

## 10.2 Kugeldrehverbindungen; 2-reihig, Achtpunktlager

### 10.2 Double-row ball slewing bearings



**K 2 1 · 4 0 · 3 1 5 0** – Zeichnungsendnummer  
– Drawing end number

| Bauform/<br>Erzeugnis:   | Laufbahn-<br>form:  | Verzahnung:   | Wälzkörper<br>– Ø:  | Laufkreis<br>– Ø:   |
|--|---|---|---|---------------------|
| <p>K = KDV,<br/>Kugel-DV</p> <p>X = Kreuzrollen-DV</p> <p>R = RDV,<br/>Rollen-DV</p> <p>L = Leichtbauform,<br/>Flanschlager</p>                                    | <p>1 = einreihig</p> <p>2 = zweireihig</p> <p>3 = dreireihig</p>  | <p>0 = ohne</p> <p>1 = außen gerade</p> <p>2 = innen gerade</p> <p>3 = außen schräg</p> <p>4 = innen schräg</p>   | <p>Kugel Ø</p> <p>Rollen Ø</p> <p>Angabe in mm</p>                | <p>Angabe in mm</p> |
| Build/<br>Product:   | Raceway:  | Gear:   | Rolling<br>element – Ø:   | Raceway<br>– Ø:     |
| <p>K = ball slewing<br/>bearing</p> <p>X = crossed-roller<br/>slewing bearing</p> <p>R = roller slewing<br/>bearing</p> <p>L = light-weight<br/>flange bearing</p> | <p>1 = single-row</p> <p>2 = double-row</p> <p>3 = triple-row</p> | <p>0 = without gear</p> <p>1 = outer straight<br/>gear</p> <p>2 = inner straight<br/>gear</p> <p>3 = outer helical<br/>gear</p> <p>4 = inner helical<br/>gear</p> | <p>Ball diameter Ø</p> <p>Roller diameter Ø</p> <p>unit in mm</p> | <p>unit in mm</p>   |

DV = Drehverbindung

# Kugeldrehverbindungen; 2-reihig, Achtpunktlager

## Double-row ball slewing bearings

| Abmessungen und Gewicht<br>Dimensions and weight |                                    |                            |                                     |                                     |                                    |                                     |                   | Befestigungsbohrungen<br>Fastening boreholes     |                                       |  |  |                                       |  | Lagerspiel<br>Bearing play                               |                            |
|--|------------------------------------|----------------------------|-------------------------------------|-------------------------------------|------------------------------------|-------------------------------------|-------------------|--|---------------------------------------|--|--|---------------------------------------|--|--|----------------------------|
| Außendurchmesser<br>Outer diameter               | Innendurchmesser<br>Inner diameter | Gesamthöhe<br>Total height | Höhe Außenring<br>Outer ring height | Höhe Innenring<br>Inner ring height | Durchmesser oben<br>Upper diameter | Durchmesser unten<br>Lower diameter | Gewicht<br>Weight | Außenring<br>Outer ring                          |                                       |  | Innenring<br>Inner ring                          |                                       |  | Axialspiel / Kippspiel<br>Axial play / machine clearance | Radialspiel<br>Radial play |
|  |                                    |                            |                                     |                                     |                                    |                                     |                   | Lochkreisdurchmesser<br>Diam. of borehole circle | Bohrungsanzahl<br>Number of boreholes | Bohrungsdurchmesser<br>Borehole diameter | Lochkreisdurchmesser<br>Diam. of borehole circle | Bohrungsanzahl<br>Number of boreholes | Bohrungsdurchmesser<br>Borehole diameter |  |                            |

| Verzahnung und Zahnkräfte<br>Gear and gear tooth forces |                 |                              |  |   |  |  |
|---|-----------------|------------------------------|--|---|--|--|
| Teilkreisdurchmesser<br>Pitch circle diameter           | Modul<br>Module | Zähnezahl<br>Number of teeth | Profilverschiebungsfaktor<br>Profile shift coefficient | Zulässige Zahnkraft<br>Permitted gear tooth force | Maximal zulässige Zahnkraft<br>Max. permitted gear tooth force | Anzahl der Schmiernippel<br>Number of grease nipples |

### außenverzahnt - external gear

| Typbezeichnung<br>Type designation | Da     | Di   | H    | H1   | H2   | O    | U    | G    | La   | na  | B    | Li   | ni  | b    | axial | radial |
|------------------------------------|--------|------|------|------|------|------|------|------|------|-----|------|------|-----|------|-------|--------|
|                                    | [mm]   | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [kg] | [mm] | [-] | [mm] | [mm] | [-] | [mm] | [mm]  | [mm]   |
| <b>K21.20.0800</b>                 | 916,8  | 707  | 85   | 76   | 76   | 799  | 801  | 143  | 853  | 24  | 17,5 | 747  | 24  | 17,5 | -     | -      |
| <b>K21.20.1000</b>                 | 1126,4 | 907  | 85   | 76   | 76   | 999  | 1001 | 180  | 1053 | 30  | 17,5 | 947  | 30  | 17,5 | -     | -      |
| <b>K21.20.1200</b>                 | 1326,4 | 1107 | 85   | 76   | 76   | 1199 | 1201 | 212  | 1253 | 48  | 17,5 | 1147 | 48  | 17,5 | -     | -      |
| <b>K21.20.1400</b>                 | 1526,4 | 1307 | 85   | 76   | 76   | 1399 | 1401 | 247  | 1453 | 54  | 17,5 | 1347 | 54  | 17,5 | -     | -      |

