MALMEDIE

# SAFETY-COUPLINGS

Series
**SE**

CONNECTING POWER

AT ITS SAFEST

# CONTENTS




ATB

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The operational experience with couplings that we have accumulated over more than 50 years in all sectors of drive technology attests the high performance and quality of our products. MALMEDIE Safety-Couplings have been used for more than 30 years as torque limiters in various executions (e.g. gear couplings, elastic couplings, cardan shafts etc.). They have thoroughly proven themselves even under very difficult application conditions, such as in the metallurgical industry and rolling mills, mining and the chemical industry. Their function is characterised by high precision of disengagement and rapid reset. Thus the drive components of equipment can, on the one hand, be effectively protected from damage due to overload, and on the other hand lost production time can be significantly reduced. The possible variation in the number and size of the safety elements and of the effective diameter means that the maximum release (shut-off) torque can be selected almost without limit. The individual safety element cannot be overloaded if correctly chosen. The MALMEDIE Safety-Couplings range offers a large number of variants, so that an optimal solution can be found even for difficult applications.

**Quality and production**

All Safety-Coupling parts are produced to stringent internal quality standards. With the aid of modern CNC manufacturing technology the ability to replace individual parts is guaranteed. All load-bearing coupling parts are produced from high-quality heat-treated steel. Wear is reduced by the purposeful selection of materials and by appropriate hardening treatments.

**Design and characteristics**

Unlike shear pins or break rings, the safety elements are not destroyed when disengagement is triggered, and can quickly be reactivated with the simplest tools, such as a hammer. If needed, two or more safety elements can be used for form-fitted and tensionally locked connection of two coupling flanges. Despite their compact design, the safety elements generate axial forces during transmission of the torque. These must be contained by special, precise and stable bearings of the two coupling flanges, and not transmitted to the connected drive units such as motors, gears etc. (see Fig.1). The MALMEDIE Safety-Couplings are suitable for use in reversing operation. On account of the diversity of the applications, MALMEDIE Safety-Couplings are adapted almost exclusively to the customer's request. Only the safety elements are standardised series items.

**MALMEDIE**
**Safety-Coupling**

- *high load capacity*
- *robust*
- *high shut-off accuracy*
- *fast re-engagement*
- *maintenance free*
- *suitable for use in potentially explosive atmospheres according to directive 94/9/EU* ⟨Ex⟩

**Advantages of the MALMEDIE - Safety-Coupling:**

- *low costs due to short downtimes*
- *suitable for reversing operation*
- *full unlocking*
- *readjustable*
- *low risk of damage*
- *long service life*

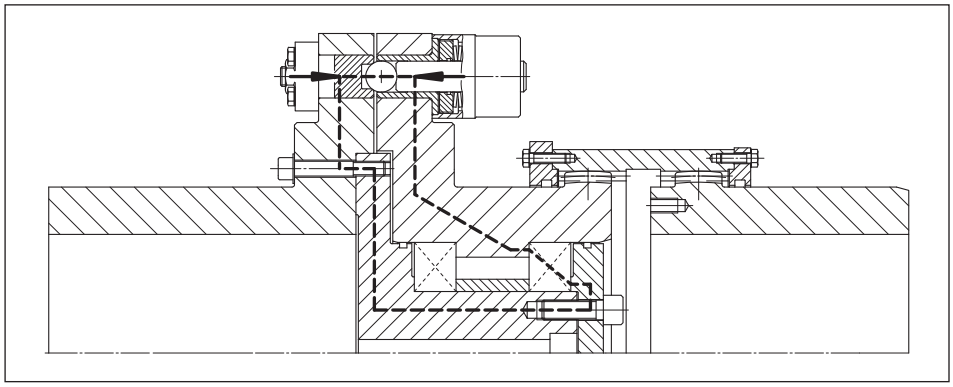


*Fig. 1*
*Course of axial force*

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

1. *Max. drive torque* $T_{nom}$
2. *Max. plant shock torque* $T_{max}$
3. *Shut-off torque* $T_{so}$
4. *Shut-off range* $T_{so\,min} - T_{so\,max}$
5. *Operating speed* $n_{op}$
6. *Dimensions of the input and output shafts*

$$T_{nom} = \frac{N \cdot 9550}{n} \cdot K_1 \cdot K_2 \leq T_{KN}$$

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

N = plant power output [kW]
n = coupling rotational speed [rpm]
$K_1$ = operating factor, taken from the "Type of drive" table
$K_2$ = operating factor, taken from the "Type of loading" table
$T_{KN}$ = coupling torque, taken from dimension sheet [Nm]

| Type of drive | $K_1$ operating factor | |
|---|---|---|
| | Daily operation, duration up to 12 hours | Daily operation, duration above 12 hours |
| Electric motor, turbine | 1,00 | 1,05 |
| Hydraulic motor | 1,05 | 1,10 |
| Combustion engine | 1,10 | 1,20 |

| Type of loading | Operation | $K_2$ operating factor | Working machine |
|---|---|---|---|
| SMOOTH | Continuous operation without overload | 1,0 – 1,25 | Light ventilation fans<br>Radial pumps<br>Electrical generators<br>Centrifugal pumps<br>Stirrers (low viscosity liquids) |
| LIGHT DUTY | Continuous operation with light overloads and brief, infrequent shock loads | 1,25 – 1,5 | Large ventilation fans<br>Piston pumps<br>Stirrers (high viscosity liquids)<br>Textile machinery<br>Machine tools<br>Belt conveyors<br>Elevator |
| MEDIUM DUTY | Operation with frequent light shock loads and brief, medium level overloads | 1,5 – 1,8 | Piston compressors<br>Conveyor machinery<br>Calenders<br>Briquetting presses<br>Non-reversing rolling mills<br>Smoothing machinery<br>Winches |
| HEAVY DUTY | Operation with heavy and frequent shock loads.<br>Frequent load reversals.<br>High level of safety. | 1,8 – 2,2 | Cranes, elevators (heavy load operations)<br>Mixers<br>Rolling lines<br>Reversing rolling mills<br>Kneading machinery<br>Punching machinery<br>Shears |
| VERY HEAVY DUTY | Operation with very heavy and frequent shock loads.<br>Frequent and sudden load reversals.<br>Very high level of safety. | > 2,2 | Reversing rolling mills<br>Heavy load operations in the steel industry<br>Shearing and cutting units<br>Forging presses<br>Billet shears<br>Hammers<br>Stone breakers / milling machinery |

*The $K_2$ operating factors specified are average values.*

### 2. Max. plant shock torque $T_{max}$ [Nm]

$$T_{max} \leq T_{Kmax}$$

$TK_{max}$ = max. coupling torque, taken from dimension sheet [Nm]

The max. plant shock torque $T_{max}$ must be smaller than the max. coupling torque $TK_{max}$ of the connected components (gear coupling, cardan shaft, elastic coupling etc.), otherwise a larger coupling must be selected.

### 3. Shut-off torque $T_{so}$ [Nm]

$$T_{so} = T_{max} \cdot c_a$$

$T_{max}$ = plant shock torque [Nm]
$c_a$ = shock factor

| Load | Shock factor |
|---|---|
| even | 1,25 – 1,75 |
| uneven | 1,75 – 2,25 |
| impulsive | 2,25 – 3,00 |

### 4. Shut-off range $T_{so\ min}$ – $T_{so\ max}$ [Nm]

$$n_{SE} = \frac{T_{so} \cdot 2000}{d_w \cdot F_{u\ max}}$$

*Round up the number of SE elements to a whole number.*

$n_{SE}$ = necessary number of SE elements
$T_{so}$ = shut-off torque [Nm]
$d_{eff}$ = effective diameter [mm]
$F_{u\ min}$ = min. shut-off force per SE element [N]
$F_{u\ max}$ = max. shut-off force per SE element [N]
$T_{so\ min}$ = min. shut-off torque [Nm]
$T_{so\ max}$ = max. shut-off torque [Nm]

$$T_{so\ min} = \frac{n_{SE} \cdot F_{u\ min} \cdot d_{eff}}{2000}$$

$$T_{so\ max} = \frac{n_{SE} \cdot F_{u\ max} \cdot d_{eff}}{2000}$$

| Size | Shut-off force / safety element [N] | |
|---|---|---|
| | Fu min | Fu max |
| 10 | 5435 | 13180 |
| 20 | 15700 | 36724 |
| 30 | 81853 | 185264 |
| 40 | 264838 | 511542 |

The shut-off range of the coupling is adjustable from $T_{so\ min}$ to $T_{so\ max.}$

### 5. Operating rotational speed $n_{Operation}$ [rpm]

$$n_{Operation} \leq n_{perm}$$

$n_{perm}$ = permissible coupling rotational speed [rpm]

The max. permissible coupling speed $n_{perm}$ depends on the connected components (gear coupling, cardan shaft, elastic coupling etc.) and also, depending on the application, on the alignment, or in the case of elastic couplings on the ambient temperature.

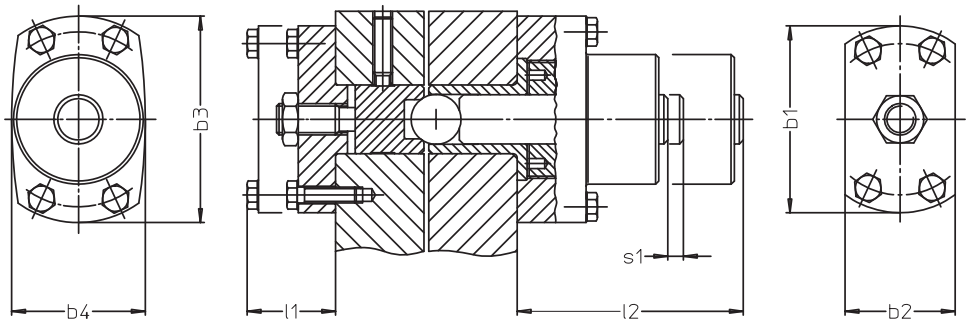
### 6. Dimensions of the input and output shafts

Furthermore a check must be made as to whether the input or output shaft diameters are smaller than the max. permissible bore diameter of the coupling according to the dimension sheet. The maximum bore diameters specified in the dimension sheets apply for keyways according to DIN6885 Sheet 1, without taper. In addition, all connections are to be checked for the torque transferred across the hub/shaft connection.

*Please contact our Technical Department is you have any queries.*

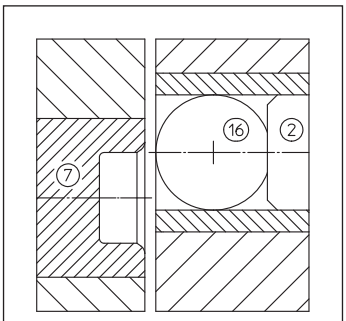
*Key connections see Page 14*

# Dimension sheet 712-01 / Type SE

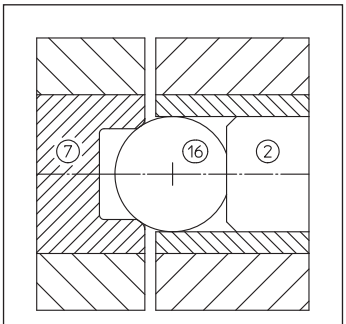



*(1) Disassembly dimensions*
*(2) Engagement travel*

| Size | Tangential force | | Dimensions | | | | | | | Weight |
|---|---|---|---|---|---|---|---|---|---|---|
| | Fu min. [N] | Fu max. [N] | b1 [mm] | b2 [mm] | b3 [mm] | b4 [mm] | l1 (1) [mm] | l2 (1) [mm] | s1 (2) [mm] | [kg] |
| 10 | 5435 | 13180 | 66 | 35 | 66 | 46 | 36 | 71 | 6,5 | 1,1 |
| 20 | 15700 | 36724 | 95 | 56 | 105 | 68 | 45 | 115 | 8 | 3,6 |
| 30 | 81853 | 185264 | 170 | 100 | 170 | 122 | 53 | 174 | 13,5 | 15,5 |
| 40 | 264838 | 511542 | 230 | 170 | 278 | 195 | 110 | 300 | 27 | 95 |



disengaged



engaged

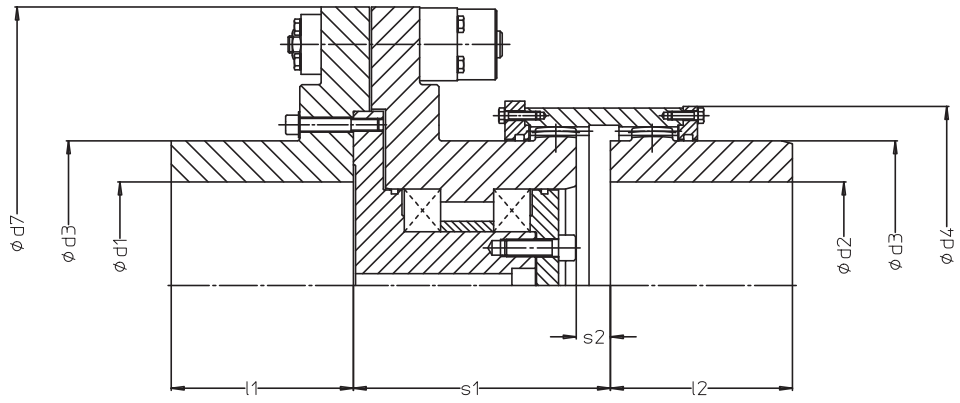
## Functional Description

Disengagement
In case of overload, the ball (item 16) and the pin (item 2) of the Safety-Element are moved rearwards by the centring bush (item 7); at the same time the two flanges are free to rotate independently. The tensionally locked connection is disengaged. The pin and the ball are held securely in the rear position and the gap between the coupling flanges ensures, that there is no wearing of the ball, centring bush or the coupling flanges themselves.

Re-engagement
The centre of the centring bush (item 7) and the centre of the ball (item 16) are coarsely aligned. By means of a blow with a plastic hammer against the end of the pin (item 2), the element audibly engages and the tensionally locked connection between the two coupling flanges is restored.

Adjustment
The Safety-Element is delivered having been pre-adjusted to the shut-off torque or shut-off force (in the case of linear applications) specified by the customer. If a change should be necessary at site, this is easily done by removing the element and adjusting the spring force in accordance with the table of the maintenance manual.

# Dimension sheet 712-02 / Type LX-SE




Examples:

| Size | Shut-off torque (1) | | Dimensions [mm] | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Tso min. [Nm] | Tso max. [Nm] | d1, d2 máx. (2) | d3 [mm] | d4 [mm] | d7 [mm] | l1, l2 [mm] | s1 [mm] | s2 [mm] |
| 0,56-10 | 1550 | 7500 | 109 | 152 | 193 | 340 | 120 | 160 | 23,5 |
| 0,56-20 | 4800 | 22400 | 109 | 152 | 193 | 380 | 120 | 160 | 23,5 |
| 0,88-10 | 1750 | 8300 | 128 | 178 | 221 | 370 | 140 | 180 | 26 |
| 0,88-20 | 5300 | 24600 | 128 | 178 | 221 | 410 | 140 | 180 | 26 |
| 1,4-10 | 1950 | 9350 | 147 | 205 | 256 | 410 | 160 | 200 | 27,5 |
| 1,4-20 | 5900 | 41300 | 147 | 205 | 256 | 450 | 160 | 200 | 27,5 |
| 2,2 -10 | 2100 | 10100 | 168 | 235 | 288 | 440 | 175 | 220 | 32 |
| 2,2 -20 | 6400 | 44600 | 168 | 235 | 288 | 480 | 175 | 220 | 32 |
| 2,2 -30 | 37700 | 85000 | 168 | 235 | 288 | 590 | 175 | 220 | 32 |
| 3,5 -10 | 2350 | 11200 | 193 | 269 | 331 | 480 | 200 | 250 | 32 |
| 3,5 -20 | 7000 | 49000 | 193 | 269 | 331 | 520 | 200 | 250 | 32 |
| 3,5 -30 | 41000 | 138000 | 193 | 269 | 331 | 630 | 200 | 250 | 32 |
| 5,6 -10 | 2650 | 12700 | 230 | 322 | 385 | 540 | 225 | 280 | 46 |
| 5,6 -20 | 7950 | 55000 | 230 | 322 | 385 | 580 | 225 | 280 | 46 |
| 5,6 -30 | 45900 | 207000 | 230 | 322 | 385 | 690 | 225 | 280 | 46 |
| 7 -10 | 2800 | 13500 | 250 | 350 | 415 | 570 | 250 | 310 | 52 |
| 7 -20 | 8400 | 58000 | 250 | 350 | 415 | 610 | 250 | 310 | 52 |
| 7 -30 | 48300 | 218000 | 250 | 350 | 415 | 720 | 250 | 310 | 52 |
| 8,8 -10 | 2950 | 14100 | 255 | 357 | 435 | 590 | 280 | 340 | 57 |
| 8,8 -20 | 8750 | 61000 | 255 | 357 | 435 | 630 | 280 | 340 | 57 |
| 8,8 -30 | 50000 | 226000 | 255 | 357 | 435 | 740 | 280 | 340 | 57 |

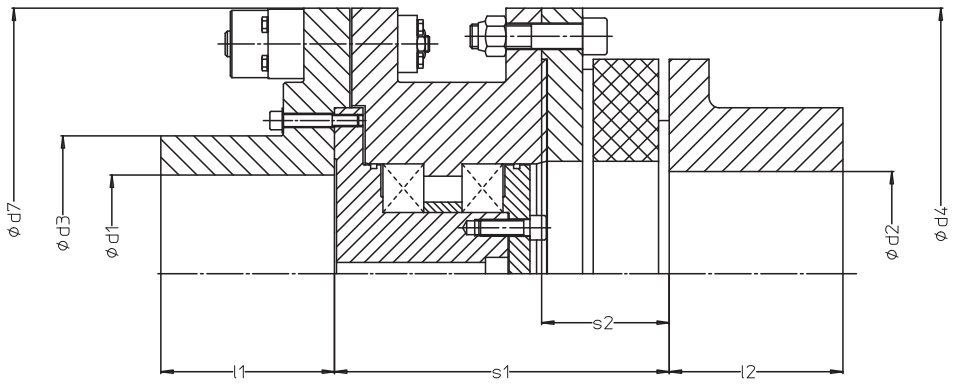
*Larger/smaller couplings, higher shut-off torques and intermediate sizes on request.*

*(1) Depending on the number and size of the safety elements.*

*The torques stated do not refer to the connection of shaft and hub. If necessary, these must be checked.*

*(2) The values specified for the bores are valid according to DIN6885-1 (see Page 14).*

# Dimension sheet 712-03 / Type SE-E




Examples:

*Larger/smaller couplings, higher shut-off torques and intermediate sizes on request.*

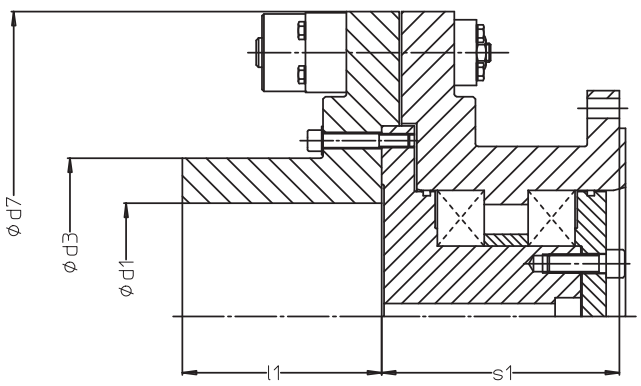
*(1) Depending on the number and size of the safety elements.*

*The torques stated do not refer to the connection of shaft and hub. If necessary, these must be checked.*

*(2) The values specified for the bores are valid according to DIN6885-1 (see Page 14).*

| Size | Shut-off torque (1) | | Dimensions [mm] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Tso min. [Nm] | Tso max. [Nm] | d1 max. (2) | d2 max. (2) | d3 [mm] | d4 [mm] | d7 [mm] | l1 [mm] | l2 [mm] | s1 [mm] | s2 [mm] |
| 133/10 | 1250 | 5900 | 95 | 115 | 133 | 285 | 280 | 100 | 110 | 192 | 75 |
| 152/10 | 1550 | 7500 | 109 | 125 | 152 | 330 | 340 | 120 | 120 | 215 | 81 |
| 152/20 | 4800 | 12000 | 109 | 125 | 152 | 330 | 380 | 120 | 120 | 215 | 81 |
| 178/10 | 1750 | 8300 | 127 | 145 | 178 | 370 | 370 | 140 | 140 | 240 | 90 |
| 178/20 | 5300 | 15000 | 127 | 145 | 178 | 370 | 410 | 140 | 140 | 240 | 90 |
| 205/10 | 1950 | 9350 | 146 | 160 | 205 | 410 | 410 | 160 | 155 | 268 | 99 |
| 205/20 | 5900 | 22000 | 146 | 160 | 205 | 410 | 450 | 160 | 155 | 268 | 99 |
| 235/10 | 2100 | 10100 | 168 | 185 | 235 | 460 | 440 | 175 | 175 | 297 | 113 |
| 235/20 | 6400 | 30000 | 168 | 185 | 235 | 460 | 480 | 175 | 175 | 297 | 113 |
| 269/20 | 7000 | 35000 | 192 | 200 | 269 | 520 | 520 | 200 | 195 | 339 | 125 |

# Dimension sheet 712-04 / Type SE-F




*For flange mounting of e.g. sprocket wheels, crown gears, belt pulleys etc.*

Examples:

| Size | Shut-off torque (1) | | Dimensions [mm] | | | | |
|---|---|---|---|---|---|---|---|
| | Tso min. [Nm] | Tso max. [Nm] | d1 max.(2) | d3 [mm] | d7 [mm] | l1 [mm] | s1 [mm] |
| 152/10 | 1550 | 7500 | 109 | 152 | 340 | 120 | 134 |
| 152/20 | 4800 | 22400 | 109 | 152 | 380 | 120 | 134 |
| 178/10 | 1750 | 8300 | 127 | 178 | 370 | 140 | 150 |
| 178/20 | 5300 | 24600 | 127 | 178 | 410 | 140 | 150 |
| 205/10 | 1950 | 9350 | 146 | 205 | 410 | 160 | 169 |
| 205/20 | 5900 | 41300 | 146 | 205 | 450 | 160 | 169 |
| 235/10 | 2100 | 10100 | 168 | 235 | 440 | 175 | 184 |
| 235/20 | 6400 | 44600 | 168 | 235 | 480 | 175 | 184 |
| 235/30 | 37700 | 85000 | 168 | 235 | 590 | 175 | 184 |
| 269/10 | 2350 | 11200 | 192 | 269 | 480 | 200 | 214 |
| 269/20 | 7000 | 49000 | 192 | 269 | 520 | 200 | 214 |
| 269/30 | 41000 | 138000 | 192 | 269 | 630 | 200 | 214 |
| 318/10 | 2650 | 12700 | 227 | 318 | 540 | 225 | 229 |
| 318/20 | 7950 | 55000 | 227 | 318 | 580 | 225 | 229 |
| 318/30 | 45900 | 207000 | 227 | 318 | 690 | 225 | 229 |
| 342/10 | 2800 | 13500 | 244 | 342 | 570 | 250 | 253 |
| 342/20 | 8400 | 58000 | 244 | 342 | 610 | 250 | 253 |
| 342/30 | 48300 | 218000 | 244 | 342 | 720 | 250 | 253 |
| 358/10 | 2950 | 14100 | 255 | 358 | 590 | 280 | 278 |
| 358/20 | 8750 | 61000 | 255 | 358 | 630 | 280 | 278 |
| 358/30 | 50000 | 226000 | 255 | 358 | 740 | 280 | 278 |

