

ZENITH 28 IFT 1-BARREL

Renault Dauphine R-1094 (1963-66)

DESCRIPTION

Carburetor is single barrel downdraft type. An integral automatic choke provides richer mixture required for cold starting. Increased idle speed needed until engine has reached operating temperature is controlled by fast idle system. It should be noted, that before starting engine when it is cold, it is necessary to depress accelerator pedal once, and then release it, to free fast idle cam, and permit automatic choke to operate.

OPERATION

Fuel Supply

Fuel is delivered by fuel pump under pressure to carburetor bowl through inlet fitting, filter screen, and needle valve assembly. Level of fuel in carburetor bowl is controlled by action of float opening and closing needle valve.

Automatic Choke

1) When engine has been stopped long enough to become cold, choke plate tends to close, because of tension of thermostatic spring. This spring is made so that it winds up when it is hot, and releases itself when it is cold. Center of spring is fixed so that a winding action is effective at outer end, which is in contact with a pin connected to choke plate shaft. Plate cannot close, however, as cam resting on stop screw holds it open. To release choke, it is necessary to depress accelerator pedal once, and then release it, in order to clear fast idle cam and allow choke plate to close.

2) When choke plate is closed, throttle plate is held partially open as fast idle adjustment screw rests on highest step of cam. Volume of air and air/fuel mixture will therefore be greater than at normal idle speed, and engine will operate at a fast idle speed.

3) A cold air inlet tube conducts filtered air to curved U-shaped pipe installed in exhaust manifold. A hot air inlet tube, which passes behind carburetor, conducts heated air through the union. This air heats thermostatic spring and support block. Purpose of this block is to absorb a large quantity of heat and to store this heat. Without this block, spring would heat and wind too rapidly. Also, when engine is stopped, spring would cool down and would release too rapidly. The block communicates its heat to the spring and retards this action.

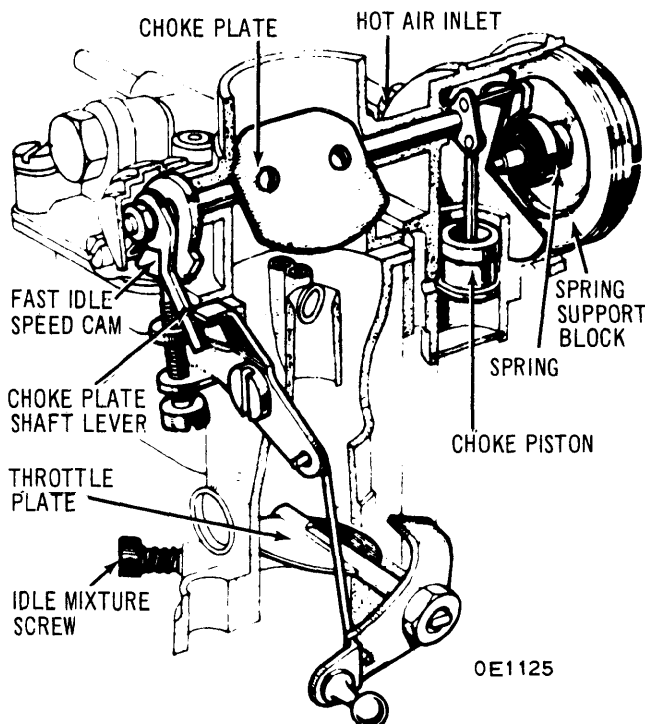
4) As soon as engine starts, vacuum created in intake manifold exerts a downward pull on choke piston. The choke plate which was closed when starting, begins opening as piston pulls downward against action of thermostatic spring, and progressively opens as spring winds up when heated.

Fast Idle System

Faster idle during warm up time is controlled by position of fast idle cam. When cold, cam is in position so that stop is against high step of cam. As choke plate opens progressively, fast idle cam pivots and fast idle adjustment screw rests on the next step. Lowering down, step by step, of fast idle adjustment screw causes, through its connecting link, a pivoting of accelerator control. This pivoting motion results in progressively reducing the partial opening of throttle plate. This continues until choke plate is fully open, and engine operates at a normal idle speed at operating temperature, as regulated by the idle adjustment screw.

