The BING slide carburettor type 85 is a cross-draught slide carburettor with part-load needle jet and idling control and is produced with a bore size of 8, 10, 12 and 13 mm. The die-cast zinc body contains the float system which regulates the fuel supply from the tank to the carburettor, and the regulating system with throttle valve and its adjusting screw, jet needle, needle jet and main jet. The carburettor is mounted on the engine by a clip fitting. The carburettor body, which is available in two different basic versions, has a flange with four threaded holes or a clip fitting having a diameter of 20 mm for connecting an air filter or intake silencer.

Fuel Supply Control

The carburettor float is plastic with a metal hinge and is located below the carburettor choke tube close to the jet system, thus enabling the carburettor to be tilted far in all directions without impairing operation. The object of the float is to maintain a constant fuel level in the carburettor. When the fuel has reached a specified level in the float chamber, then the float (23) is lifted until the float needle (22) is pressed against the fuel seat, thus preventing any further supply of fuel. When the engine draws fuel from the carburettor, the level in the float chamber (25) drops and so does the float. The float needle clears the fuel seat and allows fuel to flow in from the tank.

A tickler (31) permits the float to be pressed below the fuel level, thus "flooding" the carburettor which may be necessary for starting at low temperatures.

The float chamber (25) is secured to the carburettor housing by two screws (26). A washer (27) is provided between float chamber and carburettor body. The space above the fuel level is vented to atmosphere by one or more ducts. When these vents are blocked, an air lock forms above the fuel level, the float is not lifted and the carburettor will overflow.

In conjunction with the float the float needle valve only regulates the fuel supply, it does not function as a tap when the engine is not running. Minute foreign bodies may be deposited between needle seat and needle tip, thus preventing complete closure of the valve. When stopping the engine, therefore, the fuel tap on the tank should always be closed. In addition the fuel should be filtered before it reaches the carburettor; for this a screen having a maximum mesh size of 0.13 mm, i. e. having a fabric number 150 at a wire diameter of 0.05 mm should be used. It goes without saying that this screen should be cleaned regularly.

When fitting a new float, the fuel level needs to be adjusted. With the float needle on its seating, the float hinge is bent so that the float bottom is parallel to the upper float chamber edge.

Main Regulating System

The amount of mixture drawn in by the engine and thus its performance is determined by the cross-sectional area in the bore which is opened up by the throttle valve (4). This valve is lifted by a cable against the action of a return spring (8). The air flow produces a vacuum in the carburettor bore which draws fuel from the float chamber through the jet system. The amount of fuel drawn in at full throttle position is determined by the size of the main jet (1) which is screwed into the needle jet (2). In the part-load range, i. e. when the throttle valve is between one and three quarters of its full movement, less fuel is required than at full throttle. The fuel supplied to the bore therefore needs to be reduced. This is achieved by
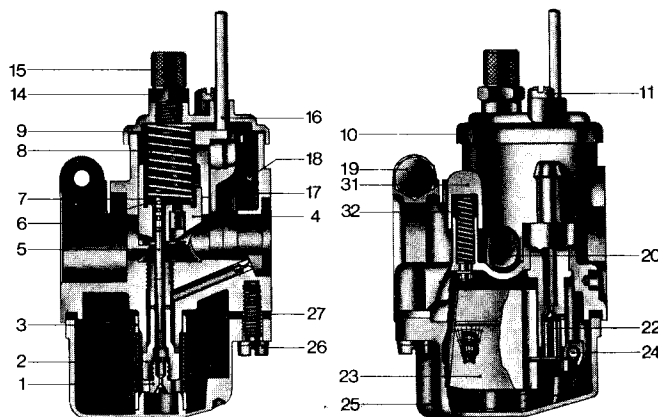
a jet needle (5) which is connected to the throttle valve (4) and enters the needle jet (2). Depending on the dimension of the taper at the end of the jet needle, the annular gap between jet needle and needle jet is enlarged or decreased. The jet needle may be located in the throttle valve in four different positions which, similarly to the jet needle taper, affect the amount of fuel drawn in. "Needle position 2" means that the jet needle has been suspended from the spring clip (6) from the second notch from the top. During assembly particular attention has to be paid to the fact that the jet needle swings freely in the throttle valve.

Guides in the throttle valve prevent the clip from being turned. These guides also locate a washer (7) which prevents contact between the throttle valve spring (8) and the clip (6) so that there is adequate axial movement for the jet needle.

When the throttle valve opening is reduced and in particular during idling, the amount of fuel supplied is affected also by the air cushion at the base of the throttle valve. A small air cushion in this range results in the mixture being enriched for instance. This idling fuel consumption can be changed by a recess or a slot at the lower end of the throttle valve.

To protect the jet system from foreign bodies which may enter the float chamber, main jet (1) and needle jet (2) are surrounded by a fuel filter which provides a seal at the top against the carburettor housing and at the bottom against the float chamber (25).

To adjust the idling speed the throttle valve is lifted or lowered by the throttle valve adjusting screw. When it is turned clockwise, the idling speed is increased and vice versa.

The throttle valve movement in the body is limited at the top by a washer (9) and a cover plate (10) secured by two screws (11). In the normal case the cable adjusting screw (15) with locknut (14) for the throttle operation is fitted into the cover plate (10) direct. Where mounting is more difficult, an additional adaptor (12) with locknut (13) enables the cable to change direction.

A starting slide (16) is provided as a starting aid; it is located in the carburettor housing and its rod-shaped extension protrudes from the cover plate (10). For cold-starting, the slide is closed by pressing on the rod. When the throttle valve is opened after the engine has started, it moves freely for a short distance and then takes the starting slide (16) with it until it is approximately half open; then the spring (17) located on the pin (18) in the carburettor body engages a cup-shaped recess in the starting slide and opens it completely.

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