

Model YFA 1-V Carburetor

**PART
24-06**

I-6 Engines Except Fairmont/Zephyr w/Automatic Transmission

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DESCRIPTION

CARBURETOR ASSEMBLY

The Carter Model YFA 1-V carburetor is made up of three main assemblies: the air horn, the main body and throttle body (Figs. 1, 2 and 3).

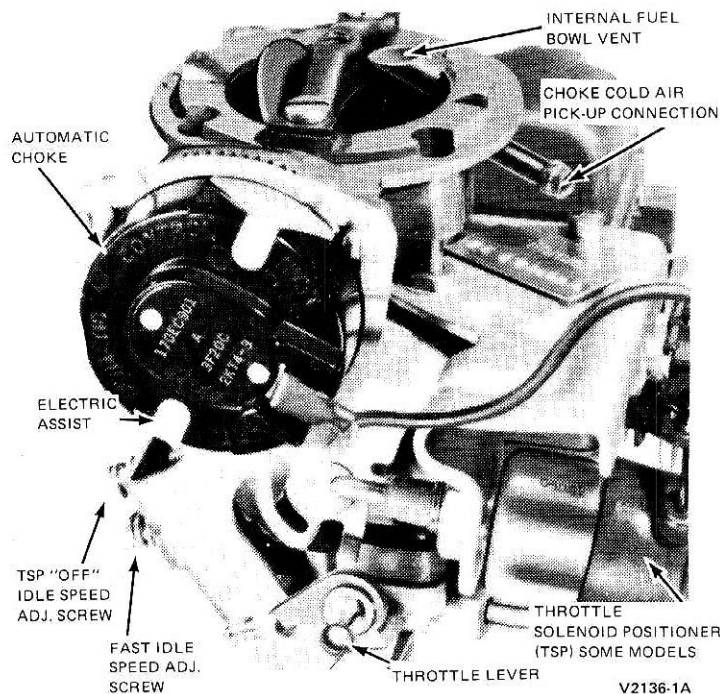


FIG. 1 Model YFA 1-V Carburetor—Rear View

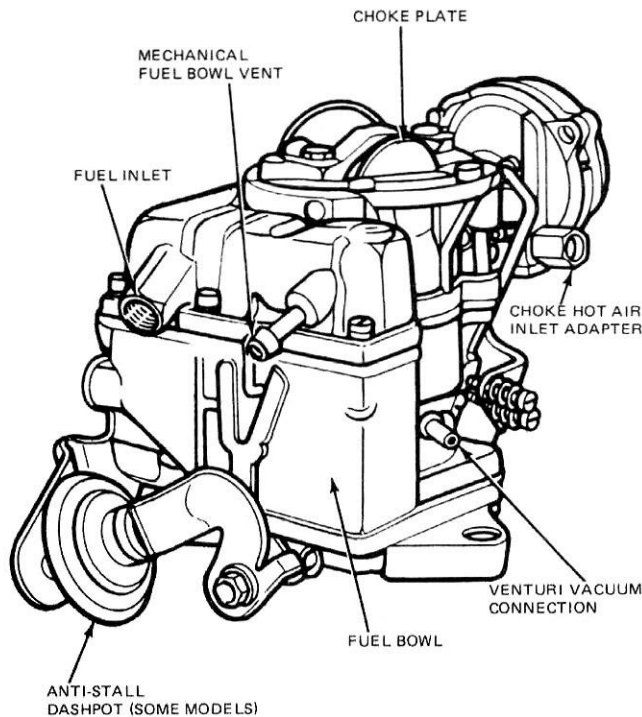
The air horn, which serves as the main body cover, contains the choke plate, an internal vent for the fuel bowl, automatic choke thermostatic control and electric assist choke (if equipped), fuel inlet fitting, inlet needle and seat and the float and lever assembly. The throttle positioner is attached to the air horn by means of a bracket. The Model YFA carburetor has a choke hot air inlet adapter, an external mechanical bowl vent for improved control of evaporative emissions, and an integral hot idle compensator (HIC) (some models). An externally-mounted choke pulldown diaphragm is used on all models.