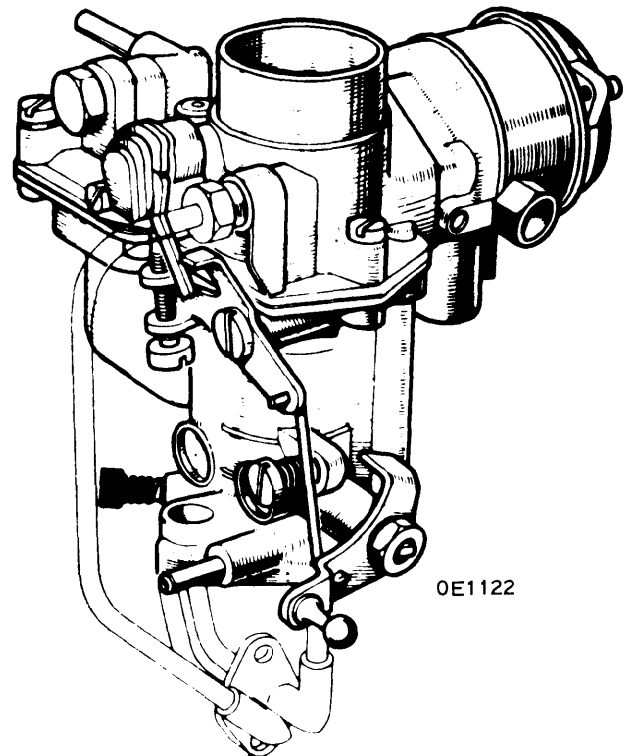
Idling And Power Transition

1) At idle speed, with engine at normal operating temperature, fuel is drawn up from carburetor bowl through the main jet, metered through idle jet, and across to the idle



OE1125

AUTOMATIC CHOKER



OE1122

ZENITH 28 IFT CARBURETOR

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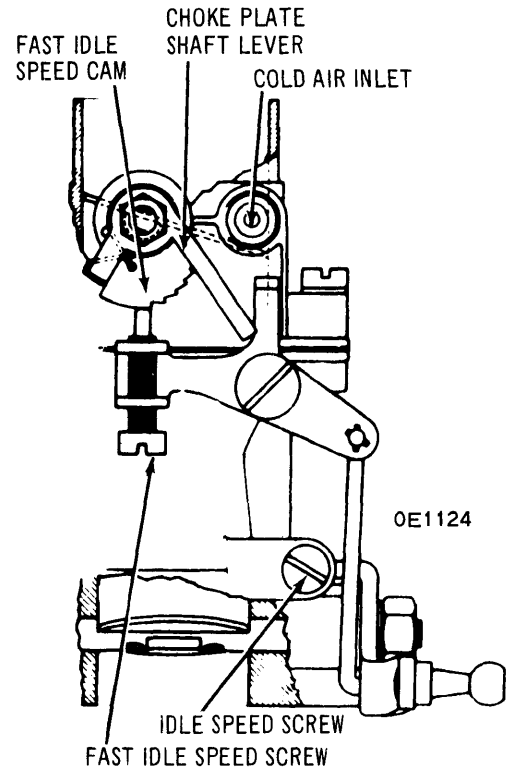
passage, where it is mixed with air entering through the calibrated air bleed and then through upper idle mixture port. Air/fuel mixture enters throttle bore below throttle plate through lower idle mixture port. Amount of mixture is regulated by adjustment of idle mixture adjustment screw. At this point, mixture is further mixed with air drawn past the slightly opened throttle plate, regulated by adjustment of idle speed adjustment screw.

2) As throttle, controlled through linkage by accelerator pedal, begins to open, the amount of air flow past throttle plate is gradually increased. As air flow increases, it begins to draw air/fuel mixture through upper idle mixture port, in addition to mixture already being drawn through lower idle mixture port, providing a proportionate increase in air/fuel mixture.

