# DRUM-COUPLINGS

## THE ORIGINAL • SERIES TTXs

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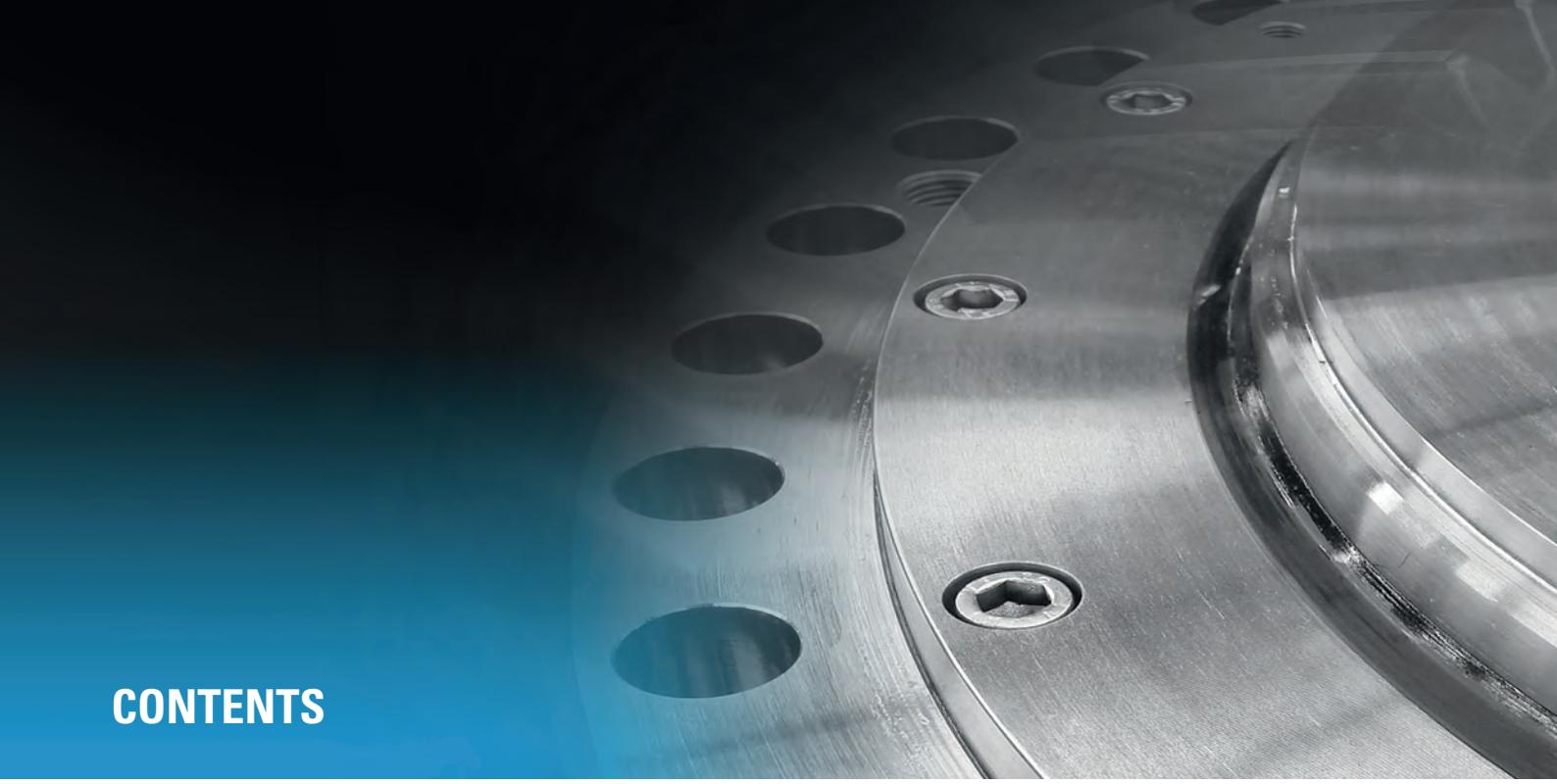


# CONTENTS


Application ____ 3-4
Design and Characteristics ____ 5
Size selection ____ 6-7
Dimension sheet TTXs ____ 8
Coupling / Rope drum connection ____ 9
Hub / Shaft connections ____ 10-11
Dimension sheet FTTXs ____ 12
Dimension sheet MTTXs ____ 13
Alternative designs ____ 14
Wear indicator ____ 15
Application examples ____ 16-17
Inquiry form ____ 18

Developed by MALMEDIE in the 1950s, the Drum-Coupling is especially suitable for installation in drum drives of cranes and conveying systems. More than 50 years experience of operating Drum-Couplings under the rough conditions of steelworks, reclaimers, ship unloaders and container cranes has left its mark in many of our customers' internal standard sheets. The MALMEDIE Drum-Coupling satisfies, for example, the technical requirements prescribed by the German Steel and Iron Operating Sheet *(Stahl-Eisen-Betriebsblatt) SEB 666212,* issued in Jan. 1991, and the *Norme Sidérurgie Française.*

A rigid connection between the gear shaft and the rope drum results, in a single or twin drum drive, in a statically indeterminated three or four-point support.

- *higher load capacity*
- *up to 10 % higher permissible torque*
- *larger permissible radial load*
- *larger permissible finish bore*
- *longer service life*
- *interchangeable with preceding series*
- *optionally with automatic wear indicator*
- *suitable for use in potentially explosive hazardous areas according to directive 2014/34/EU* ⟨Ex⟩

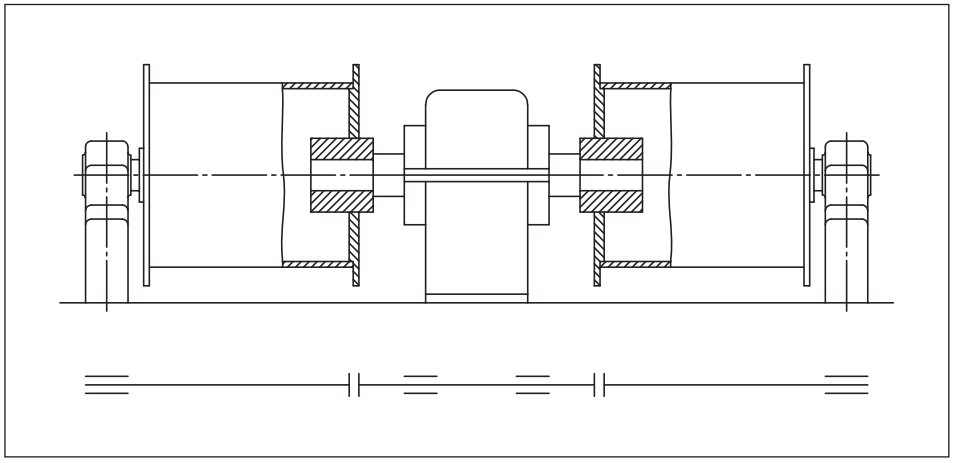


Fig. 1 Layout of a twin drum drive with four-point beared rigid shaft without a Drum-Coupling.

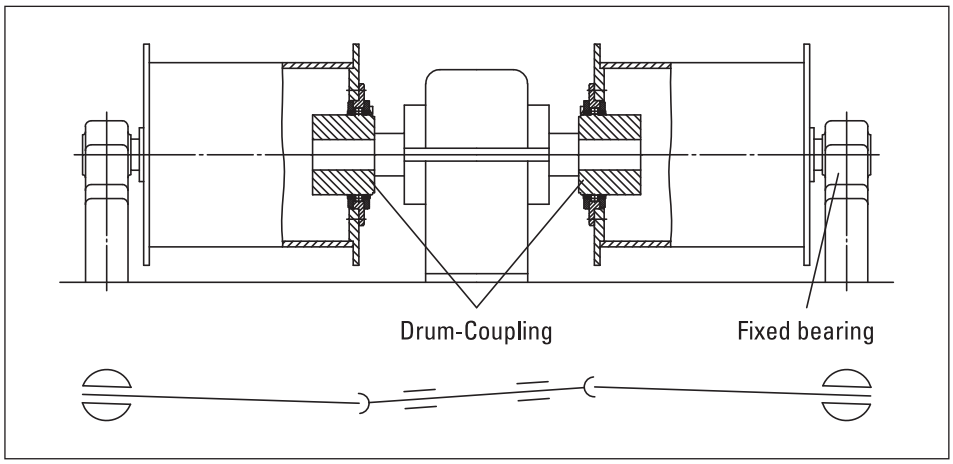



Fig. 2 Layout of a twin-drum drive with a Drum-Coupling.

