

# Disassembly, Inspection, and Reassembly of Clutch

Job-No.

25 — 4

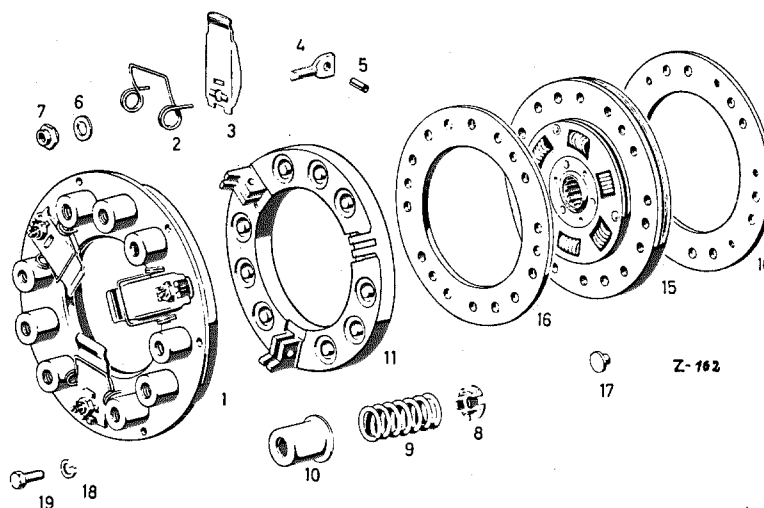


Fig. 25 — 4/1

- |                          |                                   |
|--------------------------|-----------------------------------|
| 1 Clutch                 | 9 Clutch spring                   |
| 2 Bent spring            | 10 Spring cup                     |
| 3 Release lever          | 11 Pressure plate                 |
| 4 Swivel pin             | 12 Disk                           |
| 5 Dowel pin              | 13 Clutch facing                  |
| 6 Ring for adjusting nut | 14 Hollow rivet for clutch facing |
| 7 Adjusting nut          | 15 Lock washer                    |
| 8 Spring retaining ring  | 16 Hexagon screw                  |

## Disassembly

1. Mark the release levers and the relative position of cover plate and pressure plate, since otherwise the balance of the clutch may be disturbed on reassembly.

Maximum admissible unbalance of clutch 20 cmg.

2. Place the pressure plate on a suitable stand and, using a wooden pad and three equal lengths of pipe, exert pressure on the cover plate by means of a press until the pressure on the release levers is released (Figure 25 — 4/2).

**Note:** No pressure must be exerted on the release levers themselves. During the operation the cover plate must not rest on a flat surface.

3. Remove the adjusting nuts, slowly release spring pressure and disassemble the clutch.

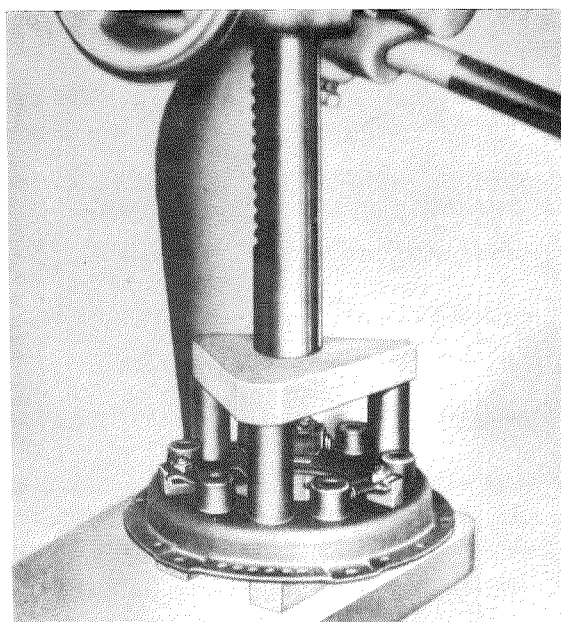


Fig. 25 — 4/2

4. Check clutch springs. The differences between the springs should be as small as possible.

## Inspection

Testing Table for Clutch Springs

Color code	Number	External diam. mm	Wire Gage mm	Unloaded length	Length under load (fully compressed)	
					mm	kg
White	9	25.6	3.6	44.5	29.2	45 ÷ 4

Total spring pressure (contact pressure) = 410 kg.

5. Check the pressure plate for heat cracks and scores.

If necessary, regrind or re-turn the pressure plate. Resurfacing should be done economically. Experience shows that the scores are not deeper than 0.2 mm. Resurfacing is permissible if the reduction in thickness is not more than 1 mm (thickness of a new plate = 15 mm). If the reduction in thickness exceeds 0.5 mm, ground shims corresponding in thickness to the total amount of material removed should be placed between the clutch springs and the cups (see arrow in Fig. 25—1/6).

Example:

Total reduction in thickness of pressure plate . . . . . = 0.7 mm  
Thickness of shims to be used . . = 0.7 mm

These shims are necessary to reestablish the prescribed contact pressure of 410 kg and the original position of the release levers.

6. Check cover plate for distortion and flaws.

## Reassembly

7. Insert the swivel pins (4) in the pressure plate (11) and drive in the dowel pins (5) (see Fig. 25—4/1). Insert the spring retaining rings (8), the springs (9), and the spring cups (10) in the pressure plate. Insert the bent springs (2) in the cover plate and bend the spring ends. Then slide the cover plate over the spring cups (10).