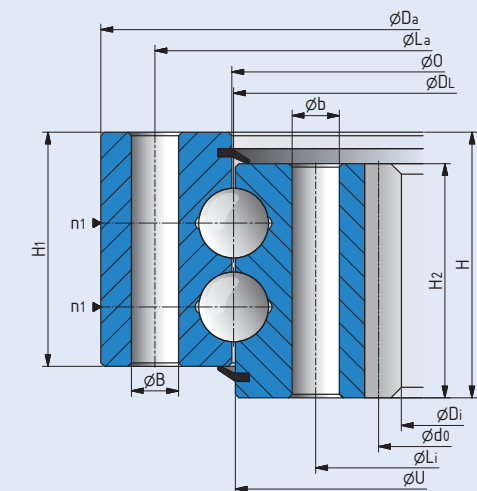
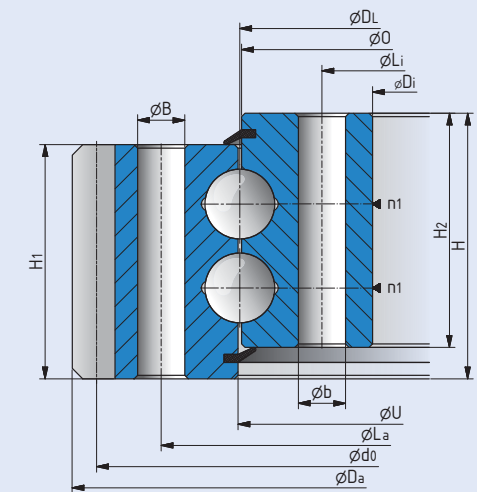
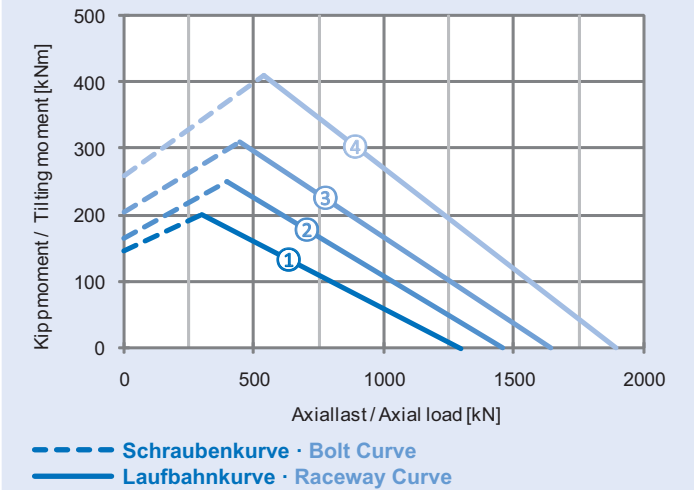
| do   | m    | z   | x   | fz norm | fz max | n1  | Kurve<br>Curve |
|------|------|-----|-----|---------|--------|-----|----------------|
| [mm] | [mm] | [-] | [-] | [kN]    | [kN]   | [-] |                |
| 900  | 6    | 150 | 0,5 | 44      | 88     | 2   | <b>1</b>       |
| 1104 | 8    | 138 | 0,5 | 59      | 118    | 2   | <b>2</b>       |
| 1304 | 8    | 163 | 0,5 | 59      | 118    | 3   | <b>3</b>       |
| 1504 | 8    | 188 | 0,5 | 59      | 118    | 4   | <b>4</b>       |

### innenverzahnt - internal gear

| Typbezeichnung<br>Type designation | Da   | Di   | H    | H1   | H2   | O    | U    | G    | La   | na  | B    | Li   | ni  | b    | axial | radial |
|------------------------------------|------|------|------|------|------|------|------|------|------|-----|------|------|-----|------|-------|--------|
|                                    | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [kg] | [mm] | [-] | [mm] | [mm] | [-] | [mm] | [mm]  | [mm]   |
| <b>K22.20.0800</b>                 | 893  | 690  | 85   | 76   | 76   | 801  | 799  | 133  | 853  | 24  | 17,5 | 747  | 24  | 17,5 | -     | -      |
| <b>K22.20.1000</b>                 | 1093 | 872  | 85   | 76   | 76   | 1001 | 999  | 178  | 1053 | 30  | 17,5 | 947  | 30  | 17,5 | -     | -      |
| <b>K22.20.1200</b>                 | 1293 | 1072 | 85   | 76   | 76   | 1201 | 1199 | 210  | 1253 | 48  | 17,5 | 1147 | 48  | 17,5 | -     | -      |
| <b>K22.20.1400</b>                 | 1493 | 1272 | 85   | 76   | 76   | 1401 | 1399 | 246  | 1453 | 54  | 17,5 | 1347 | 54  | 17,5 | -     | -      |

