

Removal and Installation of Choke Control

Job No.

30-6

Length of Control Cables

Model	Spring steel wire length in mm	Coil spring length in mm
180, 180 a, 180 b	990	900
190 SL	1180	1100
	Hot start control 960	860
220 a	980	900
219	1080	990
220 S	875	775

The choke control cables (Part No. 180 300 18 30) are only supplied in lengths of 1180 mm. If necessary they must be cut to the required length.

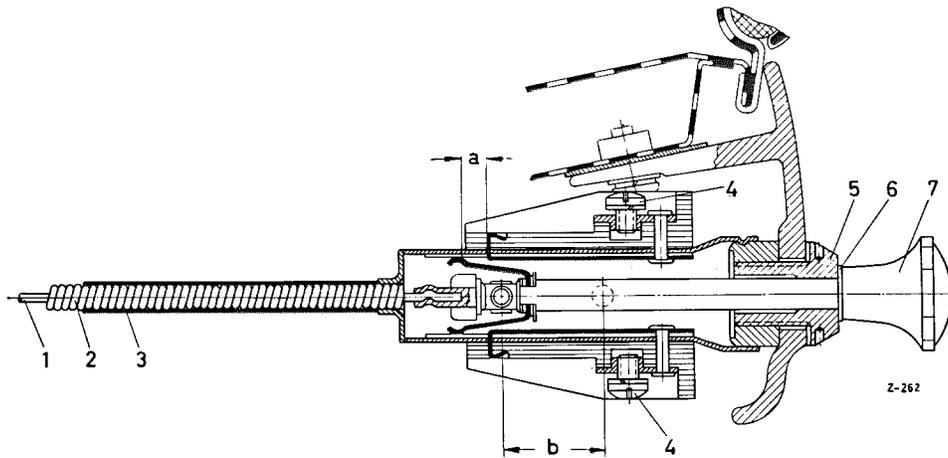


Fig. 30-6/1

- | | |
|-----------------------------------|----------------|
| 1 Spring steel wire | 5 Guide screw |
| 2 Coil spring | 6 Felt ring |
| 3 Insulating conduit | 7 Control knob |
| 4 Connections for electric cables | |

I. Models 180, 180 a, and 180 b

The removal and installation procedures for the choke control are essentially the same as described for Model 190 with the difference, however, that on these Models the choke control (2) is not held in rubber bushings but is clamped to the starter housing by means of the hexagon screw (1) (Fig. 30-6/2).

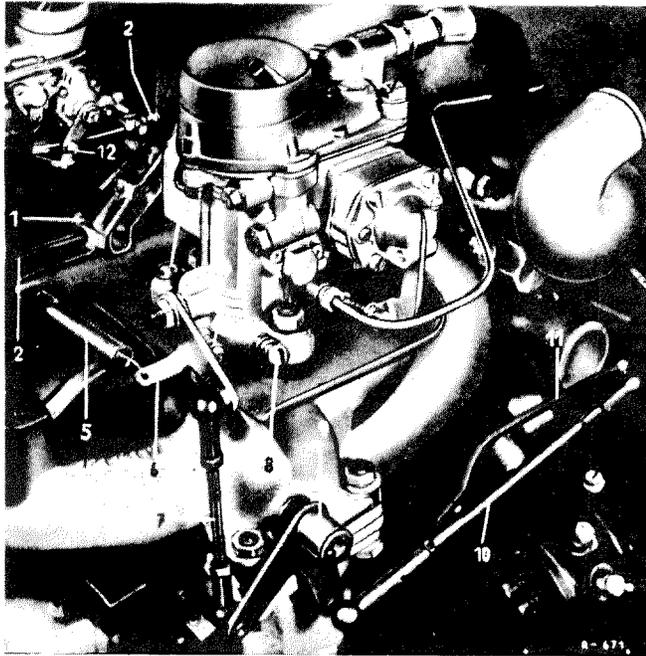


Fig. 30-6/2

- 1 Clamping screw for coil spring
- 2 Choke control
- 3 Aperture limiting screw
- 4 Idle adjustment screw
- 5 Return spring
- 6 Throttle valve lever
- 7 Push rod
- 8 Idle mixture adjusting screw
- 9 Relay lever
- 10 Push rod
- 11 Double lever
- 12 Clamping screw for choke control

