the main body, and to insert the metering rod in the main metering rod jet. Install the pump housing attaching screws snug, but not tight. Push down on the diaphragm shaft to compress the diaphragm, and tighten the attaching screws. Adjust the metering rod, following the procedure under Metering Rod Adjustment.

7. Position pump bleed valve and washer, and install valve retaining screw. Install a new welch plug by seating it securely with a 1/4" flat drift punch.
8. Install the fast idle cam and shoulder screw. Install the throttle shaft arm and pump connector link on the throttle shaft and pump lifter link (Fig. 15). Tighten the lock screw.
9. Install the E-clip, spacer, bowl vent actuating lever, wave washer, and vent operating lever. Tighten the retaining screw. Replace the hot idle compensator valve and accelerator pump check ball and weight.
10. Install the choke shaft assembly through the choke housing, the pulldown link lever, and into the air horn. Tighten the lever retaining screw.
11. Position the choke plate on the choke shaft and install the screws snug. Check the choke plate movement to be sure it isn't binding. Tighten the screws and peen or stake them to prevent loosening. Install the choke link lever and tighten the attaching screw.
12. Install the needle seat and gasket in the air horn. With the air horn inverted, install the needle, pin spring, needle pin, float and lever assembly, and float pin. Adjust the float level to specifications.



13. Align the bowl vent flapper valve with the vent rod. Make sure the spring is properly installed on the vent rod shaft. *Install the spring retainer.*
14. Position a new air horn gasket, the air horn assembly, and the solenoid bracket on the main body. Install and tighten the attaching screws.

NOTE: When installing the air horn assembly onto the main body, make sure the mechanical fuel bowl vent is engaged with the forked actuating lever.

15. Install the thermostatic coil housing, gasket and baffle plate, identification mark facing outward, with the gasket between the baffle and coil housing. Be sure the thermostatic spring engages

the choke lever tang and is not stopped by a retaining tab on the baffle plate (if equipped). *Install the retainers and housing screws. Set the coil housing index to specifications and tighten the screws.*

16. Install the air cleaner bracket. Install the fast idle link.
17. Engage the choke pulldown link with the choke shaft lever and the pulldown diaphragm rod. Position the diaphragm bracket on the air horn and install the two attaching screws. Connect the pulldown vacuum hose from the throttle body vacuum connector to the diaphragm housing.

Holley Model 1946 1-V Carburetor

**PART
24-08**
Fairmont and Zephyr

SUBJECT	PAGE	SUBJECT	PAGE
DESCRIPTION	08-1	ADJUSTMENT (Cont'd.)	
OPERATION		Curb Idle Speed (TSP ON)	08-5
Accelerator Pump System	08-4	Dechoke	08-6
Automatic Choke System	08-5	External Fuel Bowl Vent	08-7
External Fuel Bowl Vent System	08-4	Fast Idle Cam Position	08-6
Fuel Inlet System	08-2	Fast Idle Speed	08-6
Idle System	08-2	Float Level	08-7
Main Metering System	08-3	Idle Fuel Mixture	08-5
Power Enrichment System	08-3	Low Idle Speed (TSP OFF)	08-6
ADJUSTMENT		REMOVAL AND INSTALLATION	08-8
Accelerator Pump Stroke	08-6	DISASSEMBLY AND ASSEMBLY	08-9
Choke Pulldown	08-7		

CV2299-2A

DESCRIPTION

The Holley model 1946 1-V carburetor (Figs. 1-3) is used on Fairmont and Zephyr 3.3L (200 CID) I-6 engines with automatic transmission. It uses seven basic systems to provide an appropriate air/fuel mixture for fuel economy, driveability and emissions under a wide range of conditions. The systems are: (1) fuel inlet system, (2) idle system, (3) main metering system, (4) power enrichment system, (5) accelerator pump system, (6) external fuel bowl vent system, and (7) automatic choke system. The operation of each system will be detailed under the specific system heading.

Three main assemblies make up the model 1946 carburetor: the air horn, main body, and throttle body (Fig. 1). The AIR HORN assembly contains the fuel bowl vent, the enrichment valve piston and the accelerator pump piston, cup, spring and operating lever, as well as the choke plate, shaft, lever, housing and choke cap. In addition, the idle air bleed and the high speed bleed restrictors are contained in the air horn assembly.

The MAIN BODY assembly contains the fuel inlet system including the needle and seat assembly, the float, the float hinge pin, and retainer. The centrally-

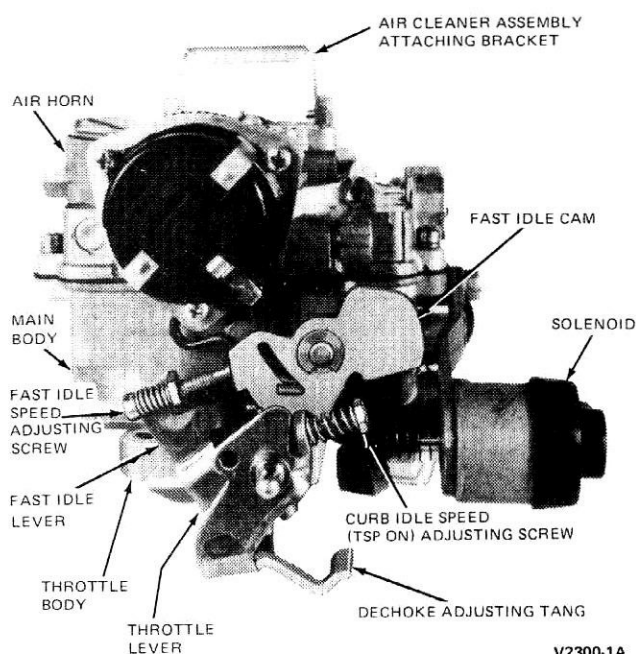


FIG. 1 Holley Model 1946 Carburetor—Side View

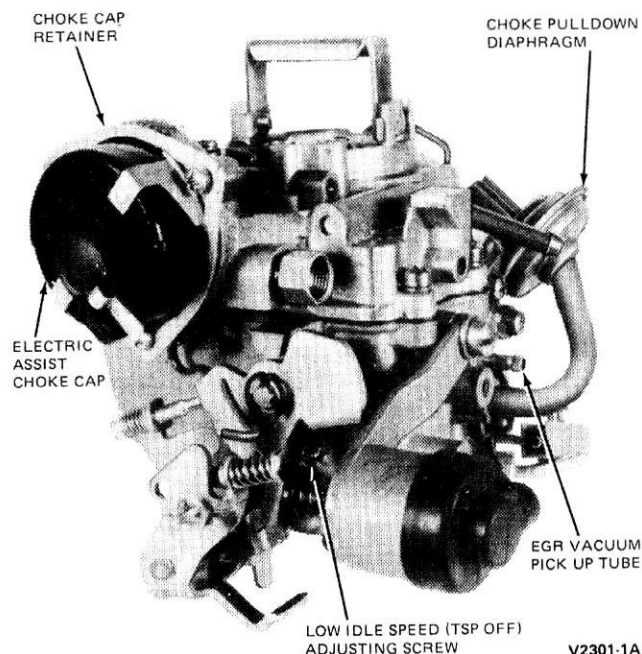


FIG. 2 Holley Model 1946 Carburetor—3/4 Rear View