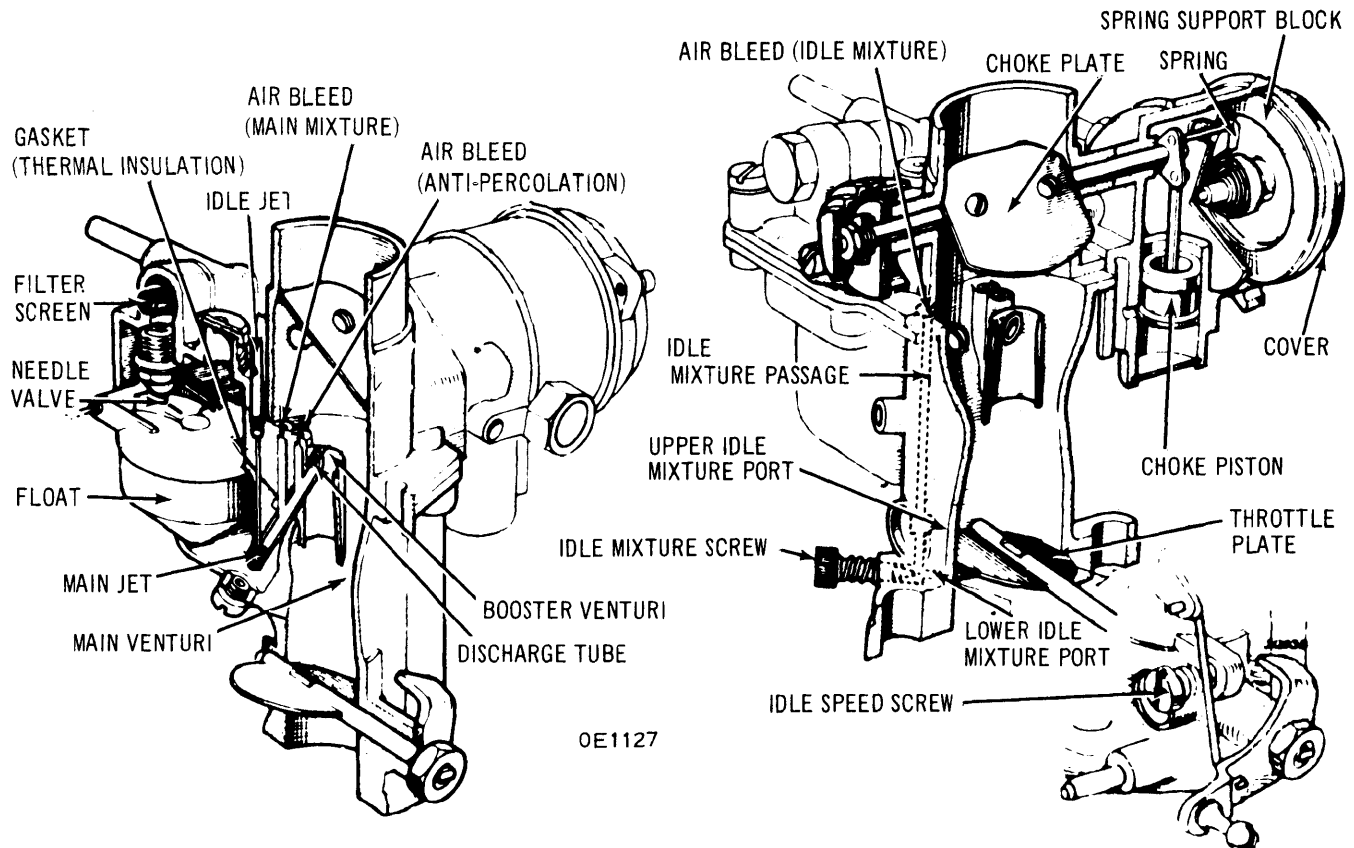
3) As throttle is opened still further, the point of highest vacuum moves to main venturi and booster venturi. Fuel then flows through main jet into discharge tube. Vaporization of fuel is accomplished first through the calibrated air bleed, second at the outlet end of discharge tube, and finally at booster venturi and main venturi. Amount of air/fuel mixture entering manifold is controlled by amount that throttle plate is opened.

