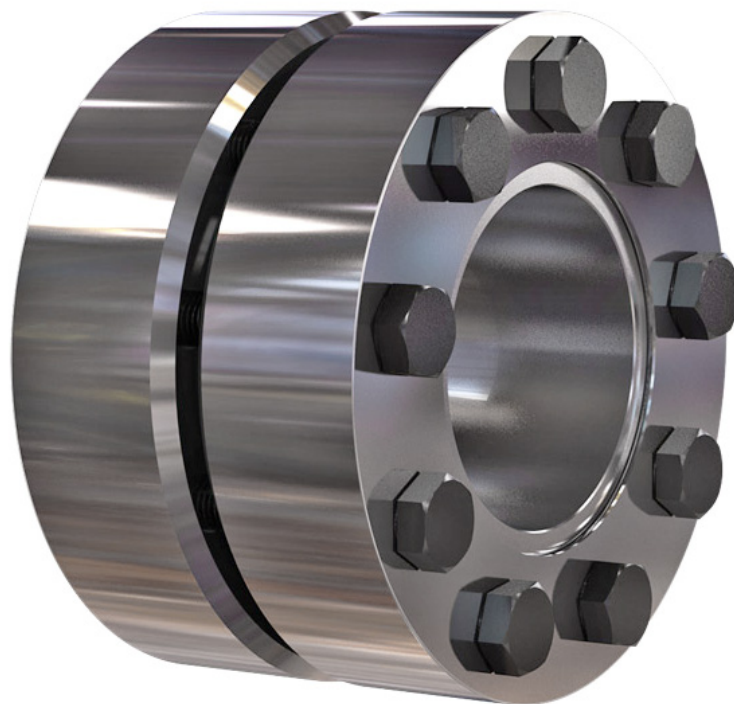


# Couplings



## Shaft couplings

# Description of function

## Rigid Shaft Coupling

The main function of the rigid shaft coupling is the safe and backlash-free connection of two shafts by means of friction. For example between a drive shaft and driven shaft and mainly to transmit torque. Shaft couplings consist of a connecting sleeve and two external clamping systems. They are not separable like flange coupling. The external clamping systems generate a backlash-free connection by pressing the connecting sleeve onto the shaft ends.

The external clamping system does not transmit any torque or moments between the shaft ends, they just provide the necessary clamping forces. Those external clamping systems are not part of the flow of forces, but the connecting sleeve is.

The couplings have to be installed by moving them onto the shaft ends followed by tightening of the external clamping systems via bolting. To achieve proper operation and a sufficiently high coefficient of friction, the contact surfaces at the shaft extensions must be free of grease, dry and clean.

Our rigid shaft couplings are supplied ready for installation. The functional surfaces of the external clamping systems, threads and head rests of the screws are provided with lubricant at the factory.

### Product data

A detailed installation manual is available on the Internet.

#### Data Sheets

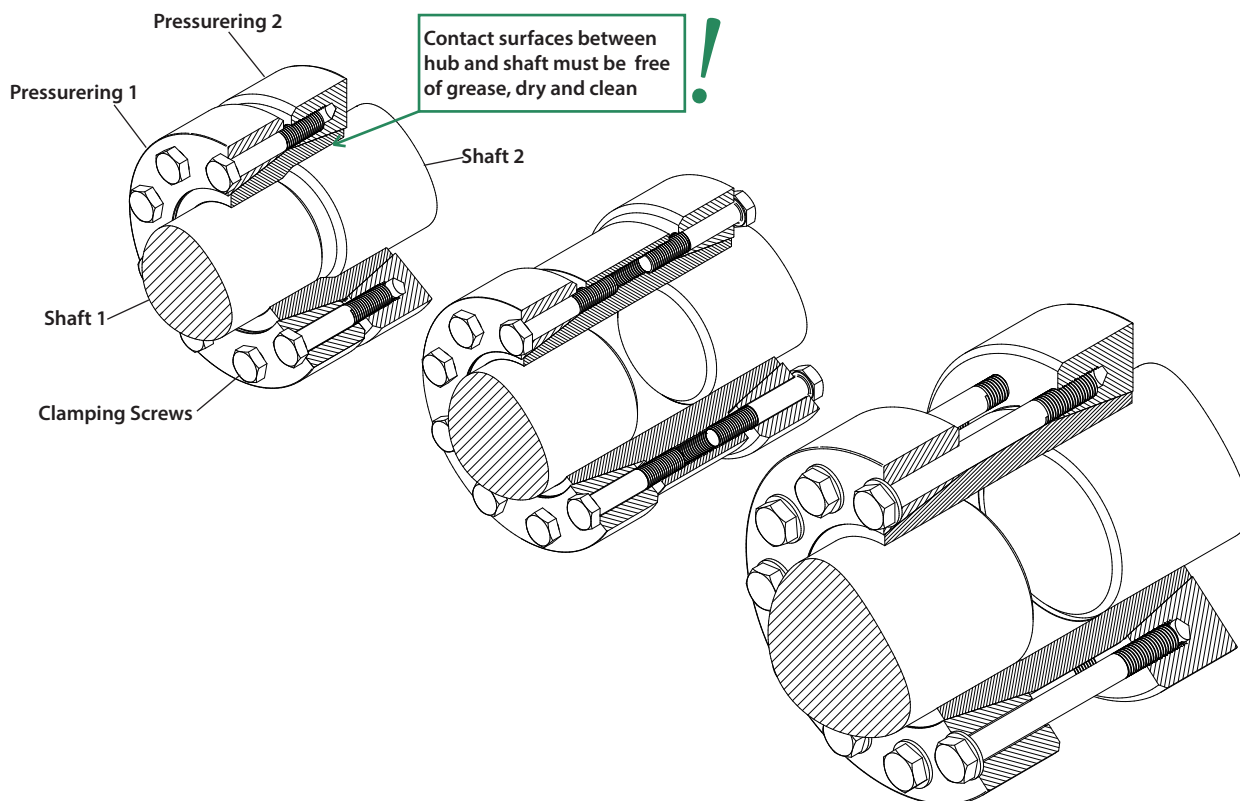
Contact us if a data sheet for an individual product is required.

- For CAD data of couplings, contact us directly, please.

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# Basics-Design

## Advantages and differences to other systems

### Clamping length for pressure rings

The insertion depth of the shaft at the junction IK (between shaft and sleeve), should be chosen to be somewhat wider to minimize the stress concentration at this point. An excessively wide connection increases the tendency to fretting corrosion, because the pressure decreases outward. The pressure is distributed approximately at an angle between 15° - 20° through the hub. This is largely dependent on the hub wall thickness and stiffness of the shaft. A good approximation can be made from the following equation:

### Clamping length for pressure rings

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Clamping length of the insertion depth:

$$l_K = 0,316(d - d_w) + l$$

The cylindrical surfaces should be located symmetrically under the shrink disc or pressure ring! With a slightly different clamping length the transmissible torque M will not change, because a smaller contact surface results in a higher pressure - also a larger contact surface causes lower pressure.

### Pursue the same diameter - but an adaptation to different diameters is also possible

Basically the target should be to connect shaft ends of the same size. With larger deviations the sleeves can be adapted for the different diameters. This is done by using different pressure rings or shrink discs or bore diameter.

### Tightening torque of the clamping screws

When using different pressure rings and shaft diameters, the tightening torque and therefore the clamping forces are adjustable. For example, this is also possible with soft shaft materials and reduces, if required, the stresses in the components.

$$M(New) = \frac{M_{Agew}}{M_A} M \quad \text{also}$$

$$p_N(New) = \frac{M_{Agew}}{M_A} p_N$$

The tightening torques can not be reduced arbitrary, therefore apply the following limits:

$$M_{Agew} \geq \begin{pmatrix} \text{Class 8.8 : } 0,85 M_A \\ \text{Class 10.9 : } 0,70 M_A \\ \text{Class 12.9 : } 0,60 M_A \end{pmatrix} \leq M_A$$

### Positioning

The cylindrical connection, as well as the used clearance, allows an easy and precise positioning of the sleeves on the shaft ends. During the clamping process there is no more shift.

### No hydraulic necessary

A hydraulic expansion of the hubs is not necessary for mounting.

### No heating necessary

There is no need for expansion of the sleeves by heating. To increase the clearance between the shaft and sleeve, a slight warming is possible.

### Shafts with keyways

The couplings can be used on shafts with keyways. As far as possible, the keyways should be closed.

### Tolerances and surfaces

The values found in the product data, are based on surface quality and tolerances, according to the table below. These values are given as recommendations.

Higher surface roughness reduces the transmissible torque and promote unwanted settling.

Larger clearance also reduces the transmissible torque and increases stresses in the connecting sleeve.

**If you need different shaft tolerances, please let us know. The holes in the sleeves can then be adjusted accordingly!**

| Recommended tolerances and surfaces roughness |     |                         |                        |          |
|---|-----|-------------------------|------------------------|----------|
| >   | ≤   | FS <sub>max</sub><br>mm | Clearance<br>Hub/Shaft | Rz<br>µm |
| 30  | 50  | 0,032                   | H6/h6                  | 10       |
| 50  | 80  | 0,049                   | H7/h6                  | 10       |
| 80  | 120 | 0,057                   | H7/h6                  | 16       |
| 120   | 150 | 0,065                   | H7/h6                  | 16       |
| 150   | 180 | 0,079                   | H7/g6                  | 16       |
| 180   | 250 | 0,090                   | H7/g6                  | 16       |
| 250   | 315 | 0,101                   | H7/g6                  | 16       |
| 315   | 400 | 0,111                   | H7/g6                  | 16       |
| 400   | 500 | 0,123                   | H7/g6                  | 25       |
| 500   | 630 | 0,136                   | H7/g6                  | 25       |

# Basics-Calculation

The calculation of the values, given in the catalogue, are based on the following assumptions and simplifications:

## Transmissible torque

A shrink connection is capable of transmitting torque, bending moment and axial force. Substituted, the transmissible torque  $M_{max}$  is specified in the product data. If such loads occur simultaneously then they must be added vectorially to the resultant moment  $M_{res}$ . The formula below applies to the resulting moment:

$$M_{res} \leq M_{max}$$

At different load cases, they must be individually checked against  $M_{max}$ !

$M_{res}$  is determined for combined loads as follows:

$$M_{res} = \sqrt{M_T^2 + 2M_B^2 + (F_{AX} \frac{dW}{2})^2}$$

with  $M_B \leq 0,4 M_{max}$  as the limit\* for the static bending moment

\*In several, the maximum bending moment corresponds to the maximum transmittable torque. The limitation to  $0,4 M_{max}$  is due to the change of the surface pressure at the edges of the connection. (This information applies to the shrink connection of the coupling only!)

## This results in the following relationships:

### Torque only:

The maximum torque is equivalent to  $M_{max}$ .

### Bending moment only:

The maximum static bending moment corresponds to  $0,4 M_{max}$ .

### Axial force only:

The maximum axial force is  $M_{max} \frac{2}{d_w}$

## Static and dynamic load

For some applications, a static review of the coupling is sufficient. The clamping forces of the shrink connection are static. Also steady torques and/or axial forces can be considered as static loads. Rotating bending, has to be considered as dynamic load and the coupling must be examined for that. Therefore, it is also essential to specify the occurring load cases.

