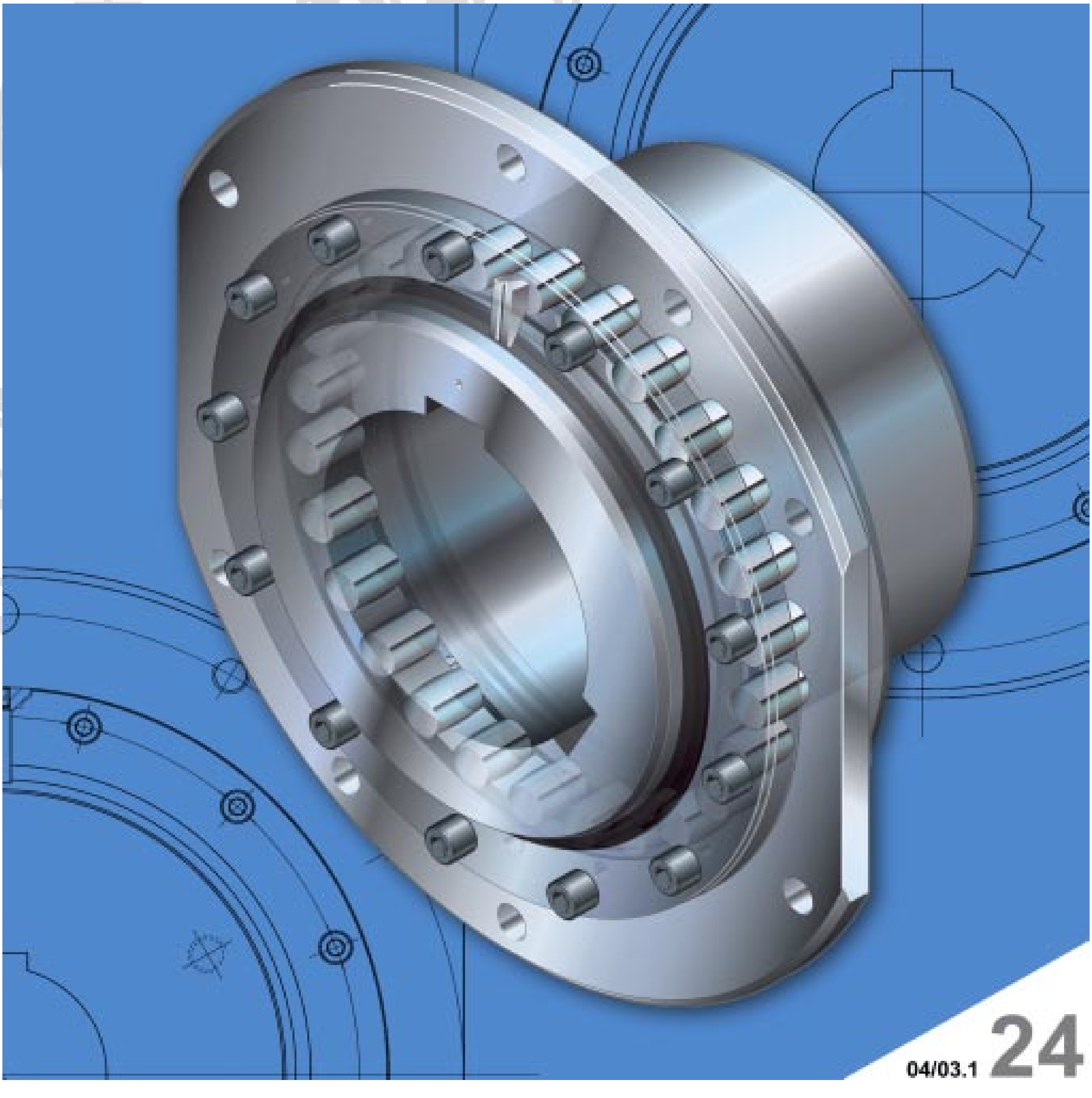
TSCHAN

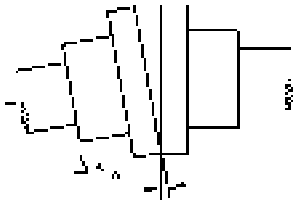
# Barrel Couplings

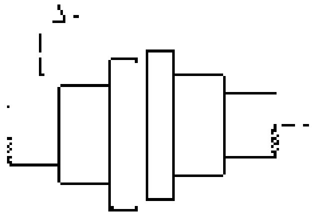
Torsionally rigid couplings

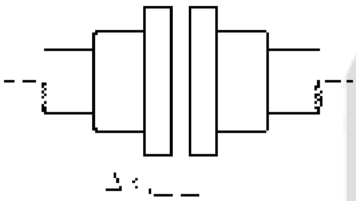


04/03.1 24

## Flexible couplings







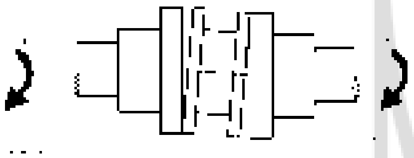
**TSCHAN®- S**

**TSCHAN® - B**

**Nor-Mex®**

**ROLLASTIC®**

## Torsionally rigid couplings



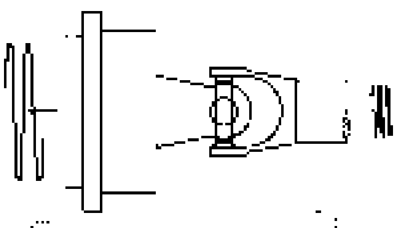
**POSIMIN®(PHP)**

**POSIMIN®-F**

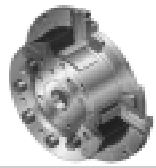
**POSIFLEX®**

**BARREL-COUPLING**

## Highly flexible couplings

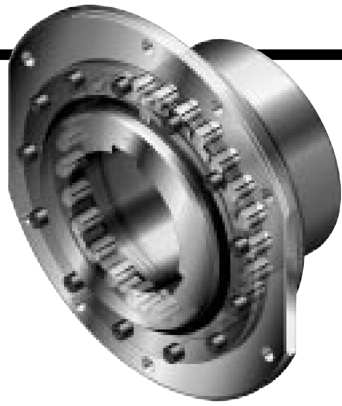


**TORMAX®-VS**



**TORMAX®-DS**

# Content



## 1.0 General Features

Tschan TK barrel couplings are recommended for installation in crane lifting mechanisms, to connect the cable drum with the gearbox output shaft, as well as in winch conveyors and platform hoists.

