

## 1. Description

### 1.1 Series 0-600-424-07 to 0-600-474-23 (please see Fig. 1)

The housing (10) has internal grooves for location of the outer plates (6). The inner plates (7) are also carried in grooves or in a tooth system on the plate support (1). The pressure required for transmission of the required torque is produced in the case of series 0-600-424-07 to 0-600-424-15 by means of one pressure spring, and in the case of series 0-600-474-23 by means of several pressure springs. The pressure applied by the spring/springs (5) can be adjusted by means of an adjusting nut (8). The adjusting nut (8) and locking plate (3) are secured against rotation by means of cheese head bolts (4).

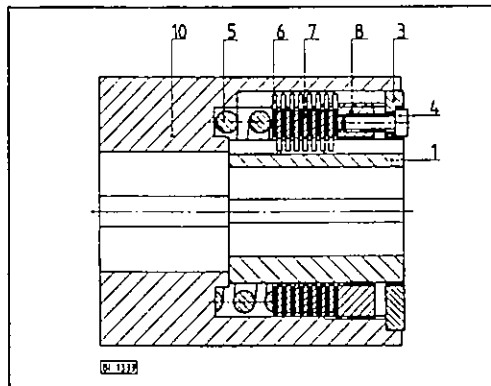


Fig. 1

### 1.2 Series 0-600-474-31 to 0-600-474-47 (please see Fig. 2)

The outer housing (10) has an internal tooth system for location of the outer plates (6). The inner plates (7) are carried in the grooves or in the tooth system of the plate support (1). The pressure necessary for transmission of the required torque is produced by means of a number of springs (5) retained between the adjusting nut (8) and the spring support thrust plate (9). The adjusting nut (8) and locking plates (3) are secured against rotation by means of cheese head bolts (4.1). Since the torque cannot be readjusted under thrust, due to the high spring pressure, a spring support thrust plate (9), which can be retracted by means of the cheese head bolts (4.1) before adjustment, is provided. The plate assembly is thus freed of spring pressure so that the adjusting nut can be turned without difficulty.

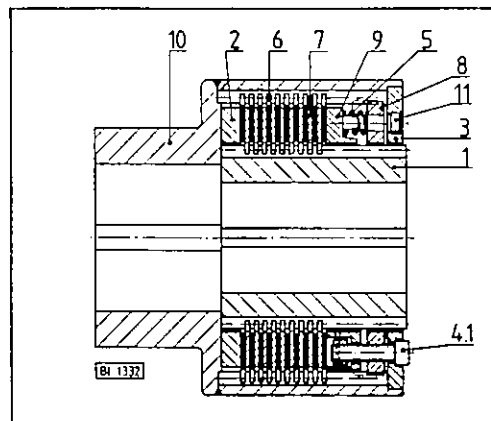


Fig. 2

### 1.3 Series 0-600-07-47 and larger sizes (please see Fig. 3)

The outer plates (6) are carried in the tooth system in the housing (10). The inner plates (7) are carried in the tooth system of the plate support (1). The pressure necessary for transmission of a required torque is produced by a number of pressure springs (5) retained in place between the adjusting nut (8) and the spring support thrust plate (9). The two threaded adjusting rings (8) are clamped against one another and thus secured against rotation by means of the cheese head bolts (4.2). Since torque cannot be readjusted under thrust, due to the high spring pressure, a spring support thrust plate (9), which can be retracted by means of the cheese head bolts (4.3) before adjustment, is provided. The plate assembly is thus freed from spring pressure, so that the adjusting nut can be turned without difficulty. In the case of series 0-600-07-47, the plate assembly is not retained in place by the stop plate (2), but by a Seeger circlip and thrust plates. Special types of slip clutch are not equipped with the adjusting nuts described above, the pressure springs are retained by means of individual spring cups, which are threaded to permit insertion, adjustment and removal.

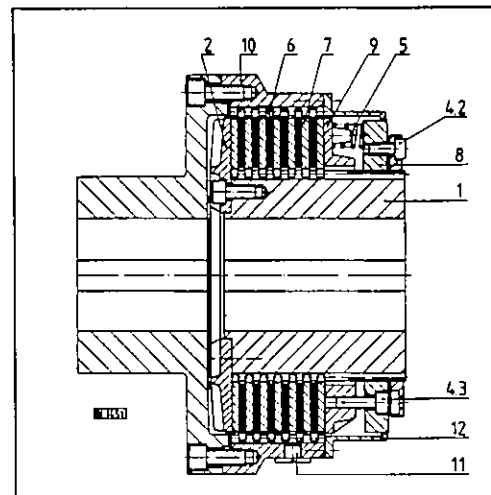


Fig. 3

## 2. Spare Parts

Please always state the production number located on the outer housing or on the plate support as well as the spare part number when ordering spare parts. In order to avoid incorrect supply, please always place spare part orders by letter or by telegram/telex.