*The two illustrations on this page are showing the arrangement of twin-drum drives for a crane unit.*

*This kind of connection requires a considerable amount of alignment work.*

*In case of misalignment due to inaccurate assembly, bending of the beams, or high wear at a roller bearing, considerable additional forces affect the shaft.*

*Alternating bending stresses arise on the gear shaft during rotation, and these can lead to fatigue fractures and to damage to bearings and to gear teeth.*

The calculation for a single-drum drive with rigid connection between gear shaft and rope drum (Fig. 3) yields, for given load F and with bending or alignment error, a maximum bending moment on the gear shaft end of M. To achieve a statically determinated bearing, the rigid connection must be replaced by a joint. The maximum determined bending moment which can occur at the gear shaft under the same load F then falls to only about 25% of M (Fig. 4).

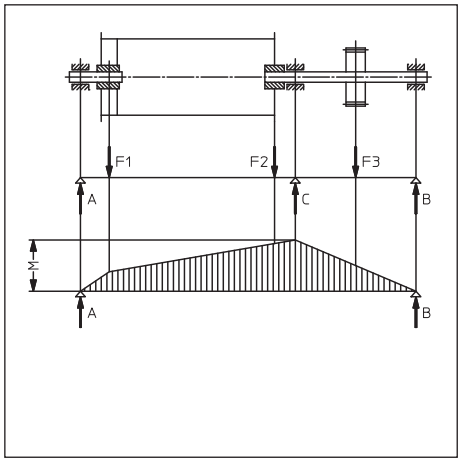



Fig. 3

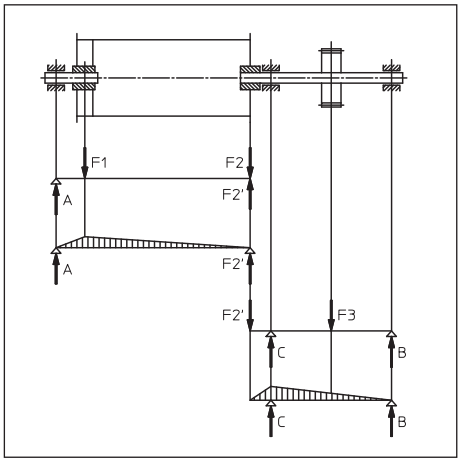



Fig. 4

Fig. 5 shows a Drum-Coupling in a single-drum drive. The Drum-Coupling's hub sits on the end of the gear shaft in the rope drum. The rope drum's plummer block is to be constructed as a fixed bearing.

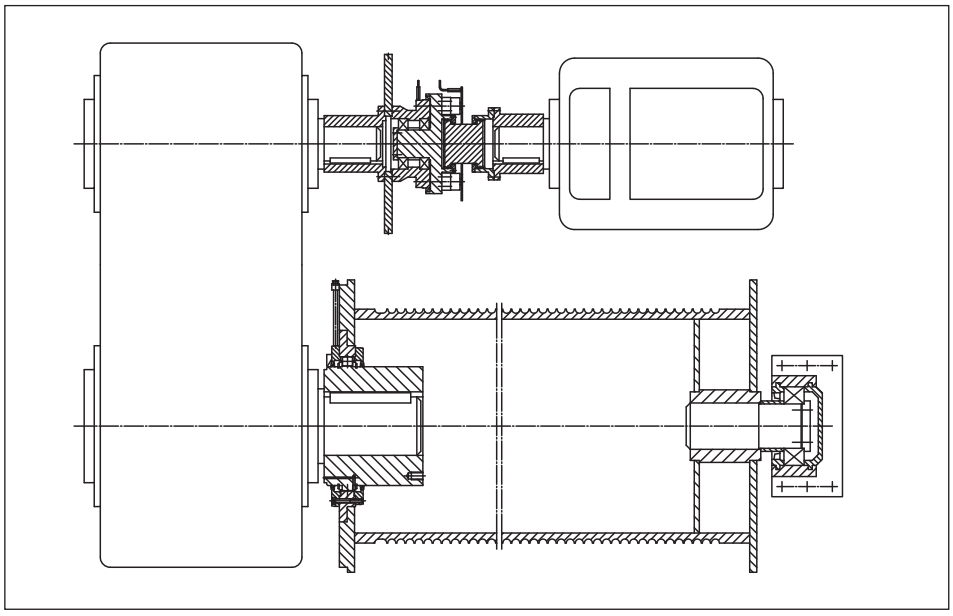


Fig. 5

The MALMEDIE TTXs Drum-Coupling is a further development of the TT, RTT, NTT and TTX series, which have been proven over many years. The new development brings an increase in capacity, accompanied by significantly improved operating security and fulfils customers' demands for continually higher performances but low weights and small installation spaces. Modern CNC manufacturing technology ensures that the connection dimensions permit the devices to be exchanged. The TTXs Drum-Coupling consists of: coupling hub, coupling housing, inner cover, outer cover, barrel rollers, pointer, seals, cover screws, circlips and thrust collars (fastening bolts are not scope of supply).

The MALMEDIE Drum-Coupling should be considered as a complete exchange part. For warranty reasons, the coupling hubs and housings cannot be supplied separately. The Drum-Couplings are supplied ready assembled, but not filled with lubricant. They are provided with a corrosion protection adequate for normal storage conditions.

The transmission of force within the Drum-Coupling takes place through positive locking. Hardened barrel rollers, placed in the holes formed by the two circular gearings, are used as the force transmitting elements. From coupling size 2 upwards, the barrel rollers are axially fixed. The cover, housing and seals prevent both the ingress of external particles and the leakage of lubricant. The torque is transmitted to the rope drum via the flattenings on the outer diameter of the coupling housing and via the friction between the coupling housing and the flanged wheel. The connecting bolts (HSFG bolts, class 10.9) between the coupling housing and flanged wheel generate the necessary friction whilst, at the same time, providing fastening. A pointer fixed to the outer cover, and corresponding markings on the coupling hub, allow external control of the wear and the axial position of the coupling housing in relation to the coupling hub. It is not necessary to dismantle the coupling for this purpose.

*The MALMEDIE Drum-Coupling type TTXs, which, with its compact form, must transmit not only torque but also large radial loads in the gearings, has the following characteristics:*

- *safe absorption of large radial forces with low bending load on the tooth ground, even circumferential and radial play in the gearing, compensation of angular misalignments of up to* ***±1°***
- *depending on the size of the coupling, axial displacements of max. 3 mm up to max. 10 mm can be accepted in operation (see table of dimensions). MALMEDIE Drum-Couplings are not suitable for the absorption and transmission of axial forces (exception: special design)*
- *Sliding movement in the gearing is kept to a minimum during compensation of angular misalignment. The wear intensifying relative movement between inner and outer gearing is reduced by the barrel roller itself*
- *high safety factor against overloads*
- *the force transmission results in work hardening of the tooth flanks, thus bringing high wear resistance*

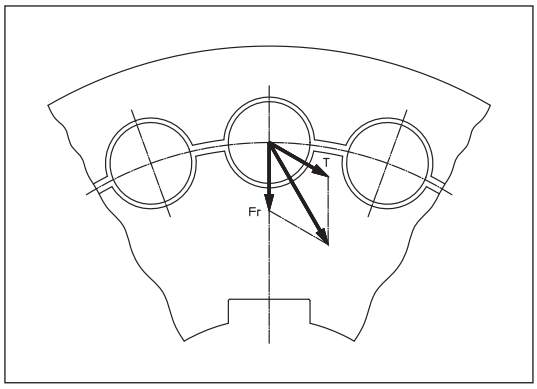



Fig. 6

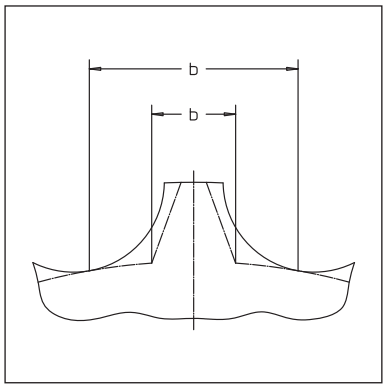



Fig. 7

*The barrel rollers accept the compressive strains caused by the torque and the radial load over a large area. This design means that the risk of a tooth fracture resulting from bending stress is excluded. (Fig. 6)*

*A comparison of the bending stress on the tooth base occurring with involute toothing and circular toothing yields a significant lower value for the circular toothing. (Fig. 7)*

*The required size of a coupling depends on the following factors:*

1. *max. torque $T_{max}$*
2. *max. radial load $F_{max}$ [N]*
3. *Dimensions of the gear shaft*

## 1. max. torque $T_{max}$ [Nm]

The determined torque $T_{max}$ to be transmitted on the basis of the installed or used capacity of the coupling must be smaller than the max. permissible torque $Tk_{max}$ of the Drum-Coupling in accordance with dimension sheet 709-04.

