

Disassembly and Reassembly of Transmission

Job-No.

26 — 4

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

Removal:

1. Shift the shifting shaft lever (2) to neutral (see Fig. 26 — 4/1) and unscrew the hexagon screws for the transmission case top cover.

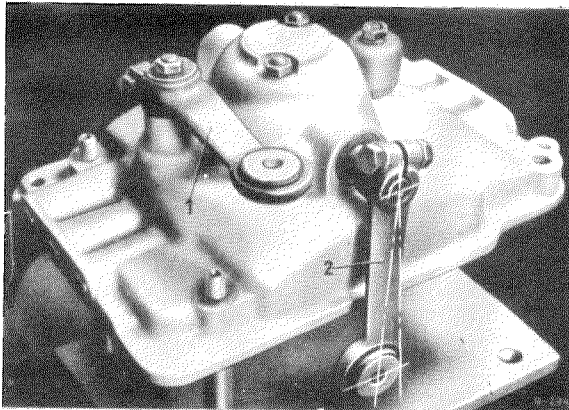


Figure 26 — 4/1

1 Selector finger lever
2 Shifting shaft lever

2. Insert a screw driver in the recess of the cover, prize up the cover and remove it (Fig. 26 — 4/2).

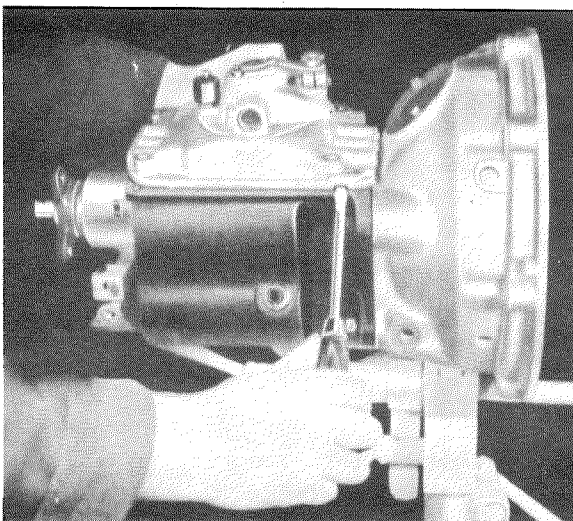


Fig. 26 — 4/2

3. Remove the gasket between transmission case and top cover. Cover up the transmission case.

Disassembly:

4. Drive out the key for the shift rail mounting with a drift (Fig. 26 — 4/3).

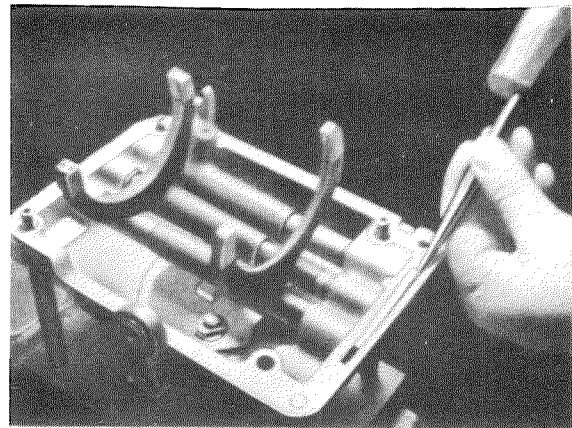


Fig. 26 — 4/3

5. Drive out the shift rails from the top cover with a drift.

Caution! Retain the steel balls and pressure springs in place by inserting a suitable bolt (Fig. 26 — 4/4). Make sure that the spacer tubes and spacer rings do not drop into the cover!