## Shaft calculation

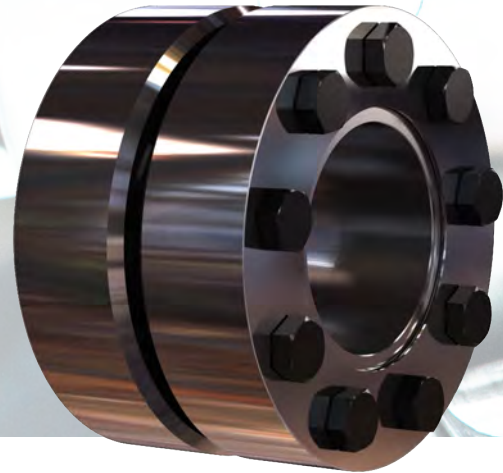
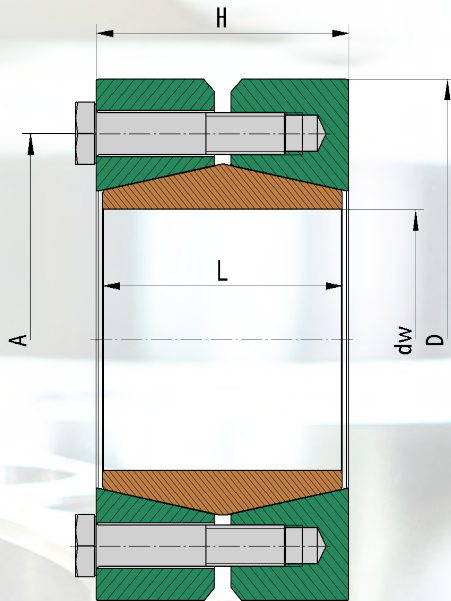
The sleeve will be deformed due to the applied clamping force. In addition to the clearance between shaft and sleeve, shaft stiffness and surface finish should be considered. For solid shafts the stiffness can be ignored, but with hollow shafts (see „Bore in the shaft (hollow shaft)“) there is higher deformation and thus higher stresses in the components. This must be considered in addition to other loads.

## Notch effect

Generally there is a notch effect on the components, caused by the radial pressure of the pressure ring. This depends mainly on the applied pressure. The notch effect is generally higher on the sleeve than on the shaft, because the pressure ring is directly pressed onto the sleeve, while the stresses are distributed through the sleeve before reaching the shaft. The notch factors range from 2,5 to 3,5 for the sleeve and between 1,5 and 2 for the shaft. This can be mitigated by suitable design features, such as relief notches.

## Bore in the shaft (hollow shaft)

A large bore  $d_B$  in the shaft or the use of a hollow shaft, reduces the stiffness of this component against radial pressure. This leads to a decrease in pressure  $p_w$ , a reduced transmissible torque  $M$ , a contraction  $\Delta d_B$  within the shaft and an increase of stresses in these components. Basically, a bore should not be greater than  $0,3 d_w$ .



### Used symbols

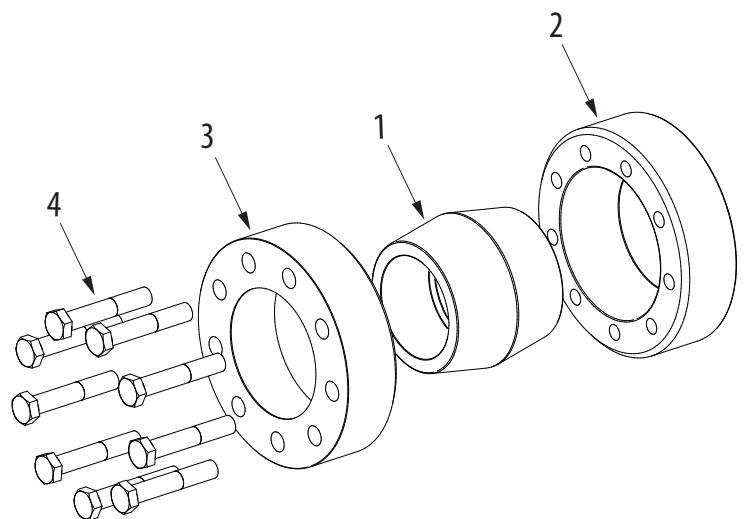
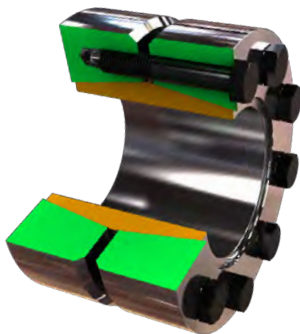
|                            |   |              |
|----------------------------|---|--------------|
| $d_w$ [mm]                 | Shaft diameter                                |              |
| $M_{max}$ [Nm]             | max. transmittable torque                     | $F_{ax} = 0$ |
| $F_{ax}$ [kN]              | max. transmittable axial force                | $M_t = 0$    |
| $D$ [mm]                   | Outer diameter of coupling                    |              |
| $L$ [mm]                   | Length of sleeve                              |              |
| $H$ [mm]                   | Width of shaft coupling                       |              |
| $A$ [mm]                   | Pitch circle diameter of bolting              |              |
| $M_A$                      | Required tightening torque of clamping screws |              |
| $Z$                        | Number of screws                              |              |
| $S$                        | Size of screws                                |              |
| $p_w$ [N/mm <sup>2</sup> ] | Average contact pressure on the shaft         |              |

### Design of the disc

|              |                                     |
|--------------|-------------------------------------|
| $d < 070$    | Discs lightly oiled without washers |
| $d \geq 070$ | Discs painted with washers          |

Dimensions H & e in unlocked position

| Pos. | Designation      |
|------|------------------|
| 1    | Sleeve           |
| 2    | Pressure ring G  |
| 3    | Pressure ring DG |
| 4    | Screw            |



Ordering example: TAS W-Typ/d1/ d2 (e.g: TAS W070/065/070 ... further sizes on request)



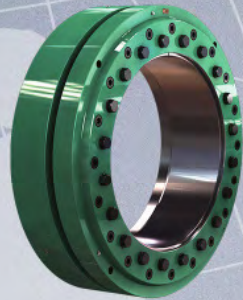


| Type | $d_w$ | $M_{max}$ | $F_{ax}$ | $D$ | $L$ | $H$ | $A$ | $M_A$ | $Z$ | $S$      | DIN | Class | $p_w$             | Weight |
|------|-------|-----------|----------|-----|-----|-----|-----|-------|-----|----------|-----|-------|-------------------|--------|
| mm   | mm    | Nm        | kN       | mm  | mm  | mm  | mm  | mm    | Pcs |          |     |       | N/mm <sup>2</sup> | Kg     |
| W011 | 10    | 30        | 6        | 47  | 25  | 27  | 30  | 6     | 6   | M5 x 20  | 933 | 10.9  | 150               | 0,4    |
| W011 | 11    | 36        | 7        | 47  | 25  | 27  | 30  | 6     | 6   | M5 x 20  | 933 | 10.9  | 189               | 0,4    |
| W011 | 12    | 60        | 10       | 47  | 25  | 27  | 30  | 6     | 6   | M5 x 20  | 933 | 10.9  | 222               | 0,4    |
| W015 | 13    | 70        | 11       | 55  | 30  | 33  | 37  | 6     | 7   | M5 x 25  | 933 | 10.9  | 83                | 0,5    |
| W015 | 15    | 150       | 20       | 55  | 30  | 33  | 37  | 6     | 7   | M5 x 25  | 933 | 10.9  | 126               | 0,5    |
| W015 | 17    | 180       | 21       | 55  | 30  | 33  | 37  | 6     | 7   | M5 x 25  | 933 | 10.9  | 160               | 0,5    |
| W020 | 18    | 200       | 22       | 60  | 34  | 37  | 42  | 12    | 8   | M6 x 30  | 931 | 10.9  | 213               | 0,7    |
| W020 | 20    | 270       | 27       | 60  | 34  | 37  | 42  | 12    | 8   | M6 x 30  | 931 | 10.9  | 241               | 0,7    |
| W020 | 22    | 350       | 31       | 60  | 34  | 37  | 42  | 12    | 8   | M6 x 30  | 931 | 10.9  | 266               | 0,7    |
| W025 | 23    | 370       | 32       | 66  | 38  | 41  | 48  | 12    | 8   | M6 x 30  | 931 | 10.9  | 178               | 0,8    |
| W025 | 25    | 470       | 37       | 66  | 38  | 41  | 48  | 12    | 8   | M6 x 30  | 931 | 10.9  | 197               | 0,8    |
| W025 | 27    | 600       | 44       | 66  | 38  | 41  | 48  | 12    | 8   | M6 x 30  | 931 | 10.9  | 214               | 0,8    |
| W030 | 28    | 540       | 38       | 76  | 42  | 45  | 54  | 12    | 10  | M6 x 35  | 931 | 10.9  | 215               | 1,3    |
| W030 | 30    | 670       | 44       | 76  | 42  | 45  | 54  | 12    | 10  | M6 x 35  | 931 | 10.9  | 217               | 1,3    |
| W030 | 32    | 750       | 46       | 76  | 42  | 45  | 54  | 12    | 10  | M6 x 35  | 931 | 10.9  | 231               | 1,3    |
| W035 | 33    | 750       | 45       | 80  | 46  | 49  | 62  | 12    | 12  | M6 x 35  | 931 | 10.9  | 168               | 1,5    |
| W035 | 35    | 900       | 51       | 80  | 46  | 49  | 62  | 12    | 12  | M6 x 35  | 931 | 10.9  | 180               | 1,5    |
| W035 | 37    | 1050      | 56       | 80  | 46  | 49  | 62  | 12    | 12  | M6 x 35  | 931 | 10.9  | 190               | 1,5    |
| W040 | 38    | 1250      | 65       | 98  | 50  | 54  | 71  | 30    | 8   | M8 x 40  | 931 | 10.9  | 175               | 2,5    |
| W040 | 40    | 1550      | 77       | 98  | 50  | 54  | 71  | 30    | 8   | M8 x 40  | 931 | 10.9  | 184               | 2,5    |
| W040 | 43    | 1850      | 86       | 98  | 50  | 54  | 71  | 30    | 8   | M8 x 40  | 931 | 10.9  | 196               | 2,5    |
| W050 | 44    | 2200      | 100      | 115 | 60  | 64  | 86  | 59    | 8   | M10 x 45 | 931 | 10.9  | 189               | 4      |
| W050 | 50    | 3300      | 132      | 115 | 60  | 64  | 86  | 59    | 8   | M10 x 45 | 931 | 10.9  | 200               | 4      |
| W050 | 54    | 3800      | 140      | 115 | 60  | 64  | 86  | 59    | 8   | M10 x 45 | 931 | 10.9  | 212               | 4      |
| W060 | 55    | 4050      | 147      | 125 | 70  | 74  | 98  | 59    | 10  | M10 x 50 | 931 | 10.9  | 177               | 5,3    |
| W060 | 60    | 5100      | 170      | 125 | 70  | 74  | 98  | 59    | 10  | M10 x 50 | 931 | 10.9  | 190               | 5,3    |
| W060 | 64    | 6100      | 190      | 125 | 70  | 74  | 98  | 59    | 10  | M10 x 50 | 931 | 10.9  | 198               | 5,3    |
| W070 | 65    | 6500      | 200      | 148 | 80  | 85  | 112 | 59    | 12  | M10 x 60 | 931 | 10.9  | 172               | 8,4    |
| W070 | 70    | 8200      | 234      | 148 | 80  | 85  | 112 | 59    | 12  | M10 x 60 | 931 | 10.9  | 181               | 8,4    |
| W070 | 74    | 9000      | 243      | 148 | 80  | 85  | 112 | 59    | 12  | M10 x 60 | 931 | 10.9  | 188               | 8,4    |
| W080 | 75    | 10500     | 280      | 170 | 94  | 99  | 130 | 100   | 12  | M12 x 70 | 931 | 10.9  | 73                | 13,1   |
| W080 | 80    | 12300     | 307      | 170 | 94  | 99  | 130 | 100   | 12  | M12 x 70 | 931 | 10.9  | 186               | 13,1   |
| W080 | 84    | 14000     | 333      | 170 | 94  | 99  | 130 | 100   | 12  | M12 x 70 | 931 | 10.9  | 192               | 13,1   |
| W090 | 85    | 14200     | 334      | 185 | 104 | 109 | 145 | 250   | 7   | M16 x 80 | 931 | 10.9  | 166               | 17     |
| W090 | 90    | 16400     | 364      | 185 | 104 | 109 | 145 | 250   | 7   | M16 x 80 | 931 | 10.9  | 173               | 17     |
| W090 | 94    | 18000     | 383      | 185 | 104 | 109 | 145 | 250   | 7   | M16 x 80 | 931 | 10.9  | 177               | 17     |
| W100 | 80    | 19100     | 402      | 200 | 114 | 119 | 158 | 250   | 9   | M16 x 90 | 931 | 10.9  | 200               | 21     |
| W100 | 100   | 23100     | 462      | 200 | 114 | 119 | 158 | 250   | 9   | M16 x 90 | 931 | 10.9  | 189               | 21     |
| W100 | 104   | 26000     | 500      | 200 | 114 | 119 | 158 | 250   | 9   | M16 x 90 | 931 | 10.9  | 193               | 21     |
| W110 | 105   | 28500     | 542      | 217 | 124 | 129 | 170 | 250   | 12  | M16 x 90 | 931 | 10.9  | 214               | 27     |
| W110 | 110   | 32000     | 581      | 217 | 124 | 129 | 170 | 250   | 12  | M16 x 90 | 931 | 10.9  | 218               | 27     |
| W110 | 114   | 35000     | 614      | 217 | 124 | 129 | 170 | 250   | 12  | M16 x 90 | 931 | 10.9  | 221               | 27     |
| W120 | 115   | 38500     | 669      | 235 | 134 | 139 | 184 | 250   | 13  | M16 x 90 | 931 | 10.9  | 199               | 33     |
| W120 | 120   | 43500     | 725      | 235 | 134 | 139 | 184 | 250   | 13  | M16 x 90 | 931 | 10.9  | 200               | 33     |
| W120 | 124   | 46000     | 742      | 235 | 134 | 139 | 184 | 250   | 13  | M16 x 90 | 931 | 10.9  | 204               | 33     |