N = used motor power [kW]
n = speed of the rope drum [rpm]
$C_{erf}$ = necessary service factor for drive groups

$$T_{max} = \frac{N \cdot 9550}{n} \cdot C_{erf}$$

| Drive group according to | | $C_{erf}$ |
|---|---|---|
| DIN15020 | F.E.M. 1.001 | |
| 1Bm / 1 Am | M3 / M4 | 1,25 |
| 2 m | M 5 | 1,40 |
| 3 m | M 6 | 1,60 |
| 4 m | M 7 | 1,80 |
| 5 m | M8 | 2,00 |

## 2. max. radial load $F_{max}$ [N]

The radial load is the portion of the load that must be covered by the Drum-Coupling due to the payload and the weight of the cable hoist. Since the Drum-Coupling forms one of the drum bearings, it must bear part of the total load.

The static load $G_{Tr}$ [N] on the rope drum must be determined first before calculating the radial load $F_{max}$.

Q = max. payload under hook [N]
G = load of tackle and ropes [N]
$i_F$ = transmission ratio of tackle
$\eta_F$ = efficiency of the rope drum and tackle

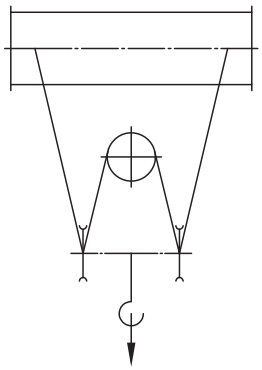
$$G_{Tr} = \frac{(Q + G)}{i_F \cdot \eta_F}$$

| $i_F$ | Efficiency $\eta_F$ | |
|---|---|---|
| | Slide bearing | Roller bearing |
| 2 | 0,92 | 0,97 |
| 3 | 0,90 | 0,96 |
| 4 | 0,88 | 0,95 |
| 5 | 0,86 | 0,94 |
| 6 | 0,84 | 0,93 |
| 7 | 0,83 | 0,92 |
| 8 | 0,81 | 0,91 |

### Calculation of the radial load $F_{max}$ with multiple rope lines to the drum

$$F_{max} = \frac{G_{Tr}}{2} + \frac{W}{2}$$

$G_{Tr}$ = static load on the rope drum [N]
W = dead weight of the rope drum [N]



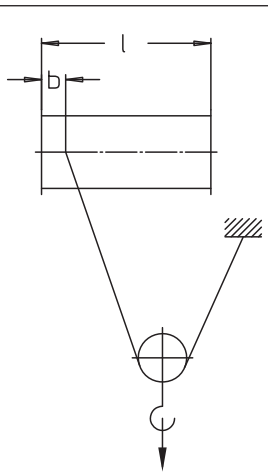
Multiple rope lines

### Calculation of the radial load $F_{max}$ with a single rope line to the drum

$$F_{max} = \left[G_{Tr} \cdot \left(1 - \frac{b}{l}\right)\right] + \frac{W}{2}$$

$G_{Tr}$ = static load on the rope drum [N]
W = dead weight of the rope drum [N]
b = smallest distance from the rope to the middle of the barrel roller [mm]
l = distance between the bearings [mm]

The determined radial load $F_{max}$ must be smaller than the max. permissible radial load $Fr_{max}$ of the Drum-Coupling in accordance with dimension sheet 709-04.




Single rope line

### Option for corrected radial load $Fr_{korr}$ [N]

If the max. torque $T_{max}$ is smaller than the max. permissible torque $Tk_{max}$ of the preselected Drum-Coupling, the max. permissible radial load $Fr_{max}$ can be corrected or increased. The unused torque can be converted for the purpose of increasing the max. permissible radial load $Fr_{max}$ as follows:

$$Fr_{korr} = \frac{(Tk_{max} - T_{max})}{C_{erf}} + Fr_{max}$$

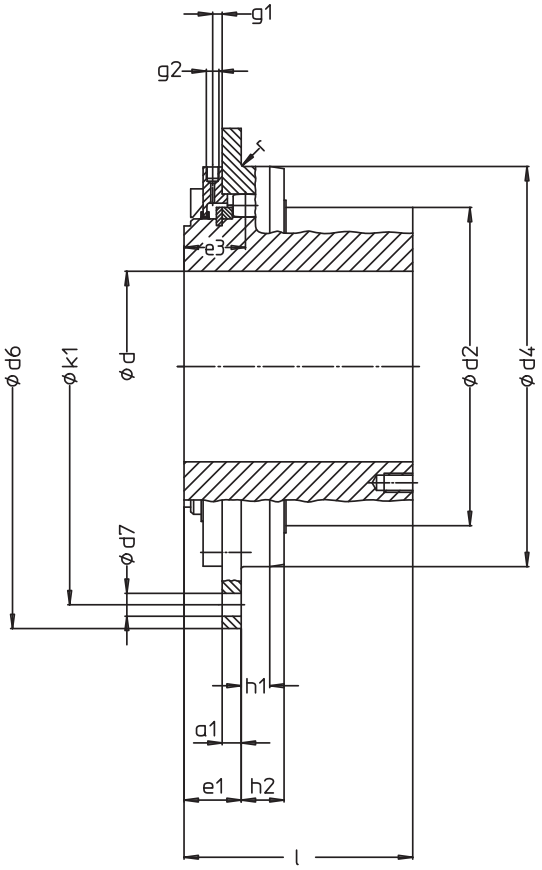
$T_{max}$ = max. torque [Nm]
$Tk_{max}$ = max. permissible torque [Nm] according to dimension sheet 709-04
$C_{erf}$ = necessary service factor for drive groups according to DIN15020 or F.E.M. 1.001
$Fr_{max}$ = max. permissible radial force [N] according to dimension sheet 709-04

The reverse procedure, i.e. to increase the max. permissible torque if the radial load is not fully exploited, is not allowed.

### 3. Check the geometric dimensions of the hub-shaft connection

It must also be checked whether or not the diameter of the gear shaft is smaller than the max. permissible bore diameter in the Drum-Coupling according to dimension sheet 709-04. In addition, the transmitted torque related to the hub/shaft connection must be checked for all types of connection.

# Drum-Couplings
## Dimension sheet 709-04 / TTXs Standard




| Size | Selection SEB | Torque Tk max [Nm] | Radial load Fr max [N] | * Weight [kg] | * Mass-moment of inertia [kgm²] |
|---|---|---|---|---|---|
| 0,25 | - | 6500 | 17500 | 10,5 | 0,06 |
| 0,5 | - | 8000 | 20000 | 13 | 0,09 |
| 0,75 | - | 9500 | 21500 | 18,5 | 0,16 |
| 1 | - | 16000 | 27000 | 23 | 0,22 |
| 1,3 | - | 21000 | 37000 | 27,5 | 0,30 |
| 1,6 | - | 26000 | 41000 | 33 | 0,40 |
| 2 | SG 130 | 30000 | 45000 | 44 | 0,58 |
| 3 | - | 41000 | 53000 | 53 | 0,80 |
| 4 | SG 140 | 54000 | 75000 | 70 | 1,33 |
| 5 | - | 77000 | 115000 | 110 | 2,66 |
| 6 | SG 185 | 120000 | 130000 | 131 | 3,6 |
| 10 | SG 200 | 180000 | 150000 | 164 | 5,2 |
| 15 | SG 240 | 240000 | 180000 | 260 | 10,9 |
| 21 | - | 330000 | 265000 | 302 | 13,5 |
| 26 | SG 270 | 410000 | 315000 | 340 | 15,8 |
| 34 | SG 315 | 520000 | 360000 | 415 | 22,2 |
| 42 | SG 355 | 650000 | 400000 | 560 | 36,8 |
| 62 | SG 400 | 770000 | 475000 | 720 | 57,6 |
| 82 | - | 930000 | 525000 | 1000 | 95 |
| 92 | - | 1100000 | 550000 | 1100 | 119 |