By selecting the coupling size (table 1), it is necassery to consider the radial load (ST), the dimension of the gearbox shaft (d min – d max) and especially the transmission torque (T) with the operating factor (K1) in table 3.

When the gearbox output shaft is rigidly connected to the drum in a lifting mechanism, supported between three points, this originates a statically indeterminate case (Fig. 1)

This type of mounting requires special care in alignment and levelling, which is difficult to achieve in practice.

Mounting inaccuracies, as well as deformation in structures and wear in moving parts, lead to enormous additional forces, above all in the gearbox output shaft, which is a result of alternative bending loads can lead to breakage due to faults in bearings and gear wheels.

In the recommended mounting Fig. 2, the barrel coupling, which is installed between the gearbox and cable drum, performs the function of an articulated joint, thus making the connection statically determinate and avoiding the occurrence of high bending moments.

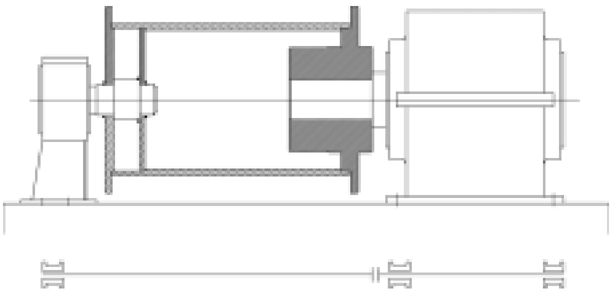


**Fig.1**
Rigid mounting of gearbox-drum connection
Support at three points – static uncertain

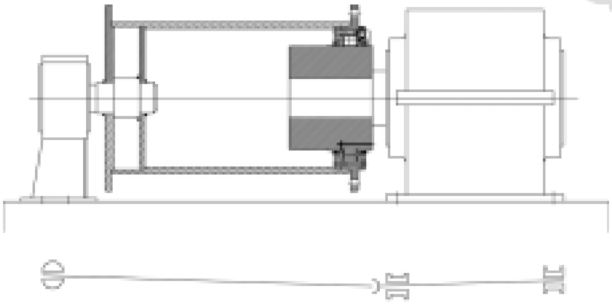


**Fig.2**
Mounting with barrel coupling – static certain

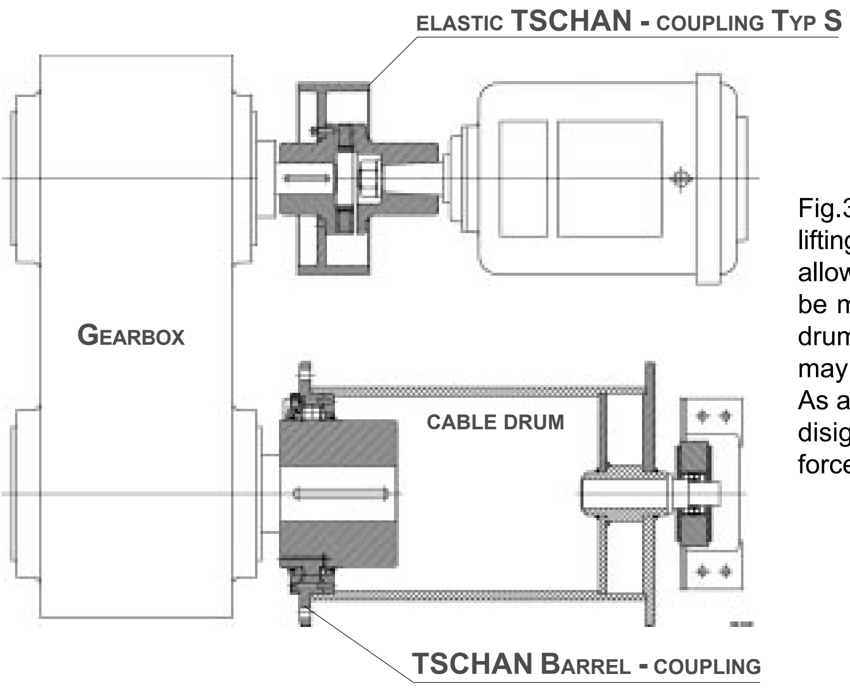



Fig.3 shows the mounting of the barrel coupling in a lifting mechanism. Considering the fact that this coupling allows axial displacement, a self-adjusting bearing must be mounted, fixed laterally, at the opposite end of the drum shaft in order to withstand the axial forces that may be genarated.
As a special application, the TK barrel coupling can be disigned as an articulated joint that withstands axial forces by itself.

## 2.0 TYPE AND ELEMENTS

The barrel coupling consists of a sleeve provided with semicircular toothing around its internal diameter and a hub that is externally toothed in a similar way. A series of cylindrical barrels, of hardened steel, are inserted in the holes formed by this toothing to act as power transmission elements.

Covers with their corresponding special seals (Pos. 8, Fig. 4) serve to assure the perfect-tightness of the inner zone, preventing the penetration of dust and guaranteeing the continuity of the necessary lubrication. Two double-lamina elastic rings mounted on the hub, one on each side of the toothing, limit the axial displacement of the barrels.

Torque is transmitted to the drum's receiving flange, generally by two diametrically opposed flat driving surfaces, located at the periphery of the coupling flange, and also by means of bolts which, at the same time, serve as connection with the drum.

The discribed design is appropriate for large bearing radial loads, as these are distributed over large barrel support surface. In the same way, this design also minimises the effect of alternative bending of the torque on the toothing, the latter being robust thanks to its low height and large bottom section. In addition to this, due to the effect of "crush polishing" of the hardened barrel on the tooth profile, its wear resistance is appreciably improved.

An indicator located on the external cover (Pos. 7, Fig. 4) which moves relative to the marks on the hub as a funktion of wear, permits control of internal wear of the toothing, without the need to disassemble any part of the coupling. The same indicator also serves to control the axial position of the sleeve relative to the hub.