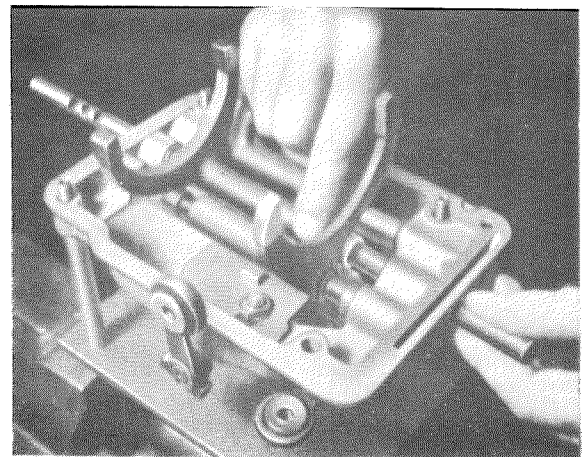


Fig. 26 — 4/4

6. Remove the shift forks and slide the spacer tube and the spacer rings onto the appropriate shift rails or make a note of the dimensions.

7. Unscrew the reversing light switch.
Remove the pressure pin, the pressure spring together with bar, and the shim.

8. Before removing the selector finger lever and the shifting shaft lever, mark the relative positions of levers and shafts if they have not been marked before. Remove the lever nuts and take off the two levers.

9. Remove the guide plate and the selector finger.

10. Remove the snap ring in front of the end cover. Use a suitable drift to drive out the shifting shaft in the direction of the end cover, removing the end cover at the same time (Fig. 26 — 4/5). Remove the washer and the shifting finger.

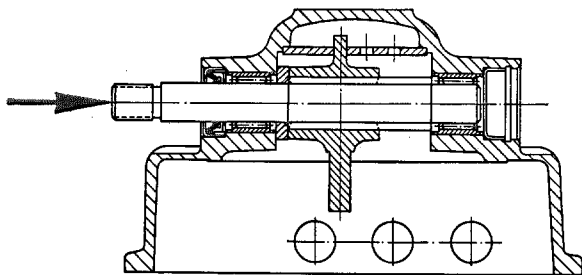


Fig. 26 — 4/5

11. Push the needle bearing out of the bore in the transmission case top cover; drive out the sealing ring.

On cars with right-hand drive, the procedures outlined in paragraphs 10 and 11 differ as follows:

- 10 a. Remove the snap ring in front of the sealing ring. Use a 5 mm \varnothing drill to drill a hole in the end cover and use a suitable drift to drive out the shifting shaft (Fig. 26 — 4/6). Remove the washer and the shifting finger.

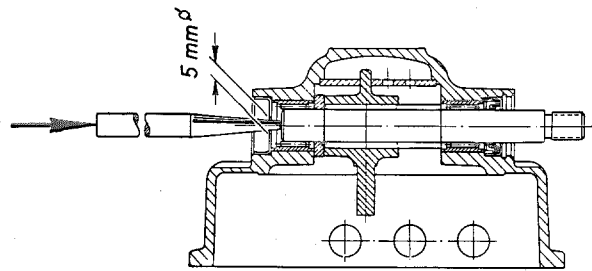


Fig. 26 — 4/6

- 11 a. Push the needle bearing out of the bore in the transmission case top cover. Press out the end cover. Drive out the sealing ring.

- 12 a. Remove the fixing screws for the stop plate and remove the stop plate (Fig. 26 — 4/7).

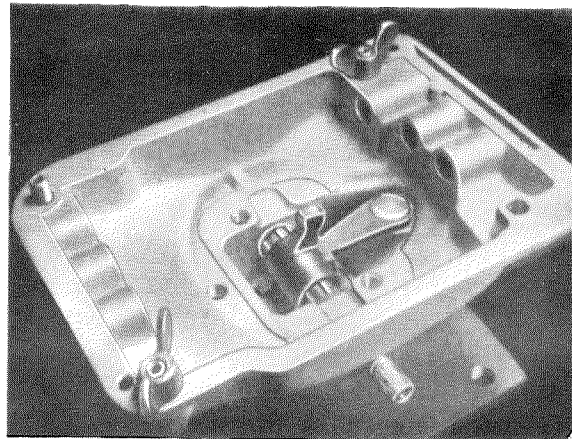


Fig. 26 — 4/7

13. Thoroughly clean all parts. Check the separating surface of the top cover for evenness and, if necessary, refinish by hand.