Anti-Percolation

After engine has been turned off, heat remaining in the assembly does not dissipate immediately. To prevent a "percolating" effect from the vaporization of fuel remaining in the discharge tube, a chamber is provided, with a calibrated air bleed drilled in the upper part. In this chamber, the vaporized fuel condenses, and returns to carburetor bowl. To further control this vaporization, thermal insulation is provided by a leather gasket.



FAST IDLE LINKAGE



ZENITH 28 IFT CARBURETOR ASSEMBLY

ZENITH 28 IFT 1-BARREL (Cont.)

MAINTENANCE

At 1,000, 3,000, and every 3,000 miles thereafter, with engine cold, make sure that the two nuts holding carburetor base to manifold are tight and that there is no air leak at this point (do not overtighten). Remove fuel inlet filter screen, wash it in gasoline, blow dry, and replace.

ADJUSTMENT

Idle Speed Adjustment

Adjustments made with engine at operating temperature, choke plate fully open, and fast idle control not in operation. Connect tachometer and adjust idle speed adjustment screw to obtain specified engine RPM.

Idle Mixture Adjustment

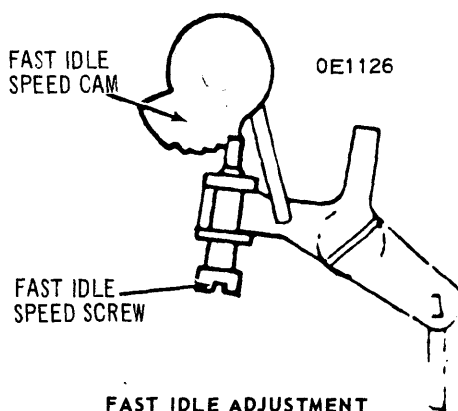
Turn idle mixture screw in until engine begins to "lope". Turn screw out until engine roughness just disappears. If idle speed has now increased, reset to specified RPM and repeat idle mixture adjustment until best quality idle has been obtained. **NOTE** - Idle mixture screw must not be forced against its seat.

Automatic Choke Adjustment

Adjustment of automatic choke is not to be altered. Proper setting is alignment of index mark on choke cover with mark on housing.

Fast Idle Adjustment

Preset at factory. Use following procedure to check and maintain factory adjustment. With throttle fully closed against idle speed adjustment screw, hold fast idle speed cam in position so that fast idle speed adjustment screw can be turned in until it just contacts first step on cam next to normal operating temperature position. Turn screw in one-half turn past this position. Check to be sure that screw is not in contact with cam when cam is in normal operating temperature position (choke plate fully opened).



SPECIFICATIONS

Engine Idle RPM	550
Automatic choke setting	Index
Main Venturi	20
Main Jet	90
Air Bleed (Main Mixture)	60
Air Bleed (Anti-Percolation)	60
Discharge Tube	3.5 x 2.5
Idle Jet	35
Air Bleed (Idle Mixture)	90
Needle Valve (Seat)	1.5

REMOVAL AND REPLACEMENT

- 1) Disconnect air filter, fuel line, hot air inlet tube, cold air inlet tube, and distributor vacuum tubing at carburetor. Disconnect throttle linkage at carburetor throttle plate arm. Remove nuts and washers from the two manifold studs.
- 2) Lift carburetor straight up until it clears the manifold studs. Remove spacer block and gaskets. Inspect all parts and connections to determine if they are still suitable for use, or must be replaced.
- 3) To replace, reverse removal procedure.

OVERHAUL

► **NOTE** - Following procedure covers a complete overhaul. In servicing in the field, it is not practical nor desirable to perform some of the operations unless prior examination reveals that it will be necessary to use new parts.