The main body contains the integral hot idle compensator (some models), accelerator pump assembly, metering rod, main metering jet, low-speed jet, accelerator pump check ball, weight, temperature compensator valve, and the main discharge nozzle.

The throttle body contains the throttle plate, throttle shaft and lever and idle mixture adjusting screw with a plastic limiter cap.

The Model YFA Carburetors used on some I-6 engines may be equipped with solenoid throttle positioners (Fig. 1). The solenoid reduces "dieseling" or after-running by allowing the throttle plate to close further than the normal curb idle position when the ignition is turned off. Some models use a second solenoid when equipped with A/C.

The engine speed is regulated and controlled by the amount of fuel and air delivered to the cylinders for all



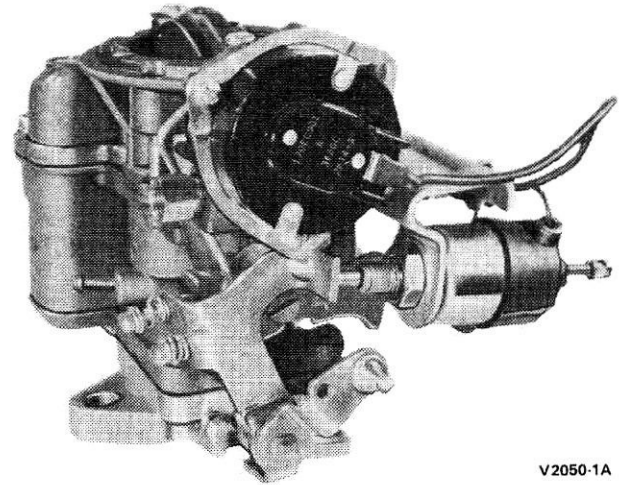
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FIG. 2 Model YFA 1-V Carburetor—Left Front View

engine operating conditions. Operation is based on the principle of pressure differences.

Air is drawn into the carburetor air horn by manifold vacuum. As the air passes through the carburetor on the way to enter the cylinders, low pressure is created at the fuel discharge outlets of the carburetor. The fuel bowl is vented to the carburetor air horn. The higher air pressure exerted on the fuel in the bowl forces the fuel to travel up through the fuel discharge channels and out into the air stream passing through the carburetor. The fuel and air is mixed at this point and distributed into the engine cylinders for combustion.

To more closely match accelerator pump fuel discharge with engine requirements over a wide range



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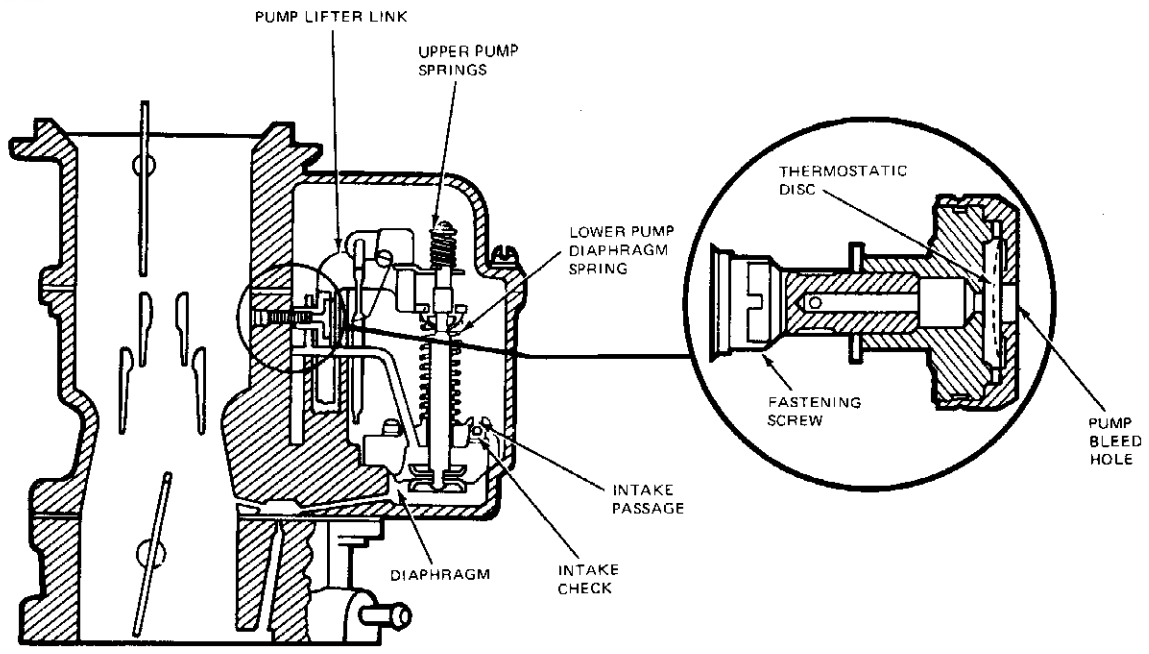
FIG. 3 YFA 1-V Carburetor Equipped with Solenoid—Rear View

