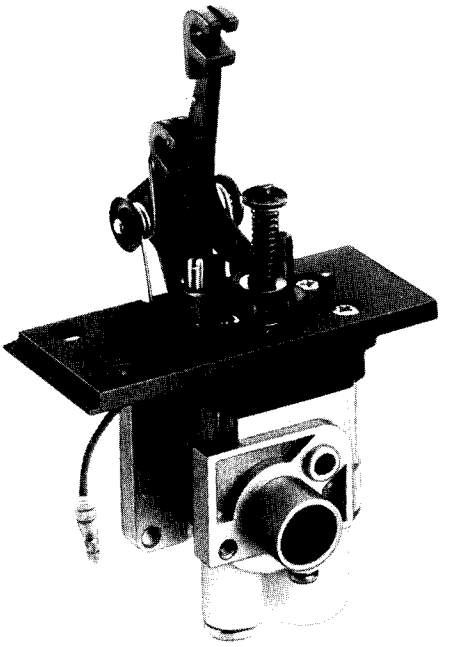
The BING 81 carburettor is a special carburettor for the SACHS Wheel Hub Engine. It is a simple flat slide valve carburettor with a side float system which also includes a starting valve, a fuel cock and an ignition switch as well as the actual carburettor itself. Control is by means of the lever and cables.
Two fittings are required on the vehicle to control the carburettor.
A control lever for selecting one of three different functions:

cold start
run
stop

A throttle twist grip for operating the throttle valve.



Fuel feed

The float (3) of the carburettor is in the form of a cylinder, forced onto the float needle. It is fitted with a damper ring at the bottom, which steadies it during travel over rough roads.
The job of the float is to keep the fuel height constant in the carburettor. If the incoming fuel has reached the set height in the float champer, the float (3) is lifted so that the float needle presses directly against the feed valve seat in the carburettor housing and interrupts the fuel feed. As fuel is taken from the carburettor by the engine, the fuel level in the float champer drops, and with it the float. The float needle clears the feed valve drilling and fuel can again enter from the tank.
The fuel feed to the carburettor housing passes through the cover plate (18), (nipple !), gaskets, the intermediate plate (31) and ducts in the carburettor housing.
The space above the fuel level is connected to the outside air through a drilling (not shown). If this vent hole is clogged up, an air cushion forms above the fuel level, and the float cannot rise and the carburettor floods.
The float needle valve, together with the float, only controls the fuel feed; it is not a fuel shut-off valve for when the engine is not running. Tiny contaminations can lodge between the needle seat and the needle tip, so preventing the valve from closing fully. An automatically-operated fuel cock is therefore provided to interrupt the fuel feed when the engine is stopped. An obvious precondition for this is that there must not be any dirt in the fuel cock in the carburettor. The engine or vehicle manufacturer must therefore provide reliable fuel filtering before the fuel enters the carburettor.

Mixture control

The volume of air-fuel mixture drawn by the engine, and therefore its power output, is regulated by the cross section of the carburettor port opened by the throttle valve (7). This valve (7) also incorporates a foam spring (8) which presses against the plate (9) on the engine side and seals the valve guideway, which is particularly important for the idling setting. The throttle valve (7) is operated by the throttle lever (19).
The air flow in through the carburettor port leads to a vacuum, which sucks fuel out of the float chamber through the jet system. The fuel quantity drawn at the maximum throttle valve setting, in other words at full throttle, is determined by the size of the main jet (1). The fuel flows through the main jet and then through an atomiser (not illustrated) pressed into the carburettor housing. The main jet is protected against dirt by a small built-in filter.
In the partial-load range, when the throttle valve partially closes the port, and when idling, less fuel is needed than at full throttle. In this range the flow is retarded by the throttle valve. A slight vacuum occurs at the outlet drilling, and less fuel is sucked in. When idling, with the throttle valve almost shut, fuel comes out through a drilling just in front of the throttle valve.
To select idling speed, the throttle valve is lifted by the throttle valve set screw (22) in the throttle lever. Turning it to the right increases the idling speed, and turning it to the left gives a slower idling speed.

Starting aid

The BING 81 carburettor is fitted with a starting valve (11), with which the carburettor port can be almost completely closed before the jet system. When the engine is started a particularly high vacuum occurs at the fuel outlets, which gives the necessary fuel enrichment for starting. The starting valve is operated with the starting lever (23). A lug on the valve pushes the lever (34), thereby operating other parts of the carburettor.

Fuel cock, ignition switch

After the engine has been started, the starting valve (11) is pushed upwards until it clears the carburettor port ("Run" setting).
If it is moved beyond the "Run" setting it moves the lever (34) with it. After a certain travel distance, the latter touches the contact pin connected to the cable (39) and thereby switches off the engine ignition.
As the starting valve (11) continues to move, the lever (34) finally lifts the closing element in the diaphragm against the spring (29) against the seat of the fuel cock via a metal pin in the diaphragm (30), and shuts off the fuel feed to the carburettor.
The throttle valve can be lifted against the spring (15) beyond the closed position of the fuel cock. The force of this spring determines the closing force of the fuel cock.
Proper operation of the operating sequence described here presupposes that the cables run without any narrow bends and are adjusted to have very little play.