# W

| Type        | $d_w$ | $M_{max}$ | $F_{ax}$ | $D$ | $L$ | $H$ | $A$ | $M_A$ | $Z$  | $S$       | DIN | Class | $pw$              | Weight |
|-------------|-------|-----------|----------|-----|-----|-----|-----|-------|------|-----------|-----|-------|-------------------|--------|
| mm          | mm    | Nm        | kN       | mm  | mm  | mm  | mm  | mm    | Pcs. |           |     |       | N/mm <sup>2</sup> | Kg     |
| <b>W130</b> | 125   | 47500     | 760      | 267 | 150 | 155 | 206 | 490   | 10   | M20 x 110 | 931 | 10.9  | 195               | 45     |
| <b>W130</b> | 130   | 55000     | 846      | 267 | 150 | 155 | 206 | 490   | 10   | M20 x 110 | 931 | 10.9  | 198               | 45     |
| <b>W130</b> | 134   | 58000     | 865      | 267 | 150 | 155 | 206 | 490   | 10   | M20 x 110 | 931 | 10.9  | 200               | 45     |
| <b>W140</b> | 135   | 62000     | 918      | 280 | 160 | 165 | 218 | 490   | 11   | M20 x 110 | 931 | 10.9  | 192               | 55     |
| <b>W140</b> | 140   | 67000     | 957      | 280 | 160 | 165 | 218 | 490   | 11   | M20 x 110 | 931 | 10.9  | 195               | 55     |
| <b>W140</b> | 144   | 71000     | 986      | 280 | 160 | 165 | 218 | 490   | 11   | M20 x 110 | 931 | 10.9  | 197               | 55     |
| <b>W150</b> | 145   | 73000     | 1006     | 302 | 170 | 175 | 230 | 490   | 12   | M20 x 120 | 931 | 10.9  | 186               | 70     |
| <b>W150</b> | 150   | 78000     | 1040     | 302 | 170 | 175 | 230 | 490   | 12   | M20 x 120 | 931 | 10.9  | 188               | 70     |
| <b>W150</b> | 154   | 82000     | 1065     | 302 | 170 | 175 | 230 | 490   | 12   | M20 x 120 | 931 | 10.9  | 190               | 70     |
| <b>W160</b> | 115   | 82000     | 1058     | 315 | 180 | 185 | 242 | 490   | 13   | M20 x 120 | 931 | 10.9  | 178               | 80     |
| <b>W160</b> | 120   | 88000     | 1100     | 315 | 180 | 185 | 242 | 490   | 13   | M20 x 120 | 931 | 10.9  | 182               | 80     |
| <b>W160</b> | 125   | 97000     | 1175     | 315 | 180 | 185 | 242 | 490   | 13   | M20 x 120 | 931 | 10.9  | 184               | 80     |
| <b>W180</b> | 166   | 108000    | 1301     | 345 | 200 | 205 | 265 | 490   | 16   | M20 x 130 | 931 | 10.9  | 179               | 105    |
| <b>W180</b> | 180   | 132000    | 1465     | 345 | 200 | 205 | 265 | 490   | 16   | M20 x 130 | 931 | 10.9  | 181               | 105    |
| <b>W180</b> | 185   | 140000    | 1513     | 345 | 200 | 205 | 265 | 490   | 16   | M20 x 130 | 931 | 10.9  | 183               | 105    |
| <b>W200</b> | 186   | 153000    | 1645     | 375 | 225 | 230 | 295 | 490   | 20   | M20 x 150 | 931 | 10.9  | 174               | 135    |
| <b>W200</b> | 200   | 184000    | 1840     | 375 | 225 | 230 | 295 | 490   | 20   | M20 x 150 | 931 | 10.9  | 178               | 135    |
| <b>W200</b> | 210   | 204000    | 1943     | 375 | 225 | 230 | 295 | 490   | 20   | M20 x 150 | 931 | 10.9  | 182               | 135    |
| <b>W220</b> | 211   | 214000    | 2028     | 410 | 253 | 258 | 320 | 840   | 18   | M24 x 160 | 931 | 10.9  | 191               | 180    |
| <b>W220</b> | 220   | 240000    | 2180     | 410 | 253 | 258 | 320 | 840   | 18   | M24 x 160 | 931 | 10.9  | 193               | 180    |
| <b>W220</b> | 230   | 260000    | 2260     | 410 | 253 | 258 | 320 | 840   | 18   | M24 x 160 | 931 | 10.9  | 196               | 180    |
| <b>W240</b> | 231   | 280000    | 2424     | 435 | 273 | 278 | 350 | 840   | 20   | M24 x 180 | 931 | 10.9  | 182               | 210    |
| <b>W240</b> | 240   | 305000    | 2540     | 435 | 273 | 278 | 350 | 840   | 20   | M24 x 180 | 931 | 10.9  | 184               | 210    |
| <b>W240</b> | 250   | 334000    | 2672     | 435 | 273 | 278 | 350 | 840   | 20   | M24 x 180 | 931 | 10.9  | 185               | 210    |
| <b>W260</b> | 251   | 390000    | 3108     | 515 | 300 | 305 | 380 | 1250  | 20   | M27 x 200 | 931 | 10.9  | 204               | 345    |
| <b>W260</b> | 260   | 425000    | 3270     | 515 | 300 | 305 | 380 | 1250  | 20   | M27 x 200 | 931 | 10.9  | 206               | 345    |
| <b>W260</b> | 270   | 465000    | 3444     | 515 | 300 | 305 | 380 | 1250  | 20   | M27 x 200 | 931 | 10.9  | 208               | 345    |

**QUALITY ON  
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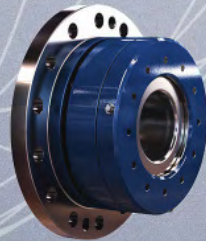
Hydraulic Shrink Disc  
for Gearbox test benches



Hydraulic Shrink Disc  
for Wind power and Industrial applications



Hydraulic Shaft Coupling  
for shaftings



Hydraulic Flange Coupling  
for Conveyor drives

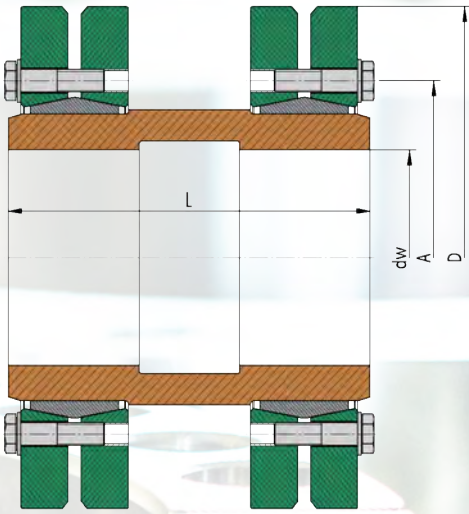
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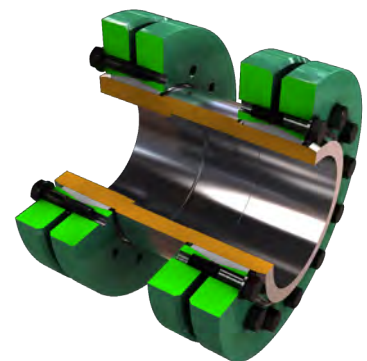
### Used symbols

|                            |   |              |
|----------------------------|---|--------------|
| $d_w$ [mm]                 | Shaft diameter                                |              |
| $M_{max}$ [Nm]             | max. transmittable torque                     | $F_{ax} = 0$ |
| $F_{ax}$ [kN]              | max. transmittable axial force                | $M_t = 0$    |
| $D$ [mm]                   | Outer diameter of coupling                    |              |
| $L$ [mm]                   | Length of sleeve                              |              |
| $H$ [mm]                   | Width of shaft coupling                       |              |
| $A$ [mm]                   | Pitch circle diameter of bolting              |              |
| $M_A$                      | Required tightening torque of clamping screws |              |
| $Z$                        | Number of screws                              |              |
| $S$                        | Size of screws                                |              |
| $p_w$ [N/mm <sup>2</sup> ] | Average contact pressure on the shaft         |              |

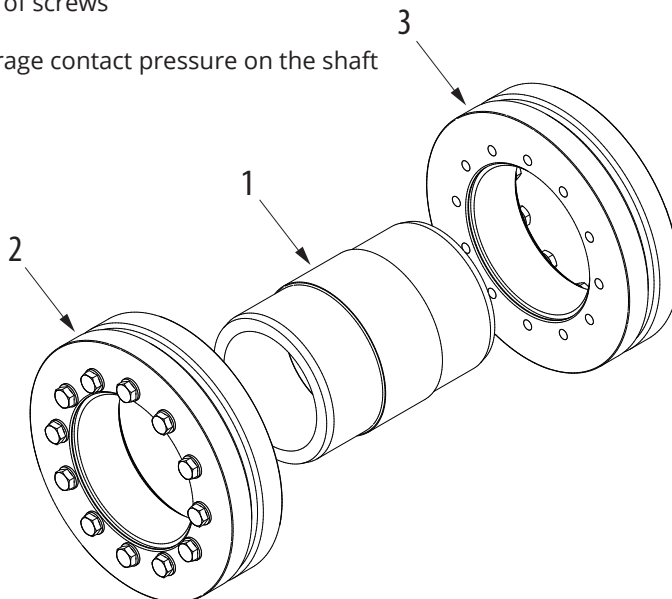
### Design of the disc

|              |                                  |
|--------------|----------------------------------|
| $d < 115$    | Discs galvanized without washers |
| $d \geq 115$ | Discs painted with washers       |

