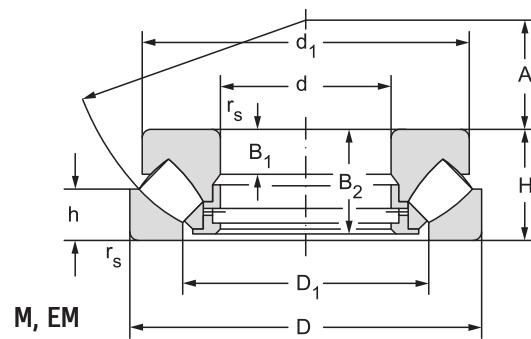
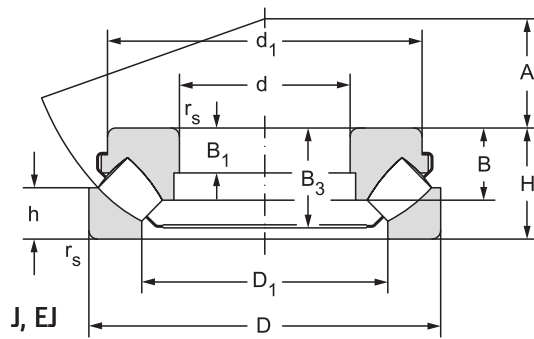


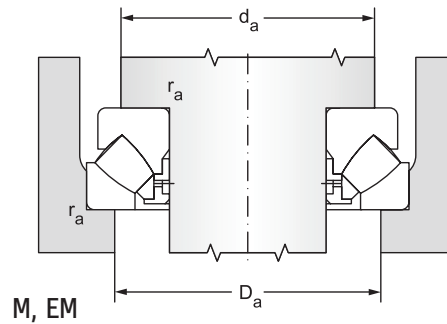
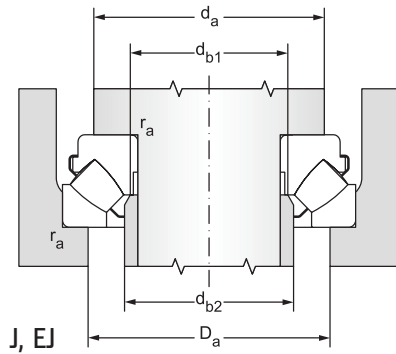
Spherical roller thrust bearings d = 50 to 1120 mm

d = 50 to 130 mm



12.9.1

| Main dimensions | | | | | | | | | | | | Basic load rating | |
|-----------------|-----|----|----------------|----------------|------|----------------|----------------|----------------|------|----|----------------|-------------------|-----------------|
| d | D | H | d ₁ | D ₁ | B | B ₁ | B ₂ | B ₃ | h | A | r _s | dynamic | static |
| | | | | | | | | | | | | C _a | C _{0a} |
| mm | | | | | | | | | | | | kN | |
| 50 | 110 | 36 | 95,0 | 70,0 | 25 | 13 | | 32,0 | 20,5 | 32 | 1,5 | 299 | 930 |
| 60 | 130 | 42 | 118,0 | 88,0 | 28 | 15 | 39,5 | 35,5 | 20,0 | 38 | 1,5 | 287 | 809 |
| | 130 | 42 | 112,3 | 87,0 | 27 | 27 | | 37,0 | 20,0 | 38 | 1,2 | 345 | 951 |
| 65 | 140 | 45 | 128,0 | 96,5 | 28 | 16 | 42,5 | 38,0 | 21,0 | 42 | 2,0 | 340 | 973 |
| | 140 | 45 | 122,8 | 93,0 | 29,5 | 16 | | 39,0 | 21,0 | 42 | 2,0 | 417 | 1155 |
| 70 | 150 | 48 | 137,0 | 102,0 | 32 | 17 | 45,5 | | 23,0 | 44 | 2,0 | 371 | 1070 |
| | 150 | 48 | 131,6 | 105,0 | 31 | 17 | | 43,5 | 23,0 | 44 | 2,0 | 453 | 1280 |
| 75 | 160 | 51 | 146,0 | 109,0 | 34,5 | 18 | 48,0 | | 24,0 | 47 | 2,0 | 429 | 1250 |
| | 160 | 51 | 141,8 | 108,0 | 33,5 | 18 | | 47,0 | 24,0 | 47 | 2,0 | 527 | 1500 |
| 80 | 170 | 54 | 155,0 | 116,0 | 36 | 19 | 51,0 | | 24,0 | 50 | 2,1 | 464 | 1370 |
| | 170 | 54 | 150,8 | 116,0 | 36 | 19 | | 46,5 | 24,0 | 50 | 2,1 | 625 | 1640 |
| 85 | 180 | 58 | 164,0 | 125,0 | 38 | 21 | 55,0 | | 28,0 | 54 | 2,1 | 527 | 1570 |
| | 180 | 58 | 164,0 | 123,0 | 37 | 21 | | 50,0 | 28,0 | 54 | 2,1 | 713 | 1945 |
| 90 | 190 | 60 | 174,0 | 130,0 | | 22 | 57,0 | | 29,0 | 56 | 2,1 | 578 | 1780 |
| | 190 | 60 | 170,8 | 130,0 | | 22 | 57,0 | | 29,0 | 56 | 2,1 | 724 | 2172 |
| 100 | 170 | 42 | 150,0 | 128,0 | 26,2 | 15 | | 37,3 | 20,5 | 58 | 1,5 | 449 | 1400 |
| | 210 | 67 | 193,0 | 144,5 | | 24 | 64,0 | | 32,0 | 62 | 3,0 | 705 | 2170 |
| | 210 | 67 | 189,8 | 144,0 | | 24 | 64,0 | | 32,0 | 62 | 2,5 | 891 | 2578 |
| 110 | 190 | 48 | 176,0 | 143,0 | | 16 | 45,5 | | 23,0 | 64 | 2,0 | 442 | 1420 |
| | 190 | 48 | 176,0 | 143,0 | 31 | 16 | | 42,0 | 23,0 | 64 | 2,0 | 587 | 1760 |
| | 230 | 73 | 212,0 | 160,0 | | 26 | 69,0 | | 35,0 | 69 | 3,0 | 817 | 2600 |
| | 230 | 73 | 209,5 | 159,0 | | 27 | | | 35,0 | 69 | 2,5 | 1053 | 3078 |
| 120 | 210 | 54 | 194,0 | 157,5 | | 18 | 51,0 | | 26,0 | 70 | 2,1 | 577 | 1830 |
| | 210 | 54 | 187,1 | 155,5 | 35,5 | 19 | | 47,0 | 27,0 | 70 | 2,1 | 670 | 2100 |
| | 250 | 78 | 229,0 | 172,0 | | 29 | 74,0 | | 37,0 | 74 | 4,0 | 934 | 3000 |
| | 250 | 78 | 226,8 | 173,0 | | 29 | | | 37,0 | 74 | 4,0 | 1215 | 3590 |
| 130 | 225 | 58 | 205,0 | 170,0 | 37 | 19 | 55,0 | | 28,0 | 76 | 2,1 | 647 | 2070 |
| | 225 | 58 | 201,5 | 165,7 | | 21 | | 49,6 | 30,1 | 76 | 2,1 | 788 | 2950 |
| | 270 | 85 | 247,0 | 188,0 | 55,5 | 31 | 81,0 | | 41,0 | 81 | 4,0 | 1090 | 3540 |
| | 270 | 85 | 245,0 | 188,0 | | 31 | | 74,0 | 41,0 | 81 | 4,0 | 1437 | 4300 |