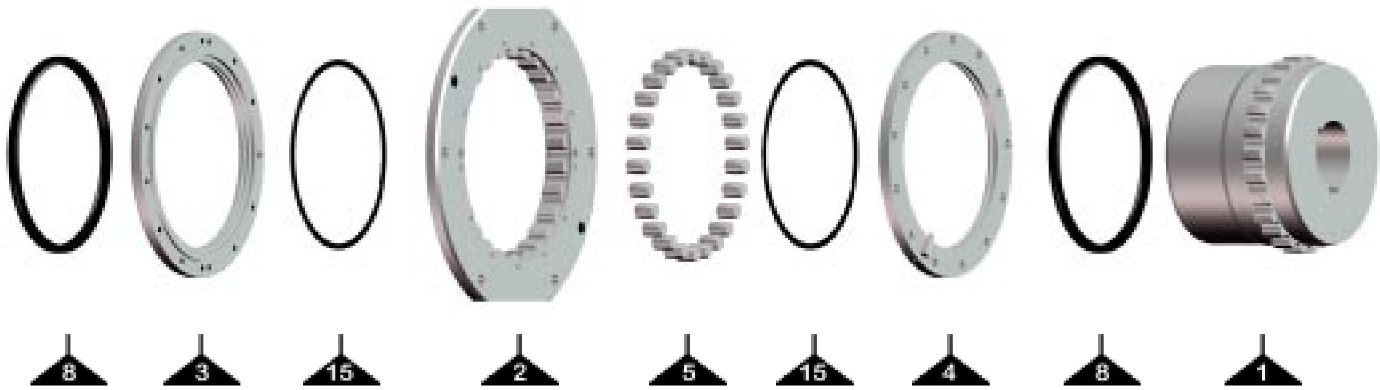
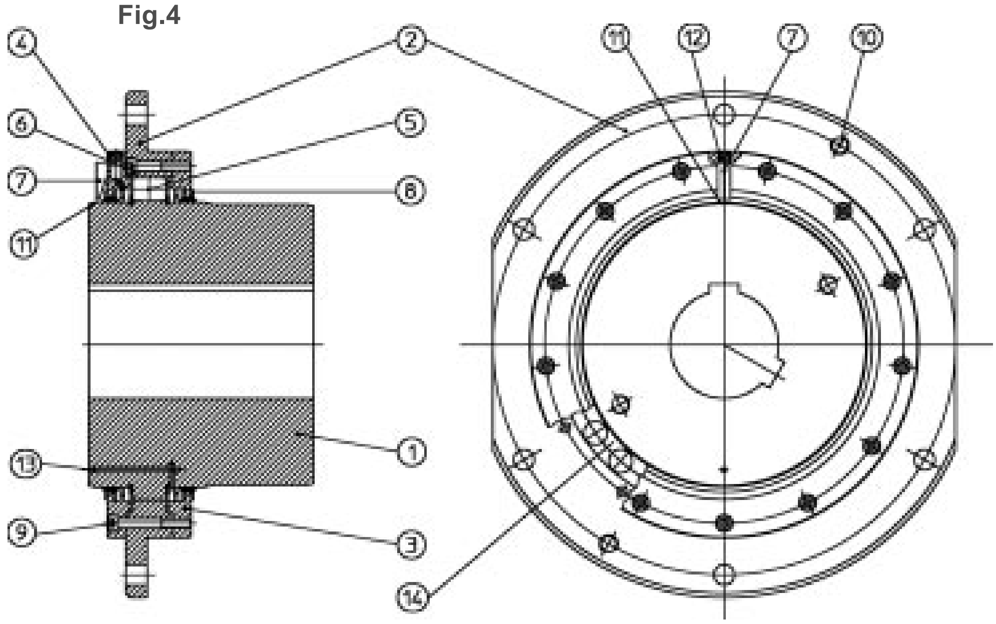



Fig.4

1 HUB
2 SLEEVE FLANGE
3 INTERNAL COVER
4 EXTERNAL COVER
5 BARREL
6 FIXING SCREW
7 POINTER
8 DOUBLE-LIP SEAL
9 FIXING SCREW
10 WITHDRAWING THREADING
11 WEAR NOTCHES
12 LUBRICANT SUPPLY
13 OVERFLOW HOLE
14 ASSEMBLY MARKING
15 RETAINING RING



