



Operating and maintenance instructions

Friction Clutch KF



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Spare part assemblies

Every clutch is provided with a production number which is applied on the front end of the clutch hub. In order to exclude any mix-ups when ordering spare parts, this number must always be specified or a specimen of the relevant spare part returned to us. We would ask you to place all spare parts order in writing. The dimensions Z as per Figs. 2 and 3 is specified in table 1 to determine the clutch size.

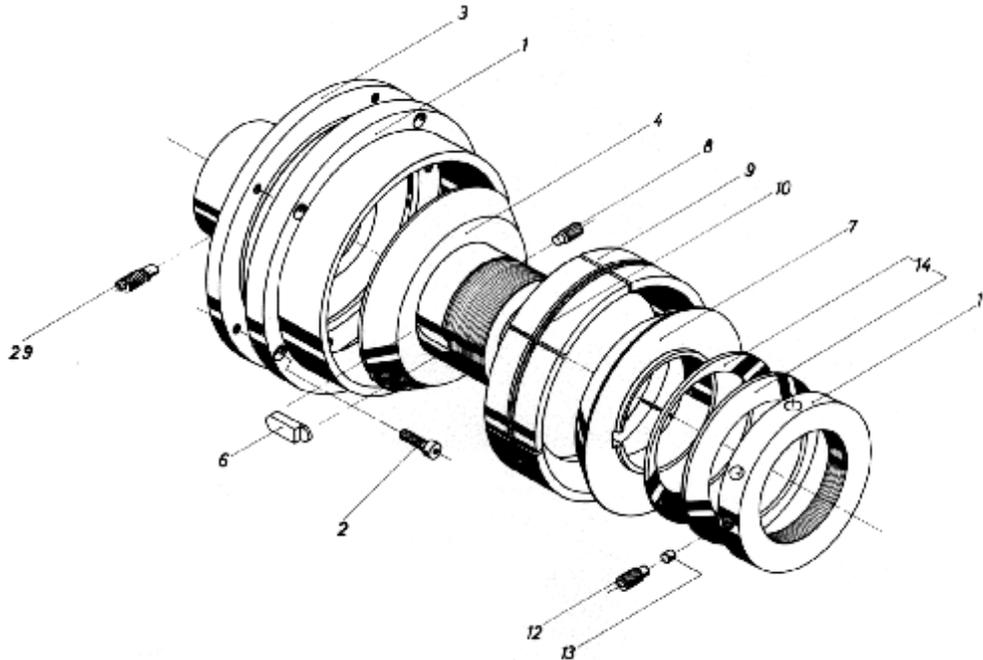


Bild 1

1 Clutch housing
2 Socket head screw
3 Flanged hub
4 Clutch hub
6 Key (Key pin on 612 100 00)

7 Dished plate
8 Setscrew
9 Friction ring
10 Tension ring (Snapping on size 612 100 00)
11 Adjusting ring
12 Setscrew

13 Pressure element
14 Dished spring
29 Setscrew

1. Notes on safety

KF clutches can be used on a wide variety of machines. Therefore, please pay special attention to the laws on machine protection for your particular application.

The following points are to be observed in particular when operating the KF clutch and during all installation, maintenance and repair work in order to avoid accidents and injuries:

- During all maintenance and repair work on the clutch, make sure that the machine is at standstill and that the main machine switch is de-activated and secured against being inadvertently reactivated.
- The admissible loading values according to the drawing or catalogue must not be exceeded.
- The maximum speed as per table 1 or as the drawing or catalogue must not be exceeded.
- Observe the regulations on accident prevention.
- The clutch must be adequately ventilated so that the heat produced during slipping can be dissipated. Prolonged slipping is to be avoided.
- Rotating components must be safely covered to avoid contact.
- It is imperative to keep friction surfaces free of grease and oil as otherwise an adequate clutch torque cannot be transmitted.
- During cleaning work on the machine near the clutch, make sure that no greasy or corrosive cleaning agents can come into contact with the clutch.
- The friction rings must not be cleaned with solvents such as, for example, petrol, acetone or paraffin. If they are oily or dirty, they must be replaced with new ones.
- Caution - risk of burns during repair and maintenance work on a KF clutch still warm from operation.
- The admissible alignment values must not be exceeded.

2. Function

The KF slipping clutch type CR is designed to protect machine components against destruction in the event of overloading or blocking of the driven machine.