| do   | m    | z   | x    | fz norm | fz max | n1  | Kurve<br>Curve |
|------|------|-----|------|---------|--------|-----|----------------|
| [mm] | [mm] | [-] | [-]  | [kN]    | [kN]   | [-] |                |
| 696  | 6    | 116 | -0,5 | 44      | 88     | 2   | <b>1</b>       |
| 880  | 8    | 110 | -0,5 | 59      | 118    | 2   | <b>2</b>       |
| 1080 | 8    | 135 | -0,5 | 59      | 118    | 3   | <b>3</b>       |
| 1280 | 8    | 160 | -0,5 | 59      | 118    | 4   | <b>4</b>       |

Grenzlastdiagramm · Statische Tragfähigkeit  
Limit load diagram · Static load capacity



# Kugeldrehverbindungen; 2-reihig, Achtpunktlager

## Double-row ball slewing bearings

| Abmessungen und Gewicht<br>Dimensions and weight |                                    |                            |                                     |                                     |                                    |                                     |                   | Befestigungsbohrungen<br>Fastening boreholes     |                                       |  |  |                                       |  | Lagerspiel<br>Bearing play                               |                            |
|--|------------------------------------|----------------------------|-------------------------------------|-------------------------------------|------------------------------------|-------------------------------------|-------------------|--|---------------------------------------|--|--|---------------------------------------|--|--|----------------------------|
| Außendurchmesser<br>Outer diameter               | Innendurchmesser<br>Inner diameter | Gesamthöhe<br>Total height | Höhe Außenring<br>Outer ring height | Höhe Innenring<br>Inner ring height | Durchmesser oben<br>Upper diameter | Durchmesser unten<br>Lower diameter | Gewicht<br>Weight | Außenring<br>Outer ring                          |                                       |  | Innenring<br>Inner ring                          |                                       |  | Axialspiel / Kippspiel<br>Axial play / machine clearance | Radialspiel<br>Radial play |
|  |                                    |                            |                                     |                                     |                                    |                                     |                   | Lochkreisdurchmesser<br>Diam. of borehole circle | Bohrungsanzahl<br>Number of boreholes | Bohrungsdurchmesser<br>Borehole diameter | Lochkreisdurchmesser<br>Diam. of borehole circle | Bohrungsanzahl<br>Number of boreholes | Bohrungsdurchmesser<br>Borehole diameter |  |                            |

| Verzahnung und Zahnkräfte<br>Gear and gear tooth forces |                 |                              |  |   |  |  |  |
|---|-----------------|------------------------------|--|---|--|--|--|
| Teilkreisdurchmesser<br>Pitch circle diameter           | Modul<br>Module | Zähnezahl<br>Number of teeth | Profilverschiebungsfaktor<br>Profile shift coefficient | Zulässige Zahnkraft<br>Permitted gear tooth force | Maximal zulässige Zahnkraft<br>Max. permitted gear tooth force | Anzahl der Schmiernippel<br>Number of grease nipples |  |

### außenverzahnt - external gear

| Typbezeichnung<br>Type designation | Da     | Di   | H    | H1   | H2   | O    | U    | G    | La   | na  | B    | Li   | ni  | b    | axial | radial |
|------------------------------------|--------|------|------|------|------|------|------|------|------|-----|------|------|-----|------|-------|--------|
|                                    | [mm]   | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [kg] | [mm] | [-] | [mm] | [mm] | [-] | [mm] | [mm]  | [mm]   |
| <b>K21.30.1300</b>                 | 1485,6 | 1171 | 119  | 110  | 110  | 1298 | 1302 | 474  | 1372 | 36  | 26   | 1228 | 36  | 26   | -     | -      |
| <b>K21.30.1500</b>                 | 1689,6 | 1371 | 119  | 110  | 110  | 1498 | 1502 | 556  | 1572 | 40  | 26   | 1428 | 40  | 26   | -     | -      |
| <b>K21.30.1700</b>                 | 1893,6 | 1571 | 119  | 110  | 110  | 1698 | 1702 | 641  | 1772 | 44  | 26   | 1628 | 44  | 26   | -     | -      |
| <b>K21.30.1900</b>                 | 2085,6 | 1771 | 119  | 110  | 110  | 1898 | 1902 | 694  | 1972 | 48  | 26   | 1828 | 48  | 26   | -     | -      |
| <b>K21.30.2100</b>                 | 2289,6 | 1971 | 119  | 110  | 110  | 2098 | 2102 | 780  | 2172 | 52  | 26   | 2028 | 52  | 26   | -     | -      |
| <b>K21.30.2300</b>                 | 2493,6 | 2171 | 119  | 110  | 110  | 2198 | 2302 | 867  | 2372 | 56  | 26   | 2228 | 56  | 26   | -     | -      |