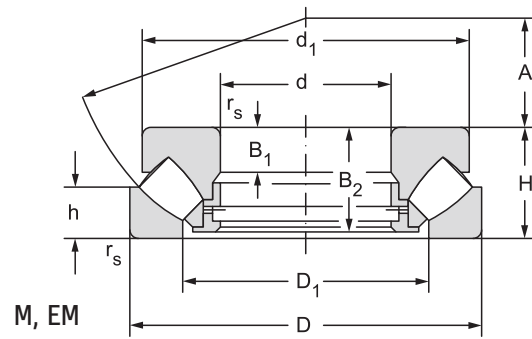
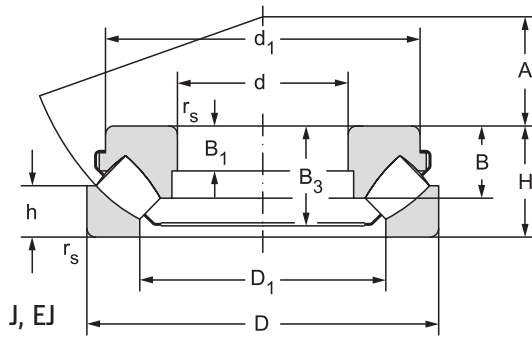
Deliveries of bearings marked * must be first consulted with the manufacturer, ** NEW FORCE

| Fatigue load limit | Limiting speed for lubrication with | Bearing designation | Abutment and fillet dimensions | | | | | | Weight | Minimum axial load factor |
|--------------------|-------------------------------------|---------------------|--------------------------------|----------------|-----------------|----------------|-----------------|----------------|--------|---------------------------|
| | | | d | d _a | d _{b1} | D _a | d _{b2} | r _a | | |
| P _u | oil | | | min | max | max | max | max | - | |
| kN | min ⁻¹ | | mm | | | | | | kg | |
| 110 | 3100 | 29410EJ** | 50 | 70 | 55,8 | 90 | 59,5 | 1,5 | 1,67 | 0,11 |
| 99 | 2400 | 29412M* | 60 | 90 | | 109 | | 1,5 | 2,60 | 0,08 |
| 120 | 2600 | 29412EJ** | | 90 | 67,0 | 117 | 67 | 1,5 | 2,47 | 0,11 |
| 120 | 2200 | 29413M* | 65 | 100 | | 118 | | 2,0 | 3,30 | 0,12 |
| 140 | 2400 | 29413EJ** | | 100 | 72,0 | 118 | 72 | 2,0 | 3,26 | 0,17 |
| 130 | 2000 | 29414M* | 70 | 105 | | 126 | | 2,0 | 4,00 | 0,14 |
| 160 | 2200 | 29414EJ** | | 105 | 77,5 | 126 | 77,5 | 2,0 | 3,98 | 0,2 |
| 150 | 2000 | 29415M* | 75 | 115 | | 134 | | 2,0 | 4,90 | 0,2 |
| 180 | 2200 | 29415EJ** | | 115 | 82,5 | 134 | 82,5 | 2,0 | 4,90 | 0,28 |
| 170 | 1900 | 29416M* | 80 | 120 | | 141 | | 2,0 | 5,80 | 0,23 |
| 200 | 2000 | 29416EJ** | | 120 | 88,0 | 141 | 88 | 2,0 | 5,80 | 0,34 |
| 190 | 1800 | 29417M* | 85 | 130 | | 153 | | 2,0 | 6,90 | 0,31 |
| 240 | 1800 | 29417EJ** | | 130 | 94,0 | 153 | 94 | 2,0 | 6,67 | 0,47 |
| 220 | 1700 | 29418M* | 90 | 135 | | 161 | | 2,0 | 8,10 | 0,4 |
| 260 | 1800 | 29418EJ** | | 135 | 99,0 | 161 | 99 | 2,0 | 8,10 | 0,59 |
| 170 | 2000 | 29320EJ** | 100 | 130 | 107,0 | 147 | 107 | 1,5 | 3,95 | 0,25 |
| 260 | 1500 | 29420M* | | 150 | | 178 | | 2,5 | 11,8 | 0,59 |
| 310 | 1600 | 29420EJ** | | 150 | 110,0 | 175 | 110 | 3,0 | 10,8 | 0,83 |
| 150 | 1600 | 29322M* | 110 | 145 | | 165 | | 2,0 | 5,50 | 0,25 |
| 190 | 1600 | 29322EJ** | | 145 | 117,0 | 165 | 117 | 2,0 | 5,40 | 0,39 |
| 270 | 1400 | 29422M* | | 165 | | 196 | | 2,5 | 14,5 | 0,85 |
| 320 | 1400 | 29422EJ** | | 165 | 120,5 | 193 | 129 | 2,5 | 13,5 | 1,2 |
| 190 | 1400 | 29324M** | 120 | 160 | | 184 | | 2,0 | 7,60 | 0,42 |
| 220 | 1600 | 29324EJ** | | 160 | 128,0 | 181 | 128 | 2,0 | 7,41 | 0,55 |
| 300 | 1300 | 29424M* | | 180 | | 212 | | 3,0 | 18,1 | 1,1 |
| 360 | 1300 | 29424EJ** | | 180 | 132,0 | 209 | 140 | 3,0 | 17,5 | 1,6 |
| 210 | 1300 | 29326M** | 130 | 170 | | 198 | | 2,0 | 9,30 | 0,54 |
| 300 | 1500 | 29326EJ** | | 175 | 138,0 | 194 | 143 | 2,0 | 9,08 | 1,1 |
| 350 | 1200 | 29426M* | | 195 | | 229 | | 3,0 | 22,5 | 1,6 |
| 430 | 1200 | 29426EJ** | | 195 | 142,5 | 227 | 153 | 3,0 | 21,6 | 2,3 |