*Larger/smaller couplings, higher shut-off torques and intermediate sizes on request.*

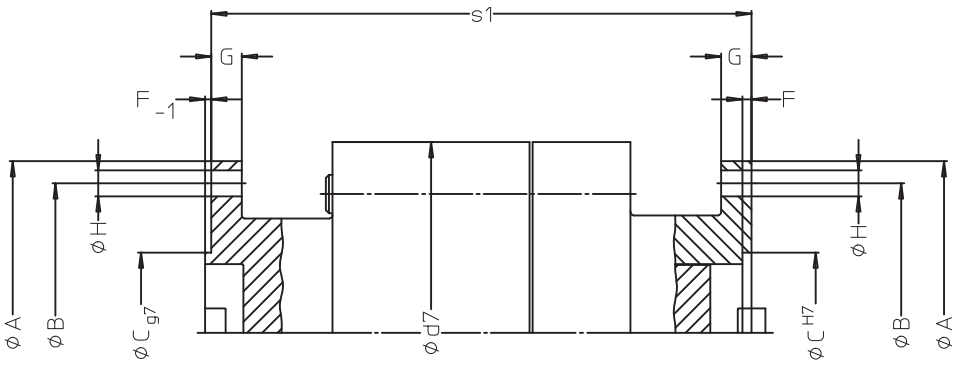
*(1) Depending on the number and size of the safety elements.*

*The torques stated do not refer to the connection of shaft and hub. If necessary, these must be checked.*

*(2) The values specified for the bores are valid according to DIN6885-1 (see Page 14).*

# Dimension sheet 712-05 / Type SE-G

*For flange mounting of cardan shafts.*




*Larger/smaller couplings, higher shut-off torques and intermediate sizes on request.*

*All connecting flanges also possible with face key.*

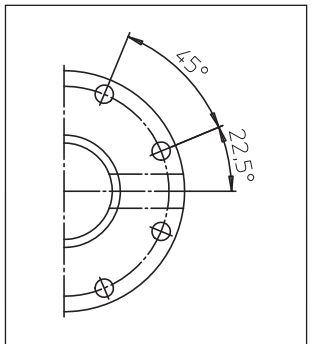
*Connecting flange also with Hirth-type serration.*

*Optionally external adjustable.*

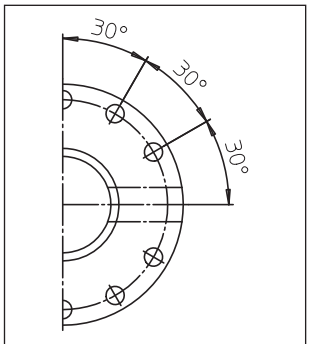
*(1) Depending on the number and size of the safety elements.*

*(2) Number of flange holes*

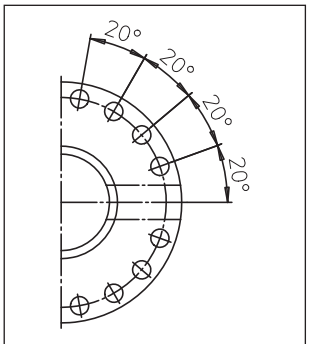
| Size | Shut-off torque (1) | | Dimensions [mm] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Tso min. [Nm] | Tso max. [Nm] | A [mm] | B [mm] | C [mm] | F [mm] | G [mm] | H [mm] | l (2) | d7 (1) [mm] | s1 (1) [mm] |
| 225 | 2900 | 26700 | 225 | 196 | 105 | 5 | 20 | 17 | 8 | 250 | 350 |
| 250 | 3300 | 30400 | 250 | 218 | 105 | 5 | 25 | 19 | 8 | 275 | 350 |
| 285 | 3800 | 44400 | 285 | 245 | 125 | 6 | 27 | 21 | 8 | 310 | 350 |
| 315 | 4300 | 60000 | 315 | 280 | 130 | 7 | 32 | 23 | 10 | 340 | 350 |
| 350 | 4800 | 67600 | 350 | 310 | 155 | 7 | 35 | 23 | 10 | 375 | 350 |
| 390 | 5500 | 89200 | 390 | 345 | 170 | 8 | 40 | 25 | 10 | 415 | 350 |
| 435 | 6200 | 115000 | 435 | 385 | 190 | 10 | 42 | 28 | 16 | 460 | 350 |




8-hole flange

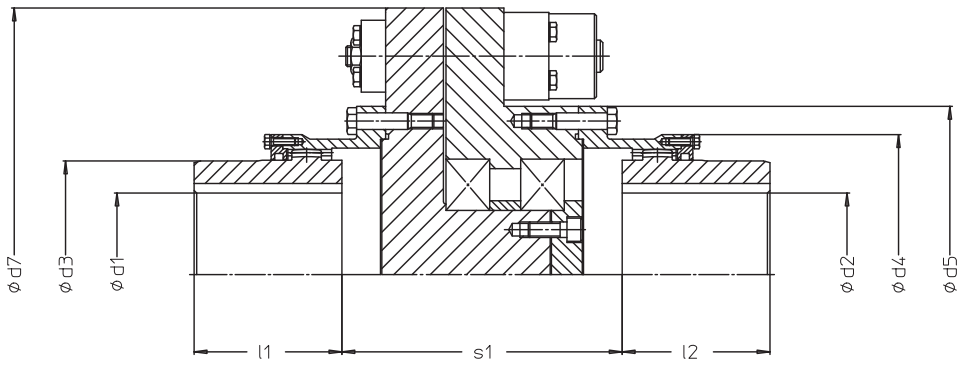



10-hole flange




16-hole flange

# Dimension sheet 712-06 / Type SE-GLX




*For flange mounting between MALMEDIE gear coupling halves according to dimensional sheet 710-51 / 710-52 / 710-53*

Examples:

| Size | Shut-off torque (1) | | Dimensions [mm] | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Tso min. [Nm] | Tso max. [Nm] | d1, d2 max. (2) | d3 [mm] | d4 [mm] | d5 [mm] | d7 [mm] | l1, l2 [mm] | s1 [mm] |
| 0,056 | 1050 | 5000 | 48 | 68 | 105 | 132 | 240 | 60 | 146 |
| 0,088 | 1100 | 5400 | 58 | 81 | 117 | 144 | 255 | 70 | 152 |
| 0,14 | 1200 | 8700 | 69 | 97 | 133 | 160 | 270 | 80 | 150 |
| 0,22 | 4100 | 14300 | 80 | 112 | 148 | 177 | 335 | 90 | 198 |
| 0,35 | 4600 | 21300 | 95 | 133 | 171 | 208 | 355 | 100 | 201 |
| 0,56 | 4900 | 34150 | 109 | 152 | 193 | 230 | 385 | 120 | 210 |
| 0,88 | 5350 | 37450 | 127 | 178 | 218 | 262 | 415 | 140 | 218 |
| 1,4 | 6150 | 43000 | 146 | 205 | 253 | 306 | 465 | 160 | 238 |
| 2,2 | 7000 | 64600 | 168 | 235 | 283 | 338 | 515 | 175 | 242 |
| 3,5 | 7700 | 72000 | 192 | 269 | 332 | 383 | 565 | 200 | 260 |

*Larger/smaller couplings, higher shut-off torques and intermediate sizes on request.*

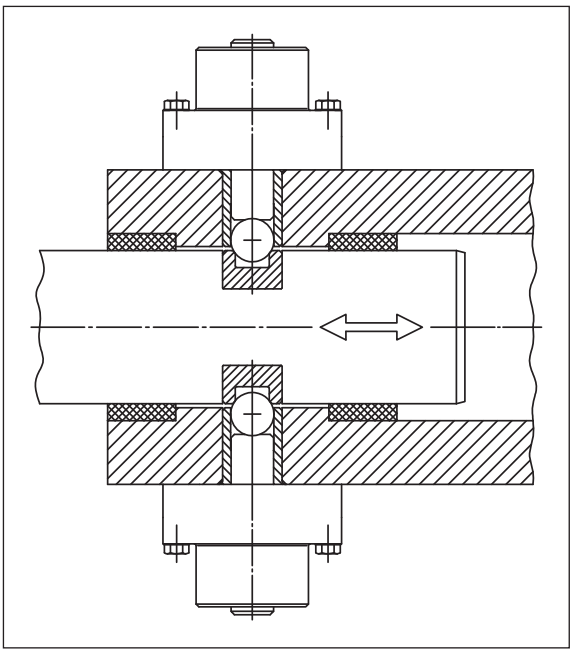
*(1) Depending on the number and size of the safety elements.*

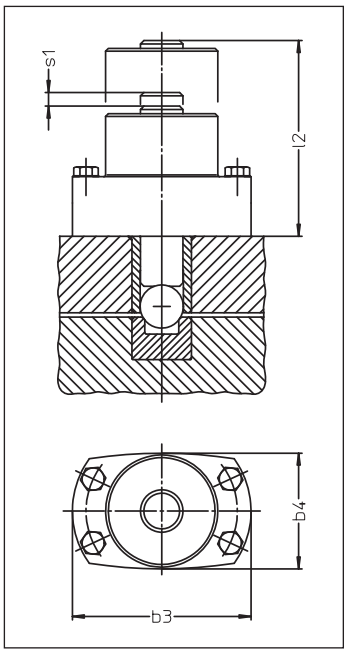
*The torques stated do not refer to the connection of shaft and hub. If necessary, these must be checked.*

*(2) The values specified for the bores are valid according to DIN6885-1 (see Page 14).*

# Dimension sheet 712-07 / Type SE-L

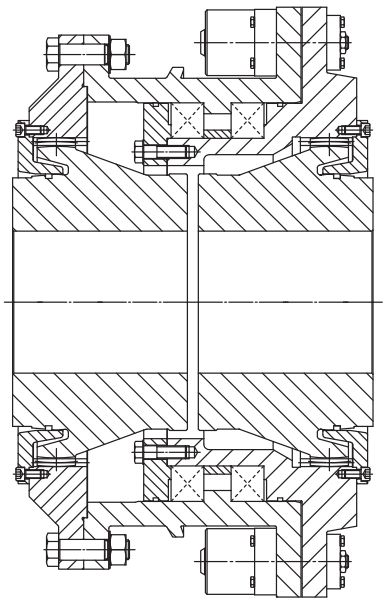
*For linear movements, e.g. for installation in connection rods or tension rods*



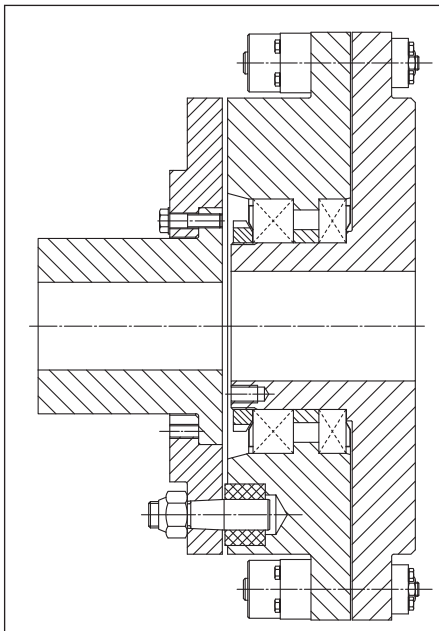



*(1) Disassembly dimensions*
*(2) Engagement travel*

| Size | Release force / element | | Dimensions | | | | Weight |
|---|---|---|---|---|---|---|---|
| | Fu min [N] | Fu max. [N] | b3 [mm] | b4 [mm] | l2 (1) [mm] | s1 (2) [mm] | [kg] |
| 10 | 5435 | 13180 | 66 | 46 | 71 | 6,5 | 1,1 |
| 20 | 15700 | 36724 | 105 | 68 | 115 | 8 | 3,6 |
| 30 | 81853 | 185264 | 170 | 122 | 174 | 13,5 | 15,5 |
| 40 | 264838 | 511542 | 278 | 195 | 300 | 27 | 95 |

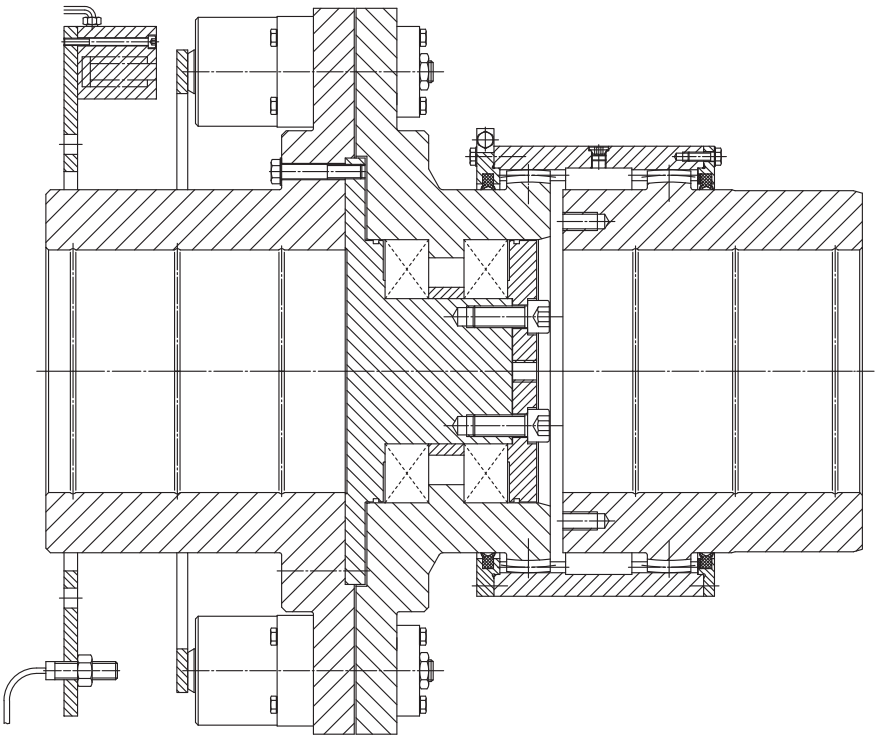


Gear-Coupling with Safety-Elements
for operation in rolling mills.



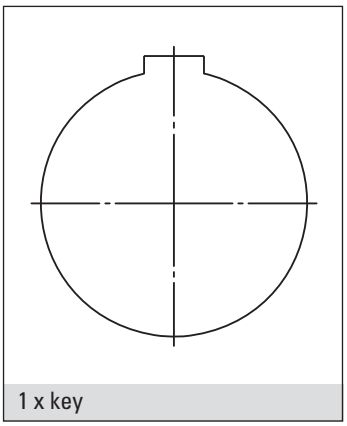
Elastic bolt coupling with
Safety-Elements.

### Automatic re-engagement device

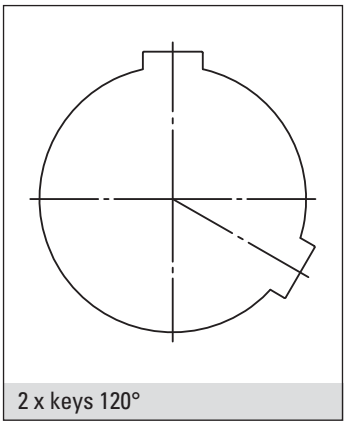


Gear-Coupling with Safety-Elements, type LX-SE, with automatic re-engagement device.
Re-engagement can take place either hydraulically or pneumatically.

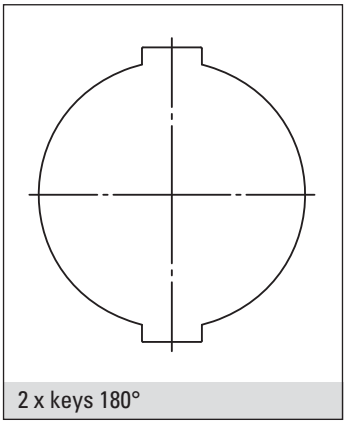
# Key connections



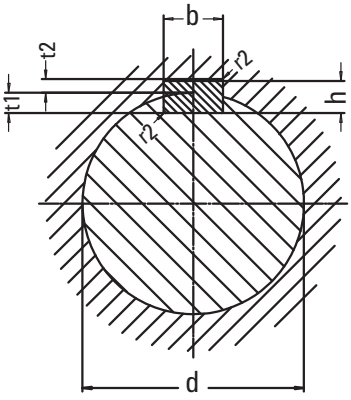
1 x key



2 x keys 120°



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 surface pressure. Keyways according to BS 46, ANSI B17.1 or other standards are also possible. For other types of connections, such as e.g. shrink-fit connections or spline connections in accordance with DIN5480, multiple splined shaft connections, or shrink-fit sleeve connections, please get in contact with our Technical Department.

**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 w of the shaft keyway**

| | |
|---|---|
| tight fit | P9 |
| loose fit | N9 |

** **Tolerance width w of the shaft keyway**

| | |
|---|---|
| tight fit | P9 |
| loose fit | JS9 |

# Inquiry form
# **for Safety-Couplings**

**Place of use**

Project _____

Working machine _____

**Operation**

Type of operation _____

Operating factor _____

| | | | |
|---|---|---|---|
| ☐ | SMOOTH | 1,00 – 1,25 | Continuous operation without overload or shock loads. |
| ☐ | LIGHT DUTY | 1,25 – 1,50 | Continuous operation with light overloads and brief infrequent shock loads. |
| ☐ | MEDIUM DUTY | 1,50 – 1,80 | Operation with frequent light shock loads and brief, medium level overloads. |
| ☐ | HEAVY DUTY | 1,80 – 2,20 | Operation with heavy and frequent shock loads. Frequent load reversals: High level of safety. |
| ☐ | VERY HEAVY DUTY | >2,20 | Operation with very heavy and frequent shock loads. Frequent and sudden load reversals. Very high level of safety. |

Direction of force

☐ constant

☐ alternating

Operations per hour _____ / h

Operational duration per day _____ h/d

Ambient temperature _____ °C

**Technical data**

Type of drive ☐ Electric motor, turbine ☐ Hydraulic motor ☐ Combustion engine

Motor power output _____ kW

Motor rotational speed _____ rpm

Gear transmission ratio _____

Gear efficiency _____

Coupling rotational speed _____ rpm

Nominal torque _____ kNm ☐ without operating factor ☐ with operating factor

max. torque _____ kNm ☐ without operating factor ☐ with operating factor

Shut-off torque $T_{so}$ _____ Nm

**Design**

Coupling type _____ Coupling size _____ (pre-selection) Overall length _____

**Hub-shaft connection**

1.) Coupling hub Bore diameter _____ Shaft diameter _____

☐ Keyway Quantity _____ Angle _____

☐ DIN5480-gearing

☐ Shrink-fit connection

☐ Other

2.) Coupling hub Bore diameter _____ Shaft diameter _____

☐ Keyway Quantity _____ Angle _____

☐ DIN5480-gearing

☐ Shrink-fit connection

☐ Other

**Remark**

_____

_____

_____

Company

_____

_____

Mr / Mrs

_____

_____

Street

_____

_____

Postcode/Town

_____

_____

Country

_____

_____

Phone

_____

_____

Fax

_____

_____

eMail

_____

_____

MALMEDIE



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MALMEDIE 中国授权代理商

ATB
上海埃驱倍科技有限公司
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# GEAR-COUPLINGS

## SERIES LX • GLX • S-NX


上 海 埃 驱 倍 科 技 有 限 公 司

Shanghai ATB Technology Co., Ltd


MALMEDIE

# CONTENTS

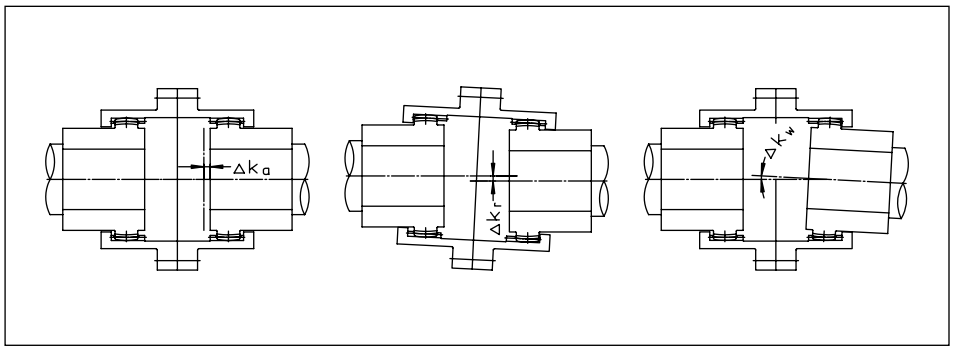
# Application

MALMEDIE Gear-Couplings are designed with crowned teeth, and are used where torques must be transmitted through shafts that are movable on all sides.

The operational experience with Gear-Couplings that we have accumulated over more than 50 years in all sectors of drive technology attests the high performance and quality of our products.

The MALMEDIE Gear-Couplings can compensate for angular, radial and axial misalignments. For standard Gear-Couplings the misalignment can be up to ± 0.75° per toothing plane, while special designs can be supplied up to ± 5°.

The MALMEDIE Gear-Couplings range offers a large number of variants, so that an optimal solution can be found even for difficult drives.




**Quality and production**

All MALMEDIE Gear-Coupling parts are produced to stringent internal quality standards. With the aid of modern CNC manufacturing technology the ability to replace individual parts is guaranteed. All load-bearing coupling parts are produced from high-quality heat-treated steel. In special cases it is possible to increase the performance of the MALMEDIE Gear-Couplings and/or to reduce wear by a careful selection of materials and appropriate hardening processes.

**Design and characteristics**

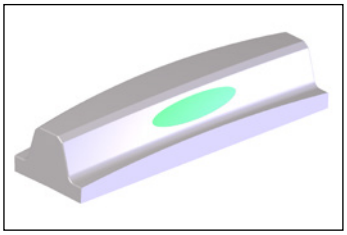
The coupling hubs with crowned outer tooth forms run in housings with straight internal tooth forms. By this means the coupling hubs can move spatially in the housings and compensate for angular, radial and axial misalignments between the shafts that are to be connected together. For standard MALMEDIE Gear-Couplings the misalignment can be up to ± 0.75° per toothing plane, while special designs can be supplied up to ± 5°.