Dimensions H & e in unlocked position



| Pos. | Designation |
|------|-------------|
| 1    | Sleeve      |
| 2    | Shrink Disc |
| 3    | Shrink Disc |



Ordering example: TAS WK-Typ/d/D (e.g: TAS WK 240/150/200 ... further sizes on request)

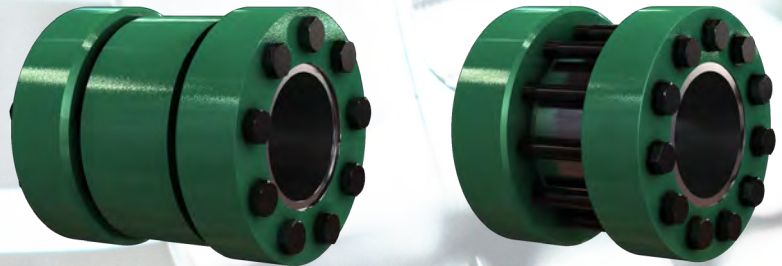
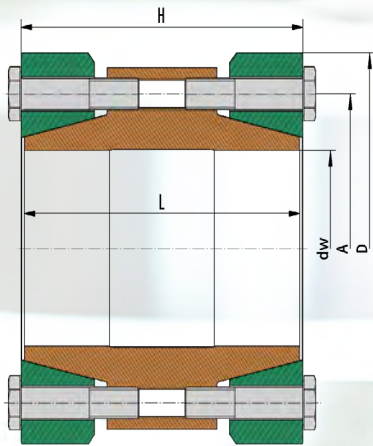
| Type  | $d_w$ | $M_{max}$ | $F_{ax}$ | $D$ | $L$ | $A$ | $M_A$ | $Z$  | $S$ | DIN | Class | $p_w$             | Weight |
|-------|-------|-----------|----------|-----|-----|-----|-------|------|-----|-----|-------|-------------------|--------|
| mm    | mm    | Nm        | kN       | mm  | mm  | mm  | mm    | Pcs. |     |     |       | N/mm <sup>2</sup> | Kg     |
| WK024 | 19    | 250       | 26       | 50  | 50  | 36  | 6     | 6    | M5  | 933 | 10.9  | 235               | 0,7    |
| WK024 | 20    | 300       | 30       | 50  | 50  | 36  | 6     | 6    | M5  | 933 | 10.9  | 254               | 0,7    |
| WK024 | 21    | 360       | 34       | 50  | 50  | 36  | 6     | 6    | M5  | 933 | 10.9  | 273               | 0,7    |
| WK030 | 24    | 310       | 26       | 60  | 55  | 44  | 6     | 6    | M5  | 933 | 10.9  | 159               | 1      |
| WK030 | 25    | 360       | 29       | 60  | 55  | 44  | 6     | 6    | M5  | 933 | 10.9  | 171               | 1      |
| WK030 | 26    | 420       | 32       | 60  | 55  | 44  | 6     | 6    | M5  | 933 | 10.9  | 183               | 1      |
| WK036 | 28    | 500       | 36       | 72  | 65  | 52  | 12    | 5    | M6  | 933 | 10.9  | 169               | 1,3    |
| WK036 | 30    | 640       | 43       | 72  | 65  | 52  | 12    | 5    | M6  | 933 | 10.9  | 186               | 1,3    |
| WK036 | 31    | 690       | 45       | 72  | 65  | 52  | 12    | 5    | M6  | 933 | 10.9  | 189               | 1,3    |
| WK044 | 34    | 880       | 52       | 80  | 70  | 61  | 12    | 7    | M6  | 933 | 10.9  | 178               | 2      |
| WK044 | 35    | 970       | 55       | 80  | 70  | 61  | 12    | 7    | M6  | 933 | 10.9  | 185               | 2      |
| WK044 | 36    | 1000      | 56       | 80  | 70  | 61  | 12    | 7    | M6  | 933 | 10.9  | 192               | 2      |
| WK050 | 38    | 1000      | 53       | 90  | 80  | 70  | 12    | 8    | M6  | 931 | 10.9  | 161               | 2,5    |
| WK050 | 40    | 1200      | 60       | 90  | 80  | 70  | 12    | 8    | M6  | 931 | 10.9  | 172               | 2,5    |
| WK050 | 42    | 1500      | 71       | 90  | 80  | 70  | 12    | 8    | M6  | 931 | 10.9  | 182               | 2,5    |
| WK055 | 42    | 1200      | 57       | 100 | 85  | 75  | 12    | 8    | M6  | 931 | 10.9  | 139               | 3,5    |
| WK055 | 45    | 1500      | 67       | 100 | 85  | 75  | 12    | 8    | M6  | 931 | 10.9  | 152               | 3,5    |
| WK055 | 48    | 1800      | 75       | 100 | 85  | 75  | 12    | 8    | M6  | 931 | 10.9  | 164               | 3,5    |
| WK062 | 48    | 1900      | 79       | 110 | 90  | 86  | 12    | 10   | M6  | 931 | 10.9  | 168               | 4      |
| WK062 | 50    | 2100      | 84       | 110 | 90  | 86  | 12    | 10   | M6  | 931 | 10.9  | 174               | 4      |
| WK062 | 52    | 2200      | 85       | 110 | 90  | 86  | 12    | 10   | M6  | 931 | 10.9  | 171               | 4      |
| WK068 | 50    | 1700      | 68       | 115 | 100 | 86  | 12    | 10   | M6  | 931 | 10.9  | 145               | 4,5    |
| WK068 | 55    | 2200      | 80       | 115 | 100 | 86  | 12    | 10   | M6  | 931 | 10.9  | 148               | 4,5    |
| WK068 | 60    | 2900      | 97       | 115 | 100 | 86  | 12    | 10   | M6  | 931 | 10.9  | 166               | 4,5    |
| WK075 | 55    | 2800      | 102      | 138 | 120 | 100 | 30    | 7    | M8  | 931 | 10.9  | 175               | 5      |
| WK075 | 60    | 3600      | 120      | 138 | 120 | 100 | 30    | 7    | M8  | 931 | 10.9  | 192               | 5      |
| WK075 | 65    | 4600      | 142      | 138 | 120 | 100 | 30    | 7    | M8  | 931 | 10.9  | 207               | 5      |
| WK080 | 60    | 3200      | 107      | 145 | 130 | 100 | 30    | 7    | M8  | 931 | 10.9  | 168               | 6      |
| WK080 | 65    | 4100      | 126      | 145 | 130 | 100 | 30    | 7    | M8  | 931 | 10.9  | 182               | 6      |
| WK080 | 70    | 5100      | 146      | 145 | 130 | 100 | 30    | 7    | M8  | 931 | 10.9  | 195               | 6      |
| WK090 | 65    | 4900      | 151      | 155 | 140 | 114 | 30    | 10   | M8  | 931 | 10.9  | 181               | 11     |
| WK090 | 70    | 6000      | 171      | 155 | 140 | 114 | 30    | 10   | M8  | 931 | 10.9  | 192               | 11     |
| WK090 | 75    | 7300      | 195      | 155 | 140 | 114 | 30    | 10   | M8  | 931 | 10.9  | 203               | 11     |
| WK100 | 70    | 6000      | 171      | 170 | 160 | 124 | 30    | 12   | M8  | 931 | 10.9  | 170               | 15     |
| WK100 | 75    | 7300      | 195      | 170 | 160 | 124 | 30    | 12   | M8  | 931 | 10.9  | 180               | 15     |
| WK100 | 80    | 8800      | 220      | 170 | 160 | 124 | 30    | 12   | M8  | 931 | 10.9  | 189               | 15     |
| WK110 | 75    | 7400      | 197      | 185 | 180 | 136 | 59    | 9    | M10 | 931 | 10.9  | 159               | 19     |
| WK110 | 80    | 8900      | 223      | 185 | 180 | 136 | 59    | 9    | M10 | 931 | 10.9  | 168               | 19     |
| WK110 | 85    | 10300     | 242      | 185 | 180 | 136 | 59    | 9    | M10 | 931 | 10.9  | 171               | 19     |
| WK125 | 85    | 11100     | 261      | 215 | 200 | 160 | 59    | 12   | M10 | 931 | 10.9  | 172               | 26     |
| WK125 | 90    | 13100     | 291      | 215 | 200 | 160 | 59    | 12   | M10 | 931 | 10.9  | 180               | 26     |
| WK125 | 95    | 15200     | 320      | 215 | 200 | 160 | 59    | 12   | M10 | 931 | 10.9  | 188               | 26     |
| WK140 | 95    | 15500     | 326      | 230 | 210 | 175 | 100   | 10   | M12 | 931 | 10.9  | 175               | 34     |
| WK140 | 100   | 17900     | 358      | 230 | 210 | 175 | 100   | 10   | M12 | 931 | 10.9  | 182               | 34     |
| WK140 | 105   | 20400     | 389      | 230 | 210 | 175 | 100   | 10   | M12 | 931 | 10.9  | 188               | 34     |