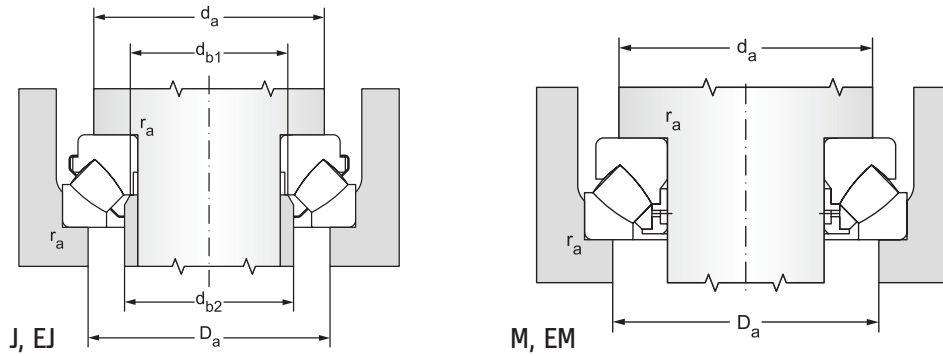
Spherical roller thrust bearings

d = 140 to 220 mm



12.9.1

| Main dimensions | | | | | | | | | | | | Basic load rating | |
|-----------------|-----|-----|----------------|----------------|------|----------------|----------------|----------------|------|-----|----------------|-------------------|-----------------|
| d | D | H | d ₁ | D ₁ | B | B ₁ | B ₂ | B ₃ | h | A | r _s | dynamic | static |
| mm | | | | | | | | | | | | C _a | C _{oa} |
| | | | | | | | | | | | | kN | |
| 140 | 240 | 60 | 219,0 | 183,0 | | 20 | 57,0 | | 29,0 | 82 | 2,1 | 695 | 2310 |
| | 240 | 60 | 214,9 | 178,9 | 38,5 | 22 | | 52,4 | 30,0 | 82 | 2,1 | 876 | 3150 |
| | 280 | 85 | 257,0 | 197,5 | | 31 | 81,0 | | 41,0 | 86 | 4,0 | 1164 | 3750 |
| | 280 | 85 | 254,0 | 196,5 | 54 | 32 | | 74,0 | 41,0 | 86 | 4,0 | 1554 | 4686 |
| 150 | 250 | 60 | 229,0 | 193,0 | | 20 | 57,0 | | 29,0 | 87 | 2,1 | 718 | 2430 |
| | 250 | 60 | 222,5 | 189,6 | 38 | 22 | | 53,8 | 28,0 | 87 | 2,1 | 889 | 3236 |
| | 300 | 90 | 276,0 | 211,5 | | 32 | 86,0 | | 44,0 | 92 | 4,0 | 1318 | 4270 |
| | 300 | 90 | 273,0 | 209,5 | 58 | 34 | | 79,0 | 44,0 | 92 | 4,0 | 1675 | 5241 |
| 160 | 270 | 67 | 248,0 | 207,0 | | 23 | 64,0 | | 32,0 | 92 | 3,0 | 831 | 2810 |
| | 270 | 67 | 243,6 | 202,3 | 42 | 24 | | 58,6 | 33,0 | 92 | 3,0 | 1067 | 3977 |
| | 320 | 95 | 306,0 | 226,0 | | 34 | 91,0 | | 45,0 | 99 | 5,0 | 1504 | 4810 |
| | 320 | 95 | 282,8 | 221,7 | 60,5 | 35 | | 82,0 | 45,5 | 99 | 5,0 | 1854 | 5930 |
| 170 | 280 | 67 | 258,0 | 215,0 | | 23 | 64,0 | | 32,0 | 96 | 3,0 | 858 | 2950 |
| | 280 | 67 | 253,6 | 214,6 | 42,2 | 24 | | 60,0 | 32,0 | 96 | 3,0 | 1090 | 4098 |
| | 340 | 103 | 324,0 | 240,0 | | 37 | 99,0 | | 50,0 | 104 | 5,0 | 1669 | 5380 |
| | 340 | 103 | 301,0 | 236,0 | 65,5 | 36 | | 88,0 | 50,0 | 104 | 5,0 | 2029 | 6230 |
| 180 | 300 | 73 | 277,0 | 231,0 | | 25 | 69,0 | | 35,0 | 103 | 3,0 | 1014 | 3530 |
| | 300 | 73 | 270,4 | 228,3 | 46 | 26 | | 64,3 | 35,5 | 103 | 3,0 | 1280 | 4813 |
| | 360 | 109 | 342,0 | 255,0 | | 39 | 105,0 | | 52,0 | 110 | 5,0 | 1854 | 6010 |
| | 360 | 109 | 320,6 | 248,7 | 69,5 | 38 | | 93,0 | 53,0 | 110 | 5,0 | 2297 | 7160 |
| 190 | 320 | 78 | 294,0 | 246,0 | | 27 | 74,0 | | 38,0 | 110 | 4,0 | 1120 | 4010 |
| | 320 | 78 | 284,4 | 239,5 | 49 | 28 | | 68,0 | 36,0 | 110 | 4,0 | 1483 | 4840 |
| | 380 | 115 | 360,0 | 270,0 | | 41 | 111,0 | | 55,0 | 117 | 5,0 | 2019 | 6610 |
| | 380 | 115 | 339,2 | 263,0 | 73 | 41 | | 98,0 | 55,5 | 117 | 5,0 | 2493 | 7750 |
| 200 | 280 | 48 | 264,0 | 233,0 | 32 | 17 | 45,0 | | 24,0 | 108 | 2,1 | 731 | 3150 |
| | 340 | 85 | 325,0 | 261,0 | | 29 | 81,0 | | 41,0 | 116 | 4,0 | 1300 | 4740 |
| | 340 | 85 | 302,8 | 253,6 | 53,5 | 29 | | 73,0 | 40,0 | 116 | 4,0 | 1669 | 5480 |
| | 400 | 122 | 365,0 | 284,0 | | 43 | 117,0 | | 59,0 | 122 | 5,0 | 2210 | 7510 |
| | 400 | 122 | 355,7 | 276,5 | 77 | 43 | | 104,0 | 59,4 | 122 | 5,0 | 2791 | 8790 |
| 220 | 300 | 48 | 286,0 | 252,0 | | 17 | 46,0 | | 24,0 | 117 | 2,0 | 757 | 3350 |
| | 360 | 85 | 345,0 | 280,0 | | 29 | 81,0 | | 41,0 | 125 | 4,0 | 1340 | 4970 |
| | 360 | 85 | 324,4 | 273,0 | 55 | 29 | | 74,0 | 41,0 | 125 | 4,0 | 1792 | 6300 |
| | 420 | 122 | 400,0 | 305,0 | | 43 | 117,0 | | 58,0 | 132 | 6,0 | 2328 | 7970 |
| | 420 | 122 | 375,3 | 296,0 | 77 | 44 | | 103,0 | 58,5 | 132 | 6,0 | 2905 | 9070 |