***The new LX and GLX series offer:***

- *higher load capacity*
- *higher permissible torque*
- *large permissible finished bore*
- *longer service life*
- *interchangeable with preceding series*
- *suitable for use in potentially explosive areas according to directive 94/9/EG* (Ex)

***Features of the MALMEDIE Gear-Coupling:***

- *compensation for angular, radial and axial misalignments*
- *suitable for operation in reverse*
- *quiet running thanks to gear head centring*
- *special designs can also be suitable for vertical installation*
- *large permissible finished bore*
- *easy replacement of seals with splitted cover*
- *high level of operational reliability as a result of the use of high quality materials*
- *long service life with low levels of maintenance*
- *high ambient temperatures are possible*



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

*1. Max. drive torque*
*$T_{nom}$*

*2. Max. plant shock torque*
*$T_{max}$*

*3. Operating rotational speed*
*$n_{Operation}$*

*4. Dimensions of the input and output shafts*

## 1. Max. drive torque $T_{nom}$ [Nm]

N = plant power output [kW]
n = coupling rotational speed [rpm]
$K_1$ = operating factor, taken from the „Type of drive“ table
$K_2$ = operating factor, taken from the „Type of loading“ table
$T_{KN}$ = coupling torque, taken from dimension sheet [Nm]

| Type of drive | $K_1$ operating factor | |
|---|---|---|
| | Daily operation duration, up to 12 hours | Daily operation duration, above 12 hours |
| Electric motor, turbine | 1,00 | 1,05 |
| Hydraulic motor | 1,05 | 1,10 |
| Combustion engine | 1,10 | 1,20 |

$$T_{nom} = \frac{N \cdot 9550}{n} \cdot K_1 \cdot K_2 \leq T_{KN}$$

| Type of loading | Operation | $K_2$ operating factor | Working machine |
|---|---|---|---|
| SMOOTH | Continuous operation without overload | 1,0 – 1,25 | Light ventilation fans<br>Radial pumps<br>Electrical generators<br>Centrifugal pumps<br>Stirrers (low viscosity liquids) |
| LIGHT DUTY | Continuous operation with light overloads and brief, infrequent shock loads | 1,25 – 1,5 | Large ventilation fans<br>Piston pumps<br>Stirrers (high viscosity liquids)<br>Textile machinery<br>Machine tools<br>Belt conveyors<br>Elevator |
| MEDIUM DUTY | Operation with frequent light shock loads and brief, medium level overloads | 1,5 – 1,8 | Piston compressors<br>Conveyor machinery<br>Calenders<br>Briquetting presses<br>Non-reversing rolling mills<br>Smoothing machinery<br>Winches |
| HEAVY DUTY | Operation with heavy and frequent shock loads. Frequent load reversals: High level of safety. | 1,8 – 2,2 | Cranes, elevators (heavy load operations)<br>Mixers<br>Rolling lines<br>Reversing rolling mills<br>Kneading machinery<br>Punching machinery<br>Shears |
| VERY HEAVY DUTY | Operation with very heavy and frequent shock loads. Frequent and sudden load reversals. Very high level of safety. | > 2,2 | Reversing rolling mills<br>Heavy load operations in the steel industry<br>Shearing and cutting units<br>Forging presses<br>Billet shears<br>Hammers<br>Stone breakers / milling machinery |

*The $K_2$ operating factors specified are average values.*

### 2. Max. plant shock torque $T_{max}$ [Nm]

$$T_{max} \leq T_{K\,max}$$

$T_{max}$ = plant shock torque or starting torque [Nm]
$T_{Kmax}$ = max. coupling torque, taken from dimension sheet [Nm]

The max. plant shock torque $T_{max}$ must be less than the max. coupling torque $T_{kmax}$, otherwise a larger coupling must be selected.

### 3. Operating rotational speed $n_{Operation}$ [rpm]

$$n_{perm} = n_{max} \cdot f_1 \geq n_{operation}$$

With angular misalignments ΔKw > 0.5° a rotational speed factor f1 must be taken into account.

$n_{perm}$ = permissible coupling rotational speed [rpm]
$n_{Operation}$ = coupling rotational speed [rpm]
$f_1$ = rotational speed factor, taken from table
$n_{max}$ = max. coupling rotational speed, taken from dimension sheet [rpm]
ΔKw = angular misalignment

| Angular misalignment | Rotational speed factor |
|---|---|
| ΔKw | $f_1$ |
| 0,50° | 1,00 |
| 0,55° | 0,91 |
| 0,60° | 0,82 |
| 0,65° | 0,73 |
| 0,70° | 0,64 |
| 0,75° | 0,55 |

The critical rotational speed in MALMEDIE Gear-Couplings with an intermediate tube or an intermediate shaft must be checked depending upon the application. For circumferential speeds of 34 m/s and upwards, measured at the diameter $d_4$ (see dimensional sheet), dynamic balancing in two planes is recommended.

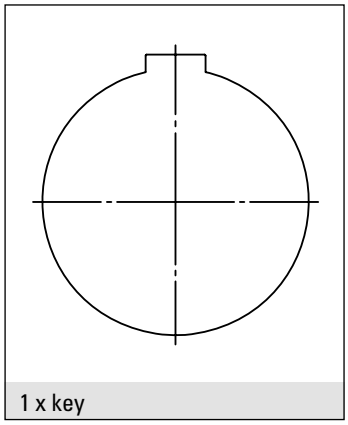
### 4. Dimensions of the input and output shafts

Furthermore a check must be made as to whether the input or output shaft diameters are smaller than the max. permissible bore diameter of the Gear-Coupling according to the dimension sheet. The maximum bore diameters specified in the dimension sheets apply for keyways according to DIN6885-1, without tightening. In addition all connections are to be checked for the torque transferred across the hub/shaft connection.

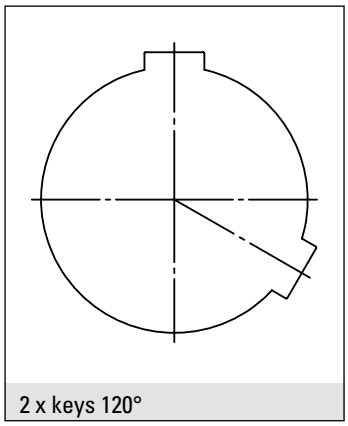
*Key connections*
*see page 6*

*Shrink-fit connections*
*see page 7*

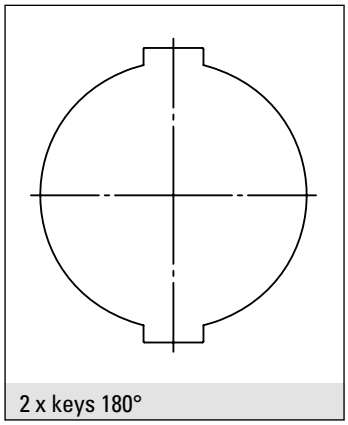
# Key connections



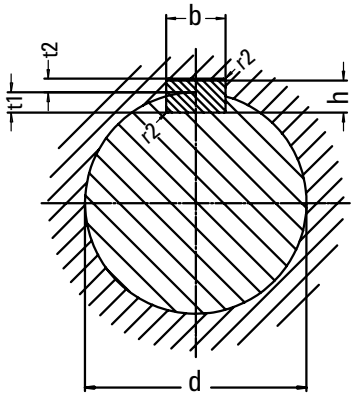
1 x key



2 x keys 120°



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 surface pressure. keyways according to BS 46, ANSI B17.1 or other standards are also possible. For other types of connections, such as e.g. spline connections in accordance with DIN5480, multiple splined shaft connections, or shrink disc connections, please get in contact with our Technical Department.

**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 | | |

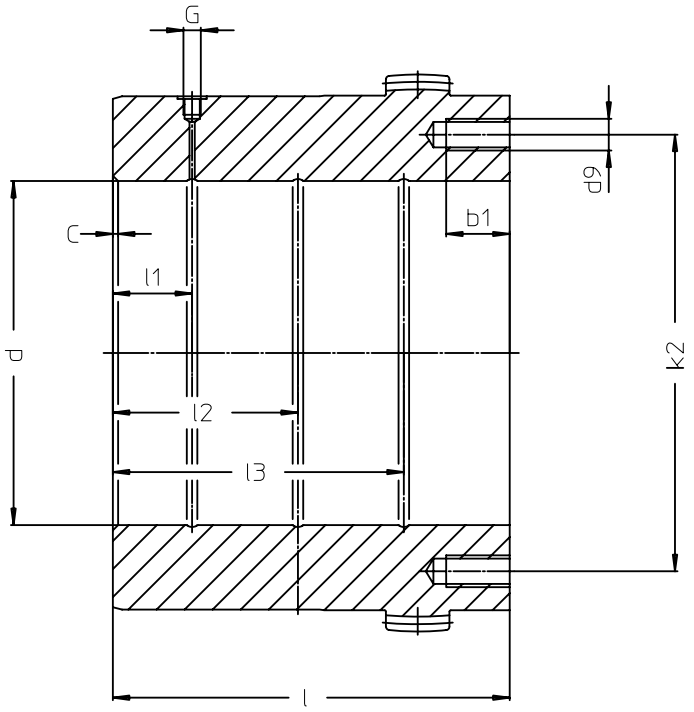
* **Tolerance width b of the shaft keyway**

| | |
|---|---|
| tight fit | P9 |
| loose fit | N9 |

** **Tolerance width b of the hub keyway**

| | |
|---|---|
| tight fit | P9 |
| loose fit | JS9 |

# Shrink-fit connections




*The Gear-Coupling hub must be brought up to the required shrinking temperature T before assembly.*

*T = required shrinking temperature [°C]*

*O = max. oversize [µm]*

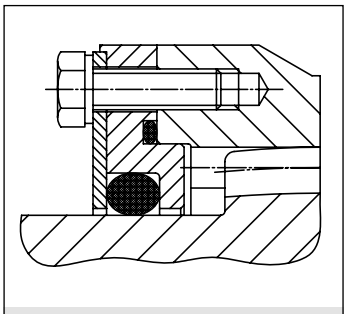
*d = bore diameter [mm]*

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

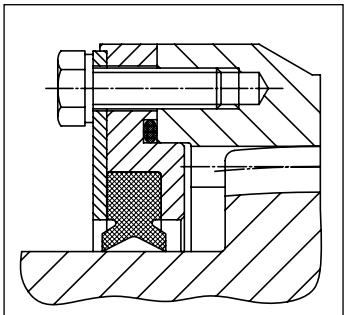
| Size | Bore | | Dimensions | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | $d_1$ min. [mm] | $d_1$ max. [mm] | l [mm] | l1 [mm] | l2 [mm] | l3 [mm] | k2 [mm] | d9 | Anz. | b1 [mm] | G |
| 0,14 | 32 | 65 | 80 | 30 | - | - | 80 | M8 | 10 | 16 | G1/8 |
| 0,22 | 40 | 75 | 90 | 35 | - | - | 95 | M8 | 12 | 16 | G1/8 |
| 0,35 | 45 | 88 | 100 | 25 | 60 | - | 110 | M10 | 8 | 20 | G1/8 |
| 0,56 | 50 | 100 | 120 | 30 | 72 | - | 130 | M10 | 12 | 20 | G1/8 |
| 0,88 | 60 | 118 | 140 | 35 | 84 | - | 150 | M12 | 10 | 24 | G1/4 |
| 1,4 | 70 | 136 | 160 | 40 | 96 | - | 170 | M12 | 12 | 24 | G1/4 |
| 2,2 | 80 | 156 | 175 | 45 | 105 | - | 200 | M16 | 10 | 32 | G1/4 |
| 3,5 | 90 | 178 | 200 | 50 | 120 | - | 230 | M16 | 12 | 32 | G1/4 |
| 5,6 | 100 | 212 | 225 | 55 | 135 | - | 265 | M20 | 10 | 40 | G1/4 |
| 7 | 110 | 228 | 250 | 60 | 150 | - | 285 | M20 | 12 | 40 | G1/4 |
| 8,8 | 120 | 238 | 280 | 70 | 170 | - | 300 | M24 | 8 | 48 | G1/4 |
| 11 | 130 | 260 | 300 | 60 | 140 | 220 | 330 | M24 | 8 | 48 | G1/4 |
| 14 | 140 | 280 | 320 | 60 | 145 | 230 | 360 | M24 | 10 | 48 | G1/4 |
| 17,5 | 150 | 302 | 340 | 70 | 160 | 250 | 390 | M30 | 8 | 60 | G1/4 |
| 22 | 170 | 328 | 360 | 70 | 165 | 260 | 420 | M30 | 8 | 60 | G1/4 |
| 28 | 180 | 345 | 380 | 75 | 175 | 275 | 450 | M30 | 10 | 60 | G1/4 |
| 35 | | 374 | 400 | 80 | 185 | 285 | 490 | M30 | 10 | 60 | G3/4 |
| 44 | | 400 | 420 | 85 | 195 | 305 | 520 | M36 | 8 | 72 | G3/4 |
| 56 | | 430 | 440 | 90 | 205 | 320 | 560 | M36 | 10 | 72 | G3/4 |
| 70 | | 475 | 470 | 95 | 215 | 335 | 600 | M36 | 12 | 72 | G3/4 |
| 88 | | 505 | 500 | 100 | 225 | 350 | 650 | M36 | 12 | 72 | G3/4 |

# Dimension sheet 710-50 / LX Standard

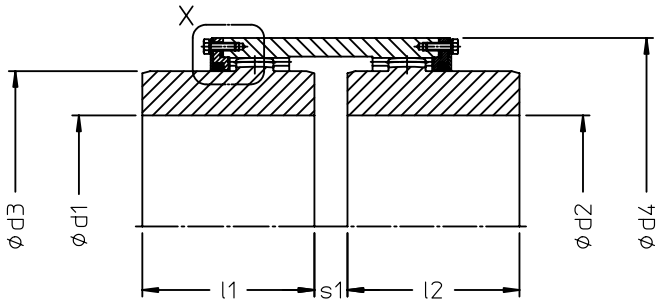
Detail "X"



Standard design



With profile seal




| Size | Torque (1) [Nm] | | Speed (2) [rpm] | Bore (3) [mm] | | Dimensions [mm] | | | | Weight (4) [kg] | Mass moment of inertia (4) | Lubricant quantity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $T_{KN}$ | $T_{K\,max}$ | n max | d1,2 min | d1,2 max | d3 | d4 | l1, l2 | s1 | G | I [kgm²] | [dm³] |
| 0,056 | 2060 | 4120 | 7500 | 25 | 48 | 68 | 105 | 60 | 6 | 4,4 | 0,0069 | 0,04 |
| 0,088 | 3120 | 6240 | 6530 | 30 | 58 | 81 | 117 | 70 | 6 | 5,7 | 0,0111 | 0,04 |
| 0,14 | 5050 | 10100 | 5570 | 32 | 69 | 97 | 133 | 80 | 8 | 8,3 | 0,0212 | 0,06 |
| 0,22 | 7550 | 15100 | 4890 | 40 | 80 | 112 | 148 | 90 | 8 | 11,5 | 0,0368 | 0,09 |
| 0,35 | 11850 | 23700 | 4210 | 45 | 95 | 133 | 171 | 100 | 8 | 16,6 | 0,0719 | 0,10 |
| 0,56 | 17800 | 35600 | 3680 | 50 | 109 | 152 | 193 | 120 | 10 | 24,7 | 0,135 | 0,16 |
| 0,88 | 24000 | 48000 | 3190 | 60 | 127 | 178 | 218 | 140 | 10 | 36,2 | 0,256 | 0,19 |
| 1,4 | 36000 | 72000 | 2770 | 70 | 146 | 205 | 253 | 160 | 10 | 56 | 0,530 | 0,37 |
| 2,2 | 54000 | 108000 | 2430 | 80 | 168 | 235 | 283 | 175 | 12 | 76 | 0,920 | 0,46 |
| 3,5 | 81000 | 162000 | 2100 | 90 | 192 | 269 | 332 | 200 | 12 | 121 | 1,99 | 0,88 |
| 5,6 | 123000 | 246000 | 1800 | 100 | 227 | 318 | 383 | 225 | 12 | 181 | 4,02 | 1,2 |
| 7 | 160000 | 320000 | 1680 | 110 | 244 | 342 | 407 | 250 | 12 | 221 | 5,68 | 1,5 |
| 8,8 | 192000 | 384000 | 1590 | 120 | 255 | 358 | 436 | 280 | 16 | 290 | 8,25 | 2,1 |
| 11 | 235000 | 470000 | 1470 | 130 | 278 | 389 | 466 | 300 | 16 | 352 | 11,6 | 2,4 |
| 14 | 290000 | 580000 | 1370 | 140 | 299 | 419 | 496 | 320 | 16 | 429 | 16,1 | 2,7 |
| 17,5 | 380000 | 760000 | 1260 | 150 | 325 | 455 | 539 | 340 | 16 | 539 | 23,9 | 3,7 |
| 22 | 480000 | 960000 | 1170 | 170 | 351 | 492 | 575 | 360 | 16 | 744 | 33,3 | 4,3 |
| 28 | 610000 | 1220000 | 1080 | 180 | 371 | 520 | 629 | 380 | 20 | 820 | 48,7 | 6,5 |
| 35 | 760000 | 1520000 | 1010 | | 400 | 561 | 675 | 400 | 20 | 985 | 65,7 | 7,4 |
| 44 | 920000 | 1840000 | 945 | | 429 | 601 | 715 | 420 | 20 | 1171 | 97,4 | 9,3 |
| 56 | 1150000 | 2300000 | 880 | | 464 | 650 | 775 | 440 | 20 | 1457 | 150 | 12 |
| 70 | 1450000 | 2900000 | 805 | | 510 | 714 | 839 | 470 | 30 | 1817 | 210 | 14 |
| 88 | 1800000 | 3600000 | 755 | | 545 | 763 | 887 | 500 | 30 | 2164 | 275 | 15,5 |

*Larger couplings, higher rotational speeds and intermediate sizes on request.*

*Torsion spring stiffness* *see page 14*

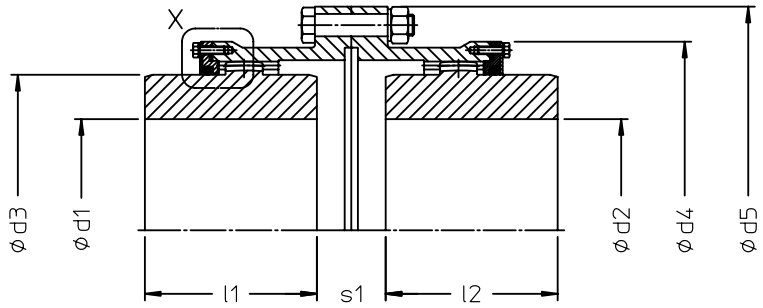
*Maximum permissible misalignments* *see page 15*

*(1) The torques stated do not refer to the connection of shaft and hub. If necessary these must be checked.*

*(2) Balancing to order.*

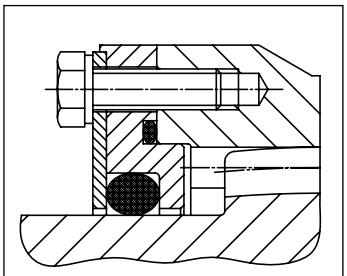
*(3) The values specified for the bores are valid according to DIN6885-1 (see page 6).*

*(4) With reference to the max. finished bore*

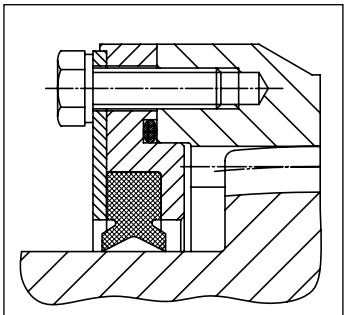



| Size | Torque (1) [Nm] | | Speed (2) [rpm] | Bore (3) [mm] | | Dimensions [mm] | | | | | Weight (4) [kg] | Mass moment of inertia (4) | Lubricant quantity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $T_{KN}$ | $T_{K\,max}$ | n max | d1,2 min | d1,2 max | d3 | d4 | d5 | l1, l2 | s1 | G | I [kgm²] | [dm³] |
| 0,056 | 2060 | 4120 | 7500 | 25 | 48 | 68 | 105 | 132 | 60 | 46 | 5,9 | 0,012 | 0,15 |
| 0,088 | 3120 | 6240 | 6530 | 30 | 58 | 81 | 117 | 144 | 70 | 52 | 7,5 | 0,018 | 0,19 |
| 0,14 | 5050 | 10100 | 5570 | 32 | 69 | 97 | 133 | 160 | 80 | 50 | 10,2 | 0,031 | 0,23 |
| 0,22 | 7550 | 15100 | 4890 | 40 | 80 | 112 | 148 | 177 | 90 | 48 | 13,6 | 0,050 | 0,28 |
| 0,35 | 11850 | 23700 | 4210 | 45 | 95 | 133 | 171 | 208 | 100 | 51 | 20,5 | 0,105 | 0,33 |
| 0,56 | 17800 | 35600 | 3680 | 50 | 109 | 152 | 193 | 230 | 120 | 60 | 28,9 | 0,181 | 0,52 |
| 0,88 | 24000 | 48000 | 3190 | 60 | 127 | 178 | 218 | 262 | 140 | 68 | 43,3 | 0,354 | 0,66 |
| 1,4 | 36000 | 72000 | 2770 | 70 | 146 | 205 | 253 | 306 | 160 | 88 | 69,1 | 0,770 | 1,1 |
| 2,2 | 54000 | 108000 | 2430 | 80 | 168 | 235 | 283 | 338 | 175 | 92 | 91,8 | 1,27 | 1,4 |
| 3,5 | 81000 | 162000 | 2100 | 90 | 192 | 269 | 332 | 383 | 200 | 110 | 139 | 2,53 | 2,5 |
| 5,6 | 123000 | 246000 | 1800 | 100 | 227 | 318 | 383 | 448 | 225 | 116 | 208 | 5,12 | 3,2 |
| 7 | 160000 | 320000 | 1680 | 110 | 244 | 342 | 407 | 474 | 250 | 120 | 256 | 7,07 | 3,8 |
| 8,8 | 192000 | 384000 | 1590 | 120 | 255 | 358 | 436 | 500 | 280 | 124 | 326 | 9,80 | 5,1 |
| 11 | 235000 | 470000 | 1470 | 130 | 278 | 389 | 466 | 545 | 300 | 138 | 400 | 14,4 | 6,0 |
| 14 | 290000 | 580000 | 1370 | 140 | 299 | 419 | 496 | 576 | 320 | 153 | 480 | 19,5 | 7,0 |
| 17,5 | 380000 | 760000 | 1260 | 150 | 325 | 455 | 539 | 621 | 340 | 147 | 596 | 28,4 | 9,1 |
| 22 | 480000 | 960000 | 1170 | 170 | 351 | 492 | 575 | 683 | 360 | 148 | 755 | 42,9 | 10 |
| 28 | 610000 | 1220000 | 1080 | 180 | 371 | 520 | 629 | 732 | 380 | 167 | 926 | 60,4 | 16,5 |
| 35 | 760000 | 1520000 | 1010 | | 400 | 561 | 675 | 777 | 400 | 60 | 1107 | 84,3 | 16 |
| 44 | 920000 | 1840000 | 45 | | 429 | 601 | 715 | 817 | 420 | 60 | 1300 | 113 | 19 |
| 56 | 1150000 | 2300000 | 880 | | 464 | 650 | 775 | 894 | 440 | 60 | 1642 | 179 | 22,5 |
| 70 | 1450000 | 2900000 | 805 | | 510 | 714 | 839 | 962 | 470 | 70 | 2027 | 250 | 25 |
| 88 | 1800000 | 3600000 | 755 | | 545 | 763 | 887 | 1013 | 500 | 70 | 2395 | 316 | 27 |
| 110 | 2200000 | 4400000 | 705 | | 580 | 813 | 965 | 1104 | 540 | 70 | 3043 | 468 | 35,5 |
| 140 | 2800000 | 5600000 | 650 | | 631 | 884 | 1036 | 1177 | 570 | 80 | 3690 | 778 | 40 |
| 175 | 3500000 | 7000000 | 605 | | 681 | 954 | 1106 | 1252 | 600 | 90 | 4410 | 911 | 44,5 |
| 220 | 4400000 | 8800000 | 560 | | 739 | 1035 | 1185 | 1337 | 650 | 90 | 5438 | 1280 | 49 |
| 280 | 5500000 | 11000000 | 515 | | 803 | 1125 | 1288 | 1433 | 700 | 95 | 6784 | 1840 | 56 |
| 350 | 7000000 | 14000000 | 460 | | 896 | 1255 | 1448 | 1590 | 750 | 105 | 9040 | 3040 | 80 |
| 440 | 8800000 | 17600000 | 440 | | 942 | 1320 | 1531 | 1670 | 800 | 105 | 10600 | 3930 | 95 |
| 560 | 11000000 | 22000000 | 400 | | 1035 | 1450 | 1666 | 1815 | 850 | 120 | 13400 | 5920 | 110 |