| do   | m    | z   | x   | fz norm | fz max | n1  | Kurve<br>Curve |
|------|------|-----|-----|---------|--------|-----|----------------|
| [mm] | [mm] | [-] | [-] | [kN]    | [kN]   | [-] |                |
| 1452 | 12   | 121 | 0,5 | 120     | 240    | 4   | <b>1</b>       |
| 1656 | 12   | 138 | 0,5 | 120     | 240    | 4   | <b>2</b>       |
| 1860 | 12   | 155 | 0,5 | 120     | 240    | 4   | <b>3</b>       |
| 2052 | 12   | 171 | 0,5 | 120     | 240    | 4   | <b>4</b>       |
| 2256 | 12   | 188 | 0,5 | 120     | 240    | 4   | <b>5</b>       |
| 2460 | 12   | 205 | 0,5 | 120     | 240    | 4   | <b>6</b>       |

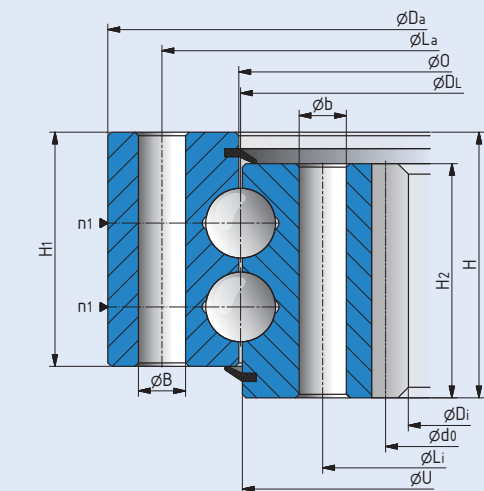
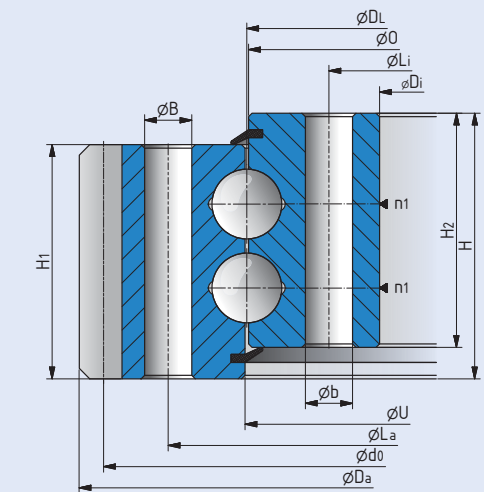
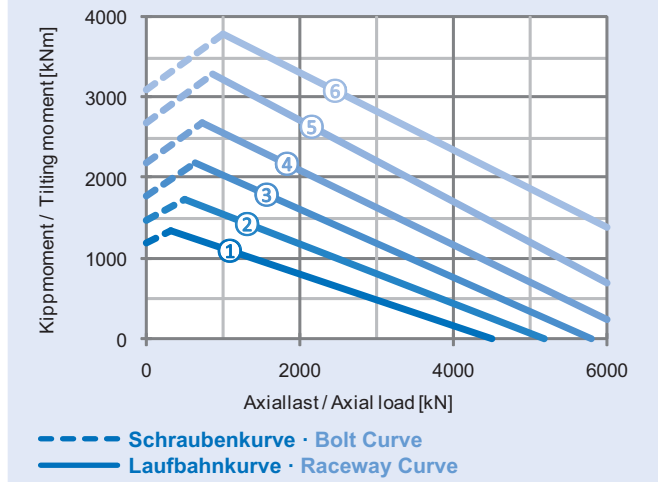
### innenverzahnt - internal gear

| Typbezeichnung<br>Type designation | Da   | Di   | H    | H1   | H2   | O    | U    | G    | La   | na  | B    | Li   | ni  | b    | axial | radial |
|------------------------------------|------|------|------|------|------|------|------|------|------|-----|------|------|-----|------|-------|--------|
|                                    | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [kg] | [mm] | [-] | [mm] | [mm] | [-] | [mm] | [mm]  | [mm]   |
| <b>K22.30.1300</b>                 | 1429 | 1104 | 119  | 110  | 110  | 1302 | 1298 | 477  | 1372 | 36  | 26   | 1228 | 36  | 26   | -     | -      |
| <b>K22.30.1500</b>                 | 1629 | 1308 | 119  | 110  | 110  | 1502 | 1498 | 546  | 1572 | 40  | 26   | 1428 | 40  | 26   | -     | -      |
| <b>K22.30.1700</b>                 | 1829 | 1512 | 119  | 110  | 110  | 1702 | 1698 | 613  | 1772 | 44  | 26   | 1628 | 44  | 26   | -     | -      |
| <b>K22.30.1900</b>                 | 2029 | 1704 | 119  | 110  | 110  | 1902 | 1898 | 706  | 1972 | 48  | 26   | 1828 | 48  | 26   | -     | -      |
| <b>K22.30.2100</b>                 | 2229 | 1908 | 119  | 110  | 110  | 2102 | 2098 | 771  | 2172 | 52  | 26   | 2028 | 52  | 26   | -     | -      |
| <b>K22.30.2300</b>                 | 2429 | 2112 | 119  | 110  | 110  | 2302 | 2198 | 835  | 2372 | 56  | 26   | 2228 | 56  | 26   | -     | -      |