Disassembly

- 1) Remove retaining plug and filter screen. Remove idle jet. Remove cover assembly and gasket. Lift out plastic float bracket and float. Remove main jet plug and seal, then remove main jet through plug opening. **NOTE** - Do not remove the two screws holding main jet body to the bowl. The thermal gasket is not to be removed. Remove idle mixture adjustment screw, and idle speed adjustment screw.
- 2) Remove bolt and spring washer holding fast idle speed adjustment screw and arm in place, and remove arm. **NOTE** - Fast idle speed adjustment screw is pre-set at factory. Remove arm and bushing from throttle plate shaft. Disconnect link between fast idle adjustment arm and throttle shaft arm. Remove screws holding throttle plate in shaft and slide plate from shaft. Slide throttle plate shaft out of carburetor base.
- 3) Remove needle valve and seal assembly. Remove cover from automatic choke, and remove thermostatic spring support block with its metal plate and the thermostatic spring (do not remove spring from the block). Remove metal shield. Remove nut and lock washer holding choke piston to shaft. Remove choke housing with piston and gasket. Remove choke piston from housing. From other end of choke shaft, remove fast idle speed cam cover, and remove choke lever and fast idle speed cam. Remove screws holding choke plate to shaft and remove plate. Remove choke plate shaft and the two spacers from the cover.

- 4) Clean all metal parts in a suitable solvent. **NOTE** - Do not attempt to clean jets or passages with metal wire or instruments; use only solvent followed by air under pressure.

Reassembly

- 1) Inspect all parts for damage, clogged passages, or distortion. Replace all parts that are not acceptable. Replace all gaskets and seals.
- 2) Slide choke shaft in place through carburetor cover, installing the two spacers as this is being done. Install choke plate on shaft between the two spacers. Peen threads of screws to prevent them from loosening. Install fast idle speed cam with its spring and hub, and the choke plate shaft lever. (Be sure lever arm is engaged in spring.) Install fast idle speed cam cover and secure with screw and lock washer. (Note the locating dowel diagonally opposite the screw.)