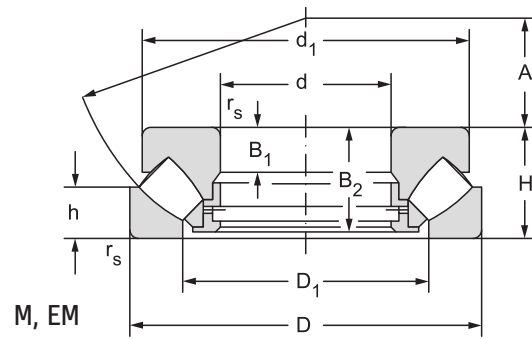
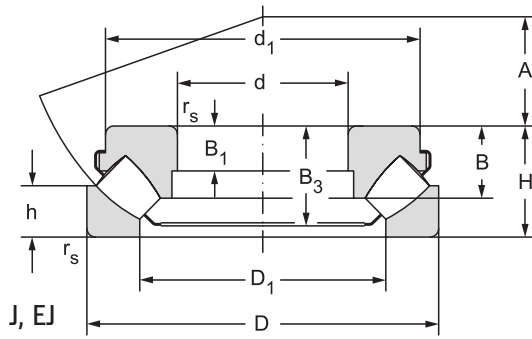
Deliveries of bearings marked * must be first consulted with the manufacturer, ** NEW FORCE

| Fatigue load limit | Limiting speed for lubrication with | Bearing designation | Abutment and fillet dimensions | | | | | | Weight | Minimum axial load factor |
|--------------------|-------------------------------------|---------------------|--------------------------------|----------------|-----------------|----------------|-----------------|----------------|--------|---------------------------|
| | | | d | d _a | d _{b1} | D _a | d _{b2} | r _a | | |
| P _u | oil | | | min | max | max | max | max | - | |
| kN | min ⁻¹ | | mm | | | | | | kg | |
| 230 | 1300 | 29328M** | 140 | 185 | | 211 | | 2,0 | 11,0 | 0,67 |
| 320 | 1400 | 29328EJ** | | 185 | 148,0 | 208 | 154 | 2,0 | 10,5 | 1,2 |
| 370 | 1200 | 29428M** | | 205 | | 239 | | 3,0 | 24,2 | 1,8 |
| 460 | 1200 | 29428EJ** | | 205 | 153,0 | 239 | 162 | 3,0 | 23,0 | 2,7 |
| 240 | 1200 | 29330M** | 150 | 195 | | 222 | | 2,0 | 11,5 | 0,74 |
| 320 | 1400 | 29330EJ** | | 195 | 158,0 | 219 | 163 | 2,0 | 10,9 | 1,3 |
| 410 | 1100 | 29430M** | | 220 | | 257 | | 3,0 | 29,4 | 2,3 |
| 500 | 1100 | 29430EJ** | | 220 | 163,0 | 275 | 175 | 3,0 | 28,2 | 3,4 |
| 270 | 1100 | 29332M** | 160 | 210 | | 239 | | 2,5 | 15,2 | 0,99 |
| 390 | 1200 | 29332EJ** | | 210 | 169,0 | 235 | 176 | 2,5 | 14,4 | 2 |
| 450 | 1000 | 29432M** | | 230 | | 274 | | 4,0 | 35,5 | 2,9 |
| 560 | 1000 | 29432EJ** | | 235 | 175,0 | 270 | 179 | 4,0 | 33,3 | 4,4 |
| 280 | 1100 | 29334M** | 170 | 220 | | 248 | | 2,5 | 16,0 | 1,1 |
| 390 | 1200 | 29334EJ** | | 220 | 178,0 | 245 | 187,5 | 2,5 | 15,1 | 2,1 |
| 500 | 940 | 29434M** | | 245 | | 291 | | 4,0 | 43,7 | 3,6 |
| 570 | 950 | 29434EJ** | | 250 | 185,0 | 286 | 199 | 4,0 | 40,1 | 4,9 |
| 330 | 1000 | 29336M** | 180 | 235 | | 266 | | 2,5 | 20,3 | 1,6 |
| 450 | 1100 | 29336EJ** | | 235 | 189,0 | 262 | 195 | 2,5 | 19,1 | 2,9 |
| 540 | 890 | 29436M** | | 260 | | 307 | | 4,0 | 52,0 | 4,5 |
| 650 | 900 | 29436EJ** | | 265 | 195,0 | 304 | 210 | 4,0 | 48,1 | 6,4 |
| 370 | 940 | 29338M* | 190 | 250 | | 283 | | 3,0 | 24,8 | 2 |
| 450 | 1100 | 29338EJ** | | 250 | 199,0 | 280 | 208,5 | 3,0 | 23,3 | 2,9 |
| 590 | 840 | 29438M** | | 275 | | 325 | | 4,0 | 60,0 | 5,5 |
| 690 | 850 | 29438EJ** | | 280 | 206,0 | 321 | 223 | 4,0 | 55,7 | 7,5 |
| 300 | 1150 | 29240EM** | 200 | 235 | | 260 | | 2,0 | 8,76 | 1,2 |
| 430 | 890 | 29340M* | | 265 | | 300 | | 3,0 | 33,0 | 2,8 |
| 500 | 950 | 29340EJ** | | 265 | 211,0 | 300 | 221,5 | 3,0 | 28,9 | 3,8 |
| 660 | 790 | 29440M* | | 290 | | 343 | | 4,0 | 69,0 | 7,1 |
| 770 | 800 | 29440EJ** | | 298 | 217,5 | 334 | 234 | 4,0 | 66,3 | 9,7 |
| 310 | 1300 | 29244EM** | 220 | 285 | | 260 | | 2,0 | 9,64 | 1,4 |
| 440 | 840 | 29344M* | | 285 | | 320 | | 3,0 | 32,8 | 3,1 |
| 560 | 950 | 29344EJ** | | 285 | 229,0 | 316 | 237,5 | 3,0 | 31,6 | 5 |
| 690 | 750 | 29444M** | | 310 | | 364 | | 5,0 | 74,0 | 7,9 |
| 780 | 750 | 29444EJ** | | 315 | 238,0 | 355 | 254 | 5,0 | 69,1 | 10 |