| do   | m    | z   | x    | fz norm | fz max | n1  | Kurve<br>Curve |
|------|------|-----|------|---------|--------|-----|----------------|
| [mm] | [mm] | [-] | [-]  | [kN]    | [kN]   | [-] |                |
| 1116 | 12   | 93  | -0,5 | 120     | 240    | 4   | <b>1</b>       |
| 1320 | 12   | 110 | -0,5 | 120     | 240    | 4   | <b>2</b>       |
| 1524 | 12   | 127 | -0,5 | 120     | 240    | 4   | <b>3</b>       |
| 1716 | 12   | 143 | -0,5 | 120     | 240    | 4   | <b>4</b>       |
| 1920 | 12   | 160 | -0,5 | 120     | 240    | 4   | <b>5</b>       |
| 2124 | 12   | 177 | -0,5 | 120     | 240    | 4   | <b>6</b>       |

### Grenzlastdiagramm · Statische Tragfähigkeit

#### Limit load diagram · Static load capacity



# Kugeldrehverbindungen; 2-reihig, Achtpunktlager

## Double-row ball slewing bearings

| Abmessungen und Gewicht<br>Dimensions and weight |                                    |                            |                                     |                                     |                                    |                                     |                   | Befestigungsbohrungen<br>Fastening boreholes     |                                       |  |  |                                       |  | Lagerspiel<br>Bearing play                               |                            |
|--|------------------------------------|----------------------------|-------------------------------------|-------------------------------------|------------------------------------|-------------------------------------|-------------------|--|---------------------------------------|--|--|---------------------------------------|--|--|----------------------------|
| Außerdurchmesser<br>Outer diameter               | Innendurchmesser<br>Inner diameter | Gesamthöhe<br>Total height | Höhe Außenring<br>Outer ring height | Höhe Innenring<br>Inner ring height | Durchmesser oben<br>Upper diameter | Durchmesser unten<br>Lower diameter | Gewicht<br>Weight | Außenring<br>Outer ring                          |                                       |  | Innenring<br>Inner ring                          |                                       |  | Axialspiel / Kippspiel<br>Axial play / machine clearance | Radialspiel<br>Radial play |
|  |                                    |                            |                                     |                                     |                                    |                                     |                   | Lochkreisdurchmesser<br>Diam. of borehole circle | Bohrungsanzahl<br>Number of boreholes | Bohrungsdurchmesser<br>Borehole diameter | Lochkreisdurchmesser<br>Diam. of borehole circle | Bohrungsanzahl<br>Number of boreholes | Bohrungsdurchmesser<br>Borehole diameter |  |                            |

| Verzahnung und Zahnkräfte<br>Gear and gear tooth forces |                 |                              |  |   |  |  |
|---|-----------------|------------------------------|--|---|--|--|
| Teilkreisdurchmesser<br>Pitch circle diameter           | Modul<br>Module | Zähnezahl<br>Number of teeth | Profilverschiebungsfaktor<br>Profile shift coefficient | Zulässige Zahnkraft<br>Permitted gear tooth force | Maximal zulässige Zahnkraft<br>Max. permitted gear tooth force | Anzahl der Schmiernippel<br>Number of grease nipples |

### außenverzahnt - external gear

| Typbezeichnung<br>Type designation | Da     | Di   | H    | H1   | H2   | O    | U    | G    | La   | na  | B    | Li   | ni  | b    | axial | radial |
|------------------------------------|--------|------|------|------|------|------|------|------|------|-----|------|------|-----|------|-------|--------|
|                                    | [mm]   | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [kg] | [mm] | [-] | [mm] | [mm] | [-] | [mm] | [mm]  | [mm]   |
| K21.40.1900                        | 2140,8 | 1731 | 152  | 143  | 143  | 1898 | 1902 | 1172 | 1993 | 40  | 33   | 1807 | 40  | 33   | -     | -      |
| K21.40.2100                        | 2332,8 | 1931 | 152  | 143  | 143  | 2098 | 2102 | 1262 | 2193 | 44  | 33   | 2007 | 44  | 33   | -     | -      |
| K21.40.2300                        | 2540,8 | 2131 | 152  | 143  | 143  | 2298 | 2302 | 1417 | 2393 | 48  | 33   | 2207 | 48  | 33   | -     | -      |
| K21.40.2500                        | 2732,8 | 2331 | 152  | 143  | 143  | 2498 | 2502 | 1501 | 2593 | 52  | 33   | 2407 | 52  | 33   | -     | -      |
| K21.40.2700                        | 2948,4 | 2531 | 152  | 143  | 143  | 2698 | 2702 | 1680 | 2793 | 56  | 33   | 2607 | 56  | 33   | -     | -      |
| K21.40.2900                        | 3164,4 | 2731 | 152  | 143  | 143  | 2898 | 2902 | 1892 | 2993 | 60  | 33   | 2807 | 60  | 33   | -     | -      |
| K21.40.3100                        | 3362,4 | 2931 | 152  | 143  | 143  | 3098 | 3102 | 2009 | 3193 | 64  | 33   | 3007 | 64  | 33   | -     | -      |