## 3.0 DIMENSIONS AND PARAMETERS

**Table 1a (mm)**

| Size | T(max) [Nm] | Admissible radial load Smax (N) | d (h7) max. Ø [mm] | d (h7) min.Ø [mm] | D Ø [mm] | L [mm] | L (min) [mm] | N Ø [mm] | A Ø [mm] | B(h6) Ø [mm] | S(h9) Ø [mm] | e [mm] | f [mm] | c [mm] | r [mm] | h [mm] | k [mm] | T Ø [mm] | b Ø [mm] | max.axial displacement [mm] | Weigt [Kg] | Inertia [Kgm²] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 4500 | 14500 | 65 | 38 | 250 | 95 | 85 | 95 | 159 | 160 | 220 | 42 | 44 | 12 | 2,5 | 16 | 34 | 220 | 15 | 3 | 12 | 0,06 |
| 50 | 6000 | 16500 | 75 | 48 | 280 | 100 | 85 | 110 | 179 | 180 | 250 | 42 | 44 | 12 | 2,5 | 16 | 34 | 250 | 15 | 3 | 19 | 0,13 |
| 75 | 7500 | 18500 | 85 | 58 | 320 | 110 | 95 | 125 | 199 | 200 | 280 | 45 | 46 | 15 | 2,5 | 17 | 34 | 280 | 19 | 4 | 23 | 0,17 |
| 100 | 9000 | 20000 | 95 | 58 | 340 | 125 | 95 | 140 | 219 | 220 | 300 | 45 | 46 | 15 | 2,5 | 17 | 34 | 300 | 19 | 4 | 27 | 0,28 |
| 130 | 15500 | 31000 | 105 | 78 | 360 | 130 | 95 | 160 | 239 | 240 | 320 | 45 | 47 | 15 | 2,5 | 19 | 34 | 320 | 19 | 4 | 33 | 0,36 |
| 160 | 19500 | 36000 | 120 | 78 | 380 | 145 | 95 | 180 | 259 | 260 | 340 | 45 | 47 | 15 | 2,5 | 19 | 34 | 340 | 19 | 4 | 42 | 0,48 |
| 200 | 24000 | 38500 | 135 | 98 | 400 | 170 | 95 | 200 | 279 | 280 | 360 | 45 | 47 | 15 | 2,5 | 19 | 34 | 360 | 19 | 4 | 59 | 0,66 |
| 300 | 28000 | 42000 | 145 | 98 | 420 | 175 | 95 | 220 | 309 | 310 | 380 | 45 | 47 | 15 | 2,5 | 19 | 34 | 380 | 19 | 4 | 70 | 0,93 |
| 400 | 38000 | 49000 | 175 | 98 | 450 | 185 | 120 | 260 | 339 | 340 | 400 | 60 | 61 | 20 | 2,5 | 22 | 40 | 400 | 24 | 4 | 95 | 1,45 |
| 600 | 70000 | 115000 | 205 | 118 | 550 | 240 | 125 | 310 | 419 | 420 | 500 | 60 | 61 | 20 | 2,5 | 22 | 42 | 500 | 24 | 6 | 162 | 3,93 |
| 1000 | 120000 | 125000 | 230 | 138 | 580 | 280 | 130 | 350 | 449 | 450 | 530 | 60 | 61 | 20 | 2,5 | 22 | 42 | 530 | 24 | 6 | 195 | 5,63 |
| 1500 | 180000 | 150000 | 280 | 158 | 650 | 315 | 140 | 415 | 529 | 530 | 580 | 65 | 68 | 25 | 2,5 | 27 | 47 | 600 | 24 | 6 | 305 | 11,0 |
| 2600 | 310000 | 250000 | 300 | 168 | 680 | 350 | 145 | 445 | 559 | 560 | 600 | 65 | 70 | 25 | 4,0 | 34 | 54 | 630 | 24 | 8 | 360 | 16,0 |
| 3400 | 400000 | 300000 | 315 | 198 | 710 | 380 | 165 | 475 | 599 | 600 | 640 | 81 | 85 | 35 | 4,0 | 34 | 56 | 660 | 28 | 8 | 408 | 20,0 |
| 4200 | 500000 | 340000 | 355 | 228 | 780 | 410 | 165 | 535 | 669 | 670 | 700 | 81 | 85 | 35 | 4,0 | 34 | 56 | 730 | 28 | 8 | 580 | 34,5 |
| 6200 | 685000 | 380000 | 400 | 258 | 850 | 450 | 165 | 600 | 729 | 730 | 760 | 81 | 85 | 35 | 4,0 | 34 | 59 | 800 | 28 | 8 | 715 | 52,0 |

The convex shape of the barrels and the internal spaces of the toothing allows the oscillation of the hub relativ to the sleeve, compensating angular misalignments of ± 1º 30' and an axial displacement that varies between ± 3 mm and ± 8 mm (see table 1a)