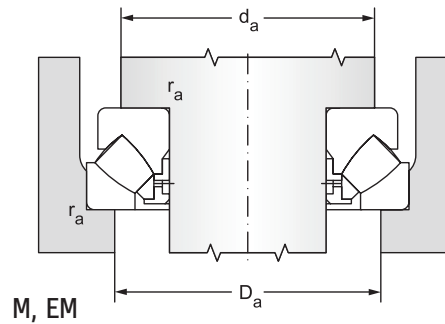
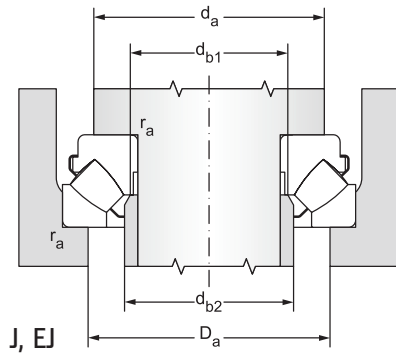
Spherical roller thrust bearings

d = 240 to 380 mm



12.9.1

| Main dimensions | | | | | | | | | | | | Basic load rating | |
|-----------------|-----|-----|----------------|----------------|-----|----------------|----------------|----------------|------|-----|----------------|-------------------|-----------------|
| d | D | H | d ₁ | D ₁ | B | B ₁ | B ₂ | B ₃ | h | A | r _s | dynamic | static |
| mm | | | | | | | | | | | | C _a | C _{oa} |
| mm | | | | | | | | | | | | kN | |
| 240 | 340 | 60 | 330,0 | 283,0 | | 19 | 57,0 | | 30,0 | 130 | 2,1 | 793 | 3450 |
| | 380 | 85 | 365,0 | 300,0 | | 29 | 81,0 | | 41,0 | 135 | 4,0 | 1340 | 5190 |
| | 380 | 85 | 343,7 | 294,8 | 54 | 29 | | 75,0 | 40,5 | 135 | 4,0 | 1844 | 6490 |
| | 440 | 122 | 420,0 | 321,0 | | 43 | 117,0 | | 59,0 | 142 | 6,0 | 2410 | 8420 |
| | 440 | 122 | 393,0 | 320,0 | 76 | 44 | | 103,0 | 59,0 | 142 | 6,0 | 3039 | 9770 |
| 260 | 360 | 60 | 350,0 | 302,0 | | 19 | 57,0 | | 30,0 | 139 | 2,1 | 825 | 3650 |
| | 420 | 95 | 405,0 | 325,0 | | 32 | 91,0 | | 45,0 | 148 | 5,0 | 1780 | 6820 |
| | 420 | 95 | 380,3 | 320,4 | 61 | 32 | | 84,0 | 46,0 | 148 | 5,0 | 2307 | 8310 |
| | 480 | 132 | 460,0 | 346,0 | | 48 | 127,0 | | 64,0 | 154 | 6,0 | 2812 | 9870 |
| | 480 | 132 | 430,7 | 344 | 86 | 48 | | 117 | 63 | 154 | 6 | 3667 | 12080 |
| 280 | 380 | 60 | 370,0 | 323,0 | | 19 | 57,0 | | 30,0 | 150 | 2,1 | 872 | 3950 |
| | 440 | 95 | 423,0 | 345,0 | | 32 | 91,0 | | 46,0 | 158 | 5,0 | 1780 | 7100 |
| | 440 | 95 | 401,7 | 342,1 | 62 | 32 | | 84,0 | 45,0 | 158 | 5,0 | 2276 | 8490 |
| | 520 | 145 | 495,0 | 380,0 | | 52 | 140,0 | | 68,0 | 166 | 6,0 | 3327 | 11840 |
| | 520 | 145 | 468,9 | 370,8 | 95 | 52 | | 125,0 | 70,0 | 166 | 6,0 | 4604 | 15750 |
| 300 | 420 | 73 | 405,0 | 355,0 | | 21 | 69,0 | | 38,0 | 162 | 3,0 | 1061 | 4670 |
| | 480 | 109 | 460,0 | 375,0 | | 37 | 105,0 | | 50,0 | 168 | 5,0 | 2180 | 8500 |
| | 480 | 109 | 431,9 | 366,7 | 70 | 36 | | 95,0 | 51,0 | 168 | 5,0 | 2730 | 11000 |
| | 540 | 145 | 515,0 | 398,0 | | 52 | 140,0 | | 70,0 | 175 | 6,0 | 3317 | 11850 |
| | 540 | 145 | 489,2 | 370,0 | 95 | 55 | | 128,0 | 70,0 | 175 | 6,0 | 4645 | 16460 |
| 320 | 440 | 73 | 430,0 | 375,0 | | 21 | 69,0 | | 38,0 | 172 | 3,0 | 1102 | 4930 |
| | 500 | 109 | 482,0 | 395,0 | | 37 | 105,0 | | 53,0 | 180 | 5,0 | 2180 | 8850 |
| | 500 | 109 | 456,1 | 387,0 | 78 | 37 | | 95,0 | 53,0 | 180 | 5,0 | 2936 | 10920 |
| | 580 | 155 | 555,0 | 430,0 | | 55 | 149,0 | | 75,0 | 191 | 7,5 | 4007 | 14690 |
| | 580 | 155 | 525,6 | 421,8 | 102 | 55 | | 134,0 | 74,5 | 191 | 7,5 | 5160 | 21200 |
| 340 | 460 | 73 | 436,0 | 389,5 | | 21 | 69,0 | | 37,0 | 183 | 3,0 | 1442 | 6600 |
| | 540 | 122 | 520,0 | 424,0 | | 41 | 117,0 | | 59,0 | 192 | 5,0 | 2719 | 10550 |
| | 620 | 170 | 590,0 | 452,0 | | 61 | 164,0 | | 82,0 | 201 | 7,5 | 4481 | 16410 |
| | 620 | 170 | 561,8 | 442,2 | 112 | 54 | | 146,0 | 84,0 | 201 | 7,5 | 5995 | 25080 |
| 360 | 500 | 85 | 485,0 | 420,0 | | 25 | 81,0 | | 44,0 | 194 | 4,0 | 1442 | 6600 |
| | 560 | 122 | 540,0 | 444,0 | | 41 | 117,0 | | 59,0 | 202 | 5,0 | 2730 | 11030 |
| 380 | 520 | 85 | 505,0 | 440,0 | | 27 | 81,0 | | 42,0 | 202 | 4,0 | 1597 | 7510 |
| | 670 | 175 | 622,0 | 504,0 | | 63 | 168,0 | | 85,0 | 222 | 7,5 | 4841 | 19100 |