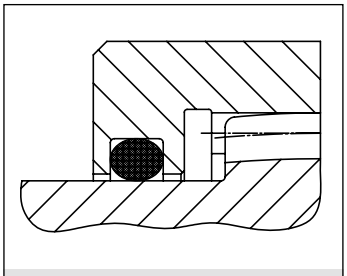
Detail "X"



Standard design



With profile seal



One-piece cover / housing

*Larger couplings, higher rotational speeds and intermediate sizes on request.*

*Torsion spring stiffness* *see page 14*

*Maximum permissible misalignments* *see page 15*

*(1) The torques stated do not refer to the connection of shaft and hub. If necessary these must be checked.*

*(2) Balancing to order.*

*(3) The values specified for the bores are valid according to DIN6885-1 (see page 6).*

*(4) With reference to the max. finished bore*

# Dimension sheet 710-52 / GLXz Standard

Detail “X” see page 9

*Larger couplings, higher rotational speeds and intermediate sizes on request.*

*Torsion spring stiffness see page 14*

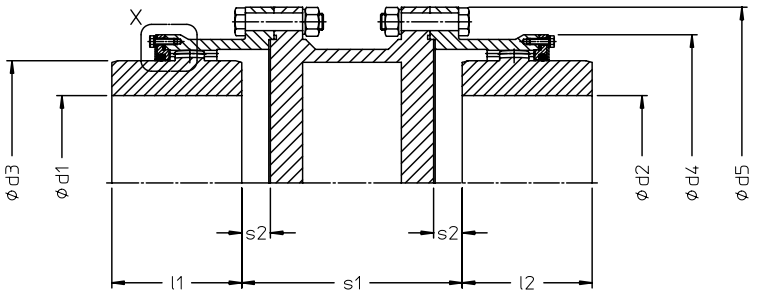
*Maximum permissible misalignments see page 15*

*(1) The torques stated do not refer to the connection of shaft and hub. If necessary these must be checked.*

*(2) Balancing to order.*

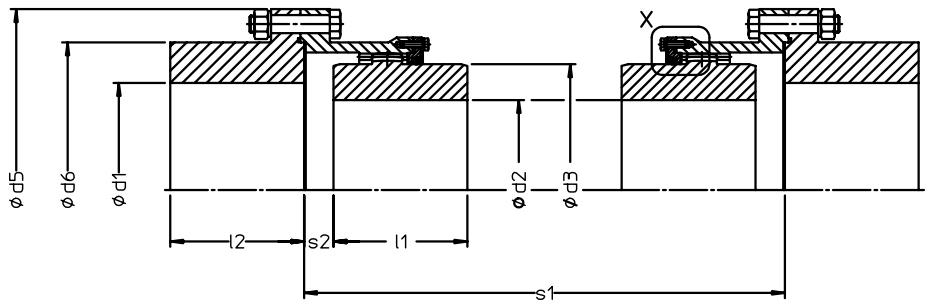
*(3) The values specified for the bores are valid according to DIN6885-1 (see page 6).*

*(4) With reference to the max. finished bore*




| Size | Torque (1) [Nm] | | Speed (2) [rpm] | Bore (3) [mm] | | Dimensions [mm] | | | | | | Weight (4) [kg] | | | Mass moment of inertia (4) [kgm²] | | | Lubricant quantity / coupling half |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $T_{KN}$ | $T_{K\,max}$ | n max | d1,2 min | d1,2 max | d3 | d4 | d5 | l1, l2 | s1 min | s2 | G | ZwH (5) | Tube 100 mm | I | ZwH (5) | Tube 100 mm | [dm³] |
| 0,056 | 2060 | 4120 | Function of critical rotational speed and/or length of the intermediate sleeve / on request | 25 | 48 | 68 | 105 | 132 | 60 | 140 | 20 | 5,9 | 4,5 | 1,3 | 0,012 | 0,009 | 0,002 | 0,08 |
| 0,088 | 3120 | 6240 | | 30 | 58 | 81 | 117 | 144 | 70 | 146 | 23 | 7,5 | 5,4 | 1,5 | 0,018 | 0,013 | 0,003 | 0,10 |
| 0,14 | 5050 | 10100 | | 32 | 69 | 97 | 133 | 160 | 80 | 144 | 22 | 10,2 | 6,9 | 2,1 | 0,031 | 0,021 | 0,006 | 0,12 |
| 0,22 | 7550 | 15100 | | 40 | 80 | 112 | 148 | 177 | 90 | 142 | 21 | 13,6 | 8,5 | 2,7 | 0,050 | 0,033 | 0,010 | 0,14 |
| 0,35 | 11850 | 23700 | | 45 | 95 | 133 | 171 | 208 | 100 | 163 | 22 | 20,5 | 13,7 | 3,5 | 0,105 | 0,070 | 0,018 | 0,17 |
| 0,56 | 17800 | 35600 | | 50 | 109 | 152 | 193 | 230 | 120 | 172 | 27 | 28,9 | 16,9 | 4,5 | 0,181 | 0,108 | 0,032 | 0,26 |
| 0,88 | 24000 | 48000 | | 60 | 127 | 178 | 218 | 262 | 140 | 199 | 31 | 43,3 | 25,4 | 5,6 | 0,354 | 0,212 | 0,046 | 0,33 |
| 1,4 | 36000 | 72000 | | 70 | 146 | 205 | 253 | 306 | 160 | 248 | 40 | 69,1 | 41,7 | 7,2 | 0,77 | 0,48 | 0,076 | 0,55 |
| 2,2 | 54000 | 108000 | | 80 | 168 | 235 | 283 | 338 | 175 | 252 | 42 | 91,8 | 51,9 | 8,9 | 1,27 | 0,75 | 0,14 | 0,70 |
| 3,5 | 81000 | 162000 | | 90 | 192 | 269 | 332 | 383 | 200 | 270 | 51 | 139 | 67,5 | 12,1 | 2,53 | 1,23 | 0,24 | 1,25 |
| 5,6 | 123000 | 246000 | | 100 | 227 | 318 | 383 | 448 | 225 | 307 | 54 | 208 | 108 | 16,6 | 5,12 | 2,76 | 0,47 | 1,6 |
| 7 | 160000 | 320000 | | 110 | 244 | 342 | 407 | 474 | 250 | 311 | 56 | 256 | 125 | 21,3 | 7,07 | 3,61 | 0,63 | 1,9 |
| 8,8 | 192000 | 384000 | | 120 | 255 | 358 | 436 | 500 | 280 | 315 | 58 | 326 | 136 | 21,0 | 9,80 | 4,30 | 0,78 | 2,6 |
| 11 | 235000 | 470000 | | 130 | 278 | 389 | 466 | 545 | 300 | 358 | 64 | 400 | 183 | 24,5 | 14,4 | 6,5 | 0,95 | 3,0 |
| 14 | 290000 | 580000 | | 140 | 299 | 419 | 496 | 576 | 320 | 373 | 71 | 480 | 209 | 29,6 | 19,5 | 8,7 | 1,4 | 3,5 |
| 17,5 | 380000 | 760000 | | 150 | 325 | 455 | 539 | 621 | 340 | 367 | 68 | 596 | 241 | 33,1 | 28,4 | 11,8 | 1,9 | 4,6 |
| 22 | 480000 | 960000 | | 170 | 351 | 492 | 575 | 683 | 360 | 429 | 69 | 755 | 370 | 38,6 | 42,9 | 21,6 | 2,3 | 5,0 |
| 28 | 610000 | 1220000 | | 180 | 371 | 520 | 629 | 732 | 380 | 448 | 78 | 926 | 429 | 46,4 | 60,4 | 28,0 | 3,2 | 8,3 |
| 35 | 760000 | 1520000 | | | 400 | 561 | 675 | 777 | 400 | | 24 | 1107 | | | 84,3 | | | 8,0 |
| 44 | 920000 | 1840000 | | | 429 | 601 | 715 | 817 | 420 | | 24 | 1300 | | | 113 | | | 9,5 |
| 56 | 1150000 | 2300000 | | | 464 | 650 | 775 | 894 | 440 | | 24 | 1642 | | | 179 | | | 11,5 |
| 70 | 1450000 | 2900000 | | | 510 | 714 | 839 | 962 | 470 | | 29 | 2027 | | | 250 | | | 12,5 |
| 88 | 1800000 | 3600000 | | | 545 | 763 | 887 | 1013 | 500 | | 29 | 2395 | | | 316 | | | 13,5 |
| 110 | 2200000 | 4400000 | | | 580 | 813 | 965 | 1104 | 540 | on request | 27 | 3043 | on request | on request | 468 | on request | on request | 18 |
| 140 | 2800000 | 5600000 | | | 631 | 884 | 1036 | 1177 | 570 | | 32 | 3690 | | | 778 | | | 20 |
| 175 | 3500000 | 7000000 | | | 681 | 954 | 1106 | 1252 | 600 | | 37 | 4410 | | | 911 | | | 22 |
| 220 | 4400000 | 8800000 | | | 739 | 1035 | 1185 | 1337 | 650 | | 37 | 5438 | | | 1280 | | | 25 |
| 280 | 5500000 | 11000000 | | | 803 | 1125 | 1288 | 1433 | 700 | | 39 | 6784 | | | 1840 | | | 28 |
| 350 | 7000000 | 14000000 | | | 896 | 1255 | 1448 | 1590 | 750 | | 42 | 9040 | | | 3040 | | | 40 |
| 440 | 8800000 | 17600000 | | | 942 | 1320 | 1531 | 1670 | 800 | | 42 | 10600 | | | 3930 | | | 48 |
| 560 | 11000000 | 22000000 | | | 1035 | 1450 | 1666 | 1815 | 850 | | 50 | 13400 | | | 5920 | | | 55 |

# Dimension sheet 710-53 / GLXw Standard




Coupling 1 Intermediate shaft Coupling 2

Detail "X" see page 9

*Larger couplings, higher rotational speeds and intermediate sizes on request.*

*Torsion spring stiffness see page 14*

*Maximum permissible misalignments see page 15*

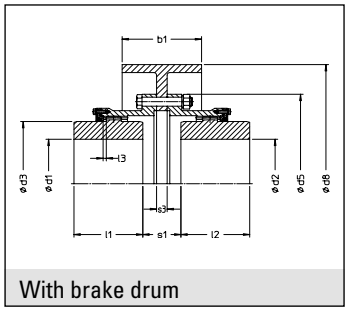
*(1) The torques stated do not refer to the connection of shaft and hub. If necessary these must be checked.*

*(2) Balancing to order.*

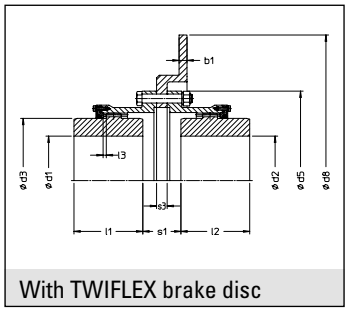
*(3) The values specified for the bores are valid according to DIN6885-1 (see page 6).*

*(4) With reference to the max. finished bore*

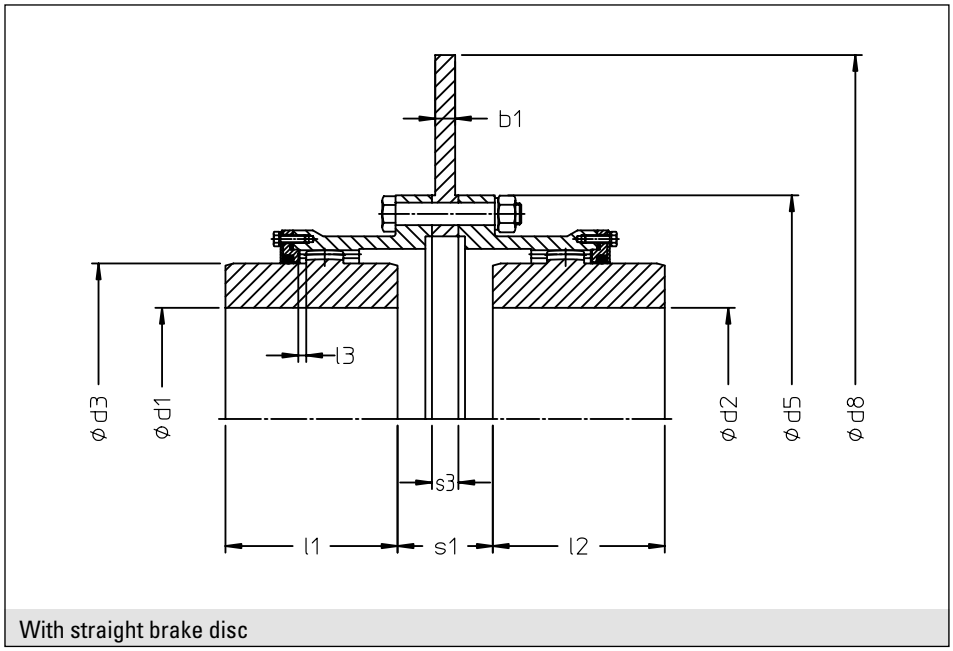
| Size | Torque (1) [Nm] | | Speed (2) [rpm] | Bore (3) [mm] | | | Dimensions [mm] | | | | | | Weight (4) [kg] | Mass moment of inertia (4) [kgm²] | Lubricant quantity / coupling half |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $T_{KN}$ | $T_{K\,max}$ | n max | d1,2 min | d1 max | d2 max | d3 | d5 | d6 | l1, l2 | s1 min | s2 | G | I | [dm³] |
| 0,056 | 2060 | 4120 | Function of critical rotational speed and/or length of the intermediate shaft / on request | 25 | 67 | 48 | 68 | 132 | 95 | 60 | 190 | 20 | 5,5 | 0,012 | 0,08 |
| 0,088 | 3120 | 6240 | | 30 | 76 | 58 | 81 | 144 | 107 | 70 | 206 | 23 | 7,1 | 0,018 | 0,10 |
| 0,14 | 5050 | 10100 | | 32 | 87 | 69 | 97 | 160 | 123 | 80 | 224 | 22 | 10,0 | 0,031 | 0,12 |
| 0,22 | 7550 | 15100 | | 40 | 100 | 80 | 112 | 177 | 140 | 90 | 242 | 21 | 13,3 | 0,052 | 0,14 |
| 0,35 | 11850 | 23700 | | 45 | 115 | 95 | 133 | 208 | 162 | 100 | 265 | 22 | 20,3 | 0,110 | 0,17 |
| 0,56 | 17800 | 35600 | | 50 | 131 | 109 | 152 | 230 | 184 | 120 | 294 | 27 | 29,0 | 0,193 | 0,26 |
| 0,88 | 24000 | 48000 | | 60 | 150 | 127 | 178 | 262 | 211 | 140 | 322 | 31 | 44 | 0,38 | 0,33 |
| 1,4 | 36000 | 72000 | | 70 | 174 | 146 | 205 | 306 | 244 | 160 | 380 | 40 | 69 | 0,82 | 0,55 |
| 2,2 | 54000 | 108000 | | 80 | 197 | 168 | 235 | 338 | 276 | 175 | 404 | 42 | 93 | 1,37 | 0,70 |
| 3,5 | 81000 | 162000 | | 90 | 228 | 192 | 269 | 383 | 320 | 200 | 492 | 51 | 140 | 2,70 | 1,25 |
| 5,6 | 123000 | 246000 | | 100 | 262 | 227 | 318 | 448 | 368 | 225 | 558 | 54 | 210 | 5,48 | 1,6 |
| 7 | 160000 | 320000 | | 110 | 281 | 244 | 342 | 474 | 394 | 250 | 602 | 56 | 260 | 7,64 | 1,9 |
| 8,8 | 192000 | 384000 | | 120 | 300 | 255 | 358 | 500 | 420 | 280 | 646 | 58 | 324 | 10,66 | 2,6 |
| 11 | 235000 | 470000 | | 130 | 321 | 278 | 389 | 545 | 450 | 300 | 678 | 64 | 406 | 15,62 | 3,0 |
| 14 | 290000 | 580000 | | 140 | 343 | 299 | 419 | 576 | 481 | 320 | 713 | 71 | 488 | 21,2 | 3,5 |
| 17,5 | 380000 | 760000 | | 150 | 375 | 325 | 455 | 621 | 526 | 340 | 747 | 68 | 609 | 31,2 | 4,6 |
| 22 | 480000 | 960000 | | 170 | 403 | 351 | 492 | 683 | 565 | 360 | 798 | 69 | 770 | 46,8 | 5,0 |
| 28 | 610000 | 1220000 | | 180 | 438 | 371 | 520 | 732 | 614 | 380 | 857 | 78 | 945 | 66,5 | 8,3 |
| 35 | 760000 | 1520000 | | | 470 | 400 | 561 | 777 | 660 | 400 | | 24 | | | 8,0 |
| 44 | 920000 | 1840000 | | | 499 | 429 | 601 | 817 | 700 | 420 | | 24 | | | 9,5 |
| 56 | 1150000 | 2300000 | | | 535 | 464 | 650 | 894 | 751 | 440 | | 24 | | | 11,5 |
| 70 | 1450000 | 2900000 | | | 584 | 510 | 714 | 962 | 819 | 470 | | 29 | | | 12,5 |
| 88 | 1800000 | 3600000 | | | 620 | 545 | 763 | 1013 | 870 | 500 | | 29 | | | 13,5 |
| 110 | 2200000 | 4400000 | | | 670 | 580 | 813 | 1104 | 939 | 540 | on request | 27 | on request | on request | 18 |
| 140 | 2800000 | 5600000 | | | 722 | 631 | 884 | 1177 | 1012 | 570 | | 32 | | | 20 |
| 175 | 3500000 | 7000000 | | | 775 | 681 | 954 | 1252 | 1087 | 600 | | 37 | | | 22 |
| 220 | 4400000 | 8800000 | | | 836 | 739 | 1035 | 1337 | 1172 | 650 | | 37 | | | 25 |
| 280 | 5500000 | 11000000 | | | 905 | 803 | 1125 | 1433 | 1268 | 700 | | 39 | | | 28 |
| 350 | 7000000 | 14000000 | | | 1012 | 896 | 1255 | 1590 | 1418 | 750 | | 42 | | | 40 |
| 440 | 8800000 | 17600000 | | | 1068 | 942 | 1320 | 1670 | 1496 | 800 | | 42 | | | 48 |
| 560 | 11000000 | 22000000 | | | 1168 | 1035 | 1450 | 1815 | 1635 | 850 | | 50 | | | 55 |




With brake drum




With TWIFLEX brake disc




With straight brake disc

*Larger couplings, higher rotational speeds and intermediate sizes on request.*

*(1) The torques stated do not refer to the connection of shaft and hub. If necessary these must be checked.*

*(2) Balancing to order.*

*(3) The values specified for the bores are valid according to DIN6885-1 (see page 6).*

*(4) With reference to the max. finished bore without brake disc/brake drum*

Max. permissible misalignment 0.25° per toothing plane.