| do   | m    | z   | x   | fz norm | fz max | n1  | Kurve<br>Curve |
|------|------|-----|-----|---------|--------|-----|----------------|
| [mm] | [mm] | [-] | [-] | [kN]    | [kN]   | [-] |                |
| 2096 | 16   | 131 | 0,5 | 198     | 396    | 4   | 1              |
| 2288 | 16   | 143 | 0,5 | 198     | 396    | 4   | 2              |
| 2496 | 16   | 156 | 0,5 | 198     | 396    | 4   | 3              |
| 2688 | 16   | 168 | 0,5 | 198     | 396    | 6   | 4              |
| 2898 | 18   | 161 | 0,5 | 223     | 446    | 6   | 5              |
| 3114 | 18   | 173 | 0,5 | 223     | 446    | 6   | 6              |
| 3312 | 18   | 184 | 0,5 | 223     | 446    | 6   | 7              |

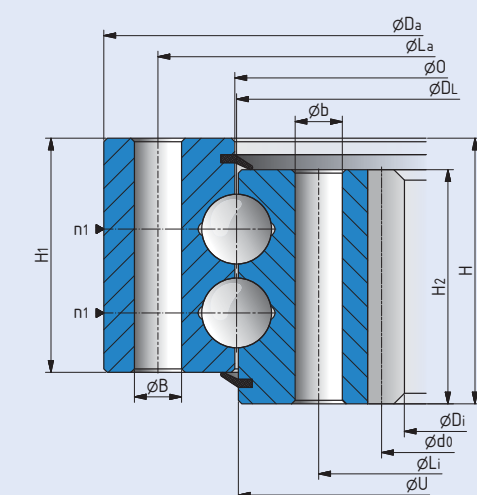
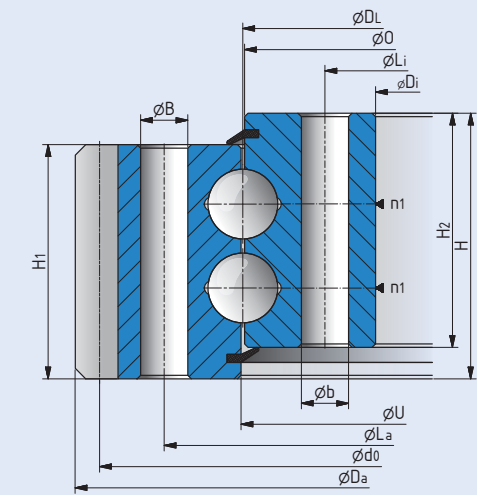
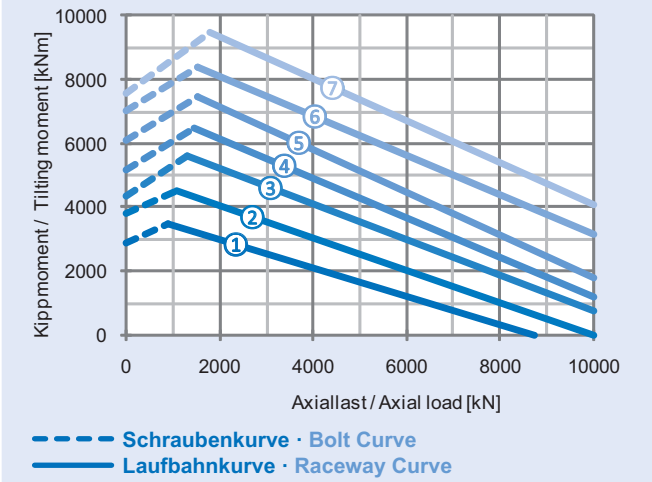
### innenverzahnt - internal gear