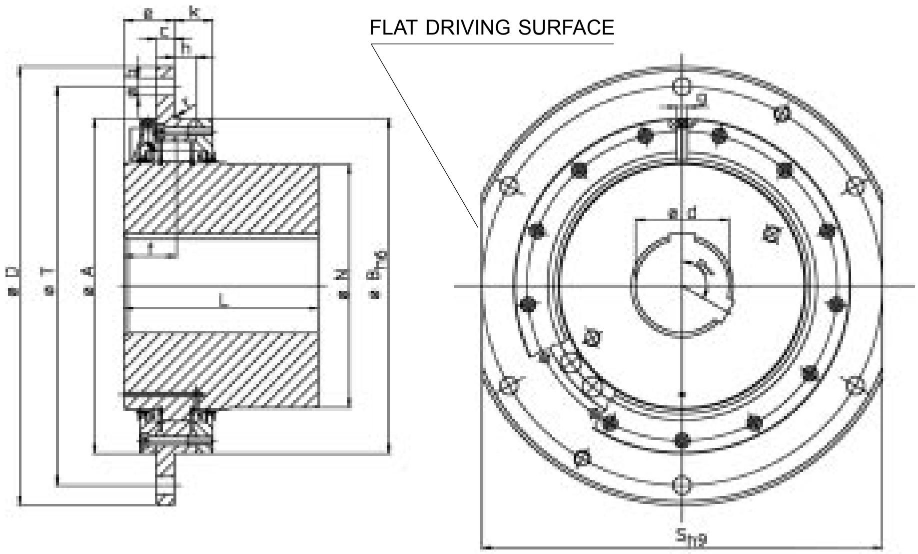



**Table 1b**

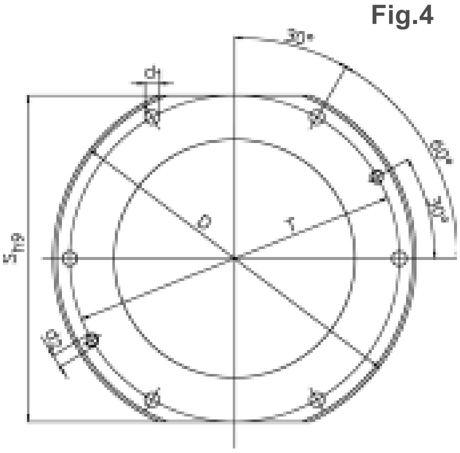
| Size | T(max) [Nm] | Admissible radial load Smax(N) | d (h7) max. Ø [inch] | d (h7) min.Ø [inch] | D Ø [inch] | L [inch] | L (min) [inch] | N Ø [inch] | A Ø [inch] | B(h6) Ø [inch] | S(h9) Ø [inch] | e [inch] | f [inch] | c [inch] | r [inch] | h [inch] | k [inch] | T Ø [inch] | b Ø [inch] | max.axial displacement [inch] | Weigt [pound] | Inertia [pound inch²] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 4500 | 14500 | 2,559 | 1,496 | 9,843 | 3,740 | 3,346 | 3,740 | 6,260 | 6,299 | 8,661 | 1,654 | 1,732 | 0,472 | 0,098 | 0,630 | 1,339 | 8,661 | 0,591 | 0,118 | 26 | 0,0001 |
| 50 | 6000 | 16500 | 2,953 | 1,890 | 11,024 | 3,937 | 3,346 | 4,331 | 7,047 | 7,087 | 9,843 | 1,654 | 1,732 | 0,472 | 0,098 | 0,630 | 1,339 | 9,843 | 0,591 | 0,118 | 42 | 0,0002 |
| 75 | 7500 | 18500 | 3,346 | 2,283 | 12,598 | 4,331 | 3,740 | 4,921 | 7,835 | 7,874 | 11,024 | 1,772 | 1,811 | 0,591 | 0,098 | 0,669 | 1,339 | 11,024 | 0,748 | 0,157 | 51 | 0,0002 |
| 100 | 9000 | 20000 | 3,740 | 2,283 | 13,386 | 4,921 | 3,740 | 5,512 | 8,622 | 8,661 | 11,811 | 1,772 | 1,811 | 0,591 | 0,098 | 0,669 | 1,339 | 11,811 | 0,748 | 0,157 | 60 | 0,0004 |
| 130 | 15500 | 31000 | 4,134 | 3,071 | 14,173 | 5,118 | 3,740 | 6,299 | 9,409 | 9,449 | 12,598 | 1,772 | 1,850 | 0,591 | 0,098 | 0,748 | 1,339 | 12,598 | 0,748 | 0,157 | 73 | 0,0005 |
| 160 | 19500 | 36000 | 4,724 | 3,071 | 14,961 | 5,709 | 3,740 | 7,087 | 10,197 | 10,236 | 13,386 | 1,772 | 1,850 | 0,591 | 0,098 | 0,748 | 1,339 | 13,386 | 0,748 | 0,157 | 93 | 0,0007 |
| 200 | 24000 | 38500 | 5,315 | 3,858 | 15,748 | 6,693 | 3,740 | 7,874 | 10,984 | 11,024 | 14,173 | 1,772 | 1,850 | 0,591 | 0,098 | 0,748 | 1,339 | 14,173 | 0,748 | 0,157 | 130 | 0,0009 |
| 300 | 28000 | 42000 | 5,709 | 3,858 | 16,535 | 6,890 | 3,740 | 8,661 | 12,165 | 12,205 | 14,961 | 1,772 | 1,850 | 0,591 | 0,098 | 0,748 | 1,339 | 14,961 | 0,748 | 0,157 | 154 | 0,0013 |
| 400 | 38000 | 49000 | 6,890 | 3,858 | 17,717 | 7,283 | 4,724 | 10,236 | 13,346 | 13,386 | 15,748 | 2,362 | 2,402 | 0,787 | 0,098 | 0,866 | 1,575 | 15,748 | 0,945 | 0,157 | 209 | 0,0021 |
| 600 | 70000 | 115000 | 8,071 | 4,646 | 21,654 | 9,449 | 4,921 | 12,205 | 16,496 | 16,535 | 19,685 | 2,362 | 2,402 | 0,787 | 0,098 | 0,866 | 1,654 | 19,685 | 0,945 | 0,236 | 357 | 0,0056 |
| 1000 | 120000 | 125000 | 9,055 | 5,433 | 22,835 | 10,236 | 5,118 | 13,780 | 17,677 | 17,717 | 20,886 | 2,362 | 2,402 | 0,787 | 0,098 | 0,866 | 1,654 | 20,866 | 0,945 | 0,236 | 430 | 0,0080 |
| 1500 | 180000 | 150000 | 11,024 | 6,220 | 25,591 | 12,402 | 5,512 | 16,339 | 20,827 | 20,866 | 22,835 | 2,559 | 2,598 | 0,984 | 0,098 | 1,063 | 1,850 | 23,622 | 0,945 | 0,236 | 673 | 0,0156 |
| 2600 | 310000 | 250000 | 11,811 | 6,614 | 26,772 | 13,780 | 5,709 | 17,520 | 22,008 | 22,047 | 23,622 | 2,559 | 2,756 | 0,984 | 0,157 | 1,339 | 2,126 | 24,803 | 0,945 | 0,315 | 794 | 0,0228 |
| 3400 | 400000 | 300000 | 12,402 | 7,795 | 27,953 | 14,961 | 6,496 | 18,701 | 23,583 | 23,622 | 25,197 | 3,189 | 3,346 | 1,378 | 0,157 | 1,339 | 2,205 | 25,984 | 1,102 | 0,315 | 900 | 0,0285 |
| 4200 | 500000 | 340000 | 13,976 | 8,976 | 30,709 | 16,142 | 6,496 | 21,063 | 26,339 | 26,378 | 27,559 | 3,189 | 3,346 | 1,378 | 0,157 | 1,339 | 2,205 | 28,740 | 1,102 | 0,315 | 1279 | 0,0491 |
| 6200 | 685000 | 380000 | 15,748 | 10,157 | 33,465 | 17,717 | 6,496 | 23,622 | 28,701 | 28,740 | 29,921 | 3,189 | 3,346 | 1,378 | 0,157 | 1,339 | 2,323 | 31,496 | 1,102 | 0,315 | 1577 | 0,0740 |

**Table 2a**

| Size | D Ø mm | T Ø mm | S (F8) mm | a (min.) mm | d1 Ø mm | d2 Thread | d3 (F8) Ø mm | P mm | n (min.) mm |
|---|---|---|---|---|---|---|---|---|---|
| 25 | 250 | 220 | 220 | 25 | 15 | M 12 | 160 | 3,0 | 10 |
| 50 | 280 | 250 | 250 | | | | 180 | | |
| 75 | 320 | 280 | 280 | | 19 | M 16 | 200 | | |
| 100 | 340 | 300 | 300 | | | | 220 | | |
| 130 | 360 | 320 | 320 | | | | 240 | | |
| 160 | 380 | 340 | 340 | | | | 260 | | |
| 200 | 400 | 360 | 360 | | | | 280 | | |
| 300 | 420 | 380 | 380 | | | | 310 | | |
| 400 | 450 | 400 | 400 | 30 | 24 | M 20 | 340 | | |
| 600 | 550 | 500 | 500 | | | | 420 | | |
| 1000 | 580 | 530 | 530 | 40 | | | 450 | | 20 |
| 1500 | 650 | 600 | 580 | 50 | | | 530 | | 25 |
| 2600 | 680 | 630 | 600 | | | | 560 | 5,0 | |
| 3400 | 710 | 660 | 640 | 60 | 28 | M 24 | 600 | | 35 |
| 4200 | 780 | 730 | 700 | | | | 670 | | |
| 6200 | 850 | 800 | 760 | | | | 730 | | |