*with max. finish bore

| Size | d min. [mm] | d max. [mm] | a1 [mm] | d2 [mm] | d4 h6 [mm] | d6 [mm] | d7 [mm] | e1 [mm] | e3 [mm] | g1 [mm] | g2* | h1 [mm] | h2 [mm] | k1 [mm] | l [mm] | r [mm] | Axial play max ± [mm] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0,25 | 40 | 65 | 12 | 95 | 160 | 250 | 15 | 42 | 44 | 7,5 | G1/8 | 16 | 31 | 220 | 95 | 2,5 | 3 |
| 0,5 | 50 | 75 | 12 | 110 | 180 | 280 | 15 | 42 | 44 | 7,5 | G1/8 | 16 | 31 | 250 | 100 | 2,5 | 3 |
| 0,75 | 60 | 85 | 15 | 125 | 200 | 320 | 19 | 45 | 46 | 7,5 | G1/8 | 17 | 32 | 280 | 110 | 2,5 | 4 |
| 1 | 60 | 95 | 15 | 140 | 220 | 340 | 19 | 45 | 46 | 7,5 | G1/8 | 17 | 32 | 300 | 125 | 2,5 | 4 |
| 1,3 | 80 | 110 | 15 | 160 | 240 | 360 | 19 | 45 | 47 | 7,5 | G1/8 | 19 | 34 | 320 | 130 | 2,5 | 4 |
| 1,6 | 80 | 125 | 15 | 180 | 260 | 380 | 19 | 45 | 47 | 7,5 | G1/8 | 19 | 34 | 340 | 145 | 2,5 | 4 |
| 2 | 100 | 140 | 15 | 211 | 280 | 400 | 19 | 45 | 48 | 7,5 | G1/8 | 22 | 32 | 360 | 170 | 2,5 | 4 |
| 3 | 100 | 155 | 15 | 231 | 310 | 420 | 19 | 45 | 50 | 7,5 | G1/8 | 22 | 33 | 380 | 175 | 2,5 | 4 |
| 4 | 100 | 180 | 20 | 272 | 340 | 450 | 24 | 60 | 61 | 10 | G1/4 | 22 | 31 | 400 | 185 | 2,5 | 4 |
| 5 | 120 | 210 | 20 | 312 | 400 | 510 | 24 | 60 | 61 | 10 | G1/4 | 22 | 35 | 460 | 220 | 2,5 | 6 |
| 6 | 120 | 215 | 20 | 329 | 420 | 550 | 24 | 60 | 65 | 10 | G1/4 | 30 | 45 | 500 | 240 | 2,5 | 6 |
| 10 | 140 | 245 | 20 | 375 | 450 | 580 | 24 | 60 | 67 | 10 | G1/4 | 30 | 46 | 530 | 260 | 2,5 | 6 |
| 15 | 160 | 290 | 25 | 433 | 530 | 650 | 24 | 65 | 69 | 10 | G1/4 | 30 | 43 | 600 | 315 | 2,5 | 6 |
| 21 | 170 | 300 | 25 | 455 | 545 | 665 | 24 | 65 | 78 | 10 | G1/4 | 35 | 63 | 615 | 330 | 4 | 6 |
| 26 | 170 | 310 | 25 | 470 | 560 | 680 | 24 | 65 | 78 | 10 | G1/4 | 35 | 63 | 630 | 350 | 4 | 6 |
| 34 | 200 | 330 | 35 | 502 | 600 | 710 | 28 | 81 | 88 | 10 | G1/4 | 38 | 59 | 660 | 380 | 4 | 8 |
| 42 | 230 | 370 | 35 | 566 | 670 | 780 | 28 | 81 | 88 | 10 | G1/4 | 38 | 59 | 730 | 410 | 4 | 8 |
| 62 | 260 | 420 | 35 | 630 | 730 | 850 | 28 | 81 | 90 | 10 | G1/4 | 40 | 61 | 800 | 450 | 4 | 8 |
| 82 | 290 | 450 | 40 | 693 | 800 | 940 | 28 | 86 | 92 | 10 | G1/4 | 50 | 62 | 875 | 500 | 4 | 10 |
| 92 | 330 | 470 | 40 | 725 | 860 | 1025 | 34 | 86 | 92 | 10 | G1/4 | 50 | 62 | 945 | 500 | 4 | 10 |

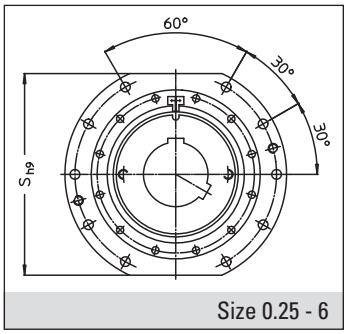
other dimensions on request

* Rc1/4, M10x1 or other connections possible via adaptor

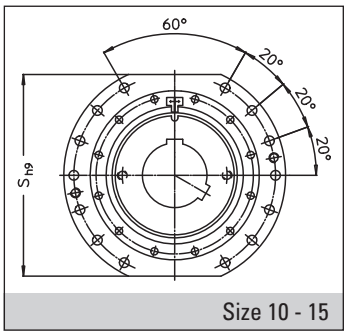
## Coupling/rope drum connection

- The material for the flanged wheel should have a minimum yield strength of 355 MPa [e.g. S355M – DIN EN10025-4].
- Bolts according to DIN931, DIN933 or DIN6914 of strength class 10.9 and washers according to DIN6916 are to be used to fasten the Drum-Coupling onto the rope drum.

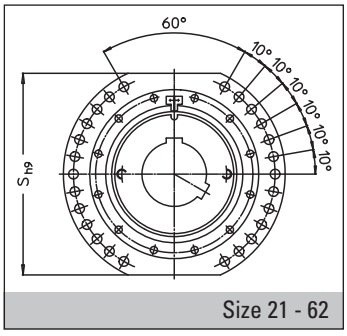
| Size | Selection SEB | S F8/h9 [mm] | a2 min. [mm] | d4 F8 [mm] | d17 Thread | d17 Qty | k1 [mm] | t4 min. [mm] | t6 [mm] | y min. [mm] |
|---|---|---|---|---|---|---|---|---|---|---|
| 0,25 | - | 220 | 27 | 160 | M12 | 10 | 220 | 12 | 0,08 | 50 |
| 0,5 | - | 250 | 27 | 180 | M12 | 10 | 250 | 12 | 0,08 | 50 |
| 0,75 | - | 280 | 30 | 200 | M16 | 10 | 280 | 15 | 0,08 | 60 |
| 1 | - | 300 | 30 | 220 | M16 | 10 | 300 | 15 | 0,08 | 60 |
| 1,3 | - | 320 | 30 | 240 | M16 | 10 | 320 | 15 | 0,10 | 60 |
| 1,6 | - | 340 | 30 | 260 | M16 | 10 | 340 | 15 | 0,10 | 60 |
| 2 | SG 130 | 360 | 30 | 280 | M16 | 10 | 360 | 15 | 0,10 | 60 |
| 3 | - | 380 | 30 | 310 | M16 | 10 | 380 | 15 | 0,10 | 60 |
| 4 | SG 140 | 400 | 40 | 340 | M20 | 10 | 400 | 20 | 0,10 | 70 |
| 5 | - | 460 | 40 | 400 | M20 | 10 | 460 | 20 | 0,10 | 70 |
| 6 | SG 185 | 500 | 40 | 420 | M20 | 10 | 500 | 20 | 0,15 | 70 |
| 10 | SG 200 | 530 | 40 | 450 | M20 | 14 | 530 | 20 | 0,15 | 70 |
| 15 | SG 240 | 580 | 50 | 530 | M20 | 14 | 600 | 25 | 0,20 | 80 |
| 21 | - | 590 | 50 | 545 | M20 | 26 | 615 | 25 | 0,20 | 80 |
| 26 | SG 270 | 600 | 50 | 560 | M20 | 26 | 630 | 25 | 0,20 | 95 |
| 34 | SG 315 | 640 | 60 | 600 | M24 | 26 | 660 | 35 | 0,20 | 95 |
| 42 | SG 355 | 700 | 60 | 670 | M24 | 26 | 730 | 35 | 0,20 | 95 |
| 62 | SG 400 | 760 | 60 | 730 | M24 | 26 | 800 | 35 | 0,20 | 95 |
| 82 | - | 830 | 70 | 800 | M24 | 32 | 875 | 40 | 0,20 | 95 |
| 92 | - | 900 | 70 | 860 | M30 | 32 | 945 | 40 | 0,20 | 95 |