| Typbezeichnung<br>Type designation | Da   | Di   | H    | H1   | H2   | O    | U    | G    | La   | na  | B    | Li   | ni  | b    | axial | radial |
|------------------------------------|------|------|------|------|------|------|------|------|------|-----|------|------|-----|------|-------|--------|
|                                    | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [kg] | [mm] | [-] | [mm] | [mm] | [-] | [mm] | [mm]  | [mm]   |
| K22.40.1900                        | 2069 | 1648 | 152  | 143  | 143  | 1902 | 1898 | 1179 | 1993 | 40  | 33   | 1807 | 40  | 33   | -     | -      |
| K22.40.2100                        | 2269 | 1856 | 152  | 143  | 143  | 2102 | 2098 | 1278 | 2193 | 44  | 33   | 2007 | 44  | 33   | -     | -      |
| K22.40.2300                        | 2469 | 2048 | 152  | 143  | 143  | 2302 | 2298 | 1431 | 2393 | 48  | 33   | 2207 | 48  | 33   | -     | -      |
| K22.40.2500                        | 2669 | 2256 | 152  | 143  | 143  | 2502 | 2498 | 1525 | 2593 | 52  | 33   | 2407 | 52  | 33   | -     | -      |
| K22.40.2700                        | 2869 | 2448 | 152  | 143  | 143  | 2702 | 2698 | 1666 | 2793 | 56  | 33   | 2607 | 56  | 33   | -     | -      |
| K22.40.2900                        | 3069 | 2646 | 152  | 143  | 143  | 2902 | 2898 | 1801 | 2993 | 60  | 33   | 2807 | 60  | 33   | -     | -      |
| K22.40.3100                        | 3269 | 2844 | 152  | 143  | 143  | 3102 | 3098 | 1937 | 3193 | 64  | 33   | 3007 | 64  | 33   | -     | -      |

| do   | m    | z   | x    | fz norm | fz max | n1  | Kurve<br>Curve |
|------|------|-----|------|---------|--------|-----|----------------|
| [mm] | [mm] | [-] | [-]  | [kN]    | [kN]   | [-] |                |
| 1664 | 16   | 104 | -0,5 | 198     | 396    | 4   | 1              |
| 1872 | 16   | 117 | -0,5 | 198     | 396    | 4   | 2              |
| 2064 | 16   | 129 | -0,5 | 198     | 396    | 4   | 3              |
| 2272 | 16   | 142 | -0,5 | 198     | 396    | 6   | 4              |
| 2466 | 18   | 137 | -0,5 | 223     | 446    | 6   | 5              |
| 2664 | 18   | 148 | -0,5 | 223     | 446    | 6   | 6              |
| 2862 | 18   | 159 | -0,5 | 223     | 446    | 6   | 7              |

### Grenzlastdiagramm · Statische Tragfähigkeit

#### Limit load diagram · Static load capacity



# Kugeldrehverbindungen; 2-reihig, Achtpunktlager

## Double-row ball slewing bearings

| Abmessungen und Gewicht<br>Dimensions and weight |                                    |                            |                                     |                                     |                                    |                                     |                   | Befestigungsbohrungen<br>Fastening boreholes     |                                       |  |  |                                       |  | Lagerspiel<br>Bearing play                               |                            |
|--|------------------------------------|----------------------------|-------------------------------------|-------------------------------------|------------------------------------|-------------------------------------|-------------------|--|---------------------------------------|--|--|---------------------------------------|--|--|----------------------------|
| Außerdurchmesser<br>Outer diameter               | Innendurchmesser<br>Inner diameter | Gesamthöhe<br>Total height | Höhe Außenring<br>Outer ring height | Höhe Innenring<br>Inner ring height | Durchmesser oben<br>Upper diameter | Durchmesser unten<br>Lower diameter | Gewicht<br>Weight | Außenring<br>Outer ring                          |                                       |  | Innenring<br>Inner ring                          |                                       |  | Axialspiel / Kippspiel<br>Axial play / machine clearance | Radialspiel<br>Radial play |
|  |                                    |                            |                                     |                                     |                                    |                                     |                   | Lochkreisdurchmesser<br>Diam. of borehole circle | Bohrungsanzahl<br>Number of boreholes | Bohrungsdurchmesser<br>Borehole diameter | Lochkreisdurchmesser<br>Diam. of borehole circle | Bohrungsanzahl<br>Number of boreholes | Bohrungsdurchmesser<br>Borehole diameter |  |                            |

| Verzahnung und Zahnkräfte<br>Gear and gear tooth forces |                 |                              |  |   |  |  |
|---|-----------------|------------------------------|--|---|--|--|
| Teilkreisdurchmesser<br>Pitch circle diameter           | Modul<br>Module | Zähnezahl<br>Number of teeth | Profilverschiebungsfaktor<br>Profile shift coefficient | Zulässige Zahnkraft<br>Permitted gear tooth force | Maximal zulässige Zahnkraft<br>Max. permitted gear tooth force | Anzahl der Schmiernippel<br>Number of grease nipples |