of engine temperature conditions, a temperature controlled pump bleed is incorporated (Fig. 4).

A thermostatic disc is designed to open and close within a specified temperature range. As the disc warms to a temperature of 71°F and above, it uncovers a calibrated pump bleed hole, permitting a portion of the fuel to be returned to the fuel bowl during the pump stroke. As the carburetor temperature drops to 49°F and below, the disc covers the pump bleed and the maximum pump volume is once again delivered to the engine.

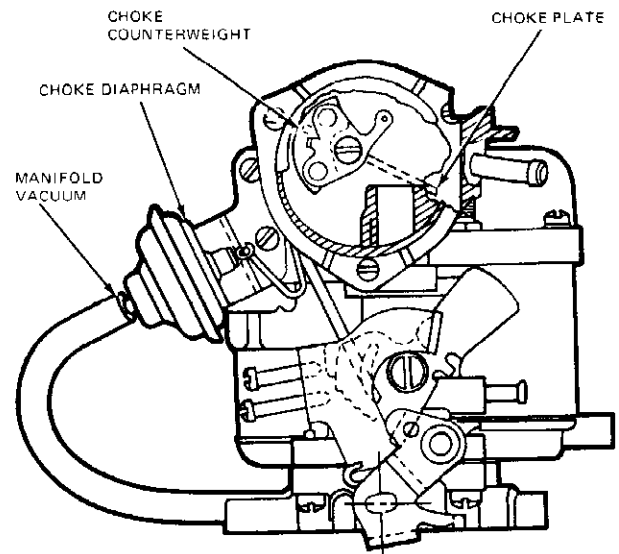
An externally mounted choke pulldown diaphragm and counterweighted choke lever (Fig. 5) is used to more closely control optimum fuel/air ratio throughout the choke cycle.

The counterweight provides extra closing force when the choke is closed, providing a richer cranking mixture to aid in cold starts. When the engine starts, and the choke begins to open, the weighted portion of the choke shaft lever travels "overcenter" with respect to the choke shaft and begins to apply additional opening effort to the assist during choke warmup.



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FIG. 4 Temperature Compensated Accelerator Pump System



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FIG. 5 Choke Pulldown System

ADJUSTMENTS

Most carburetor adjustments are factory set, and based on guidelines determined for reduced engine emission. In order to adjust:

- Automatic Choke
- Idle Speeds
- Fuel Mixture

you must refer to Engine Emission Control System Part 29-01 of this Volume or Part 50-29 of Volume 5. Specifications can be found on the engine emission decal and in the Ford Car Performance Specification book.

Adjustment points for the YFA 1-V Carburetor are shown in Figs. 1, 2, 3 and 4.

FAST IDLE SPEED ADJUSTMENT

Make certain the curb idle speed and mixture are adjusted to specification before attempting to set the fast idle speed.

1. With the engine operating temperature normalized (hot), EGR vacuum disconnected and a jumper line (if required) to the distributor, air cleaner removed and the tachometer attached, manually rotate the fast idle cam until the fast idle adjusting screw rests on the kickdown step of the cam as shown in Fig. 7.
2. Adjust fast idle speed to specification. Turning the fast idle speed adjustment screw clockwise increases the fast idle speed.