# WK

| Type<br>mm | $d_w$<br>mm | $M_{max}$<br>Nm | $F_{ax}$<br>kN | $D$<br>mm | $L$<br>mm | $A$<br>mm | $M_A$<br>mm | $Z$<br>Pcs. | $S$ | DIN | Class | $p_w$<br>N/mm <sup>2</sup> | Weight<br>Kg |
|------------|-------------|-----------------|----------------|-----------|-----------|-----------|-------------|-------------|-----|-----|-------|----------------------------|--------------|
| WK155      | 105         | 21100           | 402            | 265       | 230       | 192       | 100         | 12          | M12 | 931 | 10.9  | 179                        | 50           |
| WK155      | 110         | 23900           | 435            | 265       | 230       | 192       | 100         | 12          | M12 | 931 | 10.9  | 185                        | 50           |
| WK155      | 115         | 26900           | 468            | 265       | 230       | 192       | 100         | 12          | M12 | 931 | 10.9  | 190                        | 50           |
| WK165      | 115         | 34800           | 605            | 290       | 240       | 210       | 250         | 8           | M16 | 931 | 10.9  | 219                        | 65           |
| WK165      | 120         | 38700           | 645            | 290       | 240       | 210       | 250         | 8           | M16 | 931 | 10.9  | 224                        | 65           |
| WK165      | 125         | 42300           | 677            | 290       | 240       | 210       | 250         | 8           | M16 | 931 | 10.9  | 226                        | 65           |
| WK175      | 125         | 38600           | 618            | 300       | 250       | 220       | 250         | 8           | M16 | 931 | 10.9  | 206                        | 68           |
| WK175      | 130         | 42600           | 655            | 300       | 250       | 220       | 250         | 8           | M16 | 931 | 10.9  | 211                        | 68           |
| WK175      | 135         | 46900           | 695            | 300       | 250       | 220       | 250         | 8           | M16 | 931 | 10.9  | 215                        | 68           |
| WK185      | 135         | 53700           | 796            | 330       | 265       | 236       | 250         | 10          | M16 | 931 | 10.9  | 194                        | 100          |
| WK185      | 140         | 59000           | 843            | 330       | 265       | 236       | 250         | 10          | M16 | 931 | 10.9  | 198                        | 100          |
| WK185      | 145         | 64400           | 888            | 330       | 265       | 236       | 250         | 10          | M16 | 931 | 10.9  | 202                        | 100          |
| WK195      | 140         | 67200           | 960            | 350       | 280       | 246       | 250         | 12          | M16 | 931 | 10.9  | 226                        | 110          |
| WK195      | 150         | 79500           | 1060           | 350       | 280       | 246       | 250         | 12          | M16 | 931 | 10.9  | 233                        | 110          |
| WK195      | 155         | 84800           | 1094           | 350       | 280       | 246       | 250         | 12          | M16 | 931 | 10.9  | 232                        | 110          |
| WK200      | 150         | 76700           | 1023           | 350       | 290       | 246       | 250         | 12          | M16 | 931 | 10.9  | 224                        | 125          |
| WK200      | 155         | 81700           | 1054           | 350       | 290       | 246       | 250         | 12          | M16 | 931 | 10.9  | 224                        | 125          |
| WK200      | 160         | 88400           | 1105           | 350       | 290       | 246       | 250         | 12          | M16 | 931 | 10.9  | 227                        | 125          |
| WK220      | 160         | 95800           | 1198           | 370       | 310       | 270       | 250         | 15          | M16 | 931 | 10.9  | 199                        | 155          |
| WK220      | 165         | 103000          | 1248           | 370       | 310       | 270       | 250         | 15          | M16 | 931 | 10.9  | 202                        | 155          |
| WK220      | 170         | 111000          | 1306           | 370       | 310       | 270       | 250         | 15          | M16 | 931 | 10.9  | 205                        | 155          |
| WK240      | 170         | 126000          | 1482           | 405       | 350       | 295       | 490         | 12          | M20 | 931 | 10.9  | 221                        | 190          |
| WK240      | 180         | 144000          | 1600           | 405       | 350       | 295       | 490         | 12          | M20 | 931 | 10.9  | 227                        | 190          |
| WK240      | 190         | 163000          | 1716           | 405       | 350       | 295       | 490         | 12          | M20 | 931 | 10.9  | 230                        | 190          |
| WK260      | 190         | 170000          | 1789           | 430       | 390       | 321       | 490         | 14          | M20 | 931 | 10.9  | 214                        | 240          |
| WK260      | 200         | 193000          | 1930           | 430       | 390       | 321       | 490         | 14          | M20 | 931 | 10.9  | 219                        | 240          |
| WK260      | 210         | 217000          | 2067           | 430       | 390       | 321       | 490         | 14          | M20 | 931 | 10.9  | 224                        | 240          |
| WK280      | 210         | 224000          | 2133           | 460       | 430       | 346       | 490         | 16          | M20 | 931 | 10.9  | 209                        | 290          |
| WK280      | 220         | 251000          | 2282           | 460       | 430       | 346       | 490         | 16          | M20 | 931 | 10.9  | 213                        | 290          |
| WK280      | 230         | 280000          | 2435           | 460       | 430       | 346       | 490         | 16          | M20 | 931 | 10.9  | 217                        | 290          |
| WK300      | 230         | 287000          | 2496           | 485       | 445       | 364       | 490         | 18          | M20 | 931 | 10.9  | 208                        | 340          |
| WK300      | 240         | 318000          | 2650           | 485       | 445       | 364       | 490         | 18          | M20 | 931 | 10.9  | 211                        | 340          |
| WK300      | 245         | 334000          | 2727           | 485       | 445       | 364       | 490         | 18          | M20 | 931 | 10.9  | 213                        | 340          |
| WK320      | 240         | 326000          | 2717           | 520       | 460       | 386       | 490         | 20          | M20 | 931 | 10.9  | 217                        | 380          |
| WK320      | 250         | 359000          | 2872           | 520       | 460       | 386       | 490         | 20          | M20 | 931 | 10.9  | 220                        | 380          |
| WK320      | 260         | 391000          | 3008           | 520       | 460       | 386       | 490         | 20          | M20 | 931 | 10.9  | 222                        | 380          |
| WK340      | 250         | 401000          | 3208           | 570       | 480       | 408       | 490         | 24          | M20 | 931 | 10.9  | 224                        | 500          |
| WK340      | 260         | 435000          | 3346           | 570       | 480       | 408       | 490         | 24          | M20 | 931 | 10.9  | 225                        | 500          |
| WK340      | 270         | 476000          | 3526           | 570       | 480       | 408       | 490         | 24          | M20 | 931 | 10.9  | 228                        | 500          |
| WK350      | 270         | 456000          | 3378           | 580       | 490       | 432       | 490         | 24          | M20 | 931 | 10.9  | 209                        | 530          |
| WK350      | 280         | 497000          | 3550           | 580       | 490       | 432       | 490         | 24          | M20 | 931 | 10.9  | 212                        | 530          |
| WK350      | 285         | 518000          | 3635           | 580       | 490       | 432       | 490         | 24          | M20 | 931 | 10.9  | 213                        | 530          |
| WK360      | 280         | 478000          | 3414           | 590       | 500       | 432       | 490         | 24          | M20 | 931 | 10.9  | 203                        | 550          |
| WK360      | 290         | 519000          | 3579           | 590       | 500       | 432       | 490         | 24          | M20 | 931 | 10.9  | 206                        | 550          |
| WK360      | 295         | 541000          | 3668           | 590       | 500       | 432       | 490         | 24          | M20 | 931 | 10.9  | 207                        | 550          |

| Type         | $d_w$ | $M_{max}$ | $F_{ax}$ | $D$ | $L$ | $A$ | $M_A$ | $Z$  | $S$ | DIN | Class | $p_w$             | Weight |
|--------------|-------|-----------|----------|-----|-----|-----|-------|------|-----|-----|-------|-------------------|--------|
| mm           | mm    | Nm        | kN       | mm  | mm  | mm  | mm    | Pcs. |     |     |       | N/mm <sup>2</sup> | Kg     |
| <b>WK380</b> | 290   | 587000    | 4048     | 645 | 530 | 458 | 840   | 20   | M24 | 931 | 10.9  | 226               | 660    |
| <b>WK380</b> | 300   | 635000    | 4233     | 645 | 530 | 458 | 840   | 20   | M24 | 931 | 10.9  | 229               | 660    |
| <b>WK380</b> | 310   | 685000    | 4419     | 645 | 530 | 458 | 840   | 20   | M24 | 931 | 10.9  | 231               | 660    |
| <b>WK390</b> | 300   | 646000    | 4307     | 660 | 540 | 468 | 840   | 21   | M24 | 931 | 10.9  | 233               | 720    |
| <b>WK390</b> | 310   | 697000    | 4497     | 660 | 540 | 468 | 840   | 21   | M24 | 931 | 10.9  | 235               | 720    |
| <b>WK390</b> | 320   | 746000    | 4663     | 660 | 540 | 468 | 840   | 21   | M24 | 931 | 10.9  | 236               | 720    |
| <b>WK420</b> | 330   | 831000    | 5036     | 690 | 580 | 504 | 840   | 24   | M24 | 931 | 10.9  | 217               | 860    |
| <b>WK420</b> | 340   | 891000    | 5241     | 690 | 580 | 504 | 840   | 24   | M24 | 931 | 10.9  | 219               | 860    |
| <b>WK420</b> | 350   | 953000    | 5446     | 690 | 580 | 504 | 840   | 24   | M24 | 931 | 10.9  | 221               | 860    |
| <b>WK440</b> | 340   | 832000    | 4894     | 750 | 600 | 527 | 840   | 24   | M24 | 931 | 10.9  | 190               | 990    |
| <b>WK440</b> | 350   | 891000    | 5091     | 750 | 600 | 527 | 840   | 24   | M24 | 931 | 10.9  | 192               | 990    |
| <b>WK440</b> | 360   | 952000    | 5289     | 750 | 600 | 527 | 840   | 24   | M24 | 931 | 10.9  | 194               | 990    |
| <b>WK460</b> | 360   | 1058000   | 5878     | 770 | 620 | 547 | 840   | 28   | M24 | 931 | 10.9  | 216               | 1100   |
| <b>WK460</b> | 370   | 1127000   | 6092     | 770 | 620 | 547 | 840   | 28   | M24 | 931 | 10.9  | 217               | 1100   |
| <b>WK460</b> | 380   | 1198000   | 6305     | 770 | 620 | 547 | 840   | 28   | M24 | 931 | 10.9  | 219               | 1100   |
| <b>WK480</b> | 380   | 1216000   | 6400     | 800 | 645 | 570 | 840   | 30   | M24 | 931 | 10.9  | 209               | 1300   |
| <b>WK480</b> | 390   | 1290000   | 6615     | 800 | 645 | 570 | 840   | 30   | M24 | 931 | 10.9  | 211               | 1300   |
| <b>WK480</b> | 400   | 1367000   | 6835     | 800 | 645 | 570 | 840   | 30   | M24 | 931 | 10.9  | 212               | 1300   |
| <b>WK500</b> | 400   | 1358000   | 6790     | 850 | 670 | 590 | 1250  | 24   | M27 | 931 | 10.9  | 211               | 1480   |
| <b>WK500</b> | 410   | 1431000   | 6980     | 850 | 670 | 590 | 1250  | 24   | M27 | 931 | 10.9  | 211               | 1480   |
| <b>WK500</b> | 420   | 1513000   | 7205     | 850 | 670 | 590 | 1250  | 24   | M27 | 931 | 10.9  | 213               | 1480   |





Also available as  
„WLB“ version!

### Used symbols

|                            |   |              |
|----------------------------|---|--------------|
| $d_w$ [mm]                 | Shaft diameter                                |              |
| $M_{max}$ [Nm]             | max. transmittable torque                     | $F_{ax} = 0$ |
| $F_{ax}$ [kN]              | max. transmittable axial force                | $M_t = 0$    |
| $D$ [mm]                   | Outer diameter of coupling                    |              |
| $L$ [mm]                   | Length of sleeve                              |              |
| $H$ [mm]                   | Width of shaft coupling                       |              |
| $A$ [mm]                   | Pitch circle diameter of bolting              |              |
| $M_A$                      | Required tightening torque of clamping screws |              |
| $Z$                        | Number of screws                              |              |
| $S$                        | Size of screws                                |              |
| $p_w$ [N/mm <sup>2</sup> ] | Average contact pressure on the shaft         |              |