### außenverzahnt - external gear

| Typbezeichnung<br>Type designation | Da     | Di   | H    | H1   | H2   | O    | U    | G    | La   | na  | B    | Li   | ni  | b    | axial | radial |
|------------------------------------|--------|------|------|------|------|------|------|------|------|-----|------|------|-----|------|-------|--------|
|                                    | [mm]   | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [kg] | [mm] | [-] | [mm] | [mm] | [-] | [mm] | [mm]  | [mm]   |
| K21.50.2700                        | 2966,4 | 2521 | 186  | 177  | 177  | 2698 | 2702 | 2226 | 2803 | 60  | 33   | 2597 | 60  | 33   | -     | -      |
| K21.50.2900                        | 3164,4 | 2721 | 186  | 177  | 177  | 2898 | 2902 | 2386 | 3003 | 60  | 33   | 2797 | 60  | 33   | -     | -      |
| K21.50.3100                        | 3362,4 | 2921 | 186  | 177  | 177  | 3098 | 3102 | 2531 | 3203 | 66  | 33   | 2997 | 66  | 33   | -     | -      |
| K21.50.3300                        | 3560,4 | 3121 | 186  | 177  | 177  | 3298 | 3302 | 2673 | 3403 | 72  | 33   | 3197 | 72  | 33   | -     | -      |
| K21.50.3500                        | 3776,0 | 3321 | 186  | 177  | 177  | 3498 | 3502 | 2924 | 3603 | 78  | 33   | 3397 | 78  | 33   | -     | -      |
| K21.50.3700                        | 3976,0 | 3521 | 186  | 177  | 177  | 3698 | 3702 | 3086 | 3803 | 84  | 33   | 3597 | 84  | 33   | -     | -      |
| K21.50.3900                        | 4176,0 | 3721 | 186  | 177  | 177  | 3898 | 3902 | 3248 | 4003 | 90  | 33   | 3797 | 90  | 33   | -     | -      |

| do   | m    | z   | x   | fz norm | fz max | n1  | Kurve<br>Curve |
|------|------|-----|-----|---------|--------|-----|----------------|
| [mm] | [mm] | [-] | [-] | [kN]    | [kN]   | [-] |                |
| 2916 | 18   | 162 | 0,5 | 305     | 610    | 6   | 1              |
| 3114 | 18   | 173 | 0,5 | 305     | 610    | 6   | 2              |
| 3312 | 18   | 184 | 0,5 | 305     | 610    | 6   | 3              |
| 3510 | 18   | 195 | 0,5 | 305     | 610    | 6   | 4              |
| 3720 | 20   | 186 | 0,5 | 342     | 684    | 6   | 5              |
| 3920 | 20   | 196 | 0,5 | 342     | 684    | 6   | 6              |
| 4120 | 20   | 206 | 0,5 | 342     | 684    | 6   | 7              |

### innenverzahnt - internal gear

| Typbezeichnung<br>Type designation | Da   | Di   | H    | H1   | H2   | O    | U    | G    | La   | na  | B    | Li   | ni  | b    | axial | radial |
|------------------------------------|------|------|------|------|------|------|------|------|------|-----|------|------|-----|------|-------|--------|
|                                    | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [kg] | [mm] | [-] | [mm] | [mm] | [-] | [mm] | [mm]  | [mm]   |
| K22.50.2700                        | 2879 | 2430 | 186  | 177  | 177  | 2702 | 2698 | 2200 | 2803 | 60  | 33   | 2597 | 60  | 33   | -     | -      |
| K22.50.2900                        | 3079 | 2628 | 186  | 177  | 177  | 2902 | 2898 | 2387 | 3003 | 60  | 33   | 2797 | 60  | 33   | -     | -      |
| K22.50.3100                        | 3279 | 2826 | 186  | 177  | 177  | 3102 | 3098 | 2561 | 3203 | 66  | 33   | 2997 | 66  | 33   | -     | -      |
| K22.50.3300                        | 3479 | 3024 | 186  | 177  | 177  | 3302 | 3298 | 2737 | 3403 | 72  | 33   | 3197 | 72  | 33   | -     | -      |
| K22.50.3500                        | 3679 | 3220 | 186  | 177  | 177  | 3502 | 3498 | 2901 | 3603 | 78  | 33   | 3397 | 78  | 33   | -     | -      |
| K22.50.3700                        | 3879 | 3420 | 186  | 177  | 177  | 3702 | 3698 | 3065 | 3803 | 84  | 33   | 3597 | 84  | 33   | -     | -      |
| K22.50.3900                        | 4079 | 3620 | 186  | 177  | 177  | 3902 | 3898 | 3229 | 4003 | 90  | 33   | 3797 | 90  | 33   | -     | -      |

| do   | m    | z   | x    | fz norm | fz max | n1  | Kurve<br>Curve |
|------|------|-----|------|---------|--------|-----|----------------|
| [mm] | [mm] | [-] | [-]  | [kN]    | [kN]   | [-] |                |
| 2448 | 18   | 136 | -0,5 | 305     | 610    | 6   | 1              |
| 2646 | 18   | 147 | -0,5 | 305     | 610    | 6   | 2              |
| 2844 | 18   | 158 | -0,5 | 305     | 610    | 6   | 3              |
| 3042 | 18   | 169 | -0,5 | 305     | 610    | 6   | 4              |
| 3240 | 20   | 162 | -0,5 | 342     | 684    | 6   | 5              |
| 3440 | 20   | 172 | -0,5 | 342     | 684    | 6   | 6              |
| 3660 | 20   | 182 | -0,5 | 342     | 684    | 6   | 7              |

### Grenzlastdiagramm · Statische Tragfähigkeit

### Limit load diagram · Static load capacity