II. Model 190 SL

a) Cold start control

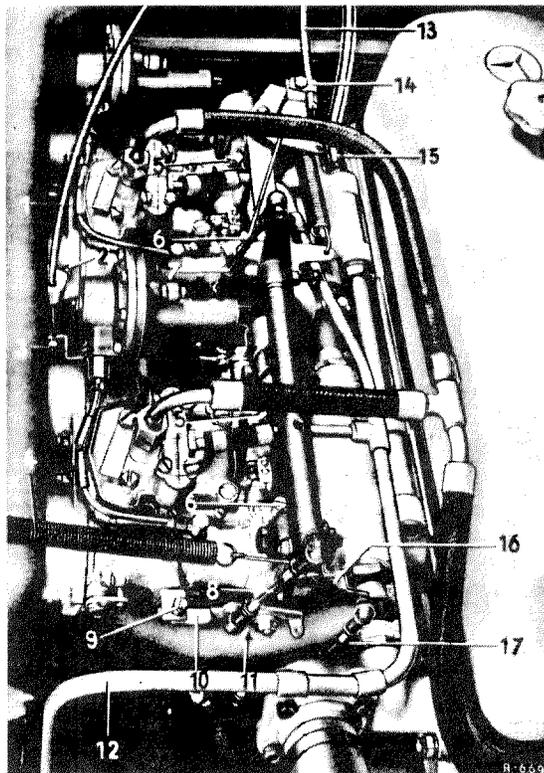


Fig. 30-6/3

- 1 Cold start control
- 2 Clamping screw for choke control sheath
- 3 Clamping screw for choke control
- 4 Return spring for carburetor linkage
- 5 Idle mixture adjusting screw of stage 2
- 6 Idle mixture adjusting screw of stage 1
- 7 Push rod for rear carburetor
- 8 Push rod for front carburetor
- 9 Idle adjustment screw
- 10 Throttle valve lever
- 11 Aperture limiting screw
- 12 Fuel overflow line
- 13 Hot start control
- 14 Clip for hot start control
- 15 Threaded union for vacuum connection of ATE power brake
- 16 Control shaft
- 17 Push rod from angle lever to control shaft

Removal:

1. Unscrew the choke control knob (7) and remove the felt ring (6) (see Fig. 30-6/1).
2. Use Hook Wrench 136 589 02 05 to unscrew the guide screw (5) of the choke control. Then push the choke control out of the mounting plate toward the front and remove it downward (see Fig. 30-6/1).
3. Disconnect the two electric cables at the connections (4) on the choke control (see Fig. 30-6/1).
4. Loosen the two clamping screws (3) for the spring steel wire of the cold start control (1) from the choke valve levers on the two carburetors (see Fig. 30-6/3).
5. Loosen the clamping screw (2) for the coil spring at the fixing eye of the intake manifold and pull out the choke control (see Fig. 30-6/3).
6. Loosen the cheese-head tapping screw on the fixing clip for the cold and hot start controls on the front panel.

Installation:

7. Push the choke control cable through the rubber grommet in the front panel into the engine compartment.
8. Connect both electric cables to the connections (4) on the control and push the choke control from the front into the mounting plate (Fig. 30-6/1).
9. Screw the guide screw (5) into the choke control and tighten by means of Hook Wrench 136 589 02 05. Install the felt ring (6) and screw in the choke control knob (7) (see Fig. 30-6/1).
10. Insert the choke control into the fixing eye on the intake manifold and clamp the coil spring to the eye by means of the clamping screw (2) (see Fig. 30-6/3).