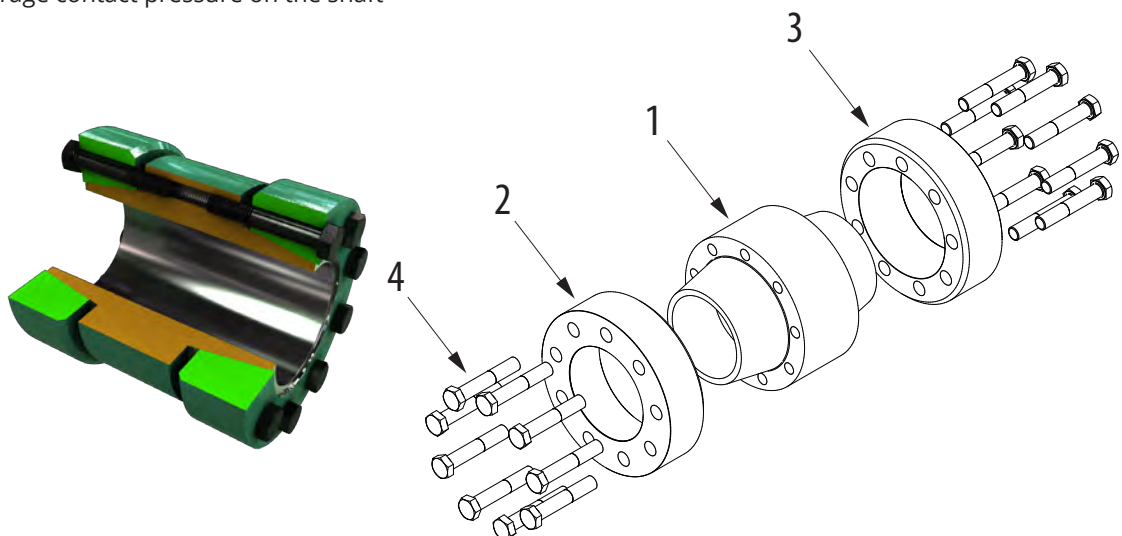
### Design of the disc

$d < 070$  Discs lightly oiled without washers

$d \geq 070$  Discs painted with washers

Dimensions H & e in unlocked position

| Pos. | Designation      |
|------|------------------|
| 1    | Sleeve           |
| 2    | Pressure ring DG |
| 3    | Pressure ring DG |
| 4    | Screw            |



Ordering example: TAS WLA-Typ/d/D (e.g: TAS WLA200/150/200 ... further sizes on request)

| Type<br>mm | $d_w$<br>mm | $M_{max}$<br>Nm | $F_{ax}$<br>kN | $D$<br>mm | $L$<br>mm | $H$<br>mm | $A$<br>mm | $M_A$<br>mm | $Z$<br>Pcs (2x) | $S$       | DIN | Class | $p_w$<br>N/mm <sup>2</sup> | Weight<br>Kg |
|------------|-------------|-----------------|----------------|-----------|-----------|-----------|-----------|-------------|-----------------|-----------|-----|-------|----------------------------|--------------|
| WLA015     | 13          | 70              | 11             | 55        | 50        | 53        | 37        | 6           | 7               | M5 x 25   | 933 | 10.9  | 83                         | 0,5          |
| WLA015     | 15          | 150             | 20             | 55        | 50        | 53        | 37        | 6           | 7               | M5 x 25   | 933 | 10.9  | 126                        | 0,5          |
| WLA015     | 17          | 180             | 21             | 55        | 50        | 53        | 37        | 6           | 7               | M5 x 25   | 933 | 10.9  | 160                        | 0,5          |
| WLA020     | 18          | 200             | 22             | 60        | 54        | 57        | 42        | 12          | 8               | M6 x 30   | 931 | 10.9  | 213                        | 0,7          |
| WLA020     | 20          | 270             | 27             | 60        | 54        | 57        | 42        | 12          | 8               | M6 x 30   | 931 | 10.9  | 241                        | 0,7          |
| WLA020     | 22          | 350             | 31             | 60        | 54        | 57        | 42        | 12          | 8               | M6 x 30   | 931 | 10.9  | 266                        | 0,7          |
| WLA025     | 23          | 370             | 32             | 66        | 62        | 65        | 48        | 12          | 8               | M6 x 30   | 931 | 10.9  | 178                        | 0,8          |
| WLA025     | 25          | 470             | 37             | 66        | 62        | 65        | 48        | 12          | 8               | M6 x 30   | 931 | 10.9  | 197                        | 0,8          |
| WLA025     | 27          | 600             | 44             | 66        | 62        | 65        | 48        | 12          | 8               | M6 x 30   | 931 | 10.9  | 214                        | 0,8          |
| WLA030     | 28          | 540             | 38             | 76        | 70        | 73        | 54        | 12          | 10              | M6 x 35   | 931 | 10.9  | 164                        | 1,3          |
| WLA030     | 30          | 670             | 44             | 76        | 70        | 73        | 54        | 12          | 10              | M6 x 35   | 931 | 10.9  | 165                        | 1,3          |
| WLA030     | 32          | 750             | 46             | 76        | 70        | 73        | 54        | 12          | 10              | M6 x 35   | 931 | 10.9  | 179                        | 1,3          |
| WLA035     | 33          | 750             | 45             | 80        | 75        | 79        | 62        | 12          | 12              | M6 x 35   | 931 | 10.9  | 168                        | 1,5          |
| WLA035     | 35          | 900             | 51             | 80        | 75        | 79        | 62        | 12          | 12              | M6 x 35   | 931 | 10.9  | 180                        | 1,5          |
| WLA035     | 37          | 1050            | 56             | 80        | 75        | 79        | 62        | 12          | 12              | M6 x 35   | 931 | 10.9  | 190                        | 1,5          |
| WLA040     | 38          | 1250            | 65             | 98        | 80        | 84        | 71        | 30          | 8               | M8 x 40   | 931 | 10.9  | 175                        | 2,5          |
| WLA040     | 40          | 1550            | 77             | 98        | 80        | 84        | 71        | 30          | 8               | M8 x 40   | 931 | 10.9  | 184                        | 2,5          |
| WLA040     | 43          | 1850            | 86             | 98        | 80        | 84        | 71        | 30          | 8               | M8 x 40   | 931 | 10.9  | 196                        | 2,5          |
| WLA050     | 44          | 2200            | 100            | 115       | 90        | 94        | 86        | 59          | 8               | M10 x 45  | 931 | 10.9  | 189                        | 4            |
| WLA050     | 50          | 3300            | 132            | 115       | 90        | 94        | 86        | 59          | 8               | M10 x 45  | 931 | 10.9  | 200                        | 4            |
| WLA050     | 54          | 3800            | 140            | 115       | 90        | 94        | 86        | 59          | 8               | M10 x 45  | 931 | 10.9  | 212                        | 4            |
| WLA060     | 55          | 4050            | 147            | 125       | 120       | 124       | 98        | 59          | 10              | M10 x 50  | 931 | 10.9  | 177                        | 5,3          |
| WLA060     | 60          | 5100            | 170            | 125       | 120       | 124       | 98        | 59          | 10              | M10 x 50  | 931 | 10.9  | 190                        | 5,3          |
| WLA060     | 64          | 6100            | 190            | 125       | 120       | 124       | 98        | 59          | 10              | M10 x 50  | 931 | 10.9  | 198                        | 5,3          |
| WLA070     | 65          | 6500            | 200            | 148       | 140       | 142       | 112       | 59          | 12              | M10 x 60  | 931 | 10.9  | 172                        | 8,4          |
| WLA070     | 70          | 8200            | 234            | 148       | 140       | 142       | 112       | 59          | 12              | M10 x 60  | 931 | 10.9  | 181                        | 8,4          |
| WLA070     | 74          | 9000            | 243            | 148       | 140       | 142       | 112       | 59          | 12              | M10 x 60  | 931 | 10.9  | 188                        | 8,4          |
| WLA080     | 75          | 10500           | 280            | 170       | 170       | 175       | 130       | 100         | 12              | M12 x 70  | 931 | 10.9  | 73                         | 13,1         |
| WLA080     | 80          | 12300           | 307            | 170       | 170       | 175       | 130       | 100         | 12              | M12 x 70  | 931 | 10.9  | 186                        | 13,1         |
| WLA080     | 84          | 14000           | 333            | 170       | 170       | 175       | 130       | 100         | 12              | M12 x 70  | 931 | 10.9  | 192                        | 13,1         |
| WLA090     | 85          | 14200           | 334            | 185       | 200       | 202       | 145       | 250         | 7               | M16 x 80  | 931 | 10.9  | 166                        | 17           |
| WLA090     | 90          | 16400           | 364            | 185       | 200       | 202       | 145       | 250         | 7               | M16 x 80  | 931 | 10.9  | 173                        | 17           |
| WLA090     | 94          | 18000           | 383            | 185       | 200       | 202       | 145       | 250         | 7               | M16 x 80  | 931 | 10.9  | 177                        | 17           |
| WLA100     | 95          | 19100           | 402            | 200       | 210       | 215       | 158       | 250         | 9               | M16 x 90  | 931 | 10.9  | 186                        | 21           |
| WLA100     | 100         | 23100           | 462            | 200       | 210       | 215       | 158       | 250         | 9               | M16 x 90  | 931 | 10.9  | 191                        | 21           |
| WLA100     | 104         | 26000           | 500            | 200       | 210       | 215       | 158       | 250         | 9               | M16 x 90  | 931 | 10.9  | 195                        | 21           |
| WLA110     | 105         | 28500           | 542            | 217       | 220       | 222       | 170       | 250         | 12              | M16 x 90  | 931 | 10.9  | 214                        | 27           |
| WLA110     | 110         | 32000           | 581            | 217       | 220       | 222       | 170       | 250         | 12              | M16 x 90  | 931 | 10.9  | 218                        | 27           |
| WLA110     | 114         | 35000           | 614            | 217       | 220       | 222       | 170       | 250         | 12              | M16 x 90  | 931 | 10.9  | 221                        | 27           |
| WLA120     | 115         | 38500           | 669            | 235       | 230       | 235       | 184       | 250         | 13              | M16 x 90  | 931 | 10.9  | 199                        | 33           |
| WLA120     | 120         | 43500           | 725            | 235       | 230       | 235       | 184       | 250         | 13              | M16 x 90  | 931 | 10.9  | 200                        | 33           |
| WLA120     | 124         | 46000           | 742            | 235       | 230       | 235       | 184       | 250         | 13              | M16 x 90  | 931 | 10.9  | 204                        | 33           |
| WLA130     | 125         | 47500           | 760            | 267       | 240       | 242       | 206       | 490         | 10              | M20 x 110 | 931 | 10.9  | 196                        | 45           |
| WLA130     | 130         | 55000           | 846            | 267       | 240       | 242       | 206       | 490         | 10              | M20 x 110 | 931 | 10.9  | 199                        | 45           |
| WLA130     | 134         | 58000           | 865            | 267       | 240       | 242       | 206       | 490         | 10              | M20 x 110 | 931 | 10.9  | 202                        | 45           |