Reassembly:

14. Install the stop plate (3) in the top cover and screw down lightly (Fig. 26 — 4/7 and 26 — 4/8). Before screwing down the stop plate, insert Assembly Fixture 191 589 02 31 in the top cover to make sure that the longitudinal slots in the stop plate run parallel to the shift rails.

Note: If the assembly fixture is not available, screw down the guide plate provisionally and then align the stop plate with the slots in the guide plate.

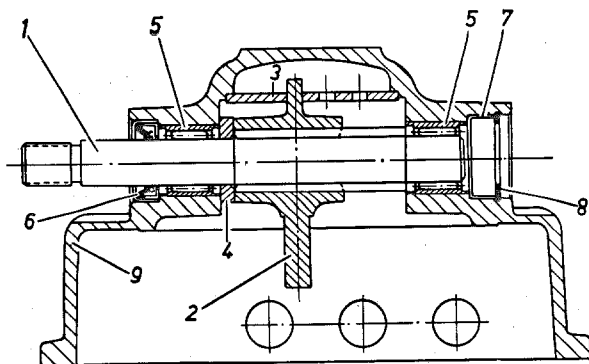


Fig. 26—4/8

- | | |
|-------------------|------------------|
| 1 Shifting shaft | 5 Needle bearing |
| 2 Shifting finger | 6 Sealing ring |
| 3 Stop plate | 7 End cover |
| 4 Washer | 8 Snap ring |

15. Insert the shifting shaft (1) from the right (seen in the direction of travel) into the top cover in such a way that the serrated end projects from the top cover at the left (Fig. 26—4/8).

16. When inserting the shifting shaft, slide on at the same time the washer (4) and the shifting finger (2). The shifting finger must slide freely on the shifting shaft.

17. Slide the two needle bearings (5) onto the shaft and gently press them into the cover, using Fitting Bolt 187 589 02 39.

18. In order to avoid damage to the sealing ring lip by the serrations, use Fitting Sleeve 187 589 05 61 to slide the sealing ring (6) onto the shifting shaft. Use Fitting Bolt 187 589 03 39 to press the sealing ring into the cover.

19. Use Fitting Bolt 187 589 01 39 to press the end cover (7) into the opposite bore at the transmission case top cover and install the snap ring (8) in front of it.

Check whether the shifting finger can be moved on the shaft and whether the shaft turns easily.

On cars with right-hand drive the procedures outlined in paragraphs 15—19 are modified as follows:

15 a — 19 a. The shifting shaft is fitted into the cover in such a way that the serrated end projects from the cover toward the right (seen in the direction of travel). For this reason the sealing ring must be pressed into the bore at the right side and secured by the snap ring. The end cover is pressed into the bore at the left (Fig. 26—4/9).

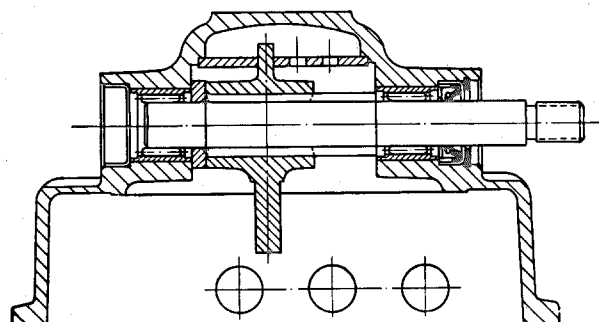


Fig. 26—4/9

20. Install the selector finger in the cover in such a way that it engages in the recess of the shifting finger (Fig. 26—4/10).