11. Insert the spring steel wire into the bore of the clamping screws (3) on the choke valve levers of the two carburetors (see Fig. 30-6/3).
12. Install the cheese-head tapping screw of the fixing clip for the choke control on the front panel. Then press the choke control together with the knob (7) toward the inside until there is a distance of approx. 2 mm between the control knob (7) and the guide screw (5) (see Fig. 30-6/1).
14. Check the choke control and the choke valves for correct adjustment and ease of movement.

Note: With the ignition switched on and the choke control pulled out the pilot light should light up.

In the warm-up position (control knob pulled out half way) the start mixture is so lean that proper idling conditions are ensured.

On earlier cars the choke control cables were installed without warming-up position.

b) Hot Start Control

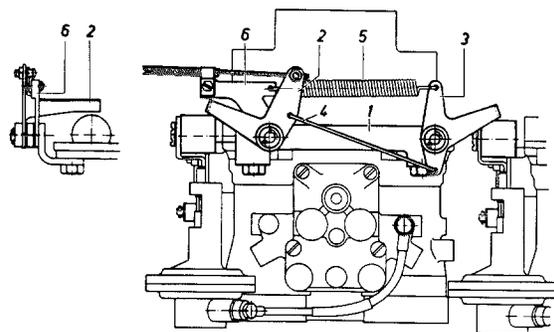


Fig. 30-6/4

- 1 Bearing bracket
- 2 Angle lever
- 3 Angle lever
- 4 Shackle
- 5 Return spring
- 6 Bowden cable and return spring mounting on bearing bracket

Removal:

1. Unscrew the control knob (7) of the hot start control and remove the felt ring (6) (see Fig. 30-6/1).
2. Use Hook Wrench 136 589 02 05 to unscrew the guide screw (5) of the hot start control. Then remove the hot start control downward toward the front (see Fig. 30-6/1).

Note: The hot start control has no pilot light.

3. Loosen the clamping screw for the spring steel wire of the hot start control at the rear angle lever (2) of the hot start control (Fig. 30-6/4).
4. Loosen the coil spring of the hot start control at the bearing bracket and remove the hot start control.
5. Loosen the cheese-head tapping screw of the fixing clip for the cold and hot start control on the front panel and pull out the hot start control toward the inside through the front panel.

Installation:

6. Push the hot start control through the rubber grommet in the front panel into the engine compartment.

7. Install the hot start control from the front through the mounting plate.
8. Screw the guide screw (5) into the hot start control and tighten by means of Hook Wrench 136 589 02 05. Slide on the felt ring (6) and screw on the control knob (7) (see Fig. 30-6/1).
9. Attach the coil spring of the hot start control to the bearing bracket.
10. Insert the spring steel wire into the bore of the clamping screw on the rear angle lever (2) of the hot start control (Fig. 30-6/4).
11. Screw in the cheese-head tapping screw for the fixing clip of the cold and hot start control on the front panel.
12. Push the hot start control toward the inside by means of the control knob (7) until there is a distance of approx. 2 mm between the control knob (7) and the guide screw (5) (see Fig. 30-6/1).
13. Clamp the spring steel wire in position by means of the clamping screw.
14. Work the hot start control and check it for ease of movement.

Note: The hot start control can only be worked if the throttle valves of the carburetors are fully opened.

III. Model 219

The removal and installation procedures of the choke control on the mounting plate are the same as described for Model 190.