Make sure that the clutch springs are properly seated!

8. Apply pressure to the clutch as described in Paragraph 2. Install release levers (3) and the rings (6) and screw on new adjusting nuts (7) (see Fig. 25—4/1). Then adjust the release levers provisionally, place the Hold-down Clamps 136 589 23 61 under the release levers and release pressure on the clutch.

9. For accurate adjustment of the release levers mount the clutch with a disk 10.3 + 0.3 mm thick (non-compressed) or a ring 9.1 + 0.3 mm thick (equaling the thickness of a new compressed disk) on a flywheel. Remove hold-down clamps.

10. Now adjust the three release levers equally by means of the adjusting nuts to the prescribed distance of 17.8 mm (see also Fig. 25—1/6).

For this purpose place a 17.8 mm precision end gage on the cover plate and set the dial gage in a holder to 0 (Fig. 25—4/3).

**Note:** If possible make this adjustment on a measuring table.

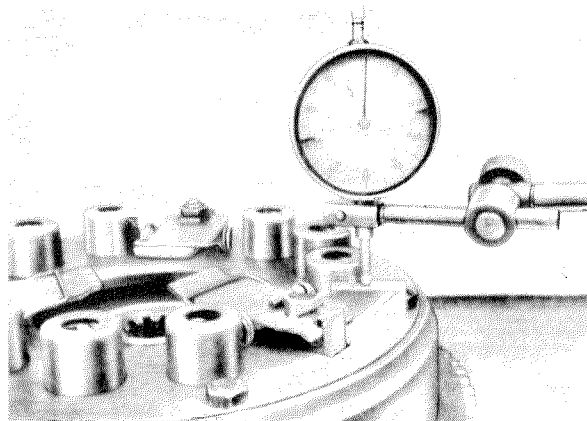


Fig. 25—4/3

11. Use the dial gage to adjust the release levers to the specified distance of 17.8 mm by turning the adjusting nuts (Fig. 25 — 4/4).

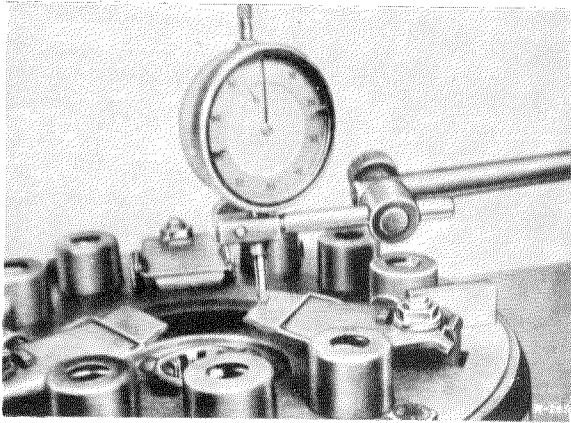


Fig. 25 — 4/4

12. After adjustment press the release levers down several times and check the adjustment again.
13. Lock the adjusting nuts by compressing the collar (Fig. 25 — 4/5).
14. After adjustment and locking, place the hold-down clamps again under the release levers in order to prevent forcing the clutch on installation.  
Remove clutch from the flywheel.

**Note:** The adjustment should only be carried out by means of a depth gage with the clutch installed in the car if a flywheel is not available (Fig. 25 — 4/6).

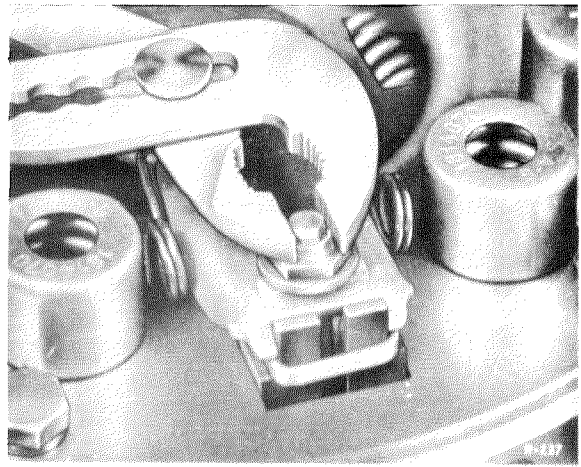


Fig. 25 — 4/5

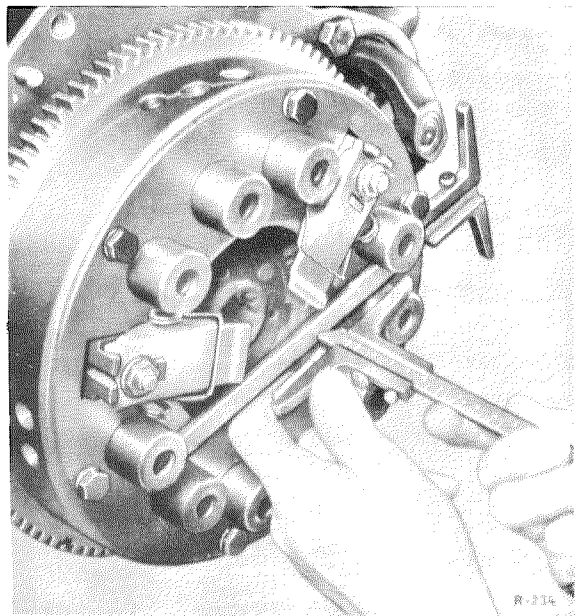


Fig. 25 — 4/6