Maintenance, repairs

No special maintenance is required for the BING 81 carburettor. Before the vehicle is taken out of service for a prolonged period of time, the fuel tank and if possible the carburettor (workshop!) should be drained. This prevents resin forming in the jets, which is very difficult or impossible to remove later.
Almost all individual parts are available for repairing the carburettor. However, it is recommended only to use parts (1) to (6) singly, together with external screws, springs and washers. The carburettor housing is not available singly. The upper part of the carburettor should only be repaired as a complete assembly. Appropriate sets of parts can be found in the BING spare parts list.
Particular care should always be exercised when the fuel hose has to be removed from the carburettor. There is a danger here of dirt entering the carburettor, which despite thorough flushing through can only be removed – if at all – by totally dismantling the carburettor and cleaning every single part.

Ausgabe 198/

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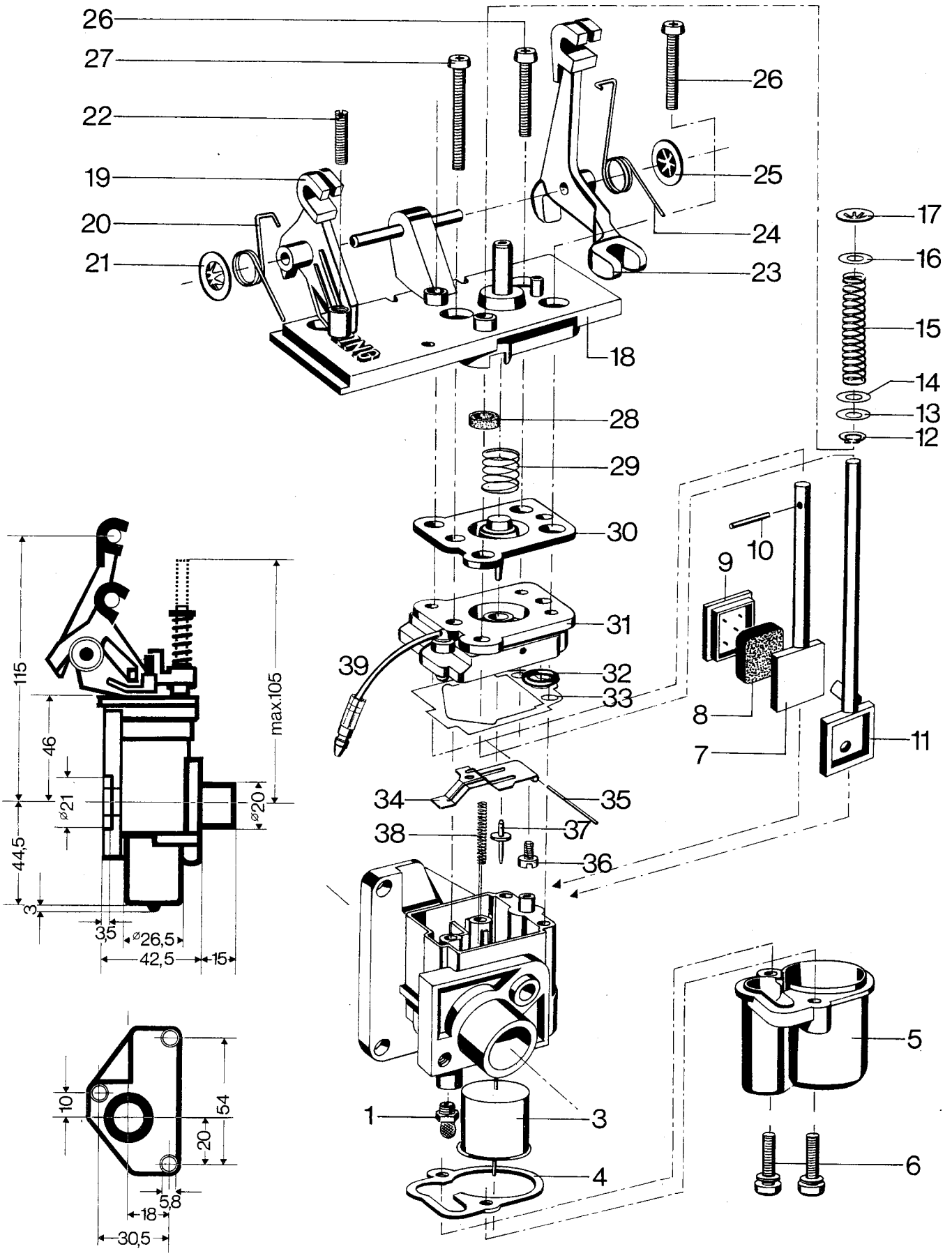
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