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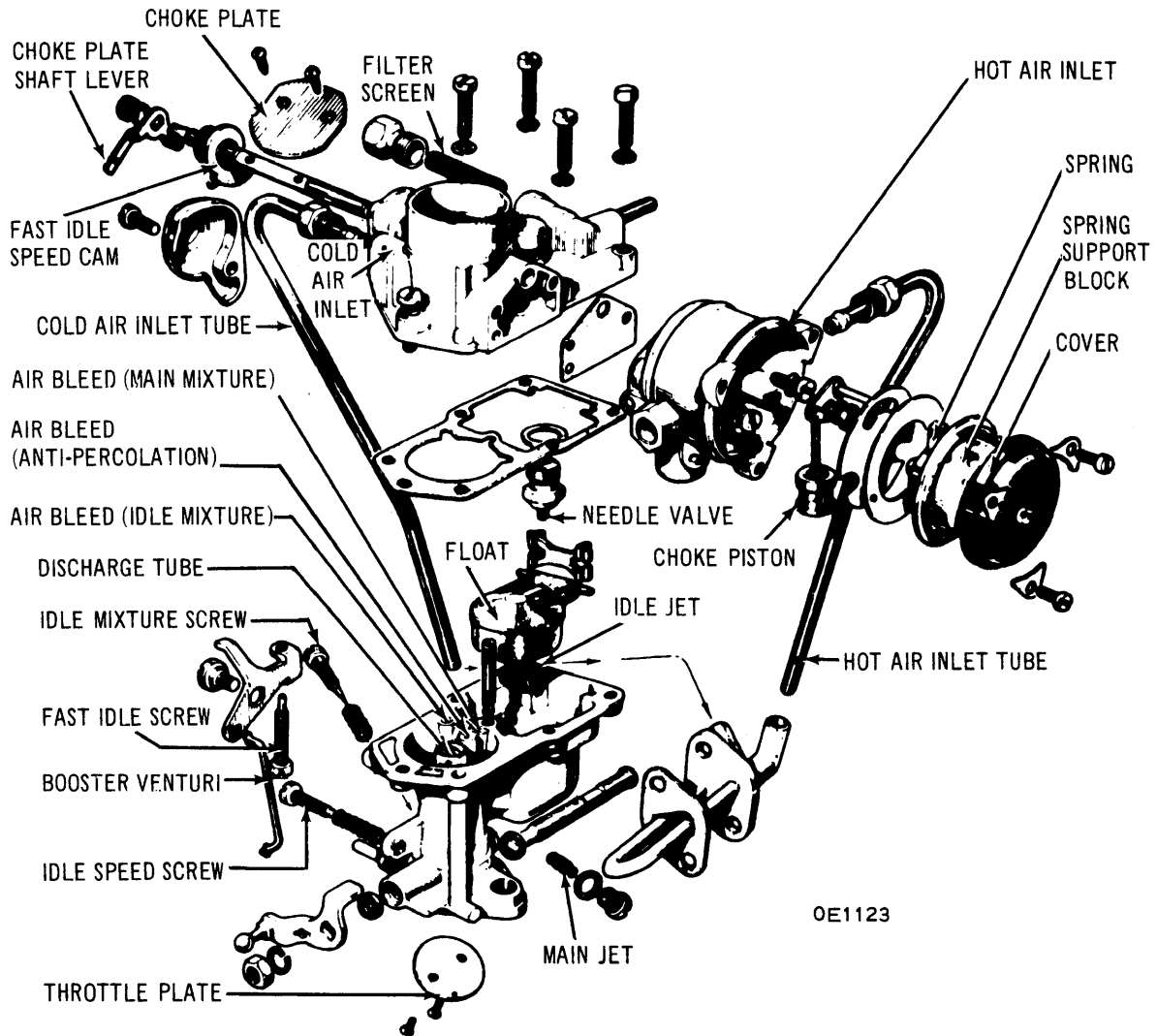
3) Install choke piston in choke housing and install housing and gasket on carburetor cover. Install piston link on choke shaft and secure with lock washer and nut. In choke housing, install metal shield, thermostatic spring support block with its metal plate and the thermostatic spring. **NOTE** - Spring must engage pin on piston link, and tangs on metal ring properly positioned in the housing. Install choke cover, making sure pin inside the cover fits in hole in thermostatic spring support block. Index mark on cover should be aligned with mark on housing.

4) Install needle valve and seal. Slide throttle plate shaft with its end seal through bore in carburetor base. Install throttle plate in slot in shaft. **NOTE** - With carburetor base upside-down, indentations in the plate should be over the screw holes, and indented away from the idle ports. Hold plate in place with the two screws, but do not tighten screws at this time. Install bushing and throttle shaft arm on shaft and secure with lock washer and nut. Hold throttle firmly in closed position and tap throttle plate lightly to center it in bore. Tighten the two screws and

peen threads to prevent them from loosening.

5) Install connecting link between throttle shaft arm and fast idle speed adjustment arm. **NOTE** - Right angle bend is at throttle shaft arm, and obtuse angle bend is at fast idle speed adjustment arm. Install fast idle speed adjustment screw and arm, using bolt and spring washer. Install idle mixture adjustment screw and spring. Turn screw in until it seats lightly, then back screw out about two turns, to provide preliminary setting. Install idle speed adjustment screw and spring, with throttle limiter, if applicable. Turn screw in until it just contacts throttle shaft arm tab when throttle is fully closed. Turn in an additional one-half turn to provide preliminary setting.

6) Install main jet, main jet plug and seal, float, and plastic float bracket. Install cover gasket and cover. Make sure plastic float bracket is in place in the boss in the cover, and the choke plate shaft lever is in proper position with regard to the unloader tab on fast idle speed adjustment screw arm. Install idle jet, fuel filter screen, and its plug.



ZENITH 28 IFT CARBURETOR ASSEMBLY