The KF slipping clutches are adjusted with a threaded ring. Accurate setting of the torque is possible. The required contact pressure on the friction ring (9) is produced by means of the adjusting ring (11), dished spring (14) and dished plate (7) and the torque transmitted by friction. The dished springs (14) offset wear over a relatively long path, thus reducing maintenance to a minimum. The clutch is to be set so that it slips when peak loads occur.

3. Operating conditions

3.1 Installation space

The installation space of the Conax clutch must be dry. Moreover, it must be ensured that no oil or grease can come into contact with the friction surface.

3.2 Speeds

The max admissible speeds are listed in Table 1:

Article No.	611 100 00	611 200 00	611 300 00	611 400 00	611 500 00
max. Speed [rpm]	5400	4000	3280	2550	2120
Dimension Z [mm]	62	90	115	148	186
Distance S [mm]	1	1	1	2	3
Adm. radial and axial run outs [mm]	0,1	0,1	0,1	0,1	0,15
Tightening torques F, screw Pos.2 [Nm]	6,1	10,4	10,4	25	25

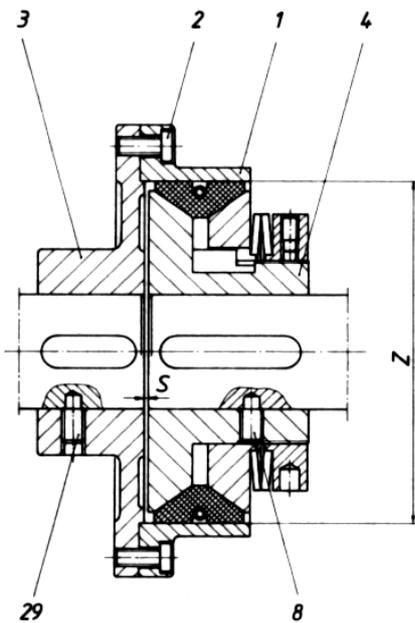


Fig. 2

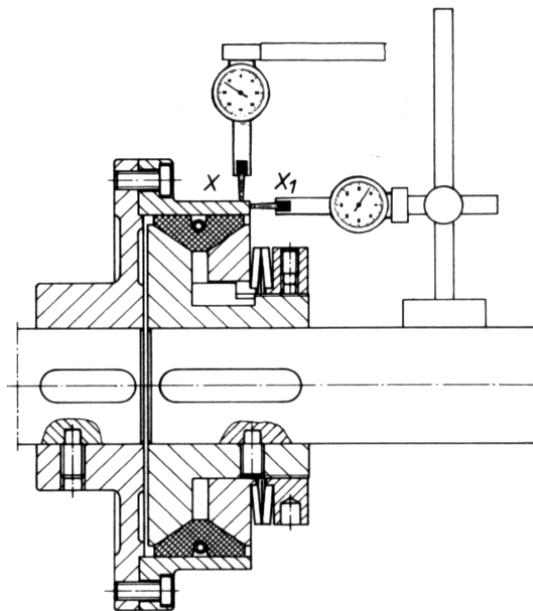


Fig. 3

4. Taking into operation

Observe the notes on safety in section 1 for all the following work on the clutch.

4.1 Installation of the KF slipping clutch

4.1.1 Remove flanged hub (3) from the clutch housing (1) by loosening the socket head screws (2).

4.1.2 Insert key into the suitable prepared keyway of one shaft and mount flanged hub (3). Bore shaft and secure flanged hub with setscrew (29) against axial displacement on the shaft.

4.1.3 Undo setscrew (12), turn back adjusting ring (11) and remove clutch housing (1).

4.1.4 Insert key into suitable prepared keyway in the second shaft and mount clutch hub (4). Remove the parts on the clutch hub (4), bore second shaft and secure clutch hub with setscrew (8) against axial displacement. Assemble clutch again and push clutch housing (1) on.

4.1.5 Connect clutch housing (1) and flanged hub (3) with socket head screws (2). The distance 5 between the shafts and between the clutch hub (4) and flanged hub (3) is given in table 1. This distance must be checked from time to time and during all works at the clutch. It must be corrected when necessary.

4.1.6 Align clutch with a dial gauge in the disengaged condition as shown in Fig. 4. When the clutch side is turned, the radial and axial run-outs must not exceed the values specified in table 1 at any point on the clutch housing.

4.1.7 Set clutch as described under 4.3.

4.1.8 If the clutch is assembled on the shaft at a back gearing the fixed bearings are to be located as close as possible to the clutch hub (4) or flanged hub (3).

4.2.1 Mount clutch as described under 4.1.3 and 4.1.4. Push pulley or wheel with idling bush right up to the clutch hub (4) and secure idling bush, after boring the shaft, with an adjusting screw against axial displacement. Screw clutch housing (1) to pulley or wheel.

