Group Ku - Clutch

The clutch used in both Type 220 and Type 220a is a single dry-plate clutch, type Fichtel & Sachs KF 12 Z.
The three clutch throwout levers must be adjusted so that the distance of all three levers is equal and corresponds to the value specified in Operation No. Ku 3, cf. 9. Adjustment of the throwout levers is only possible with clutch removed.
The clutch play between throwout lever and throwout bearing is 2 mm (0.08") and is checked as the so-called free travel at the clutch pedal. It must be restored to the specified value when the clutch facing is worn. In Type 220 the free travel is 30 mm ($1^3/_{16}$"), in Type 220a it is 25 mm (1").
The clutch plate has one side marked "Kupplungsseite" (Clutch side). This side must be installed to face the transmission.

Removal and Installation of Clutch

Types 220 and 220a

Operation No.
Ku 1

Special Tools:

Centering arbor for clutch plate	136 589 00 61
3 compressing clamps	
Dismounting arbor for clutch throwout bearing and puller for inner race of clutch throwout bearing	136 589 25 33

Procedure:

1. After the transmission has been removed, loosen the six fastening screws of the end plate with pressure plate **evenly; slacken opposite screws in turn.** Remove clutch with clutch plate.

Note: To rule out any excessive one-sided loading, which might result in the end plate being deformed, the clutch must be removed in compressed condition only. To compress the clutch, place the compression yokes 136 589 23 61 under the outer ends of the throwout levers (see Fig. Ku 1/5) in the same way as for installing the clutch.

2. Check clutch surface of flywheel and regrind or re-turn (precision turn), if necessary. The surface must be perfectly smooth and must not show any heat cracks; ist must project 0.2 to 0.3 mm (0.008 to 0.012") beyond the surface to which the end plate is fastened (see Operation No. M 14). Check the surface of the clutch pressure plate as well for scores and heat cracks and if necessary, regrind or re-turn it (see Operation No. Ku 3, cf. 5).

3. Check whether clutch plate can be displaced on the splined shaft (transmission driveshaft) easily and without side play. Check clutch plate, see also Operation No. Ku 4.

4. When installing the clutch again, center clutch plate on flywheel by means of centering arbor 136 589 00 61 or an old driveshaft (Fig. Ku 1/4). Be careful to install the clutch plate correctly! The side marked "Kupplungsseite" (Clutch side) must face the transmission (see also Fig. Ku 4/00).

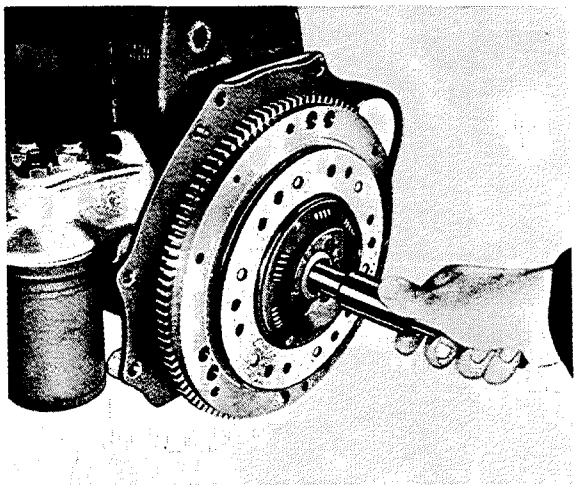

Fig. Ku 1/4

5. To facilitate installation of the clutch and to rule out any deformation of the end plate, the clutch is mounted and screwed to the flywheel in compressed condition. To compress the clutch place the small compression yokes (136 589 23 61) under the outer ends of the throwout levers (Fig. Ku 1/5).

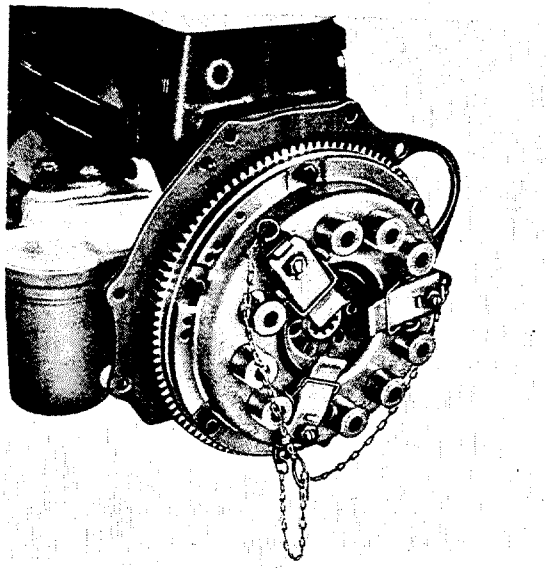

Fig. Ku 1/5

Tighten fastening screws of end plate with pressure plate **evenly by tightening opposite screws in turn.** It is recommended to use new spring rings!

After the clutch has been installed, remove centering arbor and compression yokes.

Note: The two pilot pins on the flywheel serve to center the end plate on the flywheel. Make sure that the pin holes in the end plate are not worn and that the pilot pins are firmly seated in the flywheel.
If possible, make a short check with engine running to see whether the clutch runs true.

6. Check whether the installation height of the throwout levers is equal, if this check has not already been made prior to installation (see Operation No. Ku 3, cf. 9).

7. Adjust clutch pedal after the transmission has been installed (see Operation No. Ku 5 for Type 220 and Ku 5a for Type 220a).