# WLA

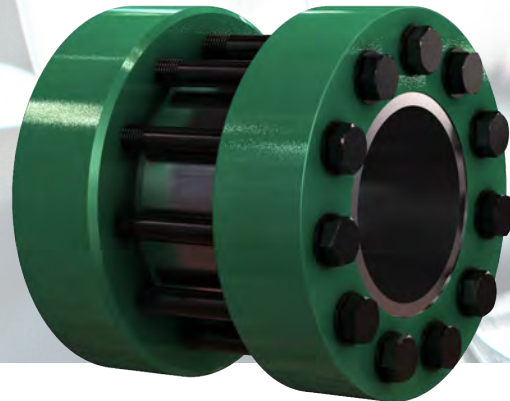
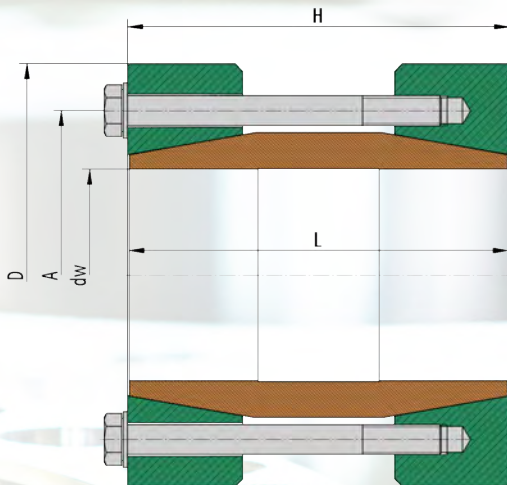
| Type          | $d_w$ | $M_{max}$ | $F_{ax}$ | $D$ | $L$ | $H$ | $A$ | $M_A$ | $Z$      | $S$       | DIN | Class | $pw$              | Weight |
|---------------|-------|-----------|----------|-----|-----|-----|-----|-------|----------|-----------|-----|-------|-------------------|--------|
| mm            | mm    | Nm        | kN       | mm  | mm  | mm  | mm  | mm    | Pcs (2x) |           |     |       | N/mm <sup>2</sup> | Kg     |
| <b>WLA140</b> | 135   | 62000     | 918      | 280 | 250 | 252 | 218 | 490   | 11       | M20 x 110 | 931 | 10.9  | 194               | 55     |
| <b>WLA140</b> | 140   | 67000     | 957      | 280 | 250 | 252 | 218 | 490   | 11       | M20 x 110 | 931 | 10.9  | 196               | 55     |
| <b>WLA140</b> | 144   | 71000     | 986      | 280 | 250 | 252 | 218 | 490   | 11       | M20 x 110 | 931 | 10.9  | 198               | 55     |
| <b>WLA150</b> | 145   | 73000     | 1006     | 302 | 265 | 267 | 230 | 490   | 12       | M20 x 120 | 931 | 10.9  | 186               | 70     |
| <b>WLA150</b> | 150   | 78000     | 1040     | 302 | 265 | 267 | 230 | 490   | 12       | M20 x 120 | 931 | 10.9  | 188               | 70     |
| <b>WLA150</b> | 154   | 82000     | 1065     | 302 | 265 | 267 | 230 | 490   | 12       | M20 x 120 | 931 | 10.9  | 190               | 70     |
| <b>WLA160</b> | 155   | 82000     | 1058     | 315 | 280 | 285 | 242 | 490   | 13       | M20 x 120 | 931 | 10.9  | 180               | 80     |
| <b>WLA160</b> | 160   | 88000     | 1100     | 315 | 280 | 285 | 242 | 490   | 13       | M20 x 120 | 931 | 10.9  | 182               | 80     |
| <b>WLA160</b> | 165   | 97000     | 1175     | 315 | 280 | 285 | 242 | 490   | 13       | M20 x 120 | 931 | 10.9  | 184               | 80     |
| <b>WLA180</b> | 166   | 108000    | 1301     | 345 | 310 | 312 | 265 | 490   | 16       | M20 x 130 | 931 | 10.9  | 179               | 105    |
| <b>WLA180</b> | 180   | 132000    | 1465     | 345 | 310 | 312 | 265 | 490   | 16       | M20 x 130 | 931 | 10.9  | 181               | 105    |
| <b>WLA180</b> | 185   | 140000    | 1513     | 345 | 310 | 312 | 265 | 490   | 16       | M20 x 130 | 931 | 10.9  | 183               | 105    |
| <b>WLA200</b> | 186   | 153000    | 1645     | 375 | 350 | 355 | 295 | 490   | 20       | M20 x 150 | 931 | 10.9  | 174               | 135    |
| <b>WLA200</b> | 200   | 184000    | 1840     | 375 | 350 | 355 | 295 | 490   | 20       | M20 x 150 | 931 | 10.9  | 178               | 135    |
| <b>WLA200</b> | 210   | 204000    | 1943     | 375 | 350 | 355 | 295 | 490   | 20       | M20 x 150 | 931 | 10.9  | 182               | 135    |
| <b>WLA220</b> | 211   | 214000    | 2028     | 410 | 390 | 392 | 320 | 840   | 18       | M24 x 160 | 931 | 10.9  | 191               | 180    |
| <b>WLA220</b> | 220   | 240000    | 2180     | 410 | 390 | 392 | 320 | 840   | 18       | M24 x 160 | 931 | 10.9  | 193               | 180    |
| <b>WLA220</b> | 230   | 260000    | 2260     | 410 | 390 | 392 | 320 | 840   | 18       | M24 x 160 | 931 | 10.9  | 196               | 180    |
| <b>WLA240</b> | 231   | 280000    | 2424     | 435 | 430 | 435 | 350 | 840   | 20       | M24 x 180 | 931 | 10.9  | 182               | 210    |
| <b>WLA240</b> | 240   | 305000    | 2540     | 435 | 430 | 435 | 350 | 840   | 20       | M24 x 180 | 931 | 10.9  | 184               | 210    |
| <b>WLA240</b> | 250   | 334000    | 2672     | 435 | 430 | 435 | 350 | 840   | 20       | M24 x 180 | 931 | 10.9  | 185               | 210    |
| <b>WLA260</b> | 251   | 390000    | 3108     | 515 | 450 | 452 | 380 | 1250  | 20       | M27 x 200 | 931 | 10.9  | 204               | 345    |
| <b>WLA260</b> | 260   | 425000    | 3270     | 515 | 450 | 452 | 380 | 1250  | 20       | M27 x 200 | 931 | 10.9  | 206               | 345    |
| <b>WLA260</b> | 270   | 465000    | 3444     | 515 | 450 | 452 | 380 | 1250  | 20       | M27 x 200 | 931 | 10.9  | 208               | 345    |





**TAS**  
**SCHÄFER**





### Used symbols

|                            |   |              |
|----------------------------|---|--------------|
| $d_w$ [mm]                 | Shaft diameter                                |              |
| $M_{max}$ [Nm]             | max. transmittable torque                     | $F_{ax} = 0$ |
| $F_{ax}$ [kN]              | max. transmittable axial force                | $M_t = 0$    |
| $D$ [mm]                   | Outer diameter of coupling                    |              |
| $L$ [mm]                   | Length of sleeve                              |              |
| $H$ [mm]                   | Width of shaft coupling                       |              |
| $A$ [mm]                   | Pitch circle diameter of bolting              |              |
| $M_A$                      | Required tightening torque of clamping screws |              |
| $Z$                        | Number of screws                              |              |
| $S$                        | Size of screws                                |              |
| $p_w$ [N/mm <sup>2</sup> ] | Average contact pressure on the shaft         |              |

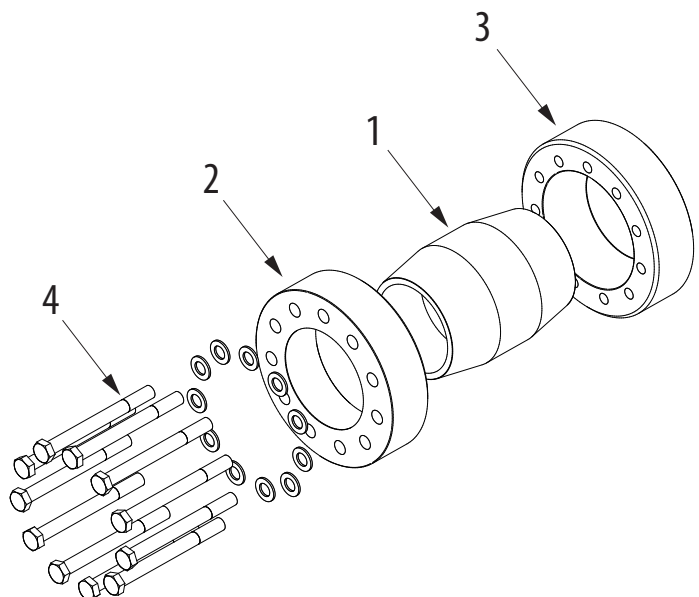
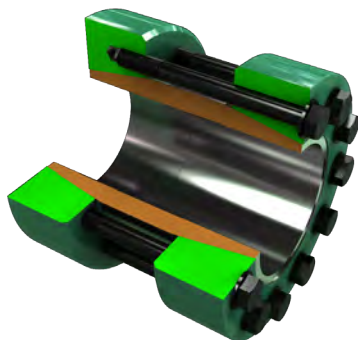
### Design of the disc

$d < 070$  Discs lightly oiled without washers

$d \geq 070$  Discs painted with washers

Dimensions H & e in unlocked position

| Pos. | Designation      |
|------|------------------|
| 1    | Sleeve           |
| 2    | Pressure ring G  |
| 3    | Pressure ring DG |
| 4    | Screw            |



Ordering example: TAS WLB-Typ/d/D (e.g: TAS WLB200/150/200 ... further sizes on request)