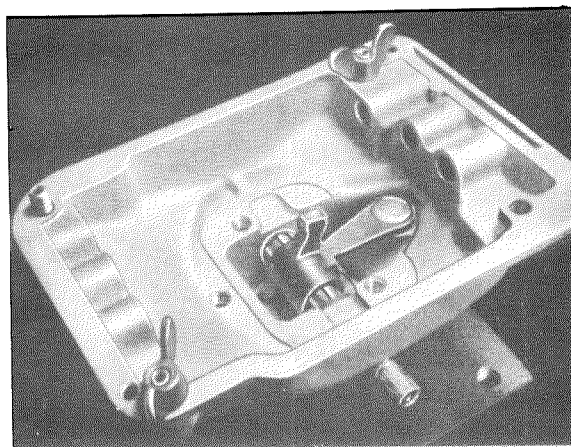


Fig. 26—4/10

21. Slide the selector finger lever (1) onto the selector finger shaft and lock it. Pay attention to the markings made on removal! The lever (1) must be at right angles to the selector finger.

Slide the shifting shaft lever (2) onto the shifting shaft and lock it. Note markings made on removal! In the 1st or 3rd speed position the lever must be perpendicular to the separating surface of the top cover (Fig. 26—4/11).

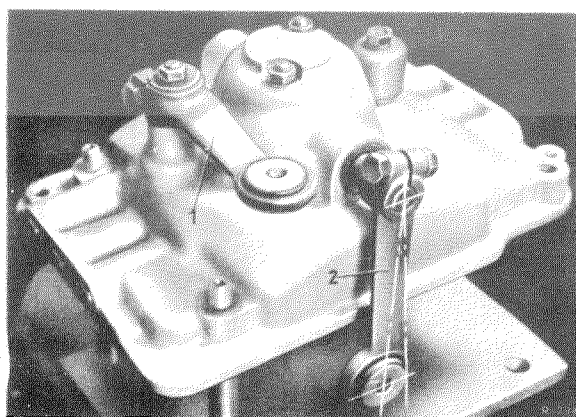


Fig. 26 — 4/11

1 Selector finger lever 2 Shifting shaft lever

22. Install the guide plate. The guide plate must be able to move easily. Use new nuts and washers. The nuts are locked by compressing their collars.
23. Install the bar (3) together with the shim (2) and the pressure spring (5) for the reverse drive gear stop (A) and install the pressure pin (4) (40 mm long) for the reversing light switch in the transmission case top cover and screw in the reversing light switch (6). The shim (2) must be of the appropriate size, i.e. when the 1st or 2nd gear is selected by means of the selector finger lever (9), the stop (A) of the guide plate (8) must rest

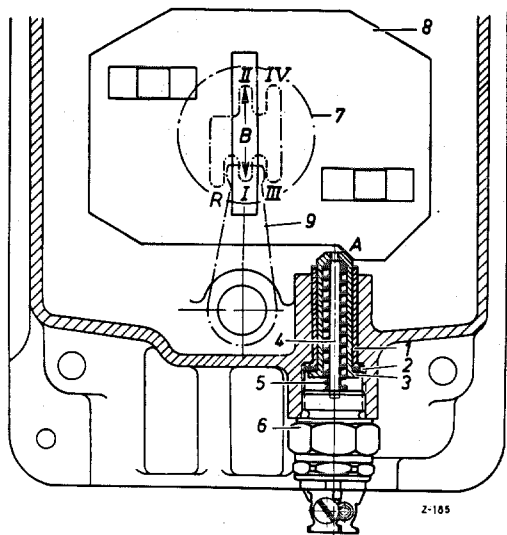


Fig. 26 — 4/12

1 Bushing	4 Pressure pin	7 Stop plate
2 Shim	5 Pressure spring	8 Guide plate
3 Bar	6 Reversing light switch	9 Selector finger

against the bar (3) (Fig. 26 — 4/12). In that position the shifting finger must be easy to move in the slot (B) of the guide plate (8) (Fig. 26 — 4/12).

Note: The shim (2) is supplied in thicknesses of 0.20 and 0.50 mm.

24. Install shift forks and shift rails. To facilitate installation of the springs and steel balls in the shift forks, use Fitting Bolt 136 589 09 61. **Caution:** The spring for the reverse gear shift fork has a larger wire gage (see Spring Testing Table, Job. No. 26 — 5, p. 26 — 5/5). When the gear is engaged, the shift fork must be properly held in the shift rail; the shift fork must not be under side pressure. For this reason the distance between spacer tube or spacer ring and transmission case top cover must be 0.10—0.15 mm when the gear is engaged. To adjust the distance, the spacer rings are available in the following thicknesses: 0.30, 0.50, and 1.00 mm.