4.2.2 Set clutch as described under 4.3.

4.3. Adjusting and re-adjusting the slipping clutch

The coefficient of friction depends on the roughness of the surfaces under friction (on parts 1, 4, 7 and 9) and the operating conditions involved, e.g. air humidity, temperature and speed. Adjusting the clutch to suit the required slipping torque, which must lie above the operating torque and below the admissible peak torque, can therefore only be performed in actual practice.

Before adjusting the clutch to the desired slipping torque, the clutch should be ground in at a low torque for some time so that the friction surfaces become smooth (about 2-3 hours with about 10 rpm). The torques specified in the catalogue and in table 2 are transmitted when the friction surfaces have become smooth. During the grinding-in operation make sure that the clutch does not heat up to over 150° C.

Caution: During adjusting and re-adjusting of the clutch the dished springs must under no circumstances be fully tensioned.

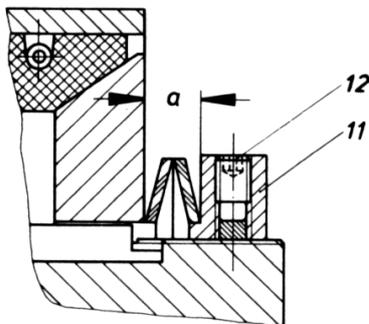


Fig. 4

Table 2 contains a dimension "a" corresponding to the desired slipping torque as a reference value.

loosen setscrew (12), set the corresponding dimension "a" and secure the adjusting ring (11) again with the setscrew (12).

- The set torque may change as a result of frequent slipping and the resultant wear on the friction ring (9). Adjustment according to 4.3.1 or 4.3.2 is required.
- Clutches which are not used for a longer period or do not slip occasionally during operation (especially in the event of humidity), may be able to transmit a higher torque than the set slipping torque, e.g. through the formation of rust on the friction surfaces. It is recommended in such cases to grind the clutch in again and clean it. Then perform the setting work according to 4.3.1 or 4.3.2.

Table 2:

Article No.		611 100 00	611 200 00	611 300 00	611 400 00	611 500 00
Max. torque $T_{\dot{u}}$ [Nm]		60	120	240	360	600
Dimension a [mm] at	$0,50 \times M_{d_{max}}$	2,65	7,1	8,3	9,6	10,2
	$0,75 \times M_{d_{max}}$	2,4	6,35	7,65	8,6	9
	$M_{d_{max}}$	1,8	4,8	5,5	6,4	6,7

5. Maintenance

Observe the notes on safety in section 1 for all work on the clutch.

5.1 Maintenance of the KF slipping clutch is almost never required if the operating conditions are favourable (dust-free, dry air). In the case of flanged clutches which are connected to a V-belt pulley, flat pulley, gear or chain wheel, the idling facility must be regreased, depending on the frequency of slipping. During overhauls of the entire plant, which are to be performed at regular intervals, it is recommended to lightly grease the sliding surfaces between the clutch hub (4) and dished plate (7) and the key or close-tolerance grooved pins (6) or the hexagon set screws (15).

Caution: The friction surfaces of the parts 1, 4, 7 and 9 must under no circumstances come into contact with grease or oil.

The friction surfaces must not be cleaned with solvents such as, for example, petrol, acetone or paraffin. If they are oily or dirty, they must be replaced with new ones.

6. Dismantling

Observe the notes on safety in section 1 .

6.1 Replacing the friction ring

6.1.1 Loosen setscrew (12) and loosen adjusting ring (11) or hexagonal nut (17) until the frictional connection between the friction ring (9) and the housing (1) is eliminated.

6.1.2 Remove socket head screws (2) and pull off clutch housing (1).

6.1.3 Remove worn friction ring (9).

6.1.4 Turn back adjusting ring (11) a few more turns. Mount new friction ring segments (9) in numerical order on the clutch hub (4) and dished plate (7) and hold together with tension spring (10). Avoid overstretching the tension spring (10).

6.1.5 Push clutch housing (1) over the disengaged clutch and secure with socket head screws (2).

6.1.6 Set the clutch according to section 4.3.

7. Transport and storage

The KF clutch must be transported in such a way that it is not subject to any severe impact loads, is protected against moisture and cannot move.

he storage area of the KF clutch must be dry and not subject to major temperature fluctuations. If properly stored, the clutch can be kept in storage for up to 1 year.

Caution! The friction surfaces must not be treated with conservation agents.