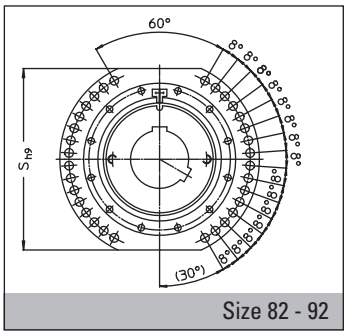
Size 0.25 - 6



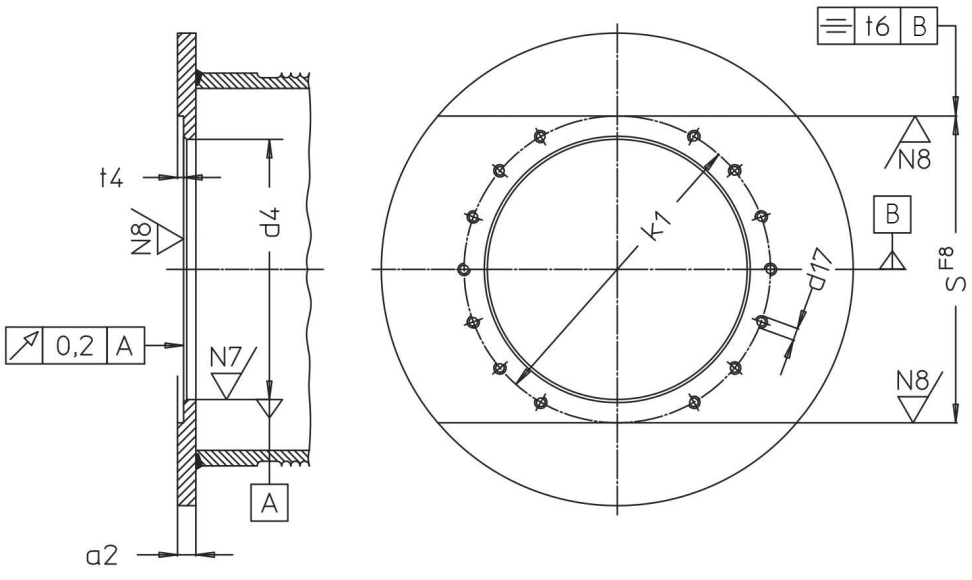
Size 10 - 15

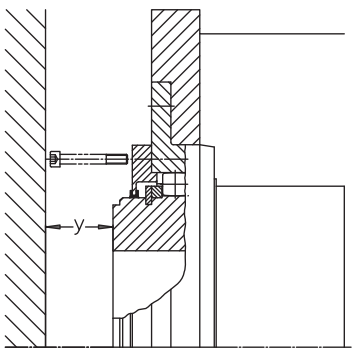


Size 21 - 62

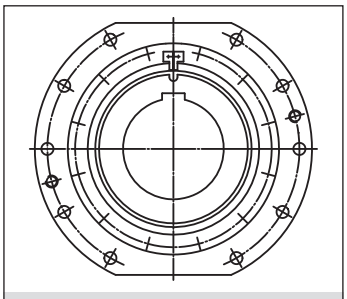


Size 82 - 92

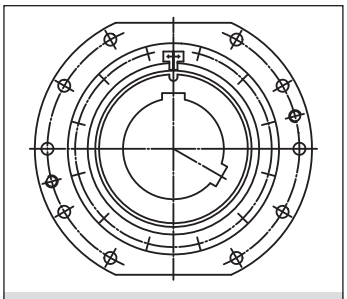


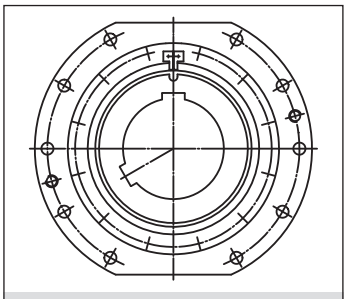
# Key connections



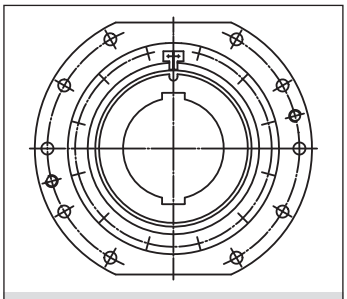
1 x key



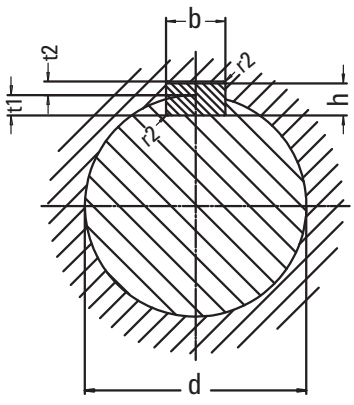
2 x keys 120° right



2 x keys 120° left



2 x keys 180°




The given values for the bores are valid according to DIN6885-1. As a matter of principle, every key connection must be checked with regard to the surface pressure. Keyways according to BS 46, ANSI B17.1 or other standards are also possible. For other types of connection, e.g. spline connections according to DIN5480 or multiple splined shaft connections, please contact our Technical Department. Shrink-fit connections see next page.

