

# Disassembly and Reassembly of Transmission

Job No.

26-4

## A. Removal and Installation of Transmission Case Top Cover, including Disassembly and Reassembly

### I. Models 180, 180 a, 180 b, 180 D, 180 Db, 190 D, 190 Db, 220 a, 219, 220 S, and 220 SE

The removal and installation as well as the disassembly and reassembly procedures for the transmission case top cover are the same as described for Model 190, with the difference that the position of the lever should be checked when it has been installed on the shifting shaft (see Job No. 26-3, Section B).

On the first cars of Models 180, 180 D, and 220 a the reversing light switch was installed in the bearing assembly of the steering wheel shift system and not in the transmission case cover.

### II. Model 190 SL

In the case of Model 190 SL the transmission case cover differs from the cover installed in models with steering wheel shift system in the location of the shifting shaft and in the design of the guide plate and the shifting finger. Furthermore the selector finger is superfluous. The removal and installation procedures of the shift forks are the same as in the case of transmissions with steering wheel shift system.

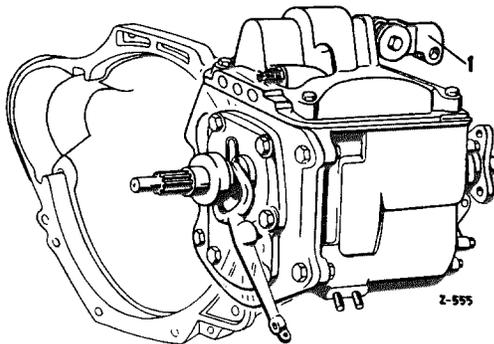


Fig. 26-4/1

1 Shifting shaft with yoke end

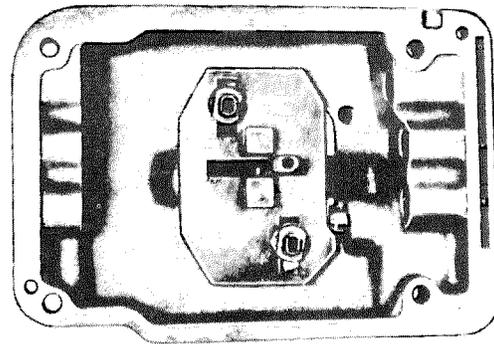


Fig. 26-4/2

#### Removal:

1. Unscrew the four hexagon screws on the transmission case cover and remove the cover.

#### Disassembly:

2. Remove the shift forks (see Workshop Manual Model 190, Job No. 26-4).

Unscrew the reversing light switch (4) and remove the pressure pin (2), the pressure spring (3), the bar (6), and the shim (Fig. 26-4/5).

3. Unscrew the guide plate and remove it (Fig. 26-4/2).
4. Unscrew the hexagon socket screw of the shifting finger, pull out the shifting shaft and remove the shifting finger (see Fig. 26-4/3).

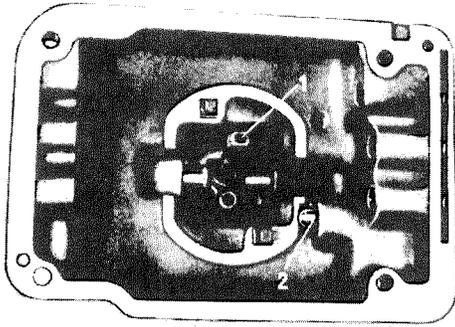


Fig. 26-4/3

- 1 Shifting finger
- 2 Bar for reverse gear

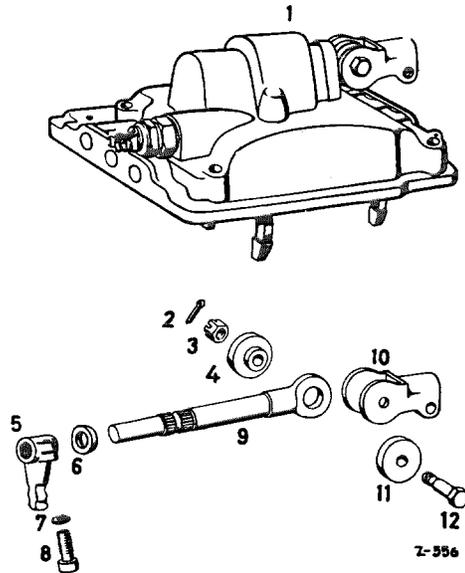


Fig. 26-4/4

- 1 Transmission case top cover
- 2 Copter pin
- 3 Castle nut
- 4 Washer
- 5 Shifting finger
- 6 Sealing ring
- 7 Lock washer
- 8 Hexagon socket screw
- 9 Shifting shaft
- 10 Yoke end
- 11 Washer
- 12 Bolt

5. If necessary, drive out the sealing ring (6) (Fig. 26-4/4).

**Reassembly:**

6. Coat a new sealing ring (6) at the outside circumference with sealing compound and press it into the transmission case top cover (Fig. 26-4/4).

7. Install the shifting shaft (9) together with the shifting finger (5).

**Note:** When installing the shifting shaft (9) make sure that the yoke end (10) and the shifting finger (5) are properly aligned (see Fig. 26-4/4).