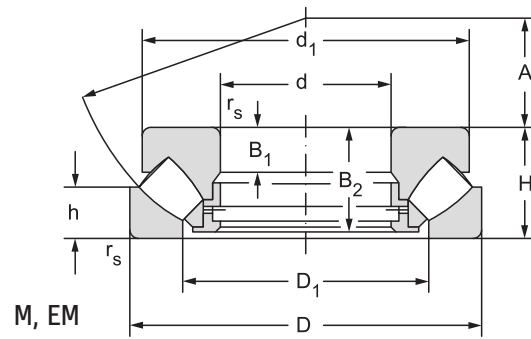
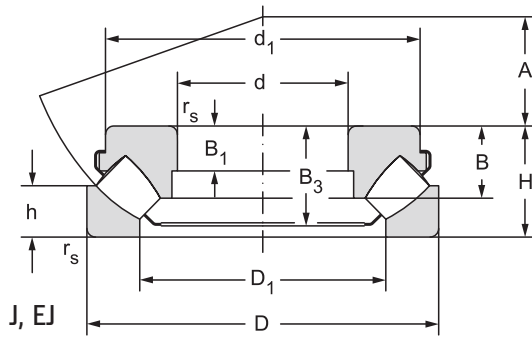
Deliveries of bearings marked * must be first consulted with the manufacturer, ** NEW FORCE

| Fatigue load limit | Limiting speed for lubrication with | Bearing designation | Abutment and fillet dimensions | | | | | | Weight | Minimum axial load factor |
|--------------------|-------------------------------------|---------------------|--------------------------------|----------------|-----------------|----------------|-----------------|----------------|--------|---------------------------|
| | | | d | d _a | d _{b1} | D _a | d _{b2} | r _a | | |
| P _u | oil | | | min | max | max | max | max | - | |
| kN | min ⁻¹ | | mm | | | | | | kg | |
| 310 | 890 | 29248M** | 240 | 285 | | 311 | | 2,0 | 16,7 | 1,5 |
| 450 | 790 | 29348M* | | 300 | | 340 | | 3,0 | 35,3 | 3,4 |
| 560 | 900 | 29348EJ** | | 305 | 249,0 | 336 | 256 | 3,0 | 33,4 | 5,3 |
| 710 | 750 | 29448M** | | 330 | | 383 | | 5,0 | 79,0 | 8,9 |
| 830 | 750 | 29448EJ** | | 335 | 258,0 | 377 | 276 | 5,0 | 73,5 | 12 |
| 320 | 890 | 29252M** | 260 | 305 | | 331 | | 2,0 | 18,5 | 1,7 |
| 580 | 750 | 29352M* | | 330 | | 374 | | 3,0 | 48,5 | 5,8 |
| 700 | 800 | 29352EJ** | | 335 | 272,0 | 370 | 283,2 | 4,0 | 46,9 | 8,6 |
| 810 | 670 | 29452M** | | 360 | | 419 | | 5,0 | 105 | 12 |
| 990 | 670 | 29452EJ** | | 406 | 278 | 378 | 296 | 5 | 96,1 | 18 |
| 340 | 840 | 29256M** | 280 | 325 | | 351 | | 2,0 | 19,5 | 2 |
| 590 | 710 | 29356M* | | 350 | | 394 | | 4,0 | 52,5 | 6,3 |
| 710 | 800 | 29356EJ** | | 355 | 293,0 | 390 | 302 | 4,0 | 49,5 | 9 |
| 950 | 630 | 29456M* | | 390 | | 453 | | 5,0 | 132 | 18 |
| 1 300 | 630 | 29456EJ** | | 395 | 298,0 | 446 | 316,5 | 5,0 | 127 | 31 |
| 390 | 750 | 29260M** | 300 | 355 | | 386 | | 2,5 | 30,5 | 2,7 |
| 690 | 630 | 29360M* | | 380 | | 429 | | 4,0 | 74,0 | 9 |
| 890 | 700 | 29360EJ** | | 385 | 312,0 | 423 | 325,8 | 4,0 | 68,7 | 15 |
| 940 | 600 | 29460M* | | 410 | | 471 | | 5,0 | 140 | 18 |
| 1 300 | 600 | 29460EJ** | | 415 | 318,0 | 465 | 339 | 5,0 | 133 | 34 |
| 400 | 710 | 29264M** | 320 | 375 | | 406 | | 2,5 | 32,9 | 3 |
| 710 | 630 | 29364M* | | 400 | | 449 | | 4,0 | 77,0 | 9,8 |
| 870 | 670 | 29364EJ** | | 405 | 332,0 | 442 | 336 | 4,0 | 72,1 | 15 |
| 1 100 | 560 | 29464M* | | 435 | | 507 | | 6,0 | 175 | 27 |
| 1 600 | 560 | 29464EJ** | | 450 | 342,0 | 500 | 364 | 6,0 | 164 | 56 |
| 530 | 850 | 29268EM** | 340 | 400 | | 422 | | 2,5 | 33,0 | 5,4 |
| 820 | 560 | 29368M** | | 430 | | 484 | | 4,0 | 103 | 14 |
| 1 300 | 500 | 29468M** | | 465 | | 451 | | 6,0 | 218 | 34 |
| 1 900 | 380 | 29468EJ** | | 475 | 358,0 | 530 | 364 | 6,0 | 211 | 79 |
| 520 | 630 | 29272M** | 360 | 420 | | 461 | | 3,0 | 51,8 | 5,4 |
| 850 | 560 | 29372M** | | 450 | | 504 | | 4,0 | 107 | 15 |
| 580 | 600 | 29276M** | 380 | 440 | | 480 | | 3,0 | 52,8 | 7,1 |
| 1 400 | 470 | 29476EM** | | 504 | | 570 | | 6,0 | 263 | 46 |



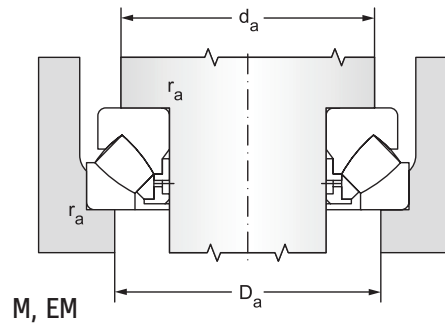
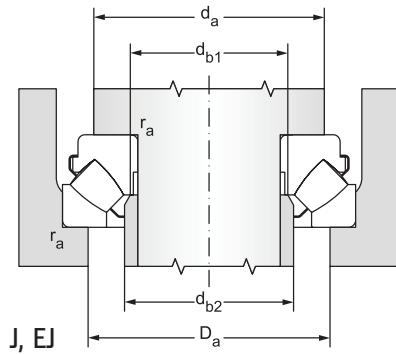
Spherical roller thrust bearings