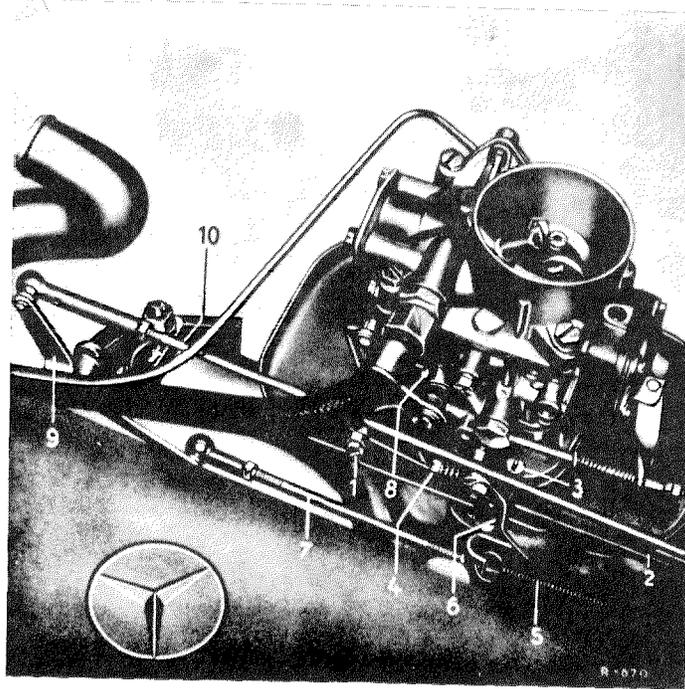


Fig. 30-6/5

- | | |
|------------------------------------|--------------------------------|
| 1 Clamping screw for choke control | 6 Throttle valve lever |
| 2 Choke control | 7 Pull rod |
| 3 Aperture limiting screw | 8 Idle mixture adjusting screw |
| 4 Idle adjustment screw | 9 Angle spring |
| 5 Return spring | 10 Pull rod |

To disconnect the choke control from the carburetor loosen the clamping screw (1) for the spring steel wire of the choke control at the angle lever and loosen the hexagon screw on the carburetor housing for the coil spring. Remove the choke control. When connecting the choke control make sure that the control knob has a distance of approx. 2 mm from the guide screw and that the starter rotary slide valve is completely closed.

IV. Models 220 a and 220 S

a) Removing and Attaching the Choke Control on the Model 220 a Carburetor

The procedures for detaching the choke control at the carburetor and for re-attaching it are the same as described for Model 219 (see Job No. 30-6, Section III).