Brake discs/brake drums can also be supplied in conjunction with all other coupling designs.

| Size | Torque (1) [Nm] | | Speed (2) [rpm] | Bore (3) [mm] | | Dimensions [mm] | | | | | Weight (4) | Mass moment of inertia (4) | Lubricant quantity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $T_{KN}$ | $T_{K\,max}$ | n max | d1,2 min | d1,2 max | d3 | l4 | d5 | l1, l2 | s1 | G [kg] | I [kgm²] | [dm³] |
| 0,056 | 2060 | 4120 | 7500 | 25 | 48 | 68 | 2 | 132 | 60 | 46 +s3 | 5,9 | 0,0120 | 0,15 |
| 0,088 | 3120 | 6240 | 6530 | 30 | 58 | 81 | 2 | 144 | 70 | 52 +s3 | 7,5 | 0,0181 | 0,19 |
| 0,14 | 5050 | 10100 | 5570 | 32 | 69 | 97 | 2 | 160 | 80 | 50 +s3 | 10,2 | 0,0305 | 0,23 |
| 0,22 | 7550 | 15100 | 4890 | 40 | 80 | 112 | 2 | 177 | 90 | 48 +s3 | 13,6 | 0,050 | 0,28 |
| 0,35 | 11850 | 23700 | 4210 | 45 | 95 | 133 | 2 | 208 | 100 | 51 +s3 | 20,5 | 0,105 | 0,33 |
| 0,56 | 17800 | 35600 | 3680 | 50 | 109 | 152 | 2 | 230 | 120 | 60 +s3 | 28,9 | 0,181 | 0,52 |
| 0,88 | 24000 | 48000 | 3190 | 60 | 127 | 178 | 3 | 262 | 140 | 68 +s3 | 43,3 | 0,354 | 0,66 |
| 1,4 | 36000 | 72000 | 2770 | 70 | 146 | 205 | 3 | 306 | 160 | 88 +s3 | 69,1 | 0,770 | 1,1 |
| 2,2 | 54000 | 108000 | 2430 | 80 | 168 | 235 | 3 | 338 | 175 | 92 +s3 | 91,8 | 1,27 | 1,4 |
| 3,5 | 81000 | 162000 | 2100 | 90 | 192 | 269 | 3 | 383 | 200 | 110 +s3 | 139 | 2,53 | 2,5 |
| 5,6 | 123000 | 246000 | 1800 | 100 | 227 | 318 | 4 | 448 | 225 | 116 +s3 | 208 | 5,12 | 3,2 |
| 7 | 160000 | 320000 | 1680 | 110 | 244 | 342 | 4 | 474 | 250 | 120 +s3 | 256 | 7,07 | 3,8 |
| 8,8 | 192000 | 384000 | 1590 | 120 | 255 | 358 | 4 | 500 | 280 | 124 +s3 | 326 | 9,80 | 5,1 |

Recommended assignment of straight brake disc.

| | d8 [mm] | 355 | 400 | 450 | 500 | 560 | 630 | 710 | 800 | 900 | 1000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | b1 [mm] | | | | | 30 | | | | | |
| | s3 [mm] | | | | | 30 | | | | | |
| | Weight [kg] | 21,2 | 26,8 | 33,8 | 41,4 | 49,8 | 62,4 | 74,3 | 93,3 | 121 | 152 |
| | Mass moment of inertia [kgm²] | 0,36 | 0,59 | 0,94 | 1,43 | 2,23 | 3,56 | 5,63 | 9,04 | 14,6 | 22,4 |
| Size | 0,056 | X | | | | | | | | | |
| | 0,088 | X | X | | | | | | | | |
| | 0,14 | | X | X | | | | | | | |
| | 0,22 | | X | X | X | | | | | | |
| | 0,35 | | | X | X | X | | | | | |
| | 0,56 | | | X | X | X | | | | | |
| | 0,88 | | | | X | X | X | | | | |
| | 1,4 | | | | | X | X | X | | | |
| | 2,2 | | | | | | X | X | X | | |
| | 3,5 | | | | | | X | X | X | X | X |
| | 5,6 - 8,8 | | | | | | | X | X | X | X |

Recommended assignment of TWIFLEX brake disc.

| | d8 [mm] | 300 | 350 | 400 | 460 | 515 | 610 | 710 | 810 | 915 |
|---|---|---|---|---|---|---|---|---|---|---|
| | b1 [mm] | | | | | 12,7 | | | | |
| | s3 [mm] | 13 | 16 | 13 | 16 | 16 | 16 | 19 | 25 | 25 |
| | Weight [kg] | 21,2 | 26,8 | 33,8 | 41,4 | 49,8 | 62,4 | 74,3 | 93,3 | 1212 |
| | Mass moment of inertia [kgm²] | 0,10 | 0,20 | 0,29 | 0,48 | 0,76 | 1,47 | 2,7 | 5,9 | 10,5 |
| Size | 0,056 | X | | | | | | | | |
| | 0,088 | X | X | | | | | | | |
| | 0,14 | | X | X | | | | | | |
| | 0,22 | | X | X | X | | | | | |
| | 0,35 | | | X | X | X | | | | |
| | 0,56 | | | X | X | X | | | | |
| | 0,88 | | | | X | X | X | | | |
| | 1,4 | | | | | X | X | X | | |
| | 2,2 | | | | | | X | X | X | |
| | 3,5 | | | | | | X | X | X | X |
| | 5,6 - 8,8 | | | | | | | X | X | X |

Recommended assignment of brake drum.

| | d8 [mm] | 200 | 250 | 315 | 400 | 500 | 630 | 710 |
|---|---|---|---|---|---|---|---|---|
| | b1 [mm] | 75 | 95 | 118 | 150 | 190 | 236 | 265 |
| | s3 [mm] | 8 | 10 | 12 | 14 | 18 | 22 | 25 |
| | Weight [kg] | 3,8 | 7,3 | 13,6 | 25,3 | 49,4 | 101 | 152 |
| | Mass moment of inertia [kgm²] | 0,032 | 0,097 | 0,291 | 0,889 | 2,75 | 8,7 | 16,2 |
| Size | 0,056 | X | X | | | | | |
| | 0,088 | X | X | X | | | | |
| | 0,14 | X | X | X | | | | |
| | 0,22 | | X | X | X | | | |
| | 0,35 | | X | X | X | | | |
| | 0,56 | | | X | X | X | | |
| | 0,88 | | | X | X | X | | |
| | 1,4 | | | | X | X | X | |
| | 2,2 | | | | X | X | X | X |
| | 3,5 + 5,6 | | | | | X | X | X |
| | 7 + 8,8 | | | | | | X | X |

# Torsion spring stiffness

*The torsion spring stiffness "c" is specified for max. bore diameters d1max, d2 max.*

*Torsion spring stiffness for larger couplings and special designs on request.*

*(1) For coupling and intermediate tube with the minimum separation distance s1 min.*

*For longer couplings the torsion spring stiffness "cv" is specified for each 100 mm tube length.*

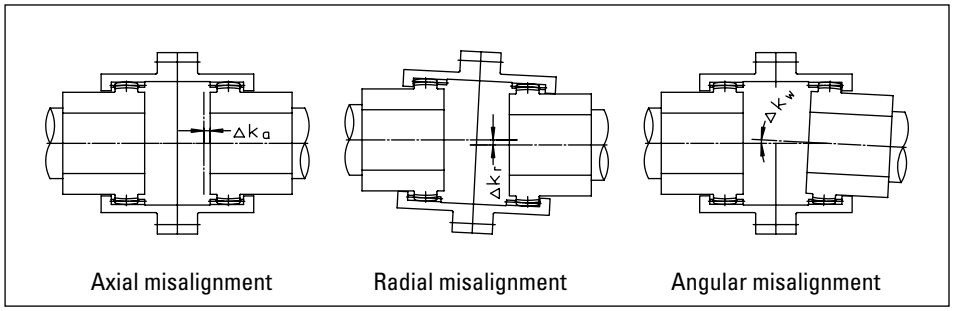
*(2) For 1x coupling without intermediate shaft*

| Size | Design | | | | |
|---|---|---|---|---|---|
| | LX | GLX | GLXz (1) | | GLXw (2) |
| | c | c | Coupling c | 100 mm tube cv | c |
| | [Nm/rad] | | | | |
| 0,056 | 2,17 x $10^6$ | 1,65 x $10^6$ | 1,12 x $10^6$ | 2,24 x $10^6$ | 2,77 x $10^6$ |
| 0,088 | 3,58 x $110^6$ | 2,52 x $10^6$ | 1,71 x $10^6$ | 3,44 x $10^6$ | 4,17 x $10^6$ |
| 0,14 | 5,94 x $10^6$ | 4,13 x $10^6$ | 2,86 x $10^6$ | 6,07 x $10^6$ | 6,66 x $10^6$ |
| 0,22 | 8,66 x $10^6$ | 6,37 x $10^6$ | 4,57 x $10^6$ | 10,65 x $10^6$ | 10,08 x $10^6$ |
| 0,35 | 14,67 x $10^6$ | 11,05 x $10^6$ | 7,31 x $10^6$ | 18,23 x $10^6$ | 17,24 x $10^6$ |
| 0,56 | 21,69 x $10^6$ | 15,30 x $10^6$ | 11,10 x $10^6$ | 32,21 x $10^6$ | 24,11 x $10^6$ |
| 0,88 | 34,29 x $10^6$ | 24,77 x $10^6$ | 16,66 x $10^6$ | 46,95 x $10^6$ | 38,87 x $10^6$ |
| 1,4 | 54,60 x $10^6$ | 37,52 x $10^6$ | 24,31 x $10^6$ | 77,12 x $10^6$ | 59,68 x $10^6$ |
| 2,2 | 80,67 x $10^6$ | 57,18 x $10^6$ | 39,48 x $10^6$ | 144,6 x $10^6$ | 90,34 x $10^6$ |
| 3,5 | 124,4 x $10^6$ | 79,13 x $10^6$ | 57,92 x $10^6$ | 244,9 x $10^6$ | 125,9 x $10^6$ |
| 5,6 | 193,6 x $10^6$ | 120,3 x $10^6$ | 89,40 x $10^6$ | 476,7 x $10^6$ | 190,8 x $10^6$ |
| 7 | 225,2 x $10^6$ | 144,8 x $10^6$ | 110,2 x $10^6$ | 637,2 x $10^6$ | 228,2 x $10^6$ |
| 8,8 | 265,1 x $10^6$ | 173,6 x $10^6$ | 133,4 x $10^6$ | 793,7 x $10^6$ | 271,9 x $10^6$ |
| 11 | 331,9 x $10^6$ | 213,1 x $10^6$ | 158,2 x $10^6$ | 964,6 x $10^6$ | 337,5 x $10^6$ |
| 14 | 415,6 x $10^6$ | 255,2 x $10^6$ | 197,7 x $10^6$ | 1397 x $10^6$ | 407,3 x $10^6$ |
| 17,5 | 526,8 x $10^6$ | 344,6 x $10^6$ | 269,0 x $10^6$ | 1952 x $10^6$ | 547,0 x $10^6$ |
| 22 | 632,8 x $10^6$ | 461,2 x $10^6$ | 332,0 x $10^6$ | 2361 x $10^6$ | 724,4 x $10^6$ |
| 28 | 839,1 x $10^6$ | 577,3 x $10^6$ | 426,0 x $10^6$ | 3247 x $10^6$ | 912,2 x $10^6$ |

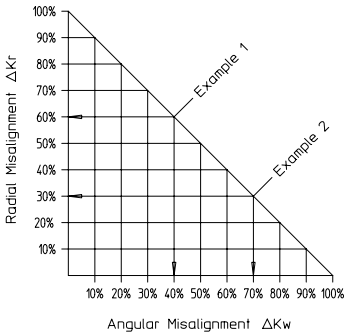
Example:
Design GLXz 3,5 with s1 = s1min + 700 mm

$$c_{tot} = \frac{1}{\frac{1}{c_{GLXz}} + \left[\frac{700}{100 \times c_v}\right]} = \frac{1}{\frac{1}{57{,}92 \times 10^6} + \left[\frac{700}{244{,}9 \times 10^6}\right]} = 21{,}81 \times 10^6 \text{ Nm / rad}$$

# Max. permissible misalignments for LX / GLX




Axial misalignment | Radial misalignment | Angular misalignment




For standard Gear-Couplings the misalignment can be up to ± 0.75° per toothing plane. The misalignment values specified are maximum values that cannot be allowed to occur at the same time.

Where there is simultaneous radial misalignment ΔKr and angular misalignment ΔKw these values must be reduced in accordance with the diagram.

*Example 1:*
*ΔKr = 60%* *ΔKw = 40%*

*Example 2:*
*ΔKr = 30%* *ΔKw = 70%*

| Size | Design | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | LX | | | GLX | | | GLXz | | | | GLXw | | | |
| | | | | | | | for s1 min | | | per 100 mm tube | for s1 min | | | per 100 mm shaft |
| | ΔKa [mm] | ΔKr [mm] | ΔKw [°] | ΔKa [mm] | ΔKr [mm] | ΔKw [°] | ΔKa [mm] | ΔKr [mm] | ΔKw [°] | ΔKr [mm] | ΔKa [mm] | ΔKr [mm] | ΔKw [°] | ΔKr [mm] |
| 0,056 | ±1 | 0,45 | Max. permissible angular misalignment 0.75° | ±1 | 0,98 | Max. permissible angular misalignment 0.75° | ±1 | 2,21 | Max. permissible angular misalignment 0.75° | A lengthening by 100 mm provides an additional max. radial misalignment of ΔKr = 1.30 mm | ±1 | 1,58 | Max. permissible angular misalignment 0,75° | A lengthening by 100 mm provides an additional max. radial misalignment of ΔKr = 1.30 mm |
| 0,088 | ±1 | 0,45 | | ±1 | 1,06 | | ±1 | 2,29 | | | ±1 | 1,71 | | |
| 0,14 | ±2 | 0,53 | | ±2 | 1,08 | | ±2 | 2,31 | | | ±2 | 1,92 | | |
| 0,22 | ±2 | 0,65 | | ±2 | 1,17 | | ±2 | 2,40 | | | ±2 | 2,06 | | |
| 0,35 | ±2 | 0,68 | | ±2 | 1,24 | | ±2 | 2,70 | | | ±2 | 2,30 | | |
| 0,56 | ±2 | 0,78 | | ±2 | 1,44 | | ±2 | 2,90 | | | ±2 | 2,48 | | |
| 0,88 | ±2 | 0,85 | | ±2 | 1,61 | | ±2 | 3,32 | | | ±2 | 2,68 | | |
| 1,4 | ±2 | 1,02 | | ±2 | 2,04 | | ±2 | 4,13 | | | ±2 | 3,03 | | |
| 2,2 | ±3 | 1,04 | | ±3 | 2,12 | | ±3 | 4,21 | | | ±3 | 3,27 | | |
| 3,5 | ±3 | 1,33 | | ±3 | 2,64 | | ±3 | 4,73 | | | ±3 | 3,90 | | |
| 5,6 | ±3 | 1,54 | | ±3 | 2,90 | | ±3 | 5,40 | | | ±3 | 4,50 | | |
| 7 | ±3 | 1,70 | | ±3 | 3,11 | | ±3 | 5,61 | | | ±3 | 4,86 | | |
| 8,8 | ±3 | 1,91 | | ±3 | 3,32 | | ±3 | 5,82 | | | ±3 | 5,23 | | |
| 11 | ±3 | 2,02 | | ±3 | 3,62 | | ±3 | 6,50 | | | ±3 | 5,38 | | |
| 14 | ±3 | 2,14 | | ±3 | 3,91 | | ±3 | 6,79 | | | ±3 | 5,55 | | |
| 17,5 | ±3 | 2,30 | | ±3 | 4,01 | | ±3 | 6,89 | | | ±3 | 5,89 | | |
| 22 | ±3 | 2,48 | | ±3 | 4,21 | | ±3 | 7,89 | | | ±3 | 6,36 | | |
| 28 | ±4 | 2,61 | | ±4 | 4,54 | | ±4 | 8,22 | | | ±4 | 6,80 | | |
| 35 | ±4 | 2,74 | | ±4 | 4,58 | | ±4 | auf Anfrage | | | ±4 | auf Anfrage | | |
| 44 | ±4 | 3,07 | | ±4 | 4,97 | | ±4 | | | | ±4 | | | |
| 56 | ±4 | 3,45 | | ±4 | 5,44 | | ±4 | | | | ±4 | | | |
| 70 | ±4 | 3,63 | | ±4 | 5,49 | | ±4 | | | | ±4 | | | |
| 88 | ±4 | 3,82 | | ±4 | 5,62 | | ±4 | | | | ±4 | | | |

Max. permissible misalignments for larger couplings on request.

*Larger couplings, higher rotational speeds and intermediate sizes on request.*

*Maximum permissible misalignments see page 19*

*(1) The torques stated do not refer to the connection of shaft and hub. If necessary these must be checked.*

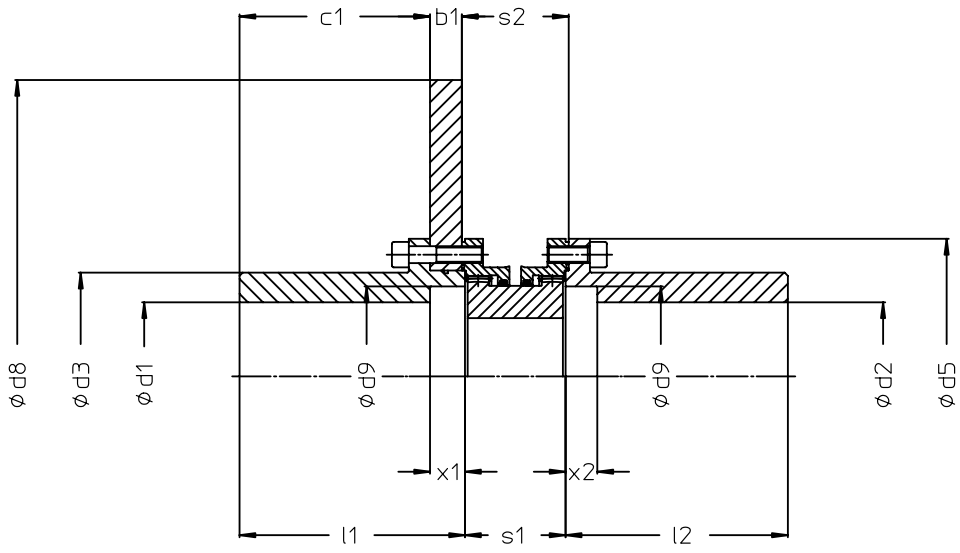
*(2) Balancing to order.*

*(3) The values specified for the bores are valid according to DIN6885-1 (see page 6).*

*(4) With reference to the max. finished bore*

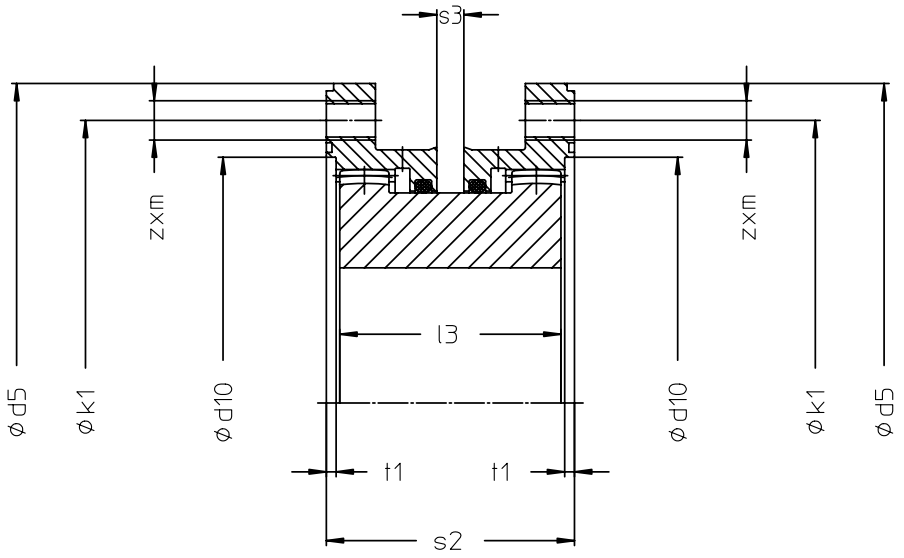
*Dimensions x1 and x2 according to customer requirements*

*(take care to ensure ease of assembly/ disassembly for the central part of the coupling)*




| Size d5 | Brake disc d8 x b1 | Torques (1) [Nm] | | Speed (2) [rpm] | Bore (3) [mm] | Dimensions | | | | | | | | Weight (4) | Mass moment of inertia (4) | Lubricant quantity / coupling half |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [mm] | [mm] | $T_{KN}$ | $T_{K\,max}$ | n max | d1,2 max | d3 [mm] | d9 [mm] | c1 [mm] | l1 [mm] | l2 [mm] | s1 [mm] | s2 [mm] | Ma [Nm] | G [kg] | I [kgm²] | [dm³] |
| | 355x30 | | | 4800 | | | | | | | | | | 35,4 | 0,40 | |
| 145 | 400x30 | 600 | 1800 | 4300 | 65 | 92 | 78 | 135 | 167 | 110 | 67 | 71 +2,5 | 85 | 41,7 | 0,62 | 0,021 |
| | 450x30 | | | 3800 | | | | | | | | | | 49,6 | 0,98 | |
| | 400x30 | | | 4300 | | | | | | | | | | 48,9 | 0,66 | |
| 170 | 450x30 | 950 | 2850 | 3800 | 80 | 117 | 98 | 135 | 167 | 140 | 67 | 71 +2,5 | 85 | 56,7 | 1,01 | 0,026 |
| | 500x30 | | | 3400 | | | | | | | | | | 65,5 | 1,51 | |
| | 450x30 | | | 3800 | | | | | | | | | | 69,6 | 1,10 | |
| 200 | 500x30 | 1650 | 4950 | 3400 | 95 | 138 | 115 | 175 | 208 | 171 | 75 | 81 +3 | 135 | 78,4 | 1,59 | 0,03 |
| | 560x30 | | | 3050 | | | | | | | | | | 90,1 | 2,42 | |
| | 500x30 | | | 3400 | | | | | | | | | | 87,9 | 1,73 | |
| 230 | 560x30 | 2580 | 7740 | 3050 | 120 | 168 | 145 | 175 | 208 | 170 | 80 | 86 +3,5 | 135 | 99,6 | 2,55 | 0,04 |
| | 630x30 | | | 2700 | | | | | | | | | | 115 | 3,92 | |
| | 560x30 | | | 3050 | | | | | | | | | | 121 | 2,83 | |
| 260 | 630x30 | 3980 | 11940 | 2700 | 140 | 196 | 170 | 180 | 213 | 210 | 95 | 101 +4 | 210 | 137 | 4,20 | 0,06 |
| | 710x30 | | | 2400 | | | | | | | | | | 157 | 6,43 | |
| | 630x30 | | | 2700 | | | | | | | | | | 164 | 4,68 | |
| 300 | 710x30 | 5850 | 17550 | 2400 | 154 | 216 | 180 | 180 | 213 | 210 | 112 | 118 +4 | 425 | 183 | 6,91 | 0,07 |
| | 800x30 | | | 2150 | | | | | | | | | | 209 | 10,5 | |
| | 800x30 | | | 2150 | | | | | | | | | | 269 | 11,9 | |
| 360 | 900x30 | 9700 | 29100 | 1900 | 184 | 258 | 215 | 220 | 253 | 250 | 124 | 130 +4 | 730 | 300 | 17,6 | 0,10 |
| | 1000x30 | | | 1700 | | | | | | | | | | 336 | 25,5 | |
| 400 | 900x30 | 13350 | 40050 | 1900 | 210 | 298 | 245 | 220 | 253 | 250 | 124 | 130 +4 | 730 | 342 | 19,1 | 0,12 |
| | 1000x30 | | | 1700 | | | | | | | | | | 377 | 27,1 | |

# Dimension sheet 710-56 / S-NX Conversion kit




*Larger couplings, higher rotational speeds and intermediate sizes on request.*

*Maximum permissible misalignments see page 19*

***Note:***
*Only suitable as a conversion kit for elastic couplings where the drives are frequency-controlled.*

| Size d5 | Torques [Nm] | | k1 | d10 H7 | s3 | l3 | s2 | t1 | Bolt connection | | Mass moment of inertia | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [mm] | $T_{KN}$ | $T_{K\,max}$ | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | z x m | $M_A$ [Nm] | I [kgm²] | G [kg] |
| 145 | 600 | 1800 | 120 | 95 | 11 | 65 | 71+2,5 | 3 | 9 x M12 | 85 | 0,011 | 4,8 |
| 170 | 950 | 2850 | 145 | 120 | 11 | 65 | 71+2,5 | 3 | 12 x M12 | 85 | 0,022 | 6,4 |
| 200 | 1650 | 4950 | 170 | 140 | 13 | 75 | 81+3 | 4 | 12 x M14 | 135 | 0,048 | 9,5 |
| 230 | 2580 | 7740 | 200 | 170 | 18 | 80 | 86+3,5 | 4 | 15 x M14 | 135 | 0,085 | 12,0 |
| 260 | 3980 | 11940 | 230 | 200 | 11 | 90 | 101+4 | 4 | 15 x M16 | 210 | 0,161 | 17,7 |
| 300 | 5850 | 17550 | 260 | 220 | 14 | 108 | 118+4 | 4 | 15 x M20 | 425 | 0,352 | 29,0 |
| 360 | 9700 | 29100 | 310 | 260 | 26 | 120 | 130+4 | 4 | 12 x M24 | 730 | 0,765 | 44,3 |
| 400 | 13350 | 40050 | 350 | 300 | 26 | 120 | 130+4 | 4 | 14 x M24 | 730 | 1,159 | 51,7 |