Installation:

25. Adjust the shift forks to neutral and coat the separating surface of the transmission case top cover with grease.
26. Put the reverse gear relay lever in its in-operative position and put the sliding sleeves of the synchronizing units in neutral.
27. Coat the separating surface of the transmission case with sealing compound. Install a new gasket on the transmission case, install the transmission case top cover and screw down (Fig. 26 — 4/13).

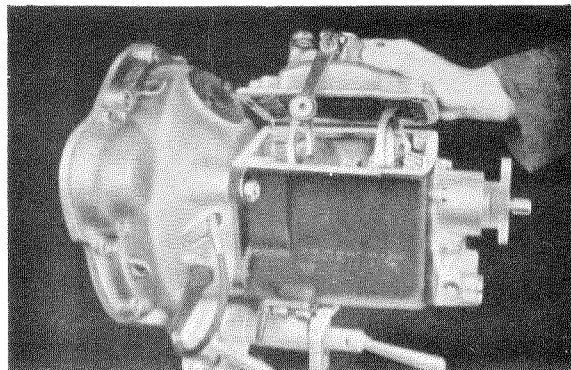


Fig. 26 — 4/13

28. Check reversing light switch.

The selector finger lever (1) and the shifting shaft lever (2) must be in neutral position (see Fig. 26 — 4/11).

Connect the reversing light switch to a battery and connect a testing light to this circuit.

Then press back the selector finger lever (1) approx. 1—1.5 mm (see Fig. 26 — 4/11); be-

ginning from this position the testing light must light up. If it lights up before the lever is in this position, shorten the pressure pin accordingly or replace it by a shorter pin. If the testing light lights up too late or not at all, replace the pressure pin by a longer one.

The pressure pin is available in the following lengths: 40.0 mm, 40.5 mm, and 41.0 mm.

B. Removal and Installation of Clutch Housing

29. Press the bent ends of the two spring clips (4) out of the throw-out fork toward the rear, turn the spring clips sideways and remove them upward (Fig. 26 — 4/14).

Then remove the throw-out unit and bearing (1) and remove the throw-out fork (3) from the ball pin.

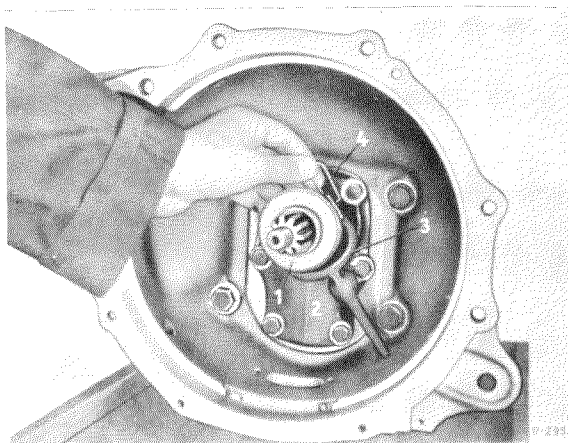


Fig. 26 — 4/14

- | | |
|---------------------------------|------------------|
| 1 Throw-out unit and bearing | 3 Throw-out fork |
| 2 Transmission case front cover | 4 Spring clip |

Caution! Do not wash out the throw-out bearing; it requires no maintenance.

30. Unscrew the four hexagon screws for attaching the clutch housing and remove the clutch housing.

31. Clean and check the separating surfaces of both transmission case and clutch housing.

32. Screw the clutch housing to the transmission case.

Do not omit the fitting sleeves for centering the clutch housing to the transmission case. When the clutch housing is screwed on, these sleeves must be properly seated.

33. Press the throw-out fork onto the ball pin and install the throw-out unit and bearing. Install the spring clips in the throw-out unit, turn them toward the rear and attach the bent ends to the throw-out fork (see Fig. 26 — 4/14).