b) Removing the Choke Control on the Model 220 S Carburetor

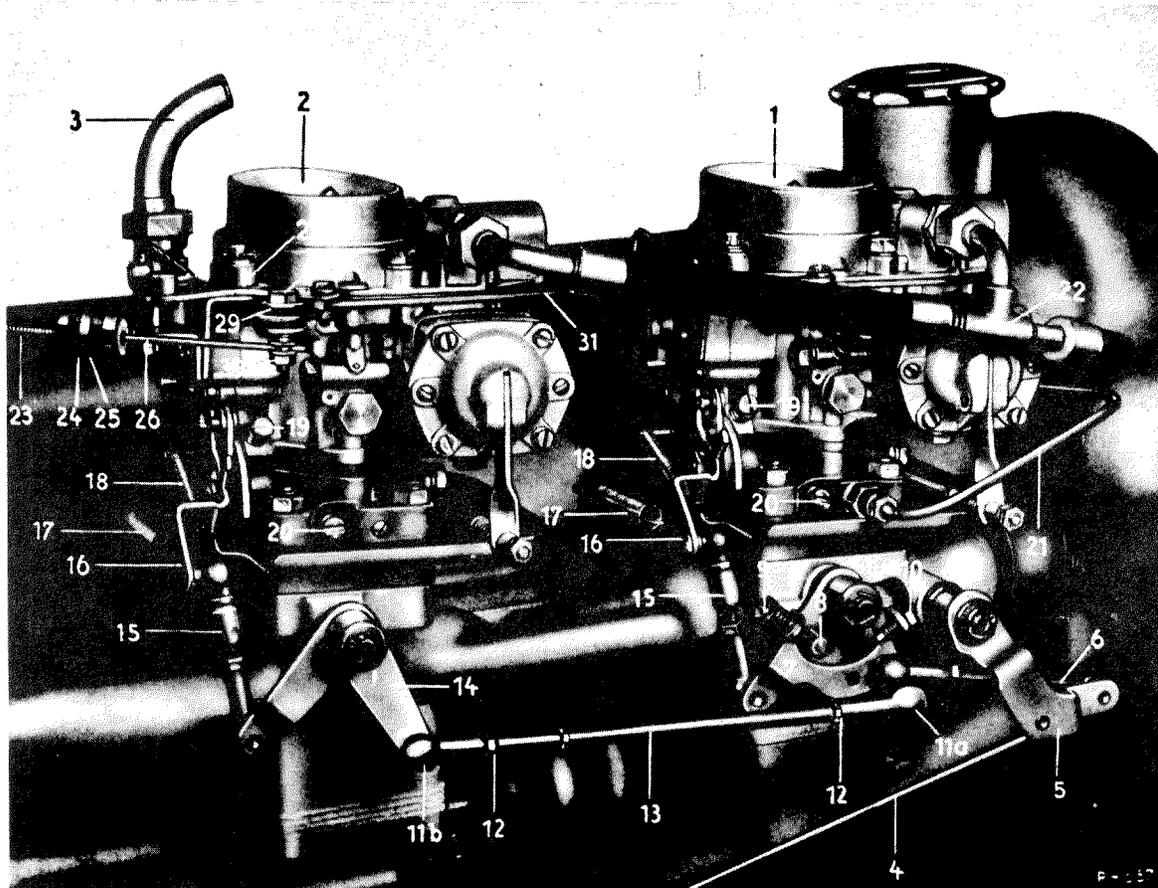


Fig. 30-6/6

1 Front carburetor	12 Hexagon nut	23 Coil spring
2 Rear carburetor	13 Push rod	24 Rubber bushing
3 Vent tube	14 Angle lever	25 Adjusting nut
4 Pull rod	15 Spring-loaded push rod	26 Spring steel wire
5 Relay lever	16 Throttle valve lever	27 Angle lever
6 Push rod	17 Return spring	28 Clamping screw
7 Control lever	18 Tension spring	29 Rubber bushing
8 Stop bolt	19 Idle adjustment screw	30 Hexagon nut
9 Idle stop screw	20 Idle mixture adjusting screw	31 Connecting rod
10 Aperture limiting screw	21 Vacuum line to distributor	32 Hexagon screw
11a, 11b Ball socket	22 Fuel line	

1. Loosen the hexagon nut (30) of the clamping screw (28) for the spring steel wire (26) of the choke control at the angle lever (27) (Fig. 30-6/6).
2. Unscrew the clamp fastening the coil spring.
3. Back out the adjusting nut (25) and the two rubber bushings (24) of the coil spring (23) (see Fig. 30-6/6).
4. Loosen the cross-recess head screw for the fixing clip of the choke control and the flexible drive shaft of the speedometer at the cowl.