d = 400 to 750 mm



12.9.1

| Main dimensions | | | | | | | | | | | | Basic load rating | |
|-----------------|------|-----|----------------|----------------|----|----------------|----------------|----------------|-------|-----|----------------|-------------------|-----------------|
| d | D | H | d ₁ | D ₁ | B | B ₁ | B ₂ | B ₃ | h | A | r _s | dynamic | static |
| mm | | | | | | | | | | | | C _a | C _{0a} |
| | | | | | | | | | | | | min | |
| | | | | | | | | | | | | kN | |
| 400 | 540 | 85 | 526,0 | 460,0 | | 27 | 81,0 | | 42,0 | 212 | 4,0 | 1648 | 7900 |
| | 620 | 132 | 596,0 | 494,0 | | 44 | 127,0 | | 64,0 | 225 | 6,0 | 3389 | 14120 |
| | 710 | 185 | 680,0 | 530,0 | | 67 | 178,0 | | 89,0 | 236 | 7,5 | 7014 | 26500 |
| 420 | 580 | 95 | 553,0 | 484,2 | | 30 | 91,0 | | 46,0 | 225 | 5,0 | 2369 | 11230 |
| | 650 | 140 | 626,0 | 520,0 | | 48 | 135,0 | | 68,0 | 235 | 6,0 | 3512 | 14700 |
| | 730 | 185 | 663,0 | 540,0 | | 67 | 175,0 | | 90,0 | 244 | 7,5 | 7056 | 31020 |
| 440 | 680 | 145 | 655,0 | 546,0 | | 49 | 140,0 | | 70,0 | 245 | 6,0 | 3976 | 16850 |
| | 780 | 206 | 745,0 | 576,0 | | 74 | 199,0 | | 100,0 | 260 | 9,5 | 6468 | 24650 |
| | 780 | 206 | 718 | 554 | | 77 | 199 | | 101 | 257 | 9,5 | 8250 | 33270 |
| 480 | 650 | 103 | 635,0 | 554,0 | 61 | 33 | 99,0 | | 55,0 | 259 | 6,0 | 1978 | 11000 |
| | 850 | 224 | 772,0 | 611,6 | | 81 | 214,0 | | 108,0 | 280 | 9,5 | 9935 | 44398 |
| 500 | 670 | 103 | 654,0 | 574,0 | | 33 | 99,0 | | 55,0 | 268 | 5,0 | 2472 | 12120 |
| | 750 | 150 | 725,0 | 611,0 | | 51 | 144,0 | | 74,0 | 280 | 6,0 | 4347 | 18660 |
| | 870 | 224 | 801,0 | 625,6 | | 81 | 218,0 | | 110,0 | 290 | 9,5 | 10326 | 48568 |
| 530 | 800 | 160 | 772,0 | 648,0 | | 54 | 154,0 | | 76,0 | 295 | 7,5 | 5284 | 22730 |
| 600 | 800 | 122 | 760,0 | 680,0 | | 44 | 117,0 | | 60,0 | 321 | 5,0 | 3832 | 19060 |
| | 900 | 180 | 850,0 | 731,0 | | 64 | 171,0 | | 87,0 | 335 | 7,5 | 7004 | 31500 |
| 630 | 850 | 132 | 820,0 | 724,0 | | 42 | 127,0 | | 67,0 | 338 | 6,0 | 4378 | 22500 |
| | 950 | 190 | 880 | 743 | | 68 | 183 | | 92 | 359 | 9,5 | 8940 | 38700 |
| | 1090 | 280 | 995 | 796 | | 107 | 270 | | 137 | 365 | 12 | 15244 | 63200 |
| 670 | 900 | 140 | 858,0 | 762,0 | | 50 | 130,0 | | 73,0 | 361 | 6,0 | 4635 | 23280 |
| | 1150 | 290 | 1045 | 844 | | 110 | 280 | | 141 | 387 | 15 | 16274 | 69300 |
| 710 | 1060 | 212 | 985 | 835 | | 74 | 205 | | 103 | 405 | 9,5 | 10506 | 46400 |
| | 1220 | 308 | 1110,0 | 899,0 | | 118 | 298,0 | | 149,0 | 415 | 15,0 | 18128 | 76500 |
| 750 | 1000 | 150 | 950 | 838 | | 52 | 144 | | 74 | 409 | 6 | 6448 | 31600 |
| | 1120 | 224 | 1086 | 890 | | 76 | 216 | | 109 | 415 | 9,5 | 9909 | 45800 |
| | 1280 | 315 | 1170 | 942 | | 122 | 305 | | 153 | 436 | 15 | 19776 | 86600 |



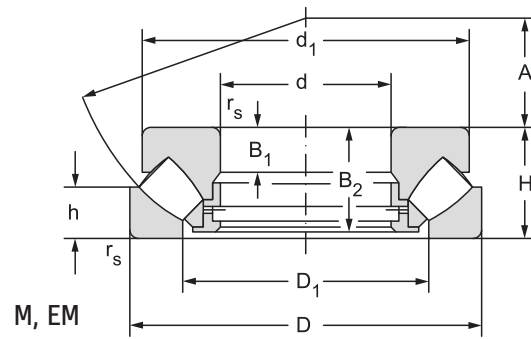
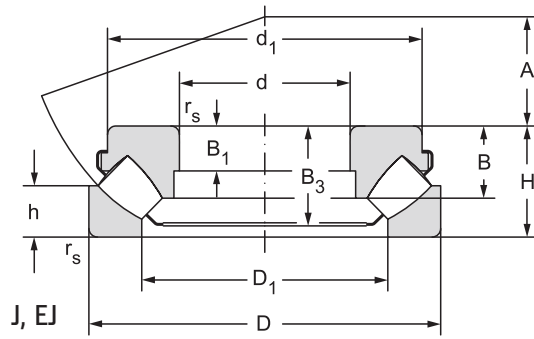
Deliveries of bearings marked * must be first consulted with the manufacturer, ** NEW FORCE