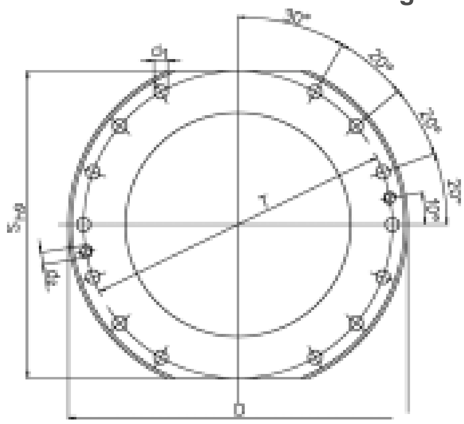
# Flange holes

Fig.4



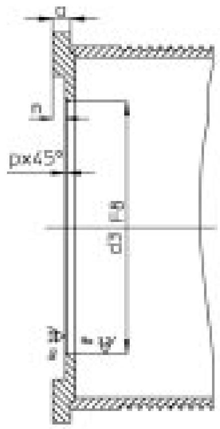
**Type 25 - 600**

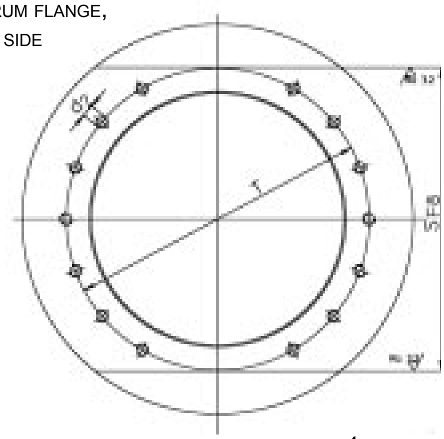
Fig.4



**Type 1000 - 1500**

CABLE DRUM FLANGE, COUPLING SIDE



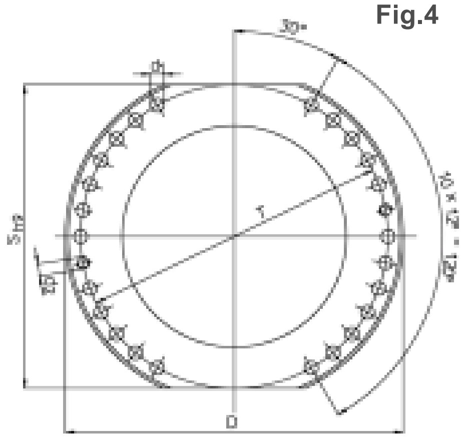



THE DESIGN OF THE CABLE DRUM FLANGE MUST BE ACCORDING TO FIG. 4 AND TABLE 2

**Table 2b**

| Size | D Ø inch | T Ø inch | S (F8) inch | a (min.) inch | d1 Ø inch | d2 Thread | d3 (F8) Ø inch | P inch | n (min.) inch |
|---|---|---|---|---|---|---|---|---|---|
| 25 | 9,843 | 8,661 | 8,661 | 0,984 | 0,591 | M 12 | 6,299 | 0,118 | 0,394 |
| 50 | 11,024 | 9,843 | 9,843 | | | | 7,087 | | |
| 75 | 12,598 | 11,024 | 11,024 | | 0,748 | M 16 | 7,874 | | |
| 100 | 13,386 | 11,811 | 11,811 | | | | 8,661 | | |
| 130 | 14,173 | 12,598 | 12,598 | | | | 9,449 | | |
| 160 | 14,961 | 13,386 | 13,386 | | | | 10,236 | | |
| 200 | 15,748 | 14,173 | 14,173 | | | | 11,024 | | |
| 300 | 16,535 | 14,961 | 14,961 | | | | 12,205 | | |
| 400 | 17,717 | 15,748 | 15,748 | 1,181 | 0,945 | M 20 | 13,386 | | |
| 600 | 21,654 | 19,685 | 19,685 | | | | 16,535 | | |
| 1000 | 22,835 | 20,866 | 20,866 | 1,575 | | | 17,717 | | 0,787 |
| 1500 | 25,591 | 23,622 | 22,835 | 1,969 | | | 20,866 | | 0,984 |
| 2600 | 26,772 | 24,803 | 23,622 | | | | 22,047 | 0,197 | |
| 3400 | 27,953 | 25,984 | 25,197 | 2,362 | 1,102 | M 24 | 23,622 | | 1,378 |
| 4200 | 30,709 | 28,740 | 27,559 | | | | 26,378 | | |
| 6200 | 33,465 | 31,496 | 29,921 | | | | 28,740 | | |

Fig.4



**Type 2600 - 6200**

## 4.0 SELECTION OF COUPLING SIZE

The required coupling size depends on:

1. Transmission torque T (Nm)
2. Radial load by the coupling $S_T$ (N)
3. Dimesions check of the gearbox shaft

### *4.1 Transmission torque T (Nm)*

a) Based on installed power Ni (kW)

Eq 1
$$T(Nm) = (N_i / n) \times 9550 \times K_1$$

$N_i$ = max. installed power of the motor (kW)
n = drum turning speed (1/min)
$K_1$ = operating factor (table 3)

**Table 3**

| group DIN 15020 | 1 Bm | 1 Am | 2 m | 3 m | 4 m | 5 m |
|---|---|---|---|---|---|---|
| group FEM (1970) | IB | IA | II | III | IV | V |
| group FEM (1987)<br>group bs 466 (1984) | M1,M2,M3 | M4 | M5 | M6 | M7 | M8 |
| operation factor $K_1$ | 1,12 | 1,25 | 1,40 | 1,60 | 1,80 | 2,00 |

b) Based on consumed power Nc (kW)

Eq 2
$$N_c(kW) = (S_R \times V_T) / 60.000$$

Eq 3
$$T(Nm) = ((N_c \times 9550) / n) \times K_1$$

**or**

Eq 4
$$T(Nm) = S_R \times (D/2) \times K_1$$

$N_c$ = max. consumed motor power (kW)
$S_R$ = drum static pull, incl. cable and pulley effciency in Newton (N) (see Eq 6)
$V_T$ = drum cable lifting rate (m/min)
n = drum turning speed (rpm)
D = drum pitch diameter (m)
$K_1$ = operating factor (table 3)

The optained transmission torque T(Nm), by means of the installed or consumed power, must be less than the transmission torque Tmax (Nm), shown in table 1.
After this, it is necessary to confirm the selection on the basis of the radial load to be withstood

### *4.2 Determination of the radial load S(N)*

Radial load is understood to be the fraction of the load that must be withstood by the coupling due to the pull of the load and the hoisting tackle. As the coupling constitutes one of the drum's two supports, it must withstand a fraction of the total load.