c) Removal of the Choke Control at the Mounting Plate on Models 220 a and 220 S

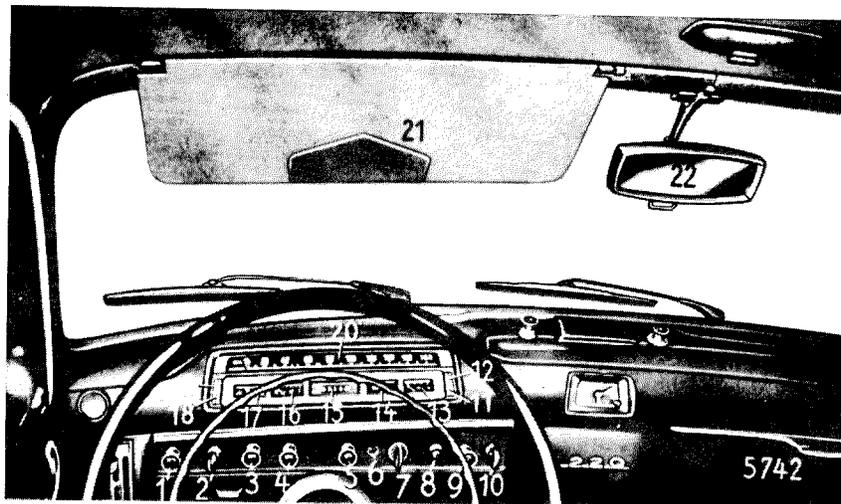


Fig. 30-6/7

- | | |
|--|---|
| 1 Pull switch for roof light | 11 Green pilot light for demisting blower |
| 2 Rotary light switch | 12 Red pilot light for flash direction signal |
| 3 Pull knob for instrument lighting | 13 Fuel reserve indicator |
| 4 Pull knob for return mechanisms of trip recorder | 14 Trip recorder |
| 5 Pull knob for demisting blower | 15 Cumulative mileage counter |
| 6 Charging light | 16 Oil pressure gage |
| 7 Steering lock | 17 Cooling water thermometer |
| 8 Starter knob | 18 White starter pilot light |
| 9 Choke control knob | 19 Blue upper beam pilot light |
| 10 Ignition control knob | 20 Speedometer |

1. Use a short screw driver to push down the cable cover (cardboard) in the left glove compartment and remove it.
2. Unscrew the control knob on the pull switches (1, 3, 4, and 5) and remove the felt ring (Fig. 30-6/7).
3. Use Hook Wrench 136 589 02 05 to unscrew the guide screw of the pull switches (1, 3, 4, and 5) and of the rotary light switch (2) and remove the guide screw from the mounting plate toward the rear (Fig. 30-6/7).
4. Unscrew the control knob (9) for the choke control and remove the guide screw (Fig. 30-6/7).
5. Loosen the wing nuts of the two adjusting screws on the right side of the mounting plate at the lower part of the cowl and remove them together with the spring washers.
6. Carefully pull out the mounting plate about 10 cm, making sure that the rib of the mounting plate is not damaged.
7. Pull out the choke control and disconnect the two electric cables at the connections (4) on the choke control (see Fig. 30-6/1).

Installation of the Choke Control in the Mounting Plate on Models 220 a and 220 S:

8. Push the choke control through the rubber grommet in the front panel into the engine compartment and connect the two cables to the connections (4) (see Fig. 30-6/1).
9. Install the choke control in the mounting plate and screw on the guide screw and the control knob.

10. Install the mounting plate and tighten the wing nuts, making sure that the adjusting screws on the right side of the mounting plate are adjusted to the correct height.
11. Install the pull switch and the rotary light switch and install the cable cover in the left glove department.

Attaching the Choke Control to the Model 220 S Carburetor:

12. Slide the one rubber bushing (24) onto the coil spring (23). Then screw the adjusting nut (25) onto the coil spring and slide on the other rubber bushing (24) (see Fig. 30-6/6).
Insert the spring steel wire through the bore of the clamping screw (28) at the angle lever (see Fig. 30-6/6).
13. Fix the coil spring (26) or the two rubber bushings (24) to the carburetor (see Fig. 30-6/6).

14. Adjust the choke control so that there is a distance of approx. 2 mm between the control knob and the guide screw.
15. Tighten the hexagon nut (30) on the angle lever **making sure that the starter rotary slide valve on the carburetor is completely closed**, i. e. the angle lever (27) must rest against the front stop (see Fig. 30-6/6).
16. Check the choke control and the starter rotary slide valve for correct adjustment and ease of movement.

Note: When the choke control is pulled right out the pilot light must light up.

In the warm-up position (control knob pulled half-way out) the start mixture is so lean that proper idling conditions are ensured.