8. Screw in the hexagon socket screw (8) together with lock washer (7) and tighten (see Fig. 26-4/4).

9. Install the guide plate. The plate must be easy to move. First install the washer and then the spring washer. Screw in the nuts and lock them by compressing their collars at the top (see Fig. 26-4/2).

**Note:** When installing the guide plate (1) make sure that the plate has a spring riveted to it (guide plates without spring are only used for transmissions with steering wheel shift system) (Fig. 26-4/5).

10. Install the bar (6) and the pressure spring (3) for the reverse gear stop as well as the pressure pin (2) for the reversing light switch in the transmission case cover and screw in the reversing light switch (4) (Fig. 26-4/5).

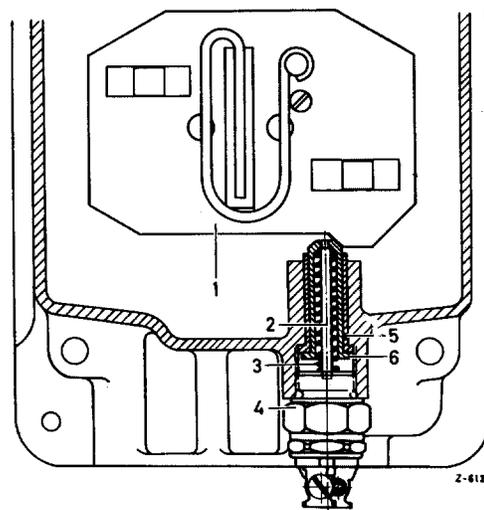


Fig. 26-4/5

- 1 Guide plate
- 2 Pressure pin
- 3 Pressure spring
- 4 Reversing light switch
- 5 Bushing
- 6 Bar

11. Install the shift forks and the shift rails (see Workshop Manual Model 190, Job No. 26-4).

**Installation:**

12. Install the transmission case cover (see Workshop Manual Model 190, Job No. 26-4).
13. Check the reversing light switch. To do this shift the shifting shaft to neutral and

connect the reversing light switch to a battery and a testing light. In the neutral position the testing light must not light up. Then engage reverse gear. In this position the testing light must light up. If the testing light does not light up, install a longer pressure pin. If the testing light lights up also in the neutral position, install a shorter pressure pin. Pressure pins are available in the following sizes:

40 mm, 40.5 mm, 41 mm

## **B. Removal and Installation of Clutch Housing**

On Models 180, 180 a, 180 b, 180 D, 180 Db, 190 D, 190 Db, 190 SL, 219, 220 a, 220 S, and 220 SE with mechanical clutch the removal and installation procedures for the clutch housing are the same as described for Model 190.

For Models 219, 220 S, and 220 SE with hydraulic automatic clutch the removal and installation of the clutch housing was described in Workshop Manual Passenger Car Models as from August 1959, under Job No. 25-18.

## **C. Removal, Installation, and Sealing of Transmission Case Front Cover**

### **I. Models 180 and 180 D (1<sup>st</sup> Version)**

Use Pliers 136 589 00 37 to remove the snap ring from the groove in the transmission case cover before the transmission case front cover itself is removed. When this has been done the cover can be removed as described for Model 190.

### **II. Models 180 a, 180 b, 180 D (2<sup>nd</sup> Version), 180 Db, 190 D, 190 Db, 190 SL, and 220 a as well as 219, 220 S, and 220 SE with Mechanical Clutch**

Removal and installation procedures are the same as for Model 190.

### **III. Models 219, 220 S, and 220 SE with Hydraulic Automatic Clutch**

The transmission case cover has no socket for the clutch throw-out bearing. On Model 220 SE and on Models 219 and 220 S 2<sup>nd</sup> version a seal is provided between the cover and the case by a round cord ring located in a groove of the transmission case cover. Removal and installation procedures are the same as for Model 190.

## **D. Removal, Installation, and Sealing of Transmission Case Rear Cover**

On Models 180 to 220 SE the removal and installation procedures for the transmission case rear cover are the same as described for Model 190. Please note that on models with three-point engine suspension the rear rubber mounting must be removed first (see Job No. 24-1 and Job No. 26-1, Section A).

When replacing the transmission case rear cover or the speedometer drive gear, make sure that the proper drive gear and helical gear are installed. The gear ratio of the gears differs on the various models and furthermore on Models 220 a, 220 S, and 220 SE the drive gears rotate anti-clockwise, whereas on the other models they rotate clockwise.

### **E. Removal and Installation of Gear Train including Disassembly and Reassembly**

On Models 180 to 220 SE the removal and installation procedures as well as the disassembly and reassembly procedures for the gear train are the same as on Model 190.

On the 3<sup>rd</sup> version transmission the third speed helical gear is carried in needle bearings and, as a result, the diameter of the main shaft is smaller at the bearing surface for the third speed gear (see Job No. 26-5). However, the disassembly and reassembly procedures for the gear train are the same as for the 1<sup>st</sup> and 2<sup>nd</sup> version transmission.