Prior to calculation the radial load S, it is necessary to obtain the static load $S_R$ in the drum.

Determination of static load $S_R$ in the drum

Eq 5
$$S_R(N) = (Q + G) / i_r$$

Q = max. load on hook (N)
G = weight of hoist tackle and cables (N)
$i_r$ = transmission ratio (Total number lines: Number of lines leaving the drum)
$K_2$ = Operating factor drum (hoist tackle efficiency) table 4

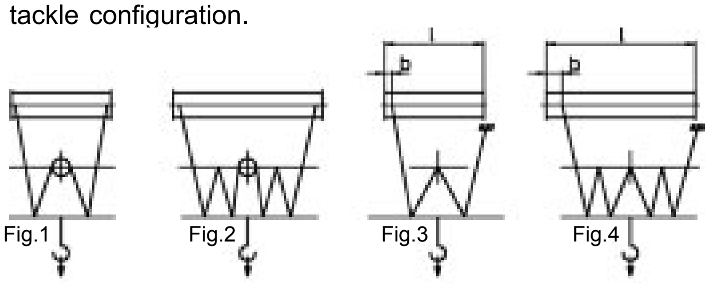
The static load is modified if cable and pulley efficiency $K_2$ is taken into account according to table 4

Eq 6
$$S_R(N) = (Q + G) / (i \times K_2)$$

Table 4

| $i_r$ Hoist tackle reduction | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| $K_2$ with bronze bearings | 0,92 | 0,90 | 0,88 | 0,86 | 0,84 | 0,83 | 0,81 |
| $K_2$ with ball bearings | 0,97 | 0,96 | 0,95 | 0,94 | 0,93 | 0,92 | 0,91 |

Figureres 1 to 4 below, show different examples of hoist tackle configuration.




| Fig.1 | Fig.2 | Fig.3 | Fig.4 |
|---|---|---|---|
| Twin hoist, 2 sheaves double line to drum | Twin hoist, 4 sheaves double line to drum | Hoist, 2 sheaves single line to drum | Twin hoist, 4 sheaves single line to drum |
| $i_r = 2$ | $i_r = 4$ | $i_r = 4$ | $i_r = 8$ |
| $S_R=(O+G)/2$ | $S_R=(O+G)/4$ | $S_R=(O+G)/4$ | $S_R=(O+G)/8$ |

After obtaining the static pull, it is necesarry to calculate the load S (N) by using the following equation:

**For examples fig. 1 + 2**

Eq 7 $$S(N) = (S_R / 2) + (w / 2)$$

| | | |
|---|---|---|
| $S_R$ | = | drum static pull, incl. cable and pulley efficiency in Newton (see EQ 6) |
| l | = | distance between drum supports (mm) |
| b | = | shortest possible distance from cable in drum, to the geometric centre axis of the barrels, into the coupling (mm) |
| w | = | Own weigt of the drum with it cables and couplings parts linked to it (N) |

**For examples fig. 3 + 4**

Eq 8 $$S(N) = (S_R \times (1 - (b / l))) + (w / 2)$$

Obtained the radial load S, it is necessary to check that the admissible radial load S, of the select coupling (see table 1) is bigger than Smax.

In the event that the transmission torque T is lower than the nominal torque of the preselected coupling Tmax., but the radial load S to be withstood by the coupling is bigger than the admissible catalogue load Smax for this size of coupling, then it is possible to get a final verification, by checking whether the coupling can withstand a radial load $S_A$ which is higher than the coupling's admissible load Smax, indicated in the catalogue:

$S_A = S+((Tmax-T)xC)$ C= Compensation factor variable according to coupling size (table 5)

Table 5

| Coupling Size | 25 | 50 | 75 | 100 | 130 | 160 | 200 | 300 | 400 | 600 | 1000 | 1500 | 2600 | 3400 | 4200 | 6200 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Factor C | 10,3 | 9 | 8 | 7,2 | 6,4 | 5,8 | 5,2 | 4,8 | 4,1 | 3,4 | 3,0 | 2,6 | 2,4 | 2,2 | 2,0 | 1,8 |

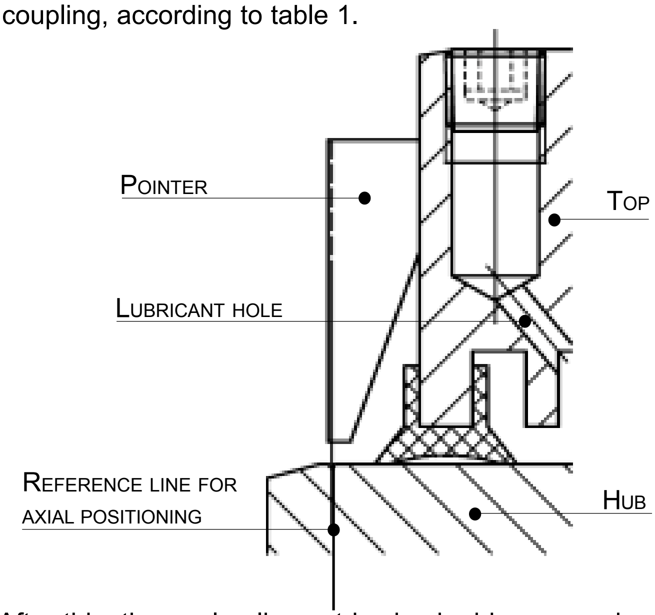
Compensation is only applicable to the radial load, not to the torque

## *4.3 Dimension check of the gearbox shaft*

Also, a check by the dimenson of the gearbox shaft must be done, if it is smaller , as the maximum admissible diameter dmax. for each coupling size, according to table 1. These values are valid for shafts with keyways according to DIN 6885 / 1. Additionally, a ckeck must be done, of the pressure to the keyways.
For other types of fixing, such as splin shafts according to DIN 5480, mounting with interference, etc. , please contact our technical department.