| Fatigue load limit | Limiting speed for lubrication with | Bearing designation | Abutment and fillet dimensions | | | | | | Weight | Minimum axial load factor |
|--------------------|-------------------------------------|---------------------|--------------------------------|----------------|-----------------|----------------|-----------------|----------------|--------|---------------------------|
| | | | d | d _a | d _{b1} | D _a | d _{b2} | r _a | | |
| P _u | oil | | | min | max | max | max | max | - | |
| kN | min ⁻¹ | | mm | | | | | | kg | |
| 610 | 600 | 29280M** | 400 | | 460,0 | 500 | 3 | | 55,3 | 7,8 |
| 1 100 | 500 | 29380M** | | | 498,0 | 557 | 5 | | 150 | 25 |
| 1 900 | 450 | 29480EM** | | | 550,0 | 615 | 6 | | 306 | 88 |
| 850 | 700 | 29284EM** | 420 | 500 | | 525 | | 4 | 73,0 | 16 |
| 1 100 | 450 | 29384M** | | | 523,0 | 585 | 5 | | 170 | 27 |
| 2 200 | 430 | 29484EM** | | | 592,0 | 684 | 8 | | 308 | 120 |
| 1 200 | 450 | 29388M** | 440 | | 548,0 | 614 | 5 | | 190 | 35 |
| 1 700 | 400 | 29488M** | | | 592,0 | 684 | 8 | | 407 | 76 |
| 2 400 | 380 | T29488EM** | | 612 | | 662 | | 8 | 412 | 140 |
| 800 | 500 | 29296M** | 480 | | 558,0 | 603 | 4 | | 96,5 | 15 |
| 3 100 | 340 | 29496EM** | | | 660,0 | 735 | 8 | | 518 | 250 |
| 870 | 470 | 292/500M** | 500 | | 578,0 | 622 | 4 | | 101 | 18 |
| 1 300 | 400 | 293/500M** | | | 613,0 | 680 | 5 | | 220 | 44 |
| 3 300 | 340 | 294/500EM** | | 685 | | 755 | | 8 | 548 | 290 |
| 1 600 | 380 | 293/530M** | 530 | | 651,0 | 724 | 6 | | 286 | 65 |
| 1 300 | 450 | 292/600EM** | 600 | 700 | | 725 | | 4 | 160 | 45 |
| 2 100 | 330 | 293/600EM** | | | 735,0 | 815 | 6 | | 390 | 120 |
| 1 500 | 350 | 292/630M** | 630 | | 730,0 | 789 | 5 | | 211 | 63 |
| 2500 | 320 | 293/630EM** | | 795 | | 860 | | 8 | 488 | 190 |
| 4000 | 260 | 294/630EM** | | 860 | | 950 | | 10 | 1108 | 500 |
| 1 500 | 380 | 292/670EM** | 670 | 790 | | 815 | | 5 | 237 | 68 |
| 4300 | 240 | 294/670EM** | | 905 | | 1000 | | 12 | 1269 | 600 |
| 2900 | 280 | 293/710EM** | 710 | 890 | | 960 | | 8 | 665 | 270 |
| 4 700 | 220 | T 294/710EM** | | 970 | | 1050 | | 12 | 1420 | 730 |
| 2000 | 325 | 292/750EM** | 750 | 880 | | 925 | | 5 | 327 | 120 |
| 2800 | 260 | 293/750EM** | | 935 | | 1000 | | 8 | 775 | 260 |
| 5200 | 200 | 274/750EF** | | 1015 | | 1120 | | 12 | 1660 | 940 |



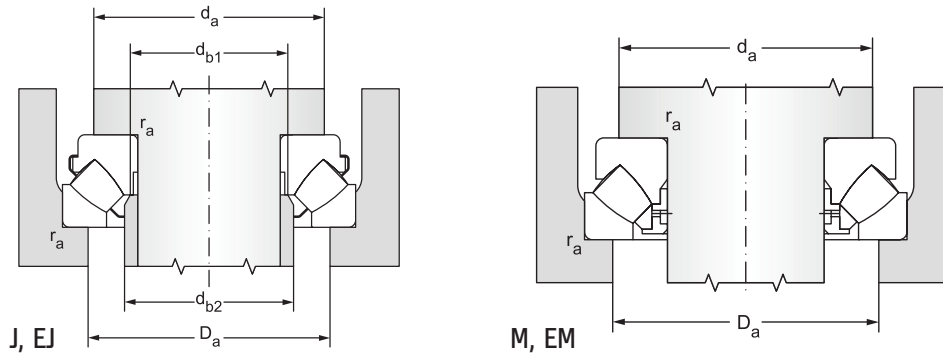
Spherical roller thrust bearings

$d = 800$ to 1120 mm



12.9.1

| Main dimensions | | | | | | | | | | | Basic load rating | | |
|-----------------|------|-----|----------------|----------------|---|----------------|----------------|----------------|-------|-----|-------------------|---------------------------|---------------------------|
| d | D | H | d ₁ | D ₁ | B | B ₁ | B ₂ | B ₃ | h | A | r _s | dynamic C _a | static C _{0a} |
| mm | | | | | | | | | | | min | kN | |
| 800 | 1060 | 155 | 1010 | 890 | | 52 | 149 | | 77 | 434 | 7,5 | 6942 | 35200 |
| | 1180 | 230 | 1146 | 943 | | 78 | 222 | | 111 | 440 | 9,5 | 10506 | 49900 |
| | 1360 | 335 | 1300,0 | 1040,0 | | 120 | 324,0 | | 162,0 | 462 | 15,0 | 16830 | 72360 |
| | 1360 | 335 | 1250 | 1010 | | 122 | 324 | | 165 | 462 | 15 | 21321 | 94800 |
| 850 | 1120 | 160 | 1060 | 945 | | 47 | 154 | | 82 | 455 | 7,5 | 7117 | 36700 |
| 950 | 1250 | 180 | 1185 | 1056 | | 58 | 174 | | 88 | 507 | 7,5 | 8755 | 46400 |
| 1000 | 1460 | 276 | 1365 | 1165 | | 100 | 267 | | 137 | 561 | 12 | 18334 | 88100 |
| 1060 | 1400 | 206 | 1325 | 1183 | | 66 | 199 | | 100 | 566 | 9,5 | 11124 | 59600 |
| 1120 | 1460 | 206 | 1385 | 1243 | | 70 | 199 | | 97 | 601 | 9,5 | 11948 | 63100 |



Deliveries of bearings marked * must be first consulted with the manufacturer, ** NEW FORCE

| Fatigue load limit | Limiting speed for lubrication with | Bearing designation | Abutment and fillet dimensions | | | | | | Weight | Minimum axial load factor |
|--------------------|-------------------------------------|---------------------|--------------------------------|----------------|-----------------|----------------|-----------------|----------------|--------|---------------------------|
| | | | d | d _a | d _{b1} | D _a | d _{b2} | r _a | | |
| P _u | oil | | | min | max | max | max | max | - | |
| kN | min ⁻¹ | | mm | | | | | | kg | |
| 2200 | 320 | 292/800EM** | 800 | 935 | | 980 | | 6 | 383 | 150 |
| 3000 | 240 | 293/800EM** | | 995 | | 1060 | | 8 | 871 | 310 |
| 4 300 | 220 | 294/800M ** | | | 1055,0 | 1200 | 12 | | 2010 | 650 |
| 5600 | 190 | 294/800EF** | | 1080 | | 1185 | | 12 | 2039 | 1100 |
| 2200 | 300 | 292/850EM** | 850 | 980 | | 1030 | | 6 | 428 | 170 |
| 2700 | 260 | 292/950EM** | 950 | 1095 | | 1155 | | 6 | 604 | 270 |
| 5000 | 180 | 293/1000EF** | 1000 | 1245 | | 1330 | | 10 | 1560 | 970 |
| 3400 | 220 | 292/1060EF** | 1060 | 1225 | | 1290 | | 8 | 866 | 440 |
| 3500 | 220 | 292/1120EF** | 1120 | 1300 | | 1365 | | 8 | 906 | 500 |