**DIN6885-1**

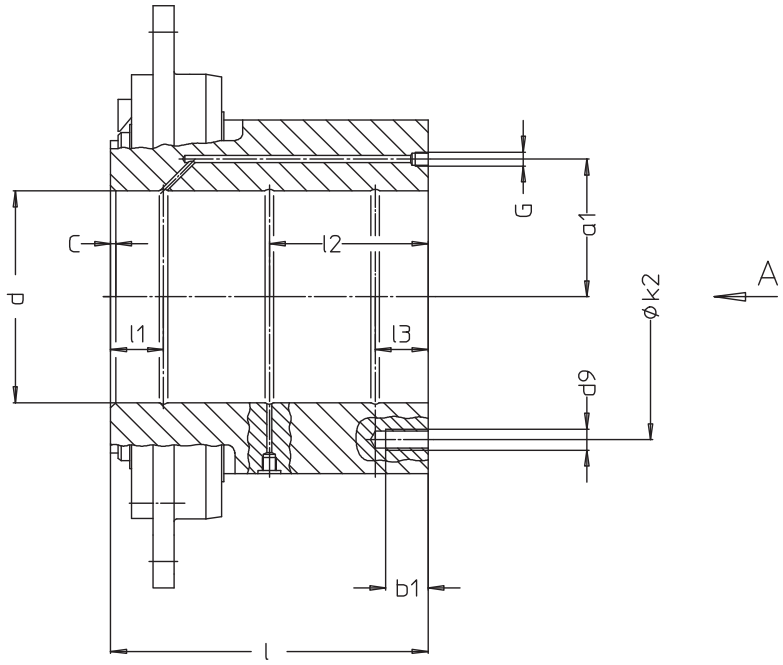
All dimensions in mm

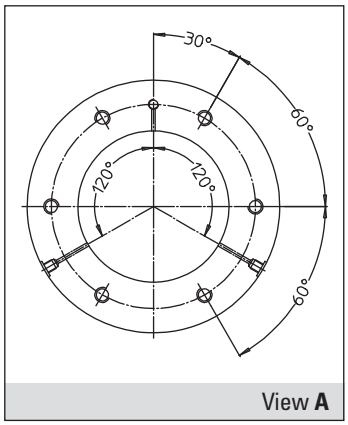
| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Bore d1** | from | 38 | 44 | 50 | 58 | 65 | 75 | 85 | 95 | 110 |
| | to | 44 | 50 | 58 | 65 | 75 | 85 | 95 | 110 | 130 |
| **Key** | Width w | 12 | 14 | 16 | 18 | 20 | 22 | 25 | 28 | 32 |
| | Height h | 8 | 9 | 10 | 11 | 12 | 14 | 14 | 16 | 18 |
| **Shaft keyway** | *Width w | 12 | 14 | 16 | 18 | 20 | 22 | 25 | 28 | 32 |
| | Depth t1 | 5 | 5,5 | 6 | 7 | 7,5 | 9 | 9 | 10 | 11 |
| | Tolerance | + 0,2 | | | | | | | | |
| | r2 min. | 0,4 | | | | 0,6 | | | | |
| | r2 max. | 0,6 | | | | 0,8 | | | | |
| **Hub keyway** | **Width w | 12 | 14 | 16 | 18 | 20 | 22 | 25 | 28 | 32 |
| | Depth t2 | 3,3 | 3,8 | 4,3 | 4,4 | 4,9 | 5,4 | 5,4 | 6,4 | 7,4 |
| | Tolerance | + 0,2 | | | | | | | | |
| | r2 min. | 0,4 | | | | 0,6 | | | | |
| | r2 max. | 0,6 | | | | 0,8 | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Bore d1** | from | 130 | 150 | 170 | 200 | 230 | 260 | 290 | 330 | 380 | 440 |
| | to | 150 | 170 | 200 | 230 | 260 | 290 | 330 | 380 | 440 | 500 |
| **Key** | Width w | 36 | 40 | 45 | 50 | 56 | 63 | 70 | 80 | 90 | 100 |
| | Height h | 20 | 22 | 25 | 28 | 32 | 32 | 36 | 40 | 45 | 50 |
| **Shaft keyway** | *Width w | 36 | 40 | 45 | 50 | 56 | 63 | 70 | 80 | 90 | 100 |
| | Depth t1 | 12 | 13 | 15 | 17 | 20 | 20 | 22 | 25 | 28 | 31 |
| | Tolerance | + 0,3 | | | | | | | | | |
| | r2 min. | 1 | | | | 1,6 | | | 2,5 | | |
| | r2 max. | 1,2 | | | | 2 | | | 3 | | |
| **Hub keyway** | **Width w | 36 | 40 | 45 | 50 | 56 | 63 | 70 | 80 | 90 | 100 |
| | Depth t2 | 8,4 | 9,4 | 10,4 | 11,4 | 12,4 | 12,4 | 14,4 | 15,4 | 17,4 | 19,5 |
| | Tolerance | + 0,3 | | | | | | | | | |
| | r2 min. | 1 | | | | 1,6 | | | 2,5 | | |
| | r2 max. | 1,2 | | | | 2 | | | 3 | | |

* **Tolerance width b of the shaft keyway**
tight fit P9
loose fit N9

** **Tolerance width b of the hub keyway**
tight fit P9
loose fit JS9




*The Drum-Coupling's hub must be heated to the required shrinking temperature T before assembly.*

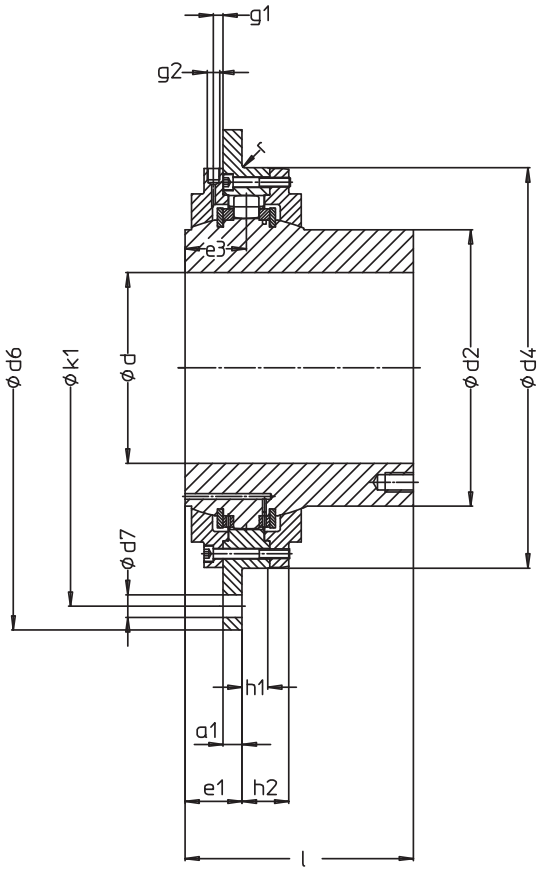
*T = required shrinking temperature [°C]*

*O = max. oversize [µm]*
*d = bore diameter [mm]*

$$T = \frac{100 \cdot O}{1{,}2 \cdot d} + 120$$

| Size | d min. [mm] | d max. [mm] | l [mm] | l1 [mm] | l2 [mm] | l3 [mm] | k2 [mm] | d9 | Qty | b1 [mm] | G | a1 [mm] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0,25 | 40 | 65 | 95 | 15 | 40 | - | 80 | M8 | 6 | 16 | G1/8 | 40 |
| 0,5 | 50 | 75 | 100 | 20 | 40 | - | 90 | M8 | 6 | 16 | G1/8 | 45 |
| 0,75 | 60 | 85 | 110 | 20 | 45 | - | 105 | M10 | 6 | 20 | G1/8 | 52,5 |
| 1 | 60 | 95 | 125 | 25 | 50 | - | 120 | M10 | 6 | 20 | G1/8 | 60 |
| 1,3 | 80 | 110 | 130 | 30 | 50 | - | 135 | M12 | 6 | 24 | G1/8 | 67,5 |
| 1,6 | 80 | 125 | 145 | 30 | 60 | - | 150 | M12 | 6 | 24 | G1/8 | 75 |
| 2 | 100 | 140 | 170 | 30 | 70 | - | 165 | M16 | 6 | 32 | G1/8 | 82,5 |
| 3 | 100 | 155 | 175 | 30 | 75 | - | 180 | M16 | 6 | 32 | G1/8 | 90 |
| 4 | 100 | 180 | 185 | 30 | 80 | - | 215 | M20 | 6 | 40 | G1/8 | 107,5 |
| 5 | 120 | 210 | 220 | 30 | 110 | 30 | 255 | M20 | 6 | 40 | G1/4 | 127,5 |
| 6 | 120 | 220 | 240 | 30 | 120 | 30 | 260 | M20 | 6 | 40 | G1/4 | 130 |
| 10 | 140 | 250 | 260 | 35 | 130 | 35 | 290 | M24 | 6 | 48 | G1/4 | 145 |
| 15 | 160 | 290 | 315 | 40 | 157,5 | 40 | 350 | M24 | 6 | 48 | G1/4 | 175 |
| 21 | 170 | 300 | 330 | 45 | 165 | 45 | 375 | M30 | 6 | 60 | G1/4 | 187,5 |
| 26 | 170 | 310 | 350 | 50 | 175 | 50 | 375 | M30 | 6 | 60 | G1/4 | 187,5 |
| 34 | 200 | 330 | 380 | 50 | 190 | 50 | 395 | M30 | 6 | 60 | G1/4 | 197,5 |
| 42 | 230 | 370 | 410 | 60 | 205 | 60 | 445 | M30 | 6 | 60 | G1/4 | 222,5 |
| 62 | 260 | 420 | 450 | 60 | 225 | 60 | 500 | M30 | 6 | 60 | G1/4 | 250 |
| 82 | 290 | 450 | 500 | 60 | 250 | 60 | 570 | M36 | 6 | 60 | G1/4 | 285 |
| 92 | 330 | 470 | 500 | 60 | 250 | 60 | 640 | M36 | 6 | 60 | G1/4 | 320 |

# Dimension sheet 709-05 / FTTXs Fixed Bearing Version




| Size | Torque Tk max [Nm] | Radial load Fr max [N] | * Weight [kg] | * Mass moment of inertia [kgm²] |
|---|---|---|---|---|
| 6 | 120000 | 130000 | 135 | 3,6 |
| 10 | 180000 | 150000 | 165 | 5,2 |
| 15 | 240000 | 180000 | 264 | 10,5 |
| 21 | 330000 | 26500 | 300 | 12,6 |
| 26 | 410000 | 315000 | 330 | 14,4 |
| 34 | 520000 | 360000 | 420 | 20,9 |
| 42 | 650000 | 400000 | 560 | 34,1 |
| 62 | 770000 | 475000 | 720 | 53,3 |
| 82 | 930000 | 525000 | 960 | 85 |
| 92 | 1100000 | 550000 | 1050 | 103 |