# Dimension sheet 710-57 / S-NX

*Larger couplings, higher rotational speeds and intermediate sizes on request.*

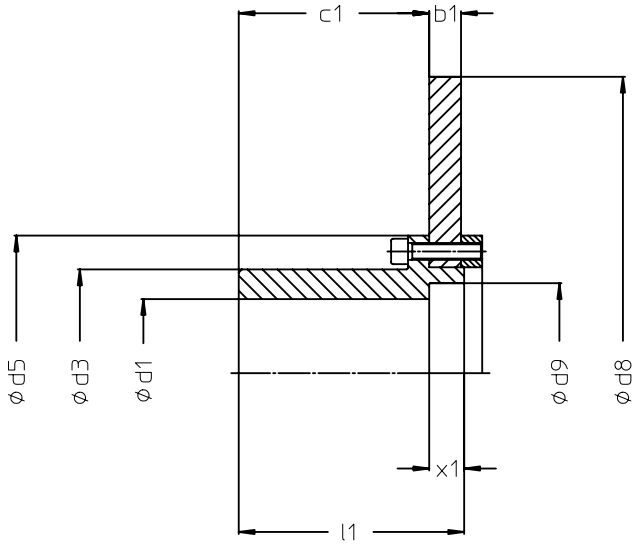
*Maximum permissible misalignments see page 19*

*(1) The torques stated do not refer to the connection of shaft and hub. If necessary these must be checked.*

*(2) Balancing to order.*

*(3) The values specified for the bores are valid according to DIN6885-1 (see page 6).*

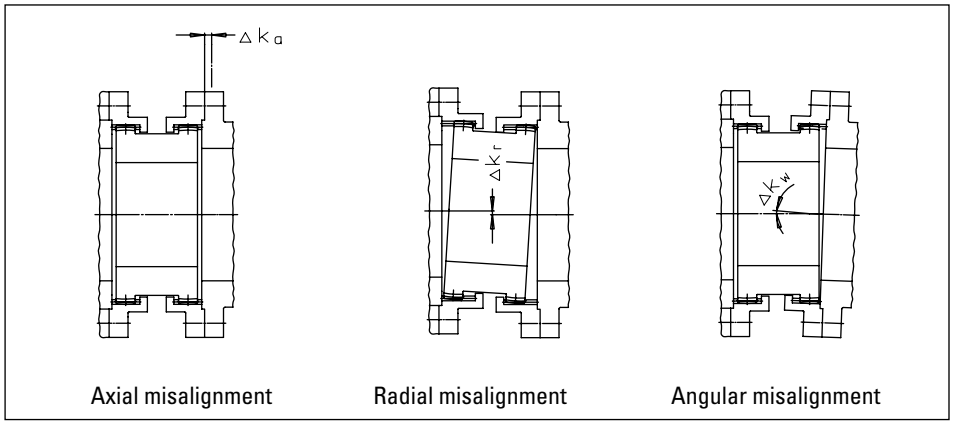
*(4) With reference to the max. finished bore*



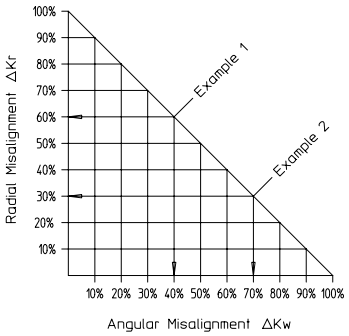

*Dimension x1 according to customer requirements*

| Size d5 | Brake disc d8 x b1 | Torque (1) [Nm] | | Speed (2) [rpm] | Bore (3) [mm] | Dimensions | | | | | Weight (4) | Mass moment of inertia (4) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [mm] | [mm] | $T_{KN}$ | $T_{K\,max}$ | n max | d1 max | d3 [mm] | d9 [mm] | c1 [mm] | l1 [mm] | Ma [Nm] | G [kg] | I [kgm²] |
| | 355x30 | | | 4800 | | | | | | | 28,0 | 0,38 |
| 145 | 400x30 | 600 | 1800 | 4300 | 65 | 92 | 78 | 135 | 167 | 85 | 34,3 | 0,61 |
| | 450x30 | | | 3800 | | | | | | | 42,7 | 0,96 |
| | 400x30 | | | 4300 | | | | | | | 36,7 | 0,62 |
| 170 | 450x30 | 950 | 2850 | 3800 | 80 | 117 | 98 | 135 | 167 | 85 | 44,6 | 0,98 |
| | 500x30 | | | 3400 | | | | | | | 53,3 | 1,47 |
| | 450x30 | | | 3800 | | | | | | | 50,3 | 1,00 |
| 200 | 500x30 | 1650 | 4950 | 3400 | 95 | 138 | 115 | 175 | 208 | 135 | 59,0 | 1,51 |
| | 560x30 | | | 3050 | | | | | | | 70,8 | 2,34 |
| | 500x30 | | | 3400 | | | | | | | 62,5 | 1,57 |
| 230 | 560x30 | 2580 | 7740 | 3050 | 120 | 168 | 145 | 175 | 208 | 135 | 68,7 | 2,36 |
| | 630x30 | | | 2700 | | | | | | | 89,7 | 3,76 |
| | 560x30 | | | 3050 | | | | | | | 80,8 | 2,50 |
| 260 | 630x30 | 3980 | 11940 | 2700 | 140 | 196 | 170 | 180 | 213 | 210 | 96,2 | 3,87 |
| | 710x30 | | | 2400 | | | | | | | 116 | 6,1 |
| | 630x30 | | | 2700 | | | | | | | 106 | 4,1 |
| 300 | 710x30 | 5850 | 17550 | 2400 | 154 | 216 | 180 | 180 | 213 | 425 | 126 | 6,3 |
| | 800x30 | | | 2150 | | | | | | | 151 | 9,9 |
| | 800x30 | | | 2150 | | | | | | | 176 | 10,5 |
| 360 | 900x30 | 9700 | 29100 | 1900 | 184 | 258 | 215 | 220 | 253 | 730 | 206 | 16,2 |
| | 1000x30 | | | 1700 | | | | | | | 240 | 24,1 |
| 400 | 900x30 | 13350 | 40050 | 1900 | 210 | 298 | 245 | 220 | 253 | 730 | 222 | 16,8 |
| | 1000x30 | | | 1700 | | | | | | | 257 | 24,8 |

# Max. permissible misalignments for S-NX




Axial misalignment | Radial misalignment | Angular misalignment



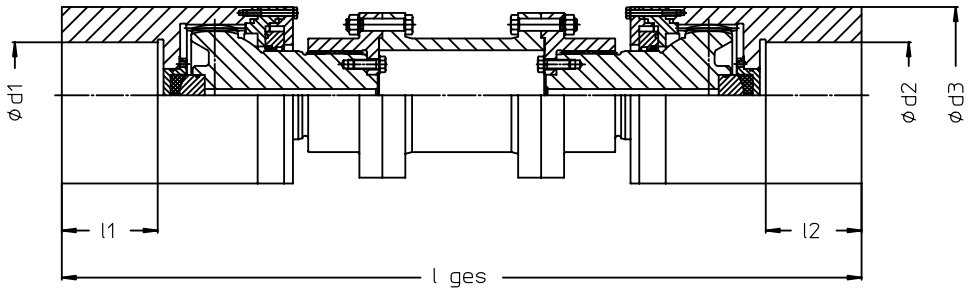

For standard MALMEDIE Gear-Couplings of the S-NX series the misalignment can be up to ± 1° per toothing plane. The misalignment values specified are maximum values that cannot be allowed to occur at the same time. Where there is simultaneous radial misalignment ΔKr and angular misalignment ΔKw these values must be reduced in accordance with the diagram.

*Example 1:*
*ΔKr = 60%* *ΔKw = 40%*

*Example 2:*
*ΔKr = 30%* *ΔKw = 70%*

| Size | Design | | |
|---|---|---|---|
| | S-NX | | |
| | ΔKa [mm] | ΔKr [mm] | ΔKw [°] |
| 145 | +2,5 | 0,87 | Max. permissible angular misalignment 1.0° per toothing plane. |
| 170 | +2,5 | 0,87 | |
| 200 | +3 | 0,96 | |
| 230 | +3,5 | 1,04 | |
| 260 | +4 | 1,22 | |
| 300 | +4 | 1,44 | |
| 360 | +4 | 1,66 | |
| 400 | +4 | 1,66 | |

# Dimension sheet 710-58 / Gear joint spindles




*Larger couplings, higher rotational speeds and intermediate sizes on request.*

*(1) The torques stated do not refer to the connection of shaft and hub.*

*If necessary these must be checked.*

*(2) Balancing to order.*

*(3) The values specified for the bores are valid according to DIN6885-1 (see page 6).*

Gear joint spindles are mainly used where high torques must be transferred with large misalignments and with smallest external diameters (e.g. in hot and cold rolling mills, straightening machines, crane travelling units, trolley travelling units, etc.).

MALMEDIE gear joint spindles are always optimally matched to a very wide variety of customer requirements. Particular attention is paid here to the rapid replacement of worn parts.

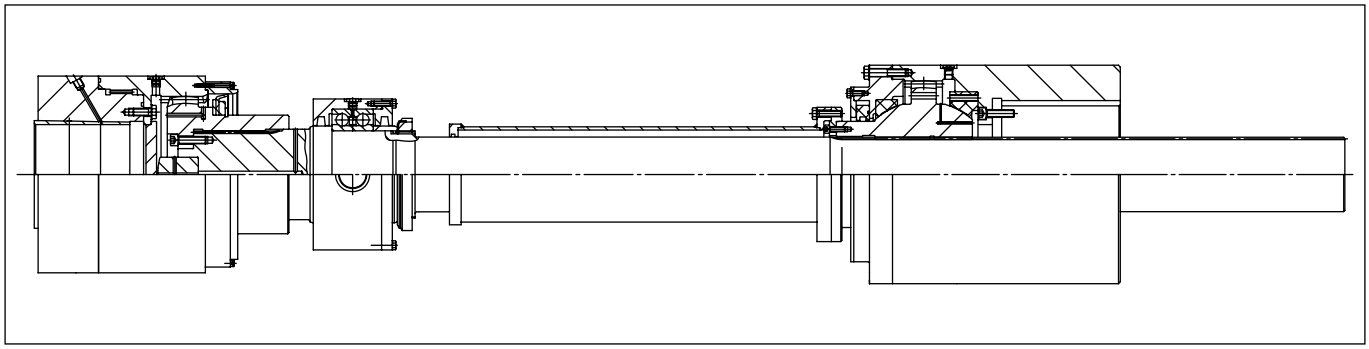
You will find some examples of various designs on page 21.

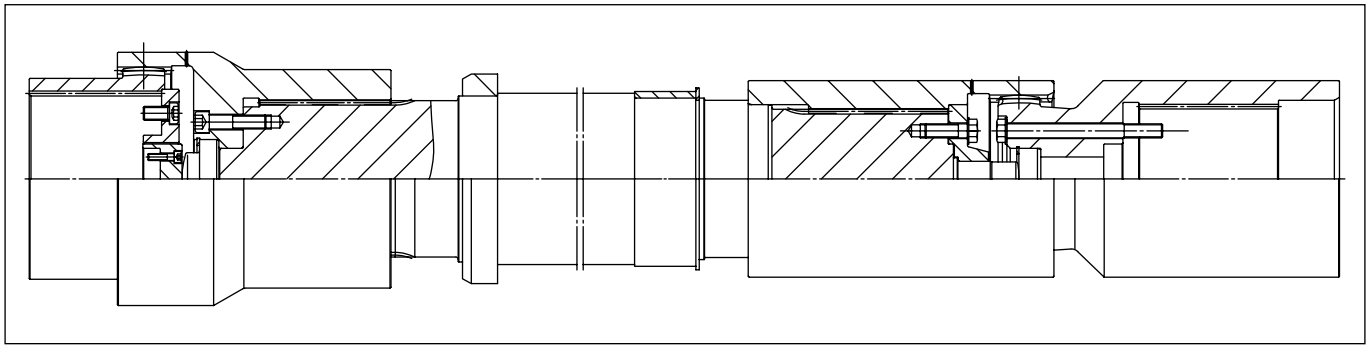
The specifications quoted below are to be understood as guideline values.

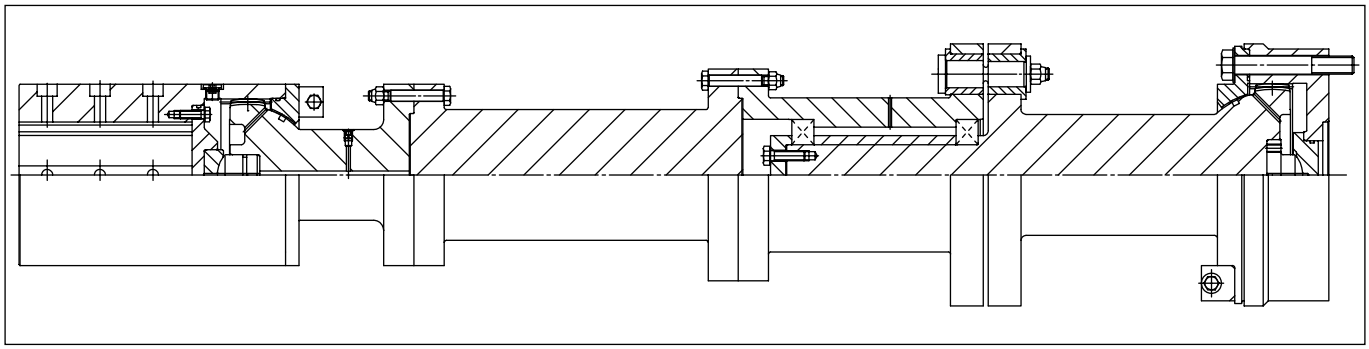
All MALMEDIE gear joint spindles designs are produced from alloyed heat-treated steels with a high elastic limit. Depending on the type of steel and hardening methods used 3 performance levels ensue.

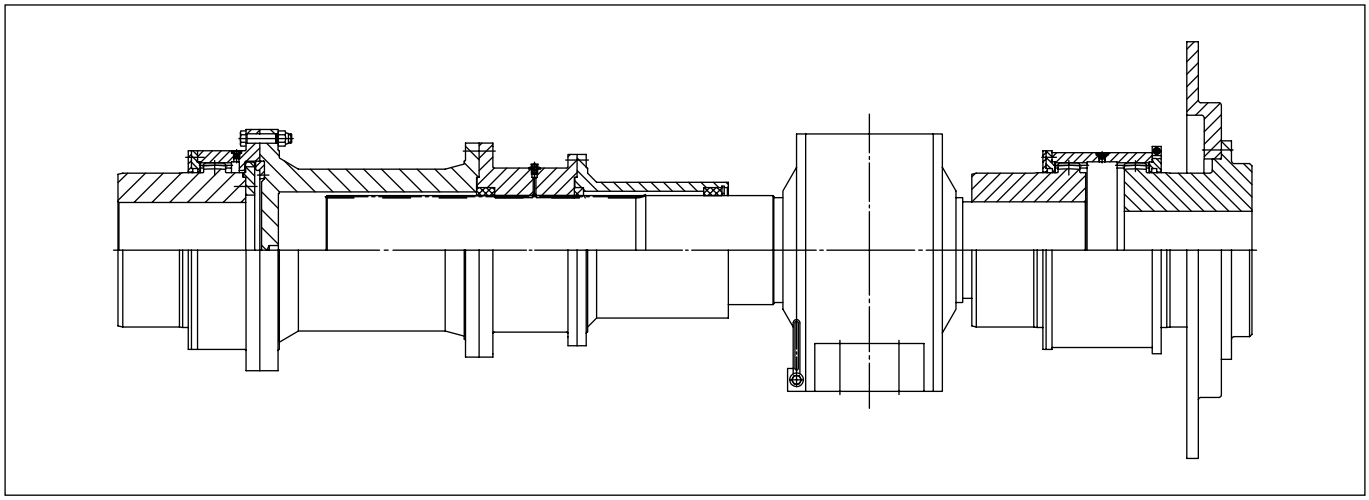
| Size | Torque (1) | | | | | | Speed (2) | Dimensions | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Performance level 1 | | Performance level 2 | | Performance level 3 | | | | | |
| | $T_{KN}$ [Nm] | $T_{K\,max}$ [Nm] | $T_{KN}$ [Nm] | $T_{K\,max}$ [Nm] | $T_{KN}$ [Nm] | $T_{K\,max}$ [Nm] | n max [rpm] | d1,2 max [mm] | d3 [mm] | l ges [mm] |
| 150 | 13000 | 26000 | 16900 | 33800 | 23400 | 46800 | Dependent on l tot | 105 | 150 | Specified when ordered |
| 200 | 35000 | 70000 | 45500 | 91000 | 63000 | 126000 | | 140 | 200 | |
| 250 | 60000 | 120000 | 78000 | 156000 | 108000 | 216000 | | 175 | 250 | |
| 300 | 110000 | 220000 | 143000 | 286000 | 198000 | 396000 | | 210 | 300 | |
| 350 | 180000 | 360000 | 234000 | 468000 | 324000 | 648000 | | 250 | 350 | |
| 400 | 290000 | 580000 | 377000 | 754000 | 522000 | 1044000 | | 280 | 400 | |
| 450 | 350000 | 700000 | 455000 | 910000 | 630000 | 1260000 | | 320 | 450 | |
| 500 | 600000 | 1200000 | 780000 | 1560000 | 1080000 | 2160000 | | 350 | 500 | |