# WLB

| Type<br>mm | $d_w$<br>mm | $M_{max}$<br>Nm | $F_{ax}$<br>kN | $D$<br>mm | $L$<br>mm | $H$<br>mm | $A$<br>mm | $M_A$<br>mm | $Z$<br>Pcs. | $S$       | DIN | Class | $p_w$<br>N/mm <sup>2</sup> | Weight<br>Kg |
|------------|-------------|-----------------|----------------|-----------|-----------|-----------|-----------|-------------|-------------|-----------|-----|-------|----------------------------|--------------|
| WLB015     | 13          | 70              | 11             | 55        | 50        | 53        | 37        | 6           | 7           | M5 x 45   | 933 | 10.9  | 83                         | 0,5          |
| WLB015     | 15          | 150             | 20             | 55        | 50        | 53        | 37        | 6           | 7           | M5 x 45   | 933 | 10.9  | 126                        | 0,5          |
| WLB015     | 17          | 180             | 21             | 55        | 50        | 53        | 37        | 6           | 7           | M5 x 45   | 933 | 10.9  | 160                        | 0,5          |
| WLB020     | 18          | 200             | 22             | 60        | 54        | 57        | 42        | 12          | 8           | M6 x 50   | 931 | 10.9  | 213                        | 0,7          |
| WLB020     | 20          | 270             | 27             | 60        | 54        | 57        | 42        | 12          | 8           | M6 x 50   | 931 | 10.9  | 241                        | 0,7          |
| WLB020     | 22          | 350             | 31             | 60        | 54        | 57        | 42        | 12          | 8           | M6 x 50   | 931 | 10.9  | 266                        | 0,7          |
| WLB025     | 23          | 370             | 32             | 66        | 62        | 65        | 48        | 12          | 8           | M6 x 55   | 931 | 10.9  | 178                        | 0,8          |
| WLB025     | 25          | 470             | 37             | 66        | 62        | 65        | 48        | 12          | 8           | M6 x 55   | 931 | 10.9  | 197                        | 0,8          |
| WLB025     | 27          | 600             | 44             | 66        | 62        | 65        | 48        | 12          | 8           | M6 x 55   | 931 | 10.9  | 214                        | 0,8          |
| WLB030     | 28          | 540             | 38             | 76        | 70        | 73        | 54        | 12          | 10          | M6 x 60   | 931 | 10.9  | 164                        | 1,3          |
| WLB030     | 30          | 670             | 44             | 76        | 70        | 73        | 54        | 12          | 10          | M6 x 60   | 931 | 10.9  | 165                        | 1,3          |
| WLB030     | 32          | 750             | 46             | 76        | 70        | 73        | 54        | 12          | 10          | M6 x 60   | 931 | 10.9  | 179                        | 1,3          |
| WLB035     | 33          | 750             | 45             | 80        | 75        | 79        | 62        | 12          | 12          | M6 x 65   | 931 | 10.9  | 168                        | 1,5          |
| WLB035     | 35          | 900             | 51             | 80        | 75        | 79        | 62        | 12          | 12          | M6 x 65   | 931 | 10.9  | 180                        | 1,5          |
| WLB035     | 37          | 1050            | 56             | 80        | 75        | 79        | 62        | 12          | 12          | M6 x 65   | 931 | 10.9  | 190                        | 1,5          |
| WLB040     | 38          | 1250            | 65             | 98        | 80        | 84        | 71        | 30          | 8           | M8 x 75   | 931 | 10.9  | 175                        | 2,5          |
| WLB040     | 40          | 1550            | 77             | 98        | 80        | 84        | 71        | 30          | 8           | M8 x 75   | 931 | 10.9  | 184                        | 2,5          |
| WLB040     | 43          | 1850            | 86             | 98        | 80        | 84        | 71        | 30          | 8           | M8 x 75   | 931 | 10.9  | 196                        | 2,5          |
| WLB050     | 44          | 2200            | 100            | 115       | 90        | 94        | 86        | 59          | 8           | M10 x 80  | 931 | 10.9  | 189                        | 4            |
| WLB050     | 50          | 3300            | 132            | 115       | 90        | 94        | 86        | 59          | 8           | M10 x 80  | 931 | 10.9  | 200                        | 4            |
| WLB050     | 54          | 3800            | 140            | 115       | 90        | 94        | 86        | 59          | 8           | M10 x 80  | 931 | 10.9  | 212                        | 4            |
| WLB060     | 55          | 4050            | 147            | 125       | 120       | 124       | 98        | 59          | 10          | M10 x 110 | 931 | 10.9  | 177                        | 5,3          |
| WLB060     | 60          | 5100            | 170            | 125       | 120       | 124       | 98        | 59          | 10          | M10 x 110 | 931 | 10.9  | 190                        | 5,3          |
| WLB060     | 64          | 6100            | 190            | 125       | 120       | 124       | 98        | 59          | 10          | M10 x 110 | 931 | 10.9  | 198                        | 5,3          |
| WLB070     | 65          | 6500            | 200            | 148       | 140       | 142       | 112       | 59          | 12          | M10 x 120 | 931 | 10.9  | 172                        | 8,4          |
| WLB070     | 70          | 8200            | 234            | 148       | 140       | 142       | 112       | 59          | 12          | M10 x 120 | 931 | 10.9  | 181                        | 8,4          |
| WLB070     | 74          | 9000            | 243            | 148       | 140       | 142       | 112       | 59          | 12          | M10 x 120 | 931 | 10.9  | 188                        | 8,4          |
| WLB080     | 75          | 10500           | 280            | 170       | 170       | 175       | 130       | 100         | 12          | M12 x 150 | 931 | 10.9  | 73                         | 13,1         |
| WLB080     | 80          | 12300           | 307            | 170       | 170       | 175       | 130       | 100         | 12          | M12 x 150 | 931 | 10.9  | 186                        | 13,1         |
| WLB080     | 84          | 14000           | 333            | 170       | 170       | 175       | 130       | 100         | 12          | M12 x 150 | 931 | 10.9  | 192                        | 13,1         |
| WLB090     | 85          | 14200           | 334            | 185       | 200       | 202       | 145       | 250         | 7           | M16 x 180 | 931 | 10.9  | 166                        | 17           |
| WLB090     | 90          | 16400           | 364            | 185       | 200       | 202       | 145       | 250         | 7           | M16 x 180 | 931 | 10.9  | 173                        | 17           |
| WLB090     | 94          | 18000           | 383            | 185       | 200       | 202       | 145       | 250         | 7           | M16 x 180 | 931 | 10.9  | 177                        | 17           |
| WLB100     | 95          | 19100           | 402            | 200       | 210       | 215       | 158       | 250         | 9           | M16 x 180 | 931 | 10.9  | 186                        | 21           |
| WLB100     | 100         | 23100           | 462            | 200       | 210       | 215       | 158       | 250         | 9           | M16 x 180 | 931 | 10.9  | 191                        | 21           |
| WLB100     | 104         | 26000           | 500            | 200       | 210       | 215       | 158       | 250         | 9           | M16 x 180 | 931 | 10.9  | 195                        | 21           |
| WLB110     | 105         | 28500           | 542            | 217       | 220       | 222       | 170       | 250         | 12          | M16 x 190 | 931 | 10.9  | 214                        | 27           |
| WLB110     | 110         | 32000           | 581            | 217       | 220       | 222       | 170       | 250         | 12          | M16 x 190 | 931 | 10.9  | 218                        | 27           |
| WLB110     | 114         | 35000           | 614            | 217       | 220       | 222       | 170       | 250         | 12          | M16 x 190 | 931 | 10.9  | 221                        | 27           |
| WLB120     | 115         | 38500           | 669            | 235       | 230       | 235       | 184       | 250         | 13          | M16 x 200 | 931 | 10.9  | 199                        | 33           |
| WLB120     | 120         | 43500           | 725            | 235       | 230       | 235       | 184       | 250         | 13          | M16 x 200 | 931 | 10.9  | 200                        | 33           |
| WLB120     | 124         | 46000           | 742            | 235       | 230       | 235       | 184       | 250         | 13          | M16 x 200 | 931 | 10.9  | 204                        | 33           |
| WLB130     | 125         | 47500           | 760            | 267       | 240       | 242       | 206       | 490         | 10          | M20 x 200 | 931 | 10.9  | 196                        | 45           |
| WLB130     | 130         | 55000           | 846            | 267       | 240       | 242       | 206       | 490         | 10          | M20 x 200 | 931 | 10.9  | 199                        | 45           |
| WLB130     | 134         | 58000           | 865            | 267       | 240       | 242       | 206       | 490         | 10          | M20 x 200 | 931 | 10.9  | 202                        | 45           |

# WLB

| Type   | $d_w$ | $M_{max}$ | $F_{ax}$ | $D$ | $L$ | $H$ | $A$ | $M_A$ | $Z$  | $S$       | DIN | Class | $pw$              | Weight |
|--------|-------|-----------|----------|-----|-----|-----|-----|-------|------|-----------|-----|-------|-------------------|--------|
| mm     | mm    | Nm        | kN       | mm  | mm  | mm  | mm  | mm    | Pcs. |           |     |       | N/mm <sup>2</sup> | Kg     |
| WLB140 | 135   | 62000     | 918      | 280 | 250 | 252 | 218 | 490   | 11   | M20 x 210 | 931 | 10.9  | 194               | 55     |
| WLB140 | 140   | 67000     | 957      | 280 | 250 | 252 | 218 | 490   | 11   | M20 x 210 | 931 | 10.9  | 196               | 55     |
| WLB140 | 144   | 71000     | 986      | 280 | 250 | 252 | 218 | 490   | 11   | M20 x 210 | 931 | 10.9  | 198               | 55     |
| WLB150 | 145   | 73000     | 1006     | 302 | 265 | 267 | 230 | 490   | 12   | M20 x 220 | 931 | 10.9  | 186               | 70     |
| WLB150 | 150   | 78000     | 1040     | 302 | 265 | 267 | 230 | 490   | 12   | M20 x 220 | 931 | 10.9  | 188               | 70     |
| WLB150 | 154   | 82000     | 1065     | 302 | 265 | 267 | 230 | 490   | 12   | M20 x 220 | 931 | 10.9  | 190               | 70     |
| WLB160 | 155   | 82000     | 1058     | 315 | 280 | 285 | 242 | 490   | 13   | M20 x 230 | 931 | 10.9  | 180               | 80     |
| WLB160 | 160   | 88000     | 1100     | 315 | 280 | 285 | 242 | 490   | 13   | M20 x 230 | 931 | 10.9  | 182               | 80     |
| WLB160 | 165   | 97000     | 1175     | 315 | 280 | 285 | 242 | 490   | 13   | M20 x 230 | 931 | 10.9  | 184               | 80     |
| WLB180 | 166   | 108000    | 1301     | 345 | 310 | 312 | 265 | 490   | 16   | M20 x 250 | 931 | 10.9  | 179               | 105    |
| WLB180 | 180   | 132000    | 1465     | 345 | 310 | 312 | 265 | 490   | 16   | M20 x 250 | 931 | 10.9  | 181               | 105    |
| WLB180 | 185   | 140000    | 1513     | 345 | 310 | 312 | 265 | 490   | 16   | M20 x 250 | 931 | 10.9  | 183               | 105    |
| WLB200 | 186   | 153000    | 1645     | 375 | 350 | 355 | 295 | 490   | 20   | M20 x 280 | 931 | 10.9  | 174               | 135    |
| WLB200 | 200   | 184000    | 1840     | 375 | 350 | 355 | 295 | 490   | 20   | M20 x 280 | 931 | 10.9  | 178               | 135    |
| WLB200 | 210   | 204000    | 1943     | 375 | 350 | 355 | 295 | 490   | 20   | M20 x 280 | 931 | 10.9  | 182               | 135    |
| WLB220 | 211   | 214000    | 2028     | 410 | 390 | 392 | 320 | 840   | 18   | M24 x 320 | 931 | 10.9  | 191               | 180    |
| WLB220 | 220   | 240000    | 2180     | 410 | 390 | 392 | 320 | 840   | 18   | M24 x 320 | 931 | 10.9  | 193               | 180    |
| WLB220 | 230   | 260000    | 2260     | 410 | 390 | 392 | 320 | 840   | 18   | M24 x 320 | 931 | 10.9  | 196               | 180    |
| WLB240 | 231   | 280000    | 2424     | 435 | 430 | 435 | 350 | 840   | 20   | M24 x 340 | 931 | 10.9  | 182               | 210    |
| WLB240 | 240   | 305000    | 2540     | 435 | 430 | 435 | 350 | 840   | 20   | M24 x 340 | 931 | 10.9  | 184               | 210    |
| WLB240 | 250   | 334000    | 2672     | 435 | 430 | 435 | 350 | 840   | 20   | M24 x 340 | 931 | 10.9  | 185               | 210    |
| WLB260 | 251   | 390000    | 3108     | 515 | 450 | 452 | 380 | 1250  | 20   | M27 x 360 | 931 | 10.9  | 204               | 345    |
| WLB260 | 260   | 425000    | 3270     | 515 | 450 | 452 | 380 | 1250  | 20   | M27 x 360 | 931 | 10.9  | 206               | 345    |
| WLB260 | 270   | 465000    | 3444     | 515 | 450 | 452 | 380 | 1250  | 20   | M27 x 360 | 931 | 10.9  | 208               | 345    |

# FLOHR - PRODUCTS OVERVIEW

## Gears

- Spiral toothed bevel gears
- Bevel gears
- Worm gears
- Spur gears
- Special gears



## Gear Technology

- Bevel gearboxes
- Angle-planetary gearboxes
- Worm gearboxes
- Cam drives and indexing units
- Cam components
- Special gearboxes



## Couplings

- Rigid and flexible couplings
- Frictional connections
- Drum-coupling
- Gear-couplings
- Safety couplings



## Friction connections

- Shrink discs
- Shaft couplings
- Flange couplings
- Locking units



## Clamping technology

- Manual and pneumatic clamping solutions
- Power clamps
- Pivot units
- End effector solutions
- Linear units
- Grippers



## Belt drives

- V-belt and flat belt pulleys
- Flywheels
- Special pulleys
- Motor clamping systems
- Drive belts
- Customer designed castings
- Accessories



## Sensor systems

- Incremental encoders
- Magnetic encoders
- Absolute encoders
- Electronic overspeed switches
- Electronic position switches
- Universal encoder systems
- Systems



## Contract manufacturing

- Turning, milling, grinding
- Grooving and broaching
- Balancing
- Calculation and design
- Assembly
- Service and repair



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