*with max. finish bore

| Size | d min. [mm] | d max. [mm] | a1 [mm] | d2 [mm] | d4 h6 [mm] | d6 [mm] | d7 [mm] | e1 [mm] | e3 [mm] | g1 [mm] | g2* | h1 [mm] | h2 [mm] | k1 [mm] | l [mm] | r [mm] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | 120 | 205 | 20 | 294 | 420 | 550 | 24 | 60 | 65 | 10 | G1/4 | 30 | 45 | 500 | 240 | 2,5 |
| 10 | 140 | 235 | 20 | 336 | 450 | 580 | 24 | 60 | 67 | 10 | G1/4 | 30 | 46 | 530 | 260 | 2,5 |
| 15 | 160 | 270 | 25 | 395 | 530 | 650 | 24 | 65 | 69 | 10 | G1/4 | 30 | 43 | 600 | 315 | 2,5 |
| 21 | 170 | 280 | 25 | 405 | 545 | 665 | 24 | 65 | 78 | 10 | G1/4 | 35 | 63 | 615 | 330 | 4 |
| 26 | 170 | 290 | 25 | 420 | 560 | 680 | 24 | 65 | 78 | 10 | G1/4 | 35 | 63 | 630 | 350 | 4 |
| 34 | 200 | 300 | 35 | 445 | 600 | 710 | 28 | 81 | 88 | 10 | G1/4 | 38 | 59 | 660 | 380 | 4 |
| 42 | 230 | 340 | 35 | 510 | 670 | 780 | 28 | 81 | 88 | 10 | G1/4 | 38 | 59 | 730 | 410 | 4 |
| 62 | 260 | 390 | 35 | 570 | 730 | 850 | 28 | 81 | 90 | 10 | G1/4 | 42 | 61 | 800 | 450 | 4 |
| 82 | 290 | 420 | 40 | 630 | 800 | 940 | 28 | 86 | 92 | 10 | G1/4 | 42 | 62 | 875 | 500 | 4 |
| 92 | 330 | 420 | 40 | 630 | 860 | 1025 | 34 | 86 | 92 | 10 | G1/4 | 42 | 62 | 945 | 500 | 4 |

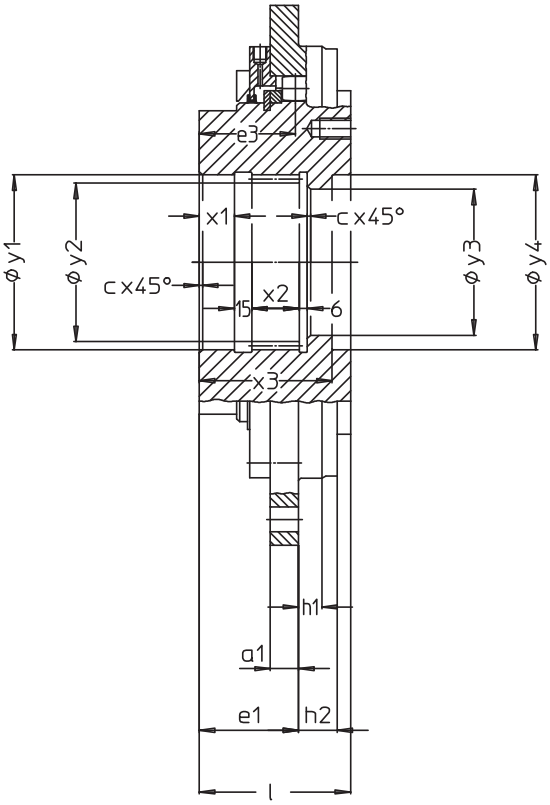
other dimensions on request

* Rc1/4, M10x1 or other connections possible via adaptor

# Dimension sheet 709-06 / MTTXs Standard

| Size | Weight [kg] | Mass moment of inertia [kgm²] | Gearing DIN5480 |
|---|---|---|---|
| 2 | 53 | 0,8 | N100x5x30x18x9H |
| 3 | 58 | 1,0 | N120x5x30x22x9H |
| 4 | 74 | 1,5 | N140x5x30x26x9H |
| 5 | 98 | 2,8 | N170x8x30x20x9H |
| 6 | 112 | 3,3 | N170x8x30x20x9H |
| 10 | 128 | 4,3 | N200x8x30x24x9H |
| 15 | 195 | 9 | N240x8x30x28x9H |
| 21 | 225 | 10 | N250x8x30x30x9H |
| 26 | 219 | 11 | N280x8x30x34x9H |
| 34 | 270 | 15 | N280x8x30x34x9H |
| 42 | 310 | 24 | N340x8x30x41x9H |
| 62 | 450 | 38 | N340x8x30x41x9H |
| 82 | 580 | 60 | N400x8x30x48x9H |
| 92 | 640 | 79 | N440x8x30x54x9H |

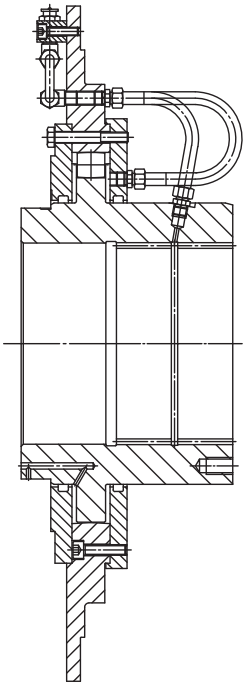
See dimension sheet 709-04 (pages 8 & 9) for all other dimensions



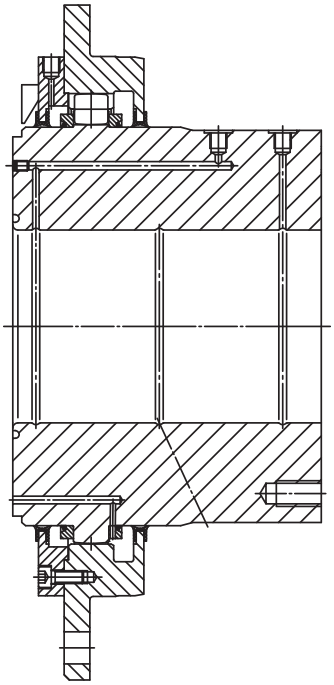

| Size | x1 [mm] | x2 [mm] | x3 [mm] | y1 K6 [mm] | y2 H11 [mm] | y3 H7 [mm] | y4 +0,5 [mm] | c [mm] | a1 [mm] | e1 [mm] | e3 [mm] | h1 [mm] | h2 [mm] | l [mm] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 39 | 32 | 110 | 100 | 90 | 85 | 101 | 1 | 32 | 90 | 76 | 10 | 20 | 125 |
| 3 | 39 | 32 | 110 | 120 | 110 | 105 | 121 | 1 | 32 | 85 | 73 | 10 | 20 | 120 |
| 4 | 40 | 40 | 121 | 140 | 130 | 125 | 141 | 1 | 32 | 92 | 81 | 10 | 21 | 130 |
| 5 | 40 | 40 | 121 | 170 | 154 | 150 | 166 | 2 | 32 | 92 | 81 | 10 | 22 | 130 |
| 6 | 38 | 42 | 121 | 170 | 154 | 150 | 166 | 2 | 32 | 89 | 82 | 10 | 30 | 129 |
| 10 | 26 | 50 | 116 | 200 | 184 | 180 | 200 | 2 | 32 | 91 | 85 | 10 | 33 | 131 |
| 15 | 27 | 60 | 129 | 240 | 224 | 220 | 240 | 2 | 40 | 108 | 96 | 12 | 35 | 150 |
| 21 | 26 | 70 | 138 | 250 | 234 | 230 | 250 | 2 | 40 | 108 | 106 | 19 | 43 | 162 |
| 26 | 26 | 70 | 138 | 280 | 264 | 260 | 280 | 2 | 40 | 111 | 109 | 19 | 45 | 162 |
| 34 | 26 | 70 | 138 | 280 | 264 | 260 | 280 | 2 | 50 | 109 | 101 | 19 | 41 | 162 |
| 42 | 33 | 80 | 161 | 340 | 324 | 320 | 350 | 2 | 50 | 137 | 129 | 19 | 43 | 190 |
| 62 | 33 | 80 | 161 | 340 | 324 | 320 | 350 | 2 | 50 | 137 | 131 | 19 | 43 | 190 |
| 82 | 35 | 100 | 190 | 400 | 384 | 380 | 410 | 2 | 50 | 137 | 133 | 30 | 50 | 219 |
| 92 | 35 | 100 | 190 | 440 | 424 | 420 | 450 | 2 | 50 | 137 | 133 | 30 | 50 | 219 |