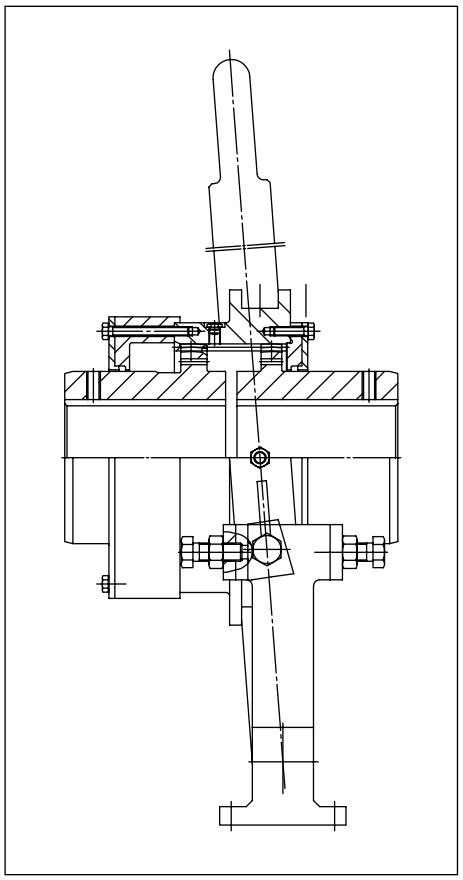
## Gear joint spindles

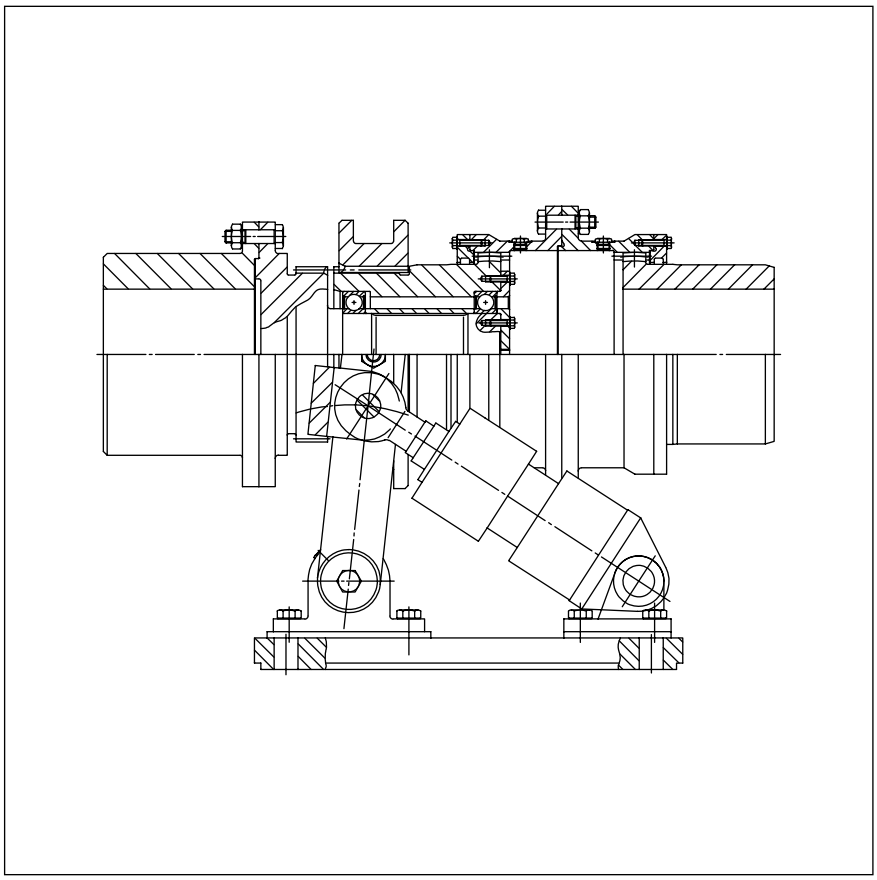




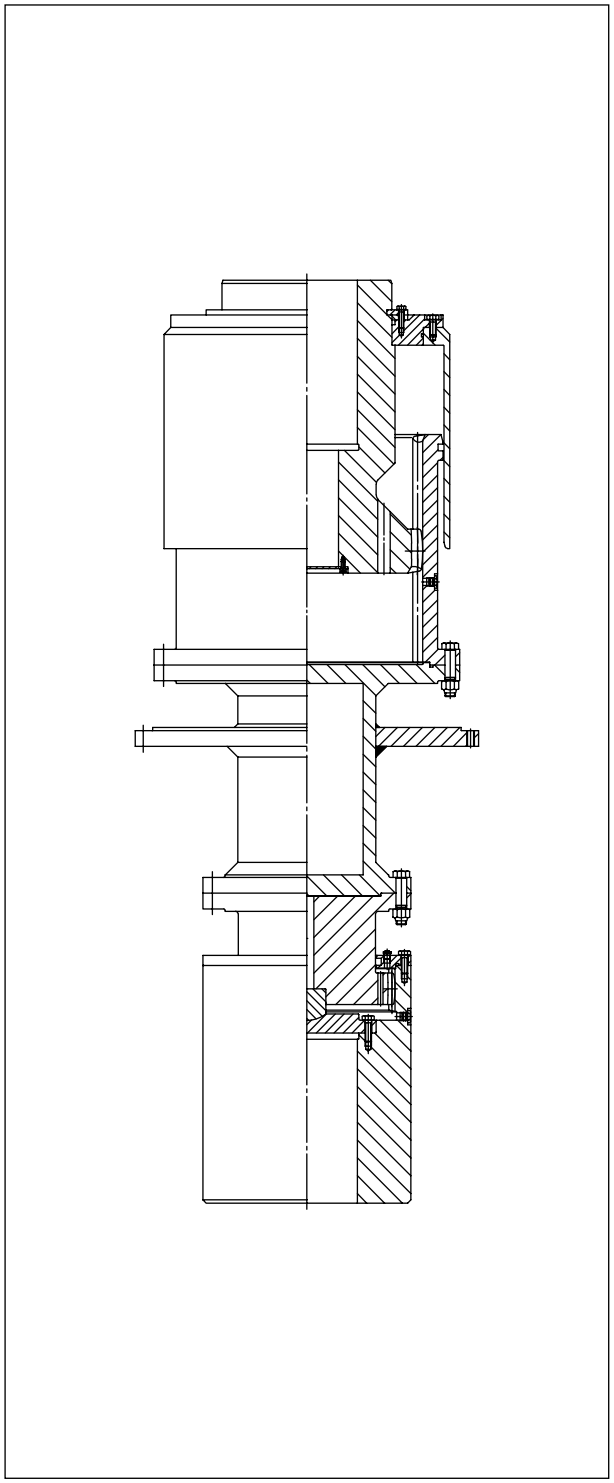


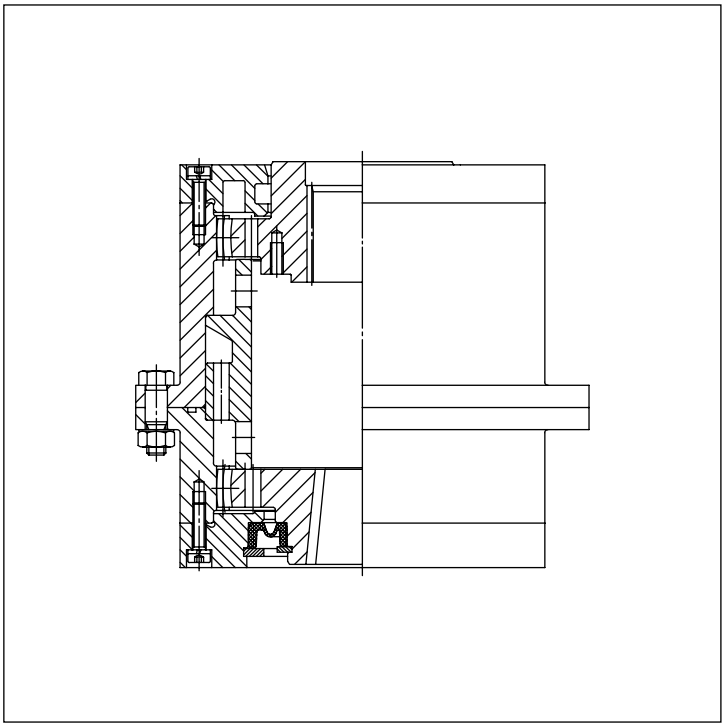


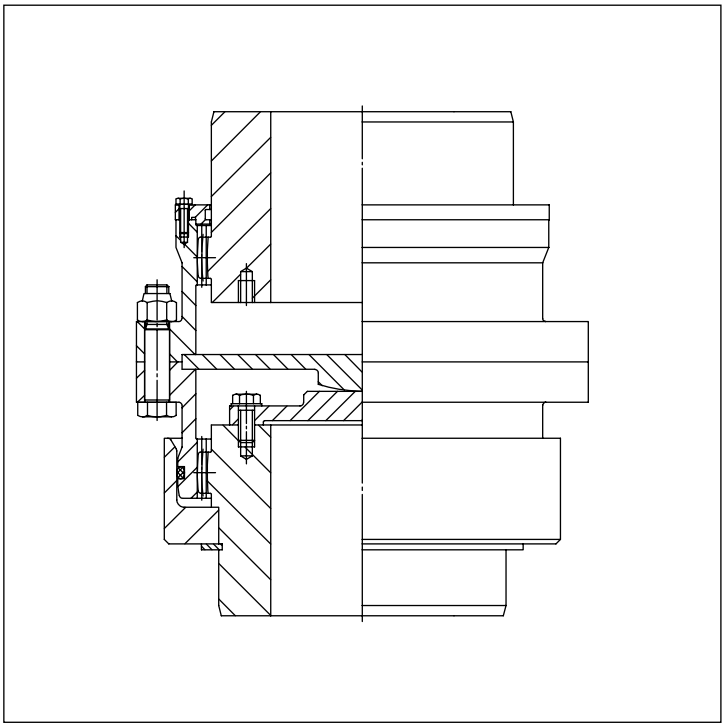




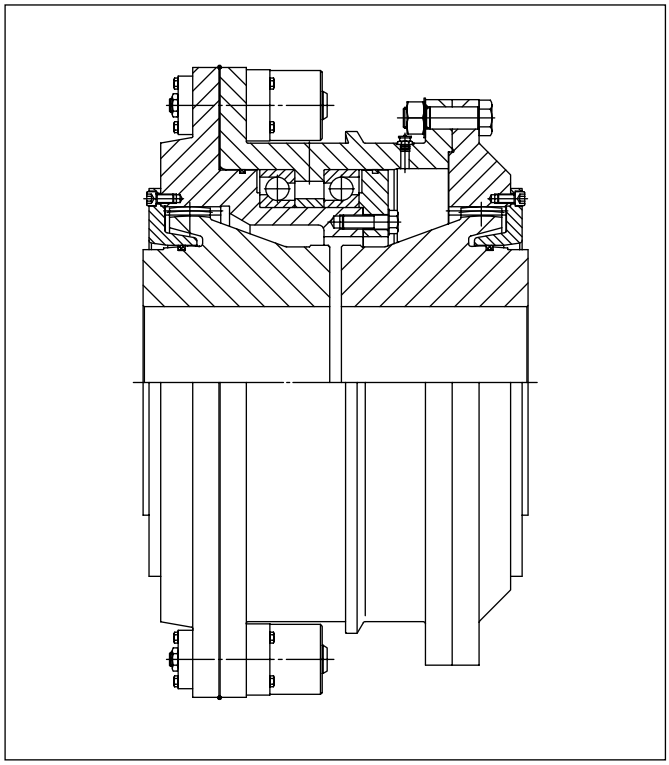
## Vertical designs

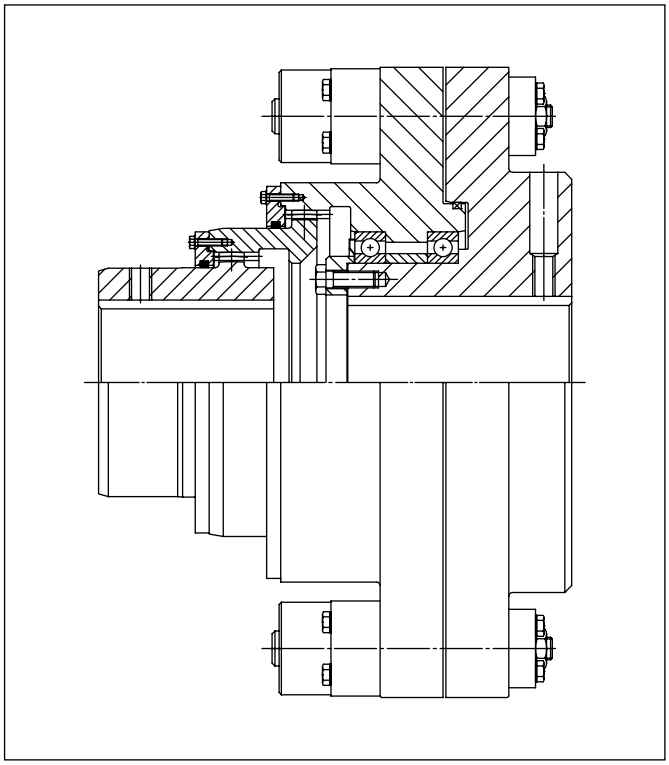


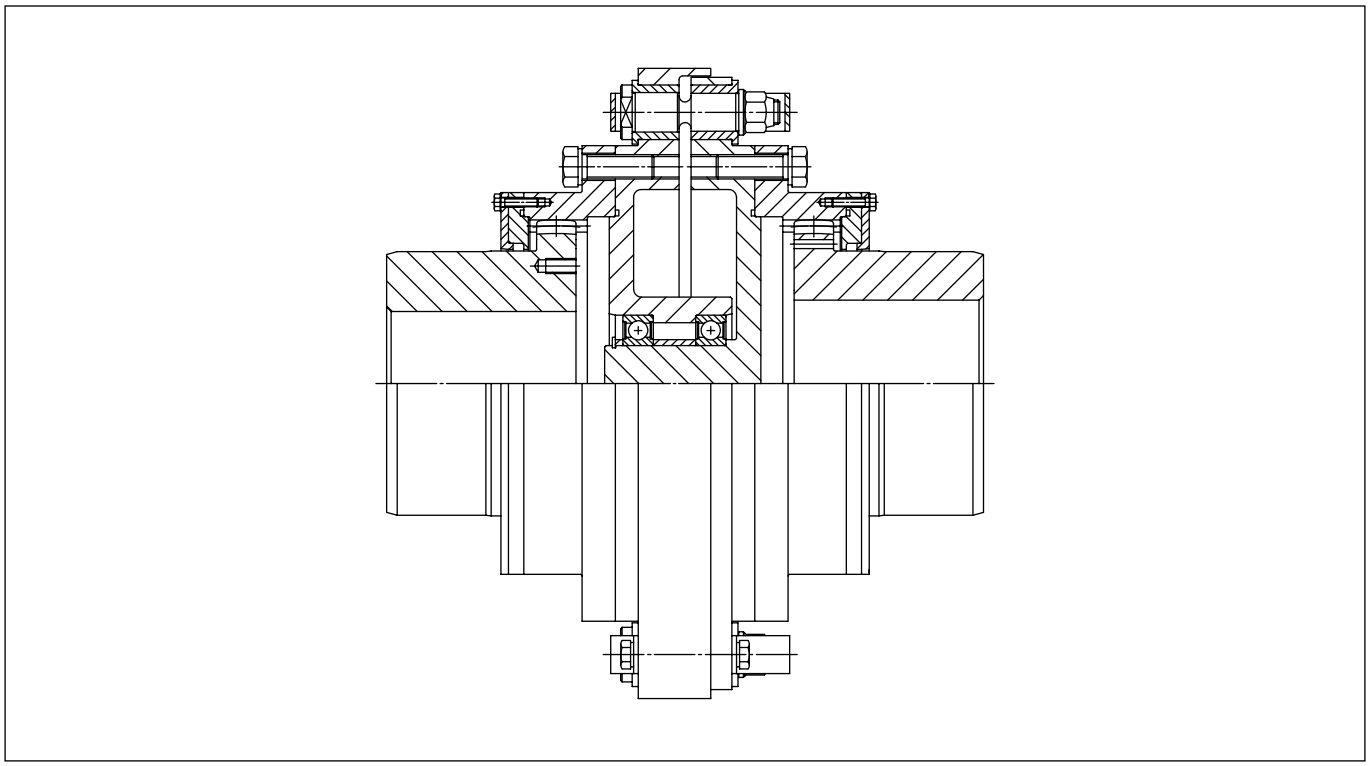




# Safety Gear-Couplings







*For further designs see the MALMEDIE catalogue under "Safety couplings"*

Crane engineering

Conveyor engineering

Steel industry

Heavy machinery construction

# Inquiry form
# for Gear-Couplings

Company

Mr / Ms

Street

Postcode/Town

Country

Phone

Fax

eMail

## Place of use

Project

Working machine

## Operation

Type of operation

Operating factor

| | | | |
|---|---|---|---|
| ☐ | SMOOTH | 1,00 – 1,25 | Continuous operation without overload |
| ☐ | LIGHT DUTY | 1,25 – 1,50 | Continuous operation with light overloads and brief, infrequent shock loads |
| ☐ | MEDIUM DUTY | 1,50 – 1,80 | Operation with frequent light shock loads and brief, medium level overloads |
| ☐ | HEAVY DUTY | 1,80 – 2,20 | Operation with heavy and frequent shock loads. Frequent load reversals: High level of safety. |
| ☐ | VERY HEAVY DUTY | >2,20 | Operation with very heavy and frequent shock loads. Frequent and sudden load reversals. Very high level of safety. |

Direction of force

☐ constant

☐ alternating

Operations per hour _____ / h

Operational duration per day _____ h/d

Ambient temperature _____ °C

## Technical data

Type of drive ☐ Electric motor, turbine ☐ Hydraulic motor ☐ Combustion Engine

Motor power output _____ kW

Motor rotational speed _____ rpm

Gear transmission ratio _____

Gear efficiency _____

Coupling rotational speed _____ rpm

Nominal torque _____ kNm ☐ without operating factor ☐ with operating factor

max. torque _____ kNm ☐ without operating factor ☐ with operating factor

## Design

Coupling type _____ Coupling size _____ (Pre-selection) Overall length _____

## Hub-shaft connection

1.) Coupling hub

Bore diameter _____

Shaft diameter _____

☐ Keyway

Quantity _____

Angle _____

☐ DIN5480-gearing

☐ Shrink-fit connection

☐ Other

2.) Coupling hub

Bore diameter _____

Shaft diameter _____

☐ Keyway

Quantity _____

Angle _____

☐ DIN5480-gearing

☐ Shrink-fit connection

☐ Other

## Remark

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MALMEDIE.COM

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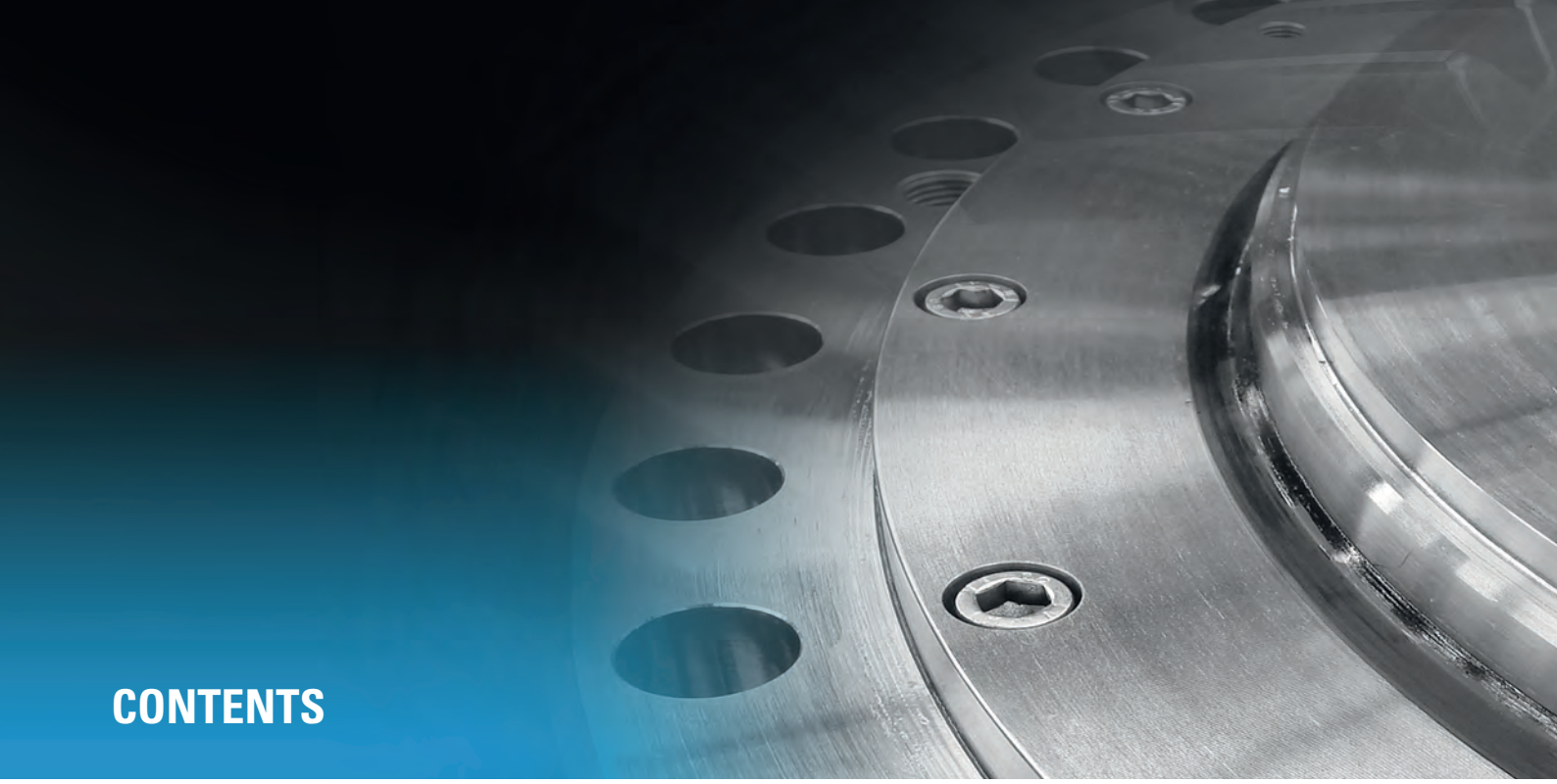
Shanghai ATB Technology Co., Ltd

# DRUM-COUPLINGS

## THE ORIGINAL • SERIES TTXs

MALMEDIE.COM

MALMEDIE



# CONTENTS




ATB

上海埃驱倍科技有限公司

Shanghai ATB Technology Co., Ltd

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⟩

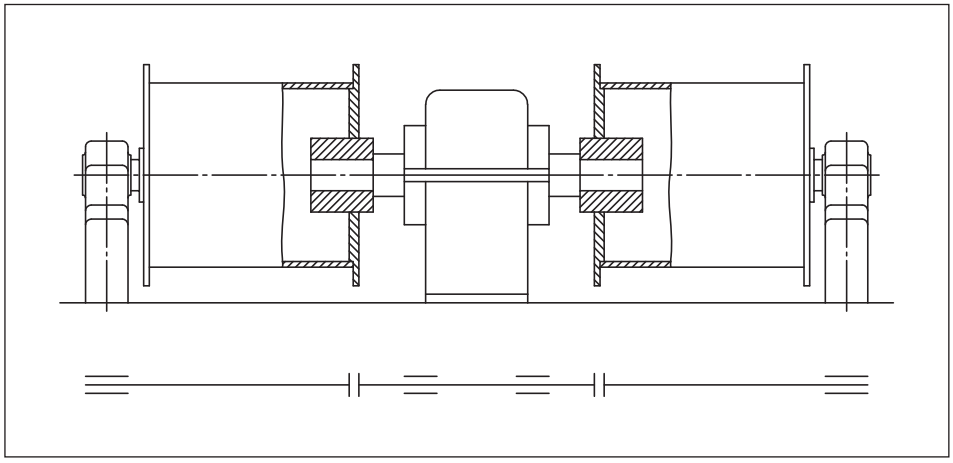


Fig. 1 Layout of a twin drum drive with four-point beared rigid shaft without a Drum-Coupling.

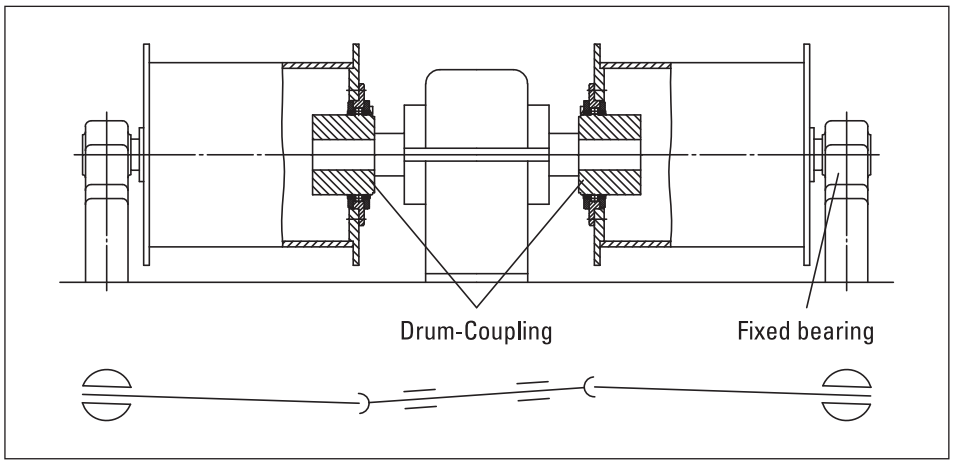



Fig. 2 Layout of a twin-drum drive with a Drum-Coupling.

*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).

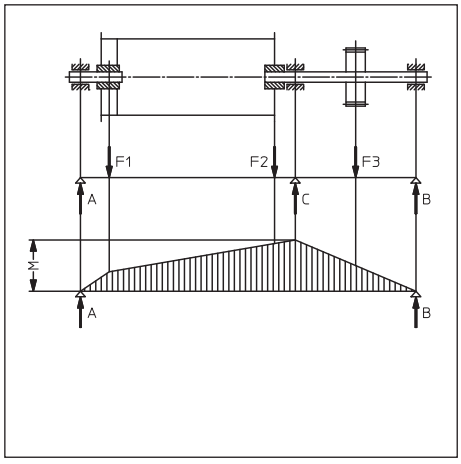



Fig. 3

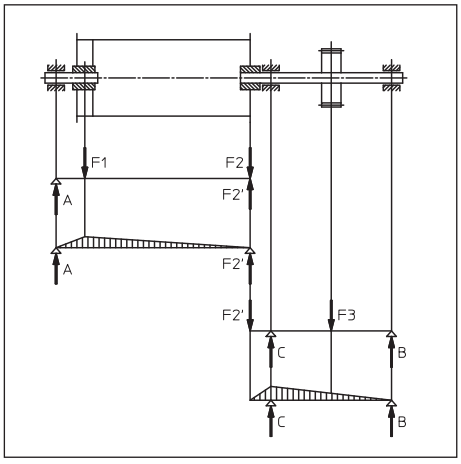



Fig. 4

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.