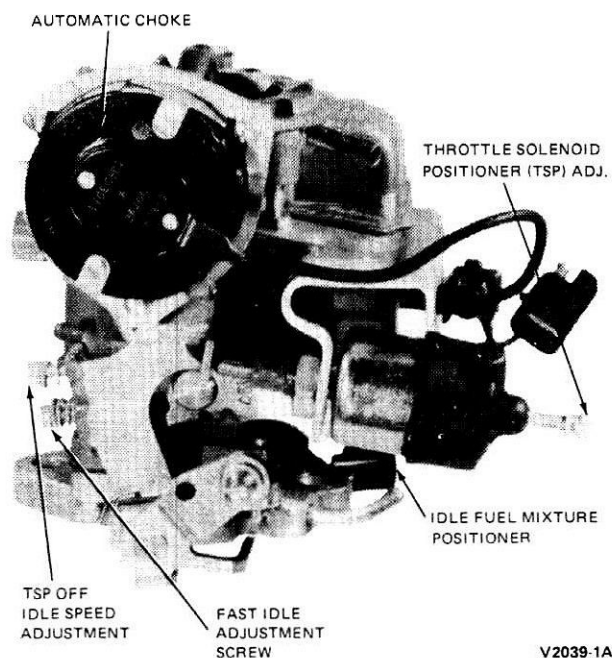
AUTOMATIC THERMOSTATIC SPRING HOUSING

The automatic choke has an adjustment to control its reaction to engine temperature. By loosening the retaining screws that attach the thermostatic spring housing to the choke housing, the spring housing can be turned to alter the adjustment. Refer to the engine emissions decal for the proper setting.

1. Remove the air cleaner assembly from the carburetor.
2. Loosen the thermostatic spring housing retaining screws. Set the spring housing to the specified index mark and tighten the retaining screws.
3. If other carburetor adjustments are not required, install the air cleaner assembly on the carburetor.

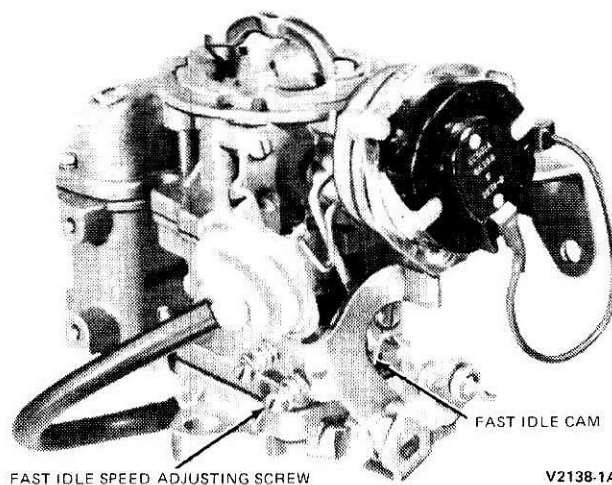
DECHOKE ADJUSTMENT

1. Remove the air cleaner assembly.
2. Hold the throttle plate fully open and close the choke plate as far as possible without forcing it. Use a drill of the proper diameter to check the clearance between the lower edge of the choke plate and air horn (Fig. 8).
3. If the clearance is not within specification, adjust by bending the arm on the choke trip lever of the throttle lever. Bending the arm downward will decrease the clearance, and bending it upward will increase the clearance. Always recheck the clearance after making any adjustment.



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FIG. 6 Carburetor Adjustments—Model YFA 1-V



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FIG. 7 Fast Idle Adjusting Screw

CHOKE PLATE PULLDOWN

1. Remove the air cleaner assembly.
2. Set the throttle on the highest step of the fast idle cam.
3. Cool the choke housing until the bi-metal closes the choke plate lightly in the air horn.
4. Record the index position of the choke bi-metal cap for later use in resetting the cap.
5. Loosen the retaining screws and rotate the bimetal cap 90 degrees in the closing (rich) direction. Retighten the retaining screws.
6. Activate the choke pulldown motor by applying vacuum to the external vacuum tube.
7. Manually insure that the pulldown motor is fully retracted by pushing down on the choke lever and releasing again.