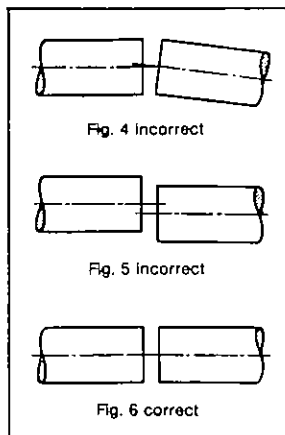


Fig. 4 incorrect

Fig. 5 incorrect

Fig. 6 correct

## 3. Fittings

The bearings must be fitted as close as possible to the clutches. Where this is not possible, and in all cases where high speeds are involved, the shafts separated by the clutch must be installed one inside the other within the clutch. The separated shafts must be precisely aligned (please see Figs. 4-6). It is advantageous to carry out adjustment of the clutch after installation, since experience shows that in many cases the precise slip moment required cannot be determined until the machine is test run. Clutches used for reduction of starting surges on squirrel cage induction motors should be set to a figure of 1.5 times the rated motor output.

Fig. 1 to 3

- |                                       |                               |
|---------------------------------------|-------------------------------|
| 1 Plate support                       | 6 Outer plate                 |
| 2 Stop plate                          | 7 Inner plate                 |
| 3 Locking plate                       | 8 Adjusting nut               |
| 4 Cheese head bolt                    | 9 Spring support thrust plate |
| 4.1 Cheese head bolt with slotted nut | 10 Housing                    |
| 4.2 Cheese head bolt                  | 11 Filling plug               |
| 4.3 Cheese head bolt                  | 12 Cover                      |
| 5 Pressure spring                     |                               |

## 4. Adjustment

### 4.1 Series 0-600-424-07 to 0-600-474-23 (please see Fig. 1)

The cheese head bolts (4) visible in the locking plate (3) should be untightened. The adjusting nut (8) connected to the locking plate can be moved axially by means of rotation of the locking plate using a key/spanner. This alters spring tension, and thus also the torque. The cheese head bolts (4) must be retightened after completion of the adjustment operation, the locking plate and adjusting nut thus being locked and secured. **It must under all circumstances be ensured that a gap for locking remains between the adjusting nut and the locking plate. Turning of the locking plate to the right increases the torque to be transmitted, turning of the locking plate to the left decreases the torque to be transmitted.**

### 4.2 Series 0-600-474-31 to 0-600-474-47 (please see Fig. 2)

The cheese head bolts (4.1) visible in the locking plate (3) must be untightened crosswise in alternation by means of turning to the left. The cheese head bolts (4.1), which are secured with slotted nuts, cannot be completely removed. Continued turning in the same direction produces retraction of the spring support thrust plate (9), and thus frees the plate assembly of plate pressure. The locking plate can now easily be rotated, causing the adjusting nut to be moved axially. After completion of the adjustment operation, spring pressure must be reapplied to the plate assembly by means of turning to the right, crosswise in alternation, of the cheese head bolts, and the setting locked by means of clamping of the adjusting nuts against the locking plate by further turning. **It must in this context be ensured under all circumstances, that the gap for locking remains between the adjusting nut and the locking plate. The bolts must under all circumstances be firmly tightened by means of turning to the right.**

If the adjusting nut projects out of the housing when a relatively low torque is selected, a number of springs, or, if necessary, a pair of plates, must then be removed. It must be ensured that the remaining springs are uniformly distributed around the circumference. **Turning the nut to the right increases the torque to be transmitted, turning the nut to the left decreases the torque to be transmitted.**

### 4.3 Series 0-600-07-47 and larger sizes (please see Fig. 3)

The cheese head bolts (4.2) visible in the adjusting nut (8) must be untightened by means of rotation to the left crosswise in alternation. Turning of the cheese head bolts (4.3) to the right causes retraction of the spring support thrust plate (9) and frees the plate assembly from spring pressure. The adjusting nut can now be turned slightly, causing it to be moved axially. After completion of the adjustment operation, spring pressure must be reapplied to the plate assembly by means of turning to the left crosswise in alternation of the cheese head bolts (4.3), and the setting must be locked by means of tightening of cheese head bolts (4.2). It must in this context under all circumstances be ensured that a gap for locking remains between the adjusting nut components. Bolts (4.2) must under all circumstances be firmly tightened by means of turning to the right. The plate assembly is not locked in the housing, as is the case with series 0-600-424-07 to 0-600-474-47, but on the plate support.