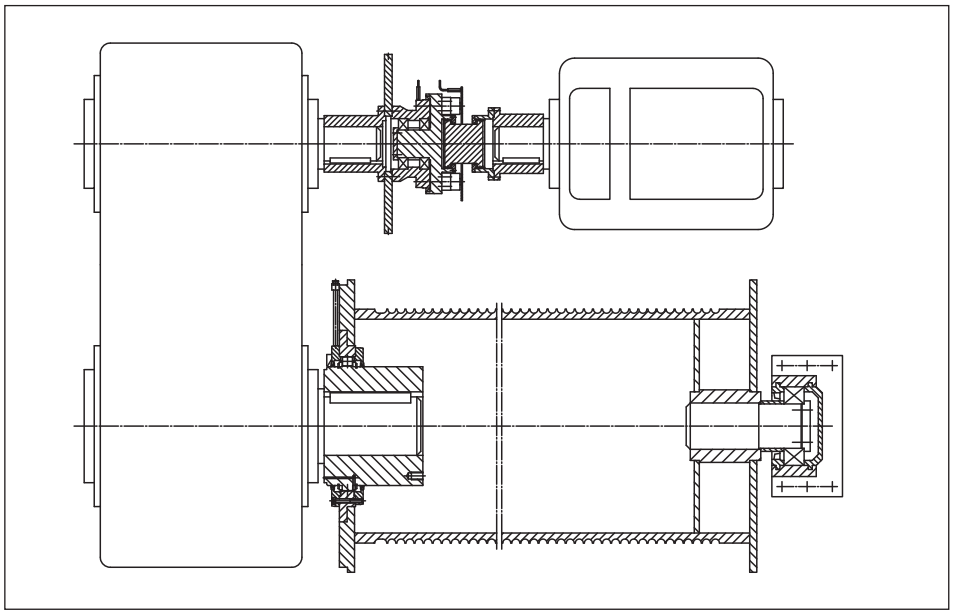


Fig. 5

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*

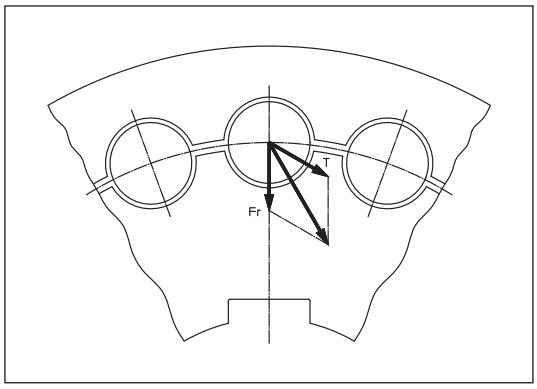



Fig. 6

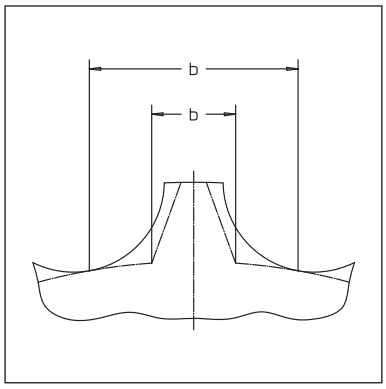



Fig. 7

*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

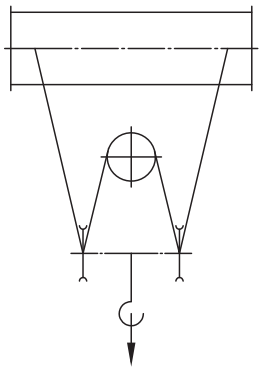
$$G_{Tr} = \frac{(Q + G)}{i_F \cdot \eta_F}$$

| $i_F$ | 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]



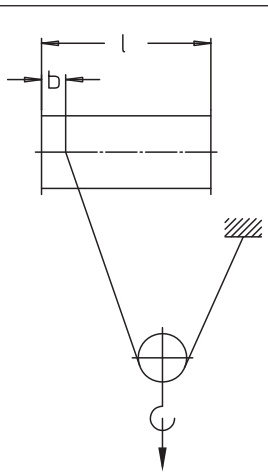
Multiple rope lines

### 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:

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

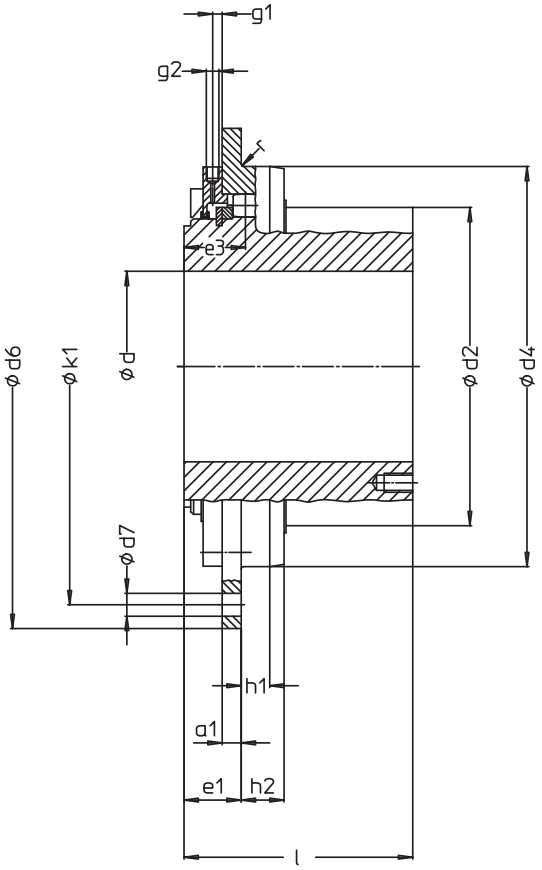
$T_{max}$ = max. torque [Nm]
$Tk_{max}$ = max. permissible torque [Nm] according to dimension sheet 709-04
$C_{erf}$ = necessary service factor for drive groups according to DIN15020 or F.E.M. 1.001
$Fr_{max}$ = max. permissible radial force [N] according to dimension sheet 709-04

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 |

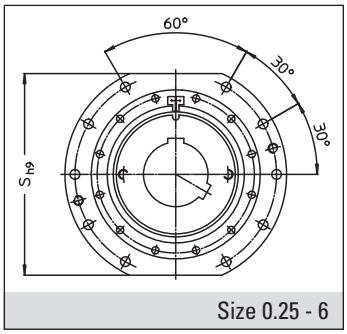
other dimensions on request

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

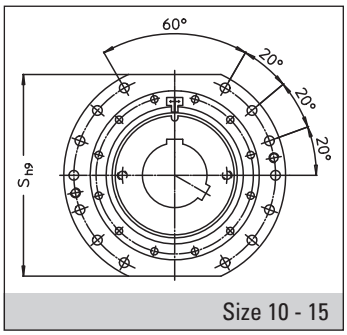
## Coupling/rope drum connection

- 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.

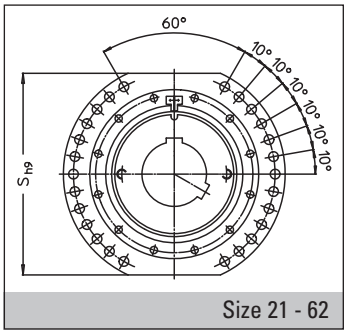
| Size | Selection SEB | S F8/h9 [mm] | a2 min. [mm] | d4 F8 [mm] | d17 Thread | d17 Qty | k1 [mm] | t4 min. [mm] | t6 [mm] | y min. [mm] |
|---|---|---|---|---|---|---|---|---|---|---|
| 0,25 | - | 220 | 27 | 160 | M12 | 10 | 220 | 12 | 0,08 | 50 |
| 0,5 | - | 250 | 27 | 180 | M12 | 10 | 250 | 12 | 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 |



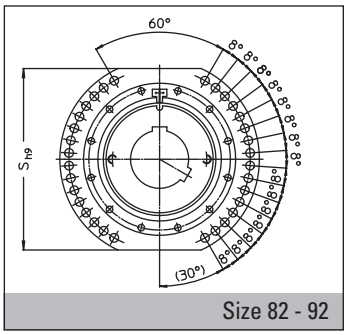
Size 0.25 - 6



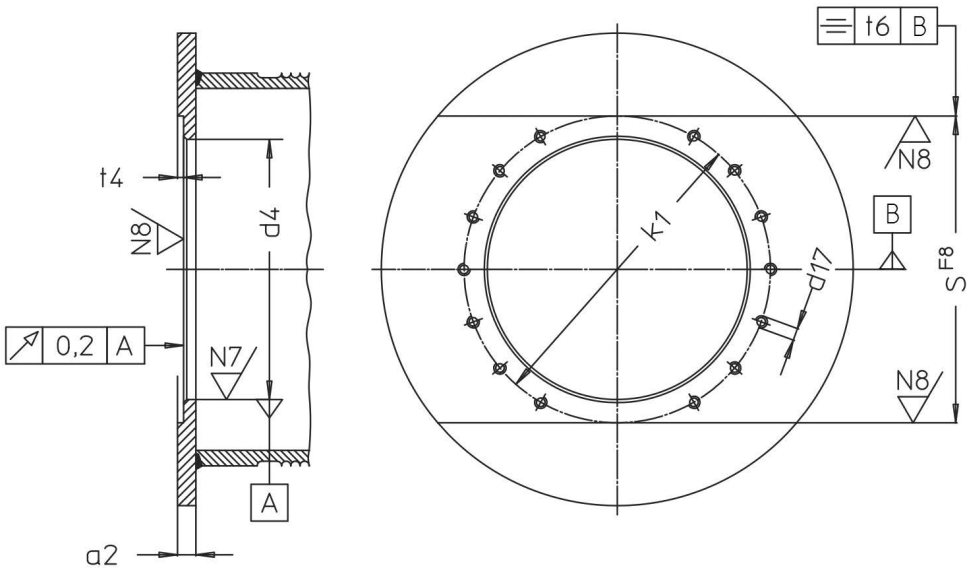
Size 10 - 15

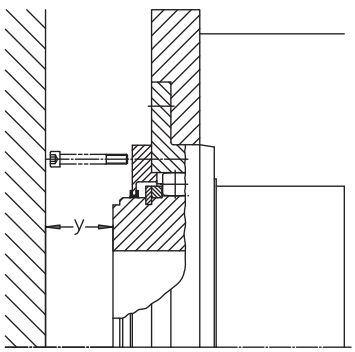


Size 21 - 62

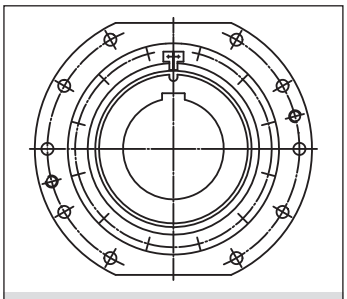


Size 82 - 92

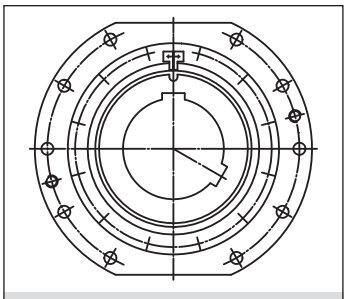


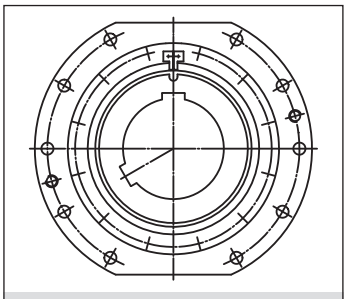
# Key connections



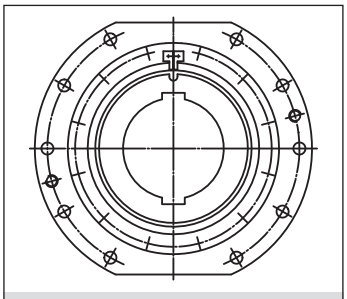
1 x key



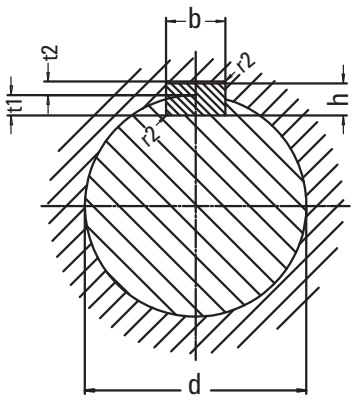
2 x keys 120° right



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**

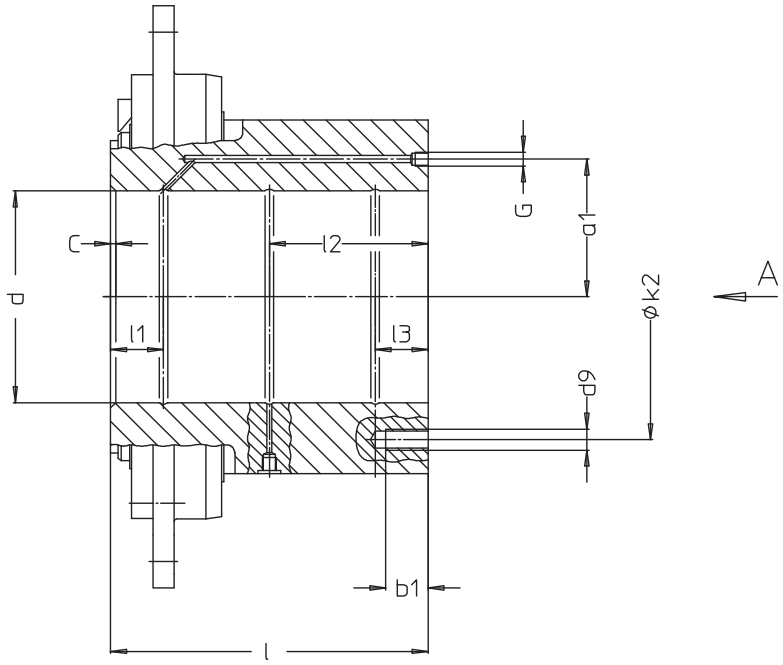
All dimensions in mm

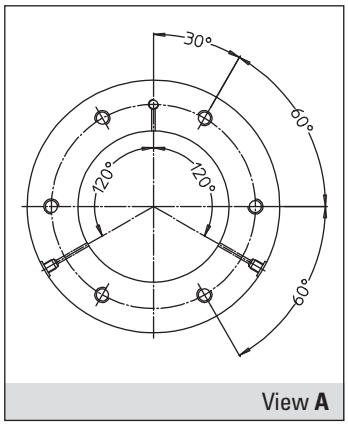
| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Bore d1** | from | 38 | 44 | 50 | 58 | 65 | 75 | 85 | 95 | 110 |
| | to | 44 | 50 | 58 | 65 | 75 | 85 | 95 | 110 | 130 |
| **Key** | Width w | 12 | 14 | 16 | 18 | 20 | 22 | 25 | 28 | 32 |
| | Height h | 8 | 9 | 10 | 11 | 12 | 14 | 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.*

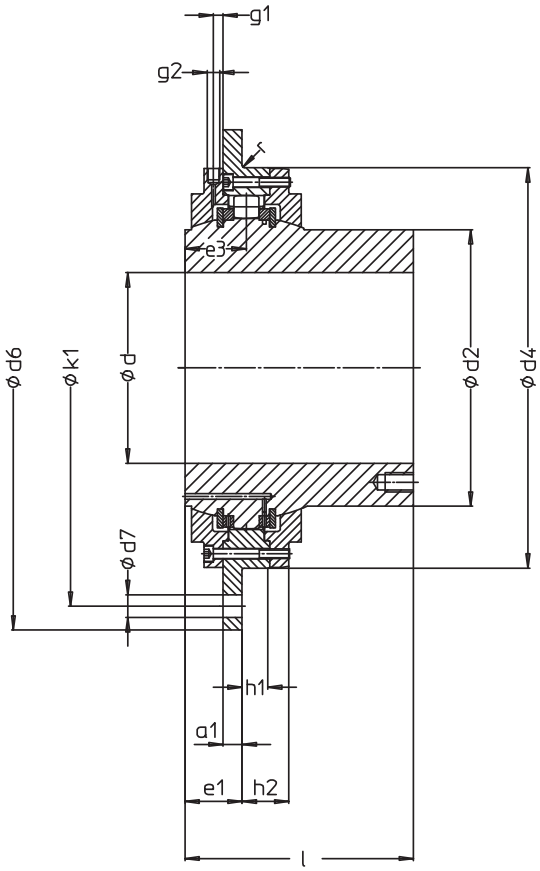
*T = required shrinking temperature [°C]*

*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 |

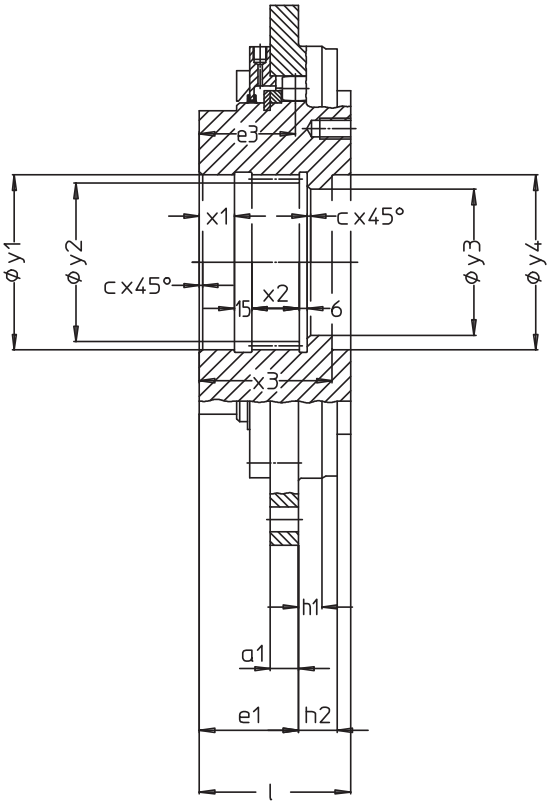
other dimensions on request

* 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 |

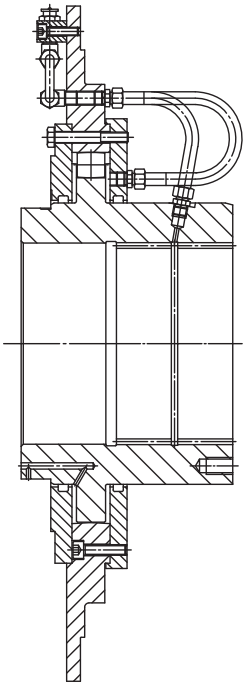
See dimension sheet 709-04 (pages 8 & 9) for all other dimensions



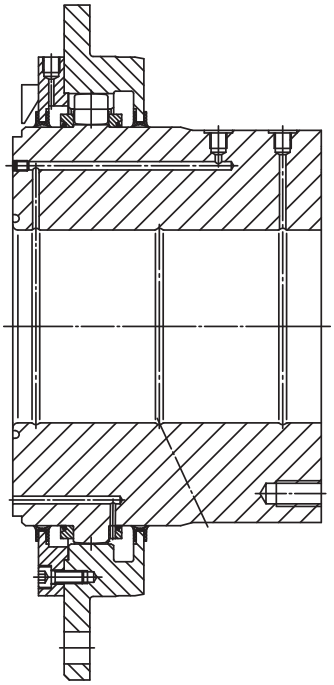

| Size | x1 [mm] | x2 [mm] | x3 [mm] | y1 K6 [mm] | y2 H11 [mm] | y3 H7 [mm] | y4 +0,5 [mm] | c [mm] | a1 [mm] | e1 [mm] | e3 [mm] | h1 [mm] | h2 [mm] | l [mm] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 39 | 32 | 110 | 100 | 90 | 85 | 101 | 1 | 32 | 90 | 76 | 10 | 20 | 125 |
| 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

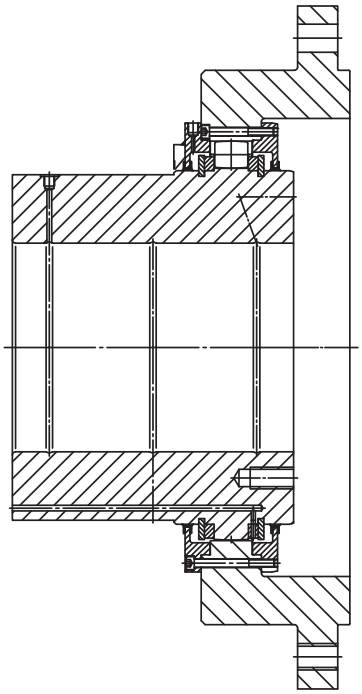
# Further designs



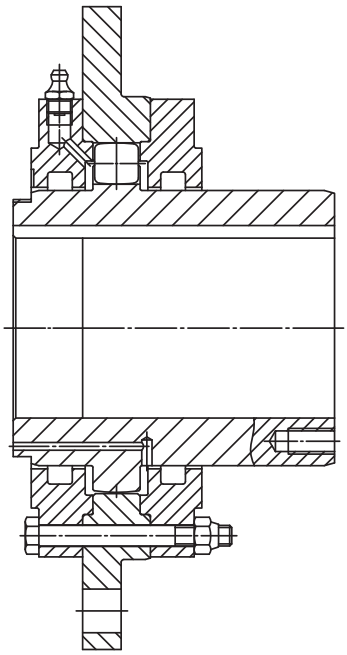
BTTXs



according to SIDMAR standard BR3-550



with special flange



for high-bay warehouses and goods lifts

# Wear indicator

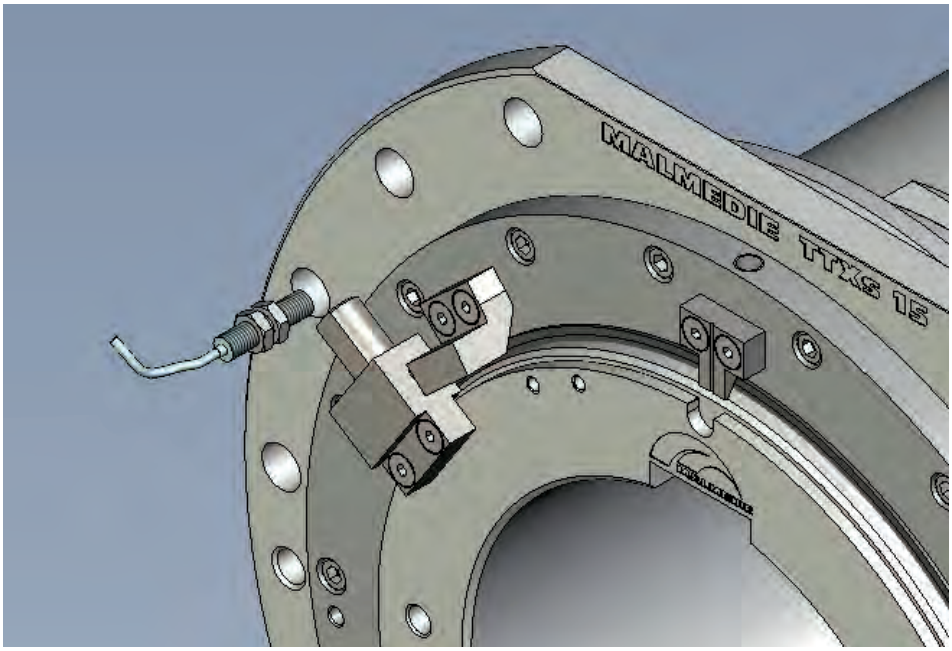
Wear which has occurred in the Drum-Coupling can be read from the displacement of the pointer in relation to the wear notch. The maximum permissible wear values $\frac{m}{2}$ are given in the table.

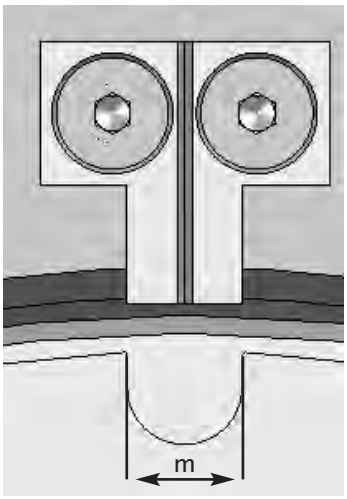
The Drum-Coupling must be replaced as soon as the limit value is exceeded.

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.

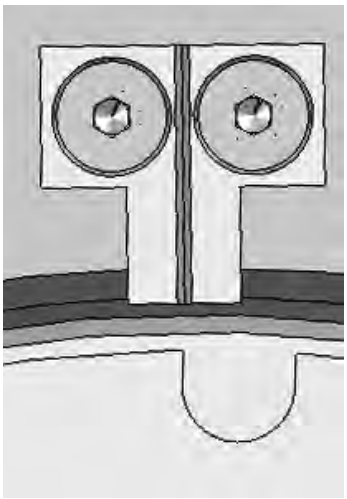
| Coupling size | max. permissible wear $\frac{m}{2}$ |
|---|---|
| 0,25 - 1 | 4 mm |
| 1,3 - 5 | 6 mm |
| 6 - 92 | 8 mm |

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
ASTTXs MTTXs
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ASTTXs MTTXs
BTTXs TTXs
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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