other dimensions and sizes on request

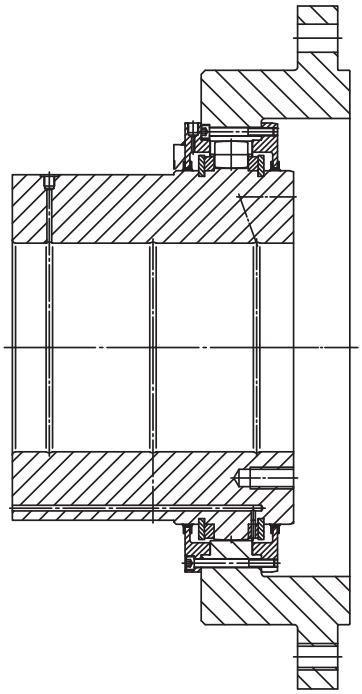
# Further designs



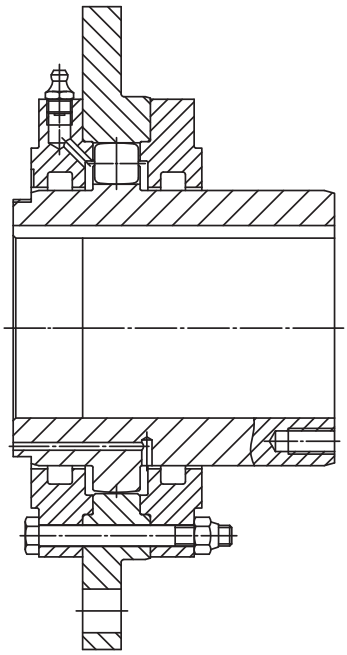
BTTXs



according to SIDMAR standard BR3-550



with special flange



for high-bay warehouses and goods lifts

# Wear indicator

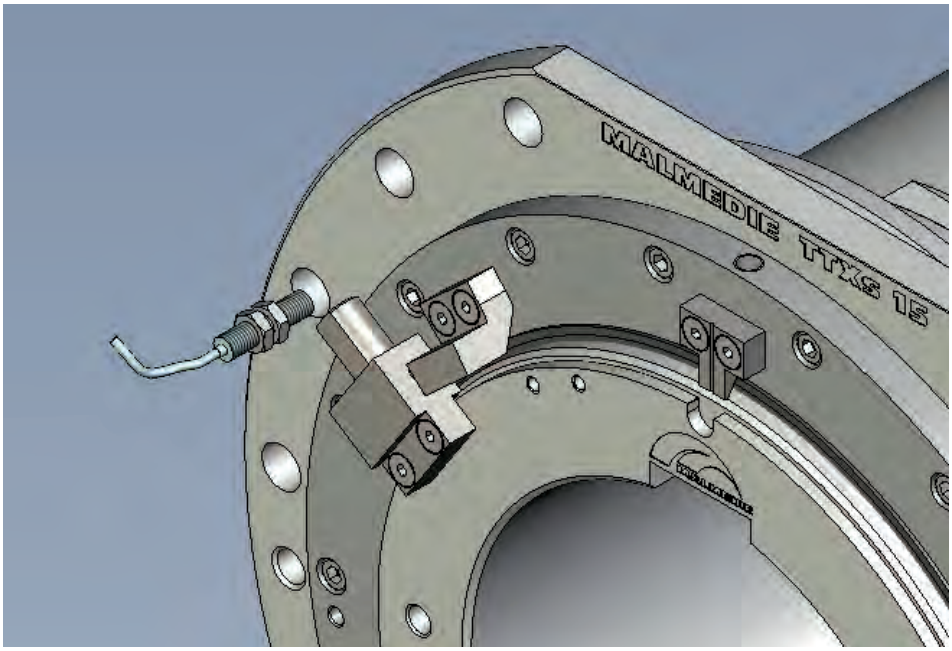
Wear which has occurred in the Drum-Coupling can be read from the displacement of the pointer in relation to the wear notch. The maximum permissible wear values $\frac{m}{2}$ are given in the table.

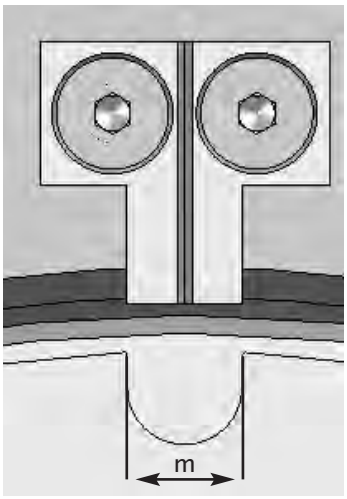
The Drum-Coupling must be replaced as soon as the limit value is exceeded.

In cases where there are two load directions, the maximum permissible wear values $\frac{m}{2}$ must be halved. This must be stated when ordering, so that the appropriate wear notch can be manufactured.

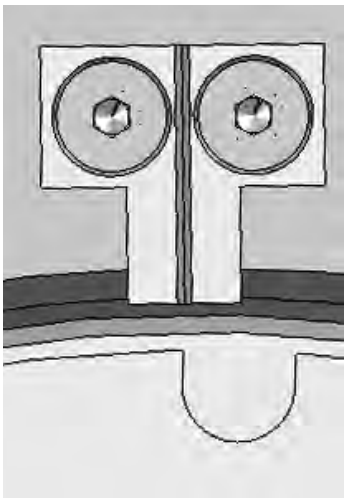
| Coupling size | max. permissible wear $\frac{m}{2}$ |
|---|---|
| 0,25 - 1 | 4 mm |
| 1,3 - 5 | 6 mm |
| 6 - 92 | 8 mm |

An automatic wear indicator is optionally available for coupling sizes from 6 to 62. However, this does not release from the duty to check the wear indicator regularly.




*without wear*



*with max. wear*

Container cranes

Steelwork cranes

Mining / conveying systems

Oil drilling towers (including low temperature applications)

TTXs ATTXs
ASTTXs MTTXs BTTXs
TTXs ATTXs
ASTTXs MTTXs BTTXs
TTXs ATTXs
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ATTXs ASTTXs
MTTXs BTTXs TTXs

# Inquiry form
# for Drum-Couplings

Company

Mr / Ms

Street

Postcode/Town

Country

Telephone

Fax

eMail

## Application

☐ Hoisting winch
☐ _____
☐ Rope winch
☐ retracting winch
☐ Grab winch boom

## Technical data

Drive group _____ ☐ acc. to DIN15020 ☐ acc. to F.E.M. 1.001

Rope drum diameter _____ mm
Rope force on the drum _____ kN
Drum speed _____ rpm

Nominal torque _____ kNm ☐ without service factor ☐ with service factor
max. torque _____ kNm ☐ without service factor ☐ with service factor
max. radial load _____ kN (referred to the Drum-Coupling

Motor power _____ kW
Motor speed _____ rpm
Used motor power _____ kW
Gearbox ratio _____
Gearbox efficiency _____

## Operation

Type of operation ☐ even ☐ swelling ☐ intermittent and heavy
Direction of force ☐ constant ☐ alternating

Operations per hour _____ / h
Operating time per day _____ h/d
Ambient temperature _____ °C

## Version

Coupling type _____ Coupling size _____ (pre-selection)

## Hub/shaft connection

☐ Key Bore _____ Keyway width _____ Keyway depth _____
Qty _____ Angle _____ Chamfer _____
☐ DIN5480 gearing _____ Length _____ Bore _____
☐ Shrink-fit connection Bore _____ Chamfer _____ Shaft _____
☐ Other _____

## Remarks

_____

_____

_____

_____

# CONTACT

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