Where special types of clutch are equipped with spring cups, adjustment should be carried out as follows. All locknuts on the spring cups must be untightened. Each individual spring cup must be turned by the same amount. After completion of the adjustment operation, the locknuts must be firmly retightened. **Turning of the spring cups to the right increases the torque to be transmitted, turning of the spring cups to the left decreases the torque to be transmitted.**

Where the required slip torque is low, springs can be removed after removal of a number of spring cups. It is advantageous to replace the empty spring cups and secure them. It must be ensured that the remaining springs are uniformly distributed around the circumference and that the spring cups are uniformly adjusted.

## 4.4 Setting to a required torque

Adjustment should be carried out as follows where it is necessary to set the clutch to a required torque: The plate support must first be keyed on to the shaft and a Prony brake must be fixed to the housing (please see Fig.7).

### Example:

Setting of a slip clutch installed between a squirrel cage induction motor  $P = 10 \text{ kW}$  at a speed of  $n = 1450 \text{ min}^{-1}$  and a machine tool is required. Motor torque is thus:

$$M = \frac{9555 \times \text{motor kW}}{\text{min}^{-1}} = \frac{9555 \times 10}{1450} = \text{approx. } 66 \text{ Nm}$$

Paragraph 3 indicates that the clutch should in this context be set to  $1.5 \times$  rated motor output.  $66 \times 1.5 = \text{approx. } 100 \text{ Nm}$ . Force  $F$  acting on a lever of  $L = 1 \text{ m}$  is  $100 \text{ N}$ . The weight of the lever  $F_1$  must be compensated for, or subtracted at  $\frac{F_1 \times L}{2}$

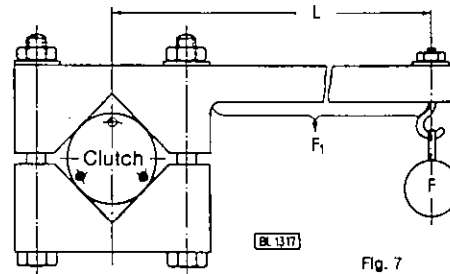


Fig. 7

## 5. Lubrication

### 5.1 Clutches with KONSTANT sintered metal/steel lining combination.

These clutches are suitable both for lubricated and for dry running. They can be installed either in the gearbox or outside. Where there is exposure to severe weather conditions, it is recommendable to fill the clutches with a low viscosity standard oil of  $32 \text{ mm}^2/\text{s}$   $40^\circ \text{C}$ , e.g. Shell Tellus Oil C 32 or with a non-acidic grease such as Shell Alvania grease R2.

On smaller clutches such filling can be carried out by means of removal on one cheese head bolt (4) on the adjusting nut. This bolt must be retightened after filling.

On medium-sized and larger clutches, a special filling plug (11) is provided in the housing or in the adjusting nut. This plug can, if necessary, be replaced with a grease-nipple of the correct size and thread. Oil-mist or immersion lubrication can be used for clutches installed in gearboxes.

### 5.2 Clutches with ORTEX friction lining (organic base)/steel lining combination.

These clutches must not be lubricated and must be installed in such a way that no lubricant can enter the plate chamber.

## 6. Fitting and maintenance faults and their rectification

### 6.1 Clutch does not pull, i.e. it slips and does not transmit the required torque.

The clutch has been set to too low a torque and must be readjusted as described in Section 4.

### 6.2 Overheating of the clutch

In this case, too, the clutch has been set to too low a torque and must be adjusted. It should be noted that the permissible period for slipping of the clutch is limited according to the size of the clutch and the power to be transmitted. Slipping of the clutch causes conversion of mechanical energy to heat. This heat must be dissipated, either by radiation, or by means of sufficient lubrication where clutches are installed in gearbox casings.