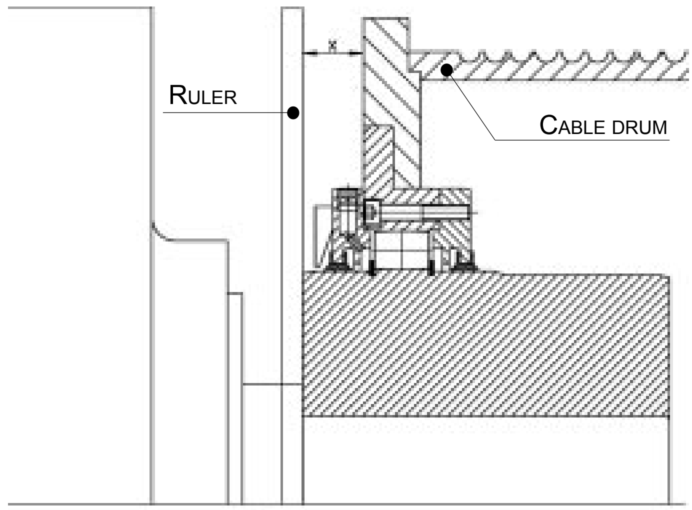
## *5.0 ASSEMBLY INSTRUCTION*

Prior to drilling the holes for the fastening of support, axially fix the position of the drum with respect to the coupling's hub. In this case, the front edge of the pointer must be line up with the mark on the hub (see fig …..) During assembly, axial displacement must not exceed 10% of the maximum nominal value admitted by the coupling, according to table 1.



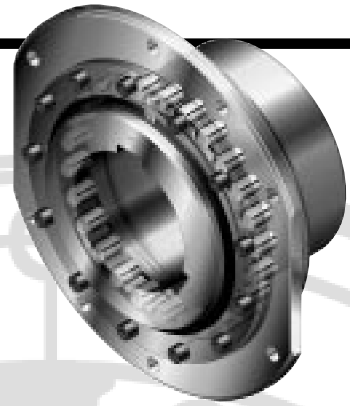

After this, the angle aligment is checked by measuring the gap "x" at four points with a separation of 90° by using a reference ruler (fig…). The difference between the four measurements should not be higher as the following figures are shown:

0,30 mm for sizes = / < TK- 600
0,60 mm for sizes = / > TK-1000



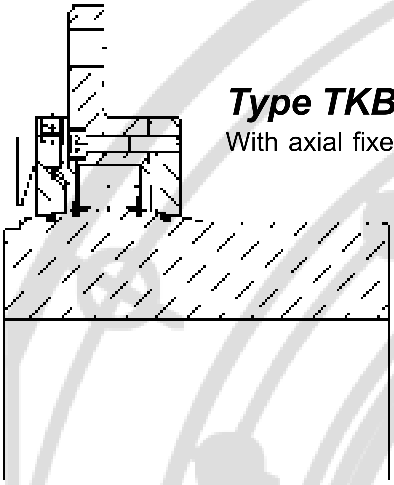

*The Tschan barrel coupling is supplied as a whole unit, ready to be mounted, but not provided with lubricant. Before it is put into service, it must be lubricated in the required quantity with the appropriate lubricant, as indicated in the assembly and service manual*

# ALTERNATIV CONSTRUCTIONS



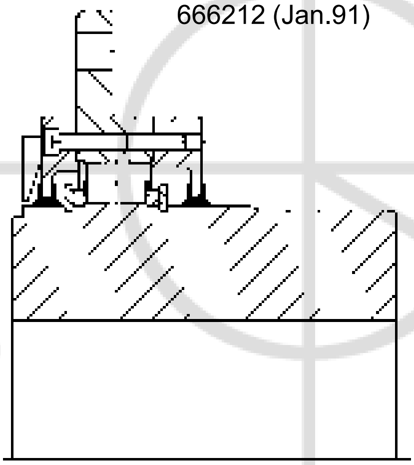
## 6.0 ALTERNATIV CONSTRUCTION

*For alternativ constructions, see types below, please contact our technical department.*

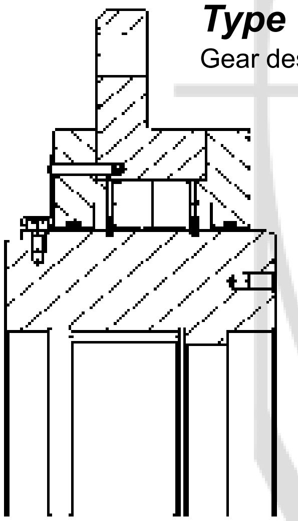


**Type TKB**
With axial fixed barrels

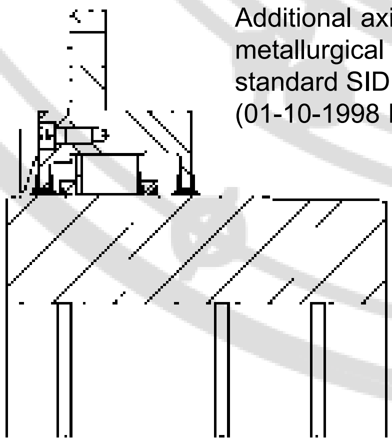
**Type TKSG**
Additional axial lock for metallurgical engineering, as per standard SEB 666212 (Jan.91)



**Type TKN**
Gear designed



**Type TKSI**
Additional axial lock for the french metallurgical engineering, as per standard SIDMAR BR3-550 (01-10-1998 Rev.D)



**TSCHAN GmbH**
Zweibrücker Strasse 104
D - 66538 Neunkirchen
Telefon: +49(0)6821/866-0
Telefax: +49(0)6821/88353
Internet: www.tschan.de
E-Mail: postmaster@tschan.de

Competent agencies troughout the world quarantee prompt information, delivery and service.
The full list of TSCHAN-agencies is available on request.