

Ball Bearing Units Steel Series



NSK Rolled Steel Housings Ensure A Safer Design

1. Features

Superior Housing Strength

Made of precision gas cut rolled steel, NSK steel housings offer superior strength characteristics when compared to cast iron and cast steel housings.

Consistent Microstructure

The rolled steel microstructure is more consistent than cast iron or cast steel, reducing the risk of housing fracture under severe conditions.

Interchangeability

Rolled steel housing dimensions are consistent with cast units, allowing them to be interchanged with NSK standard housings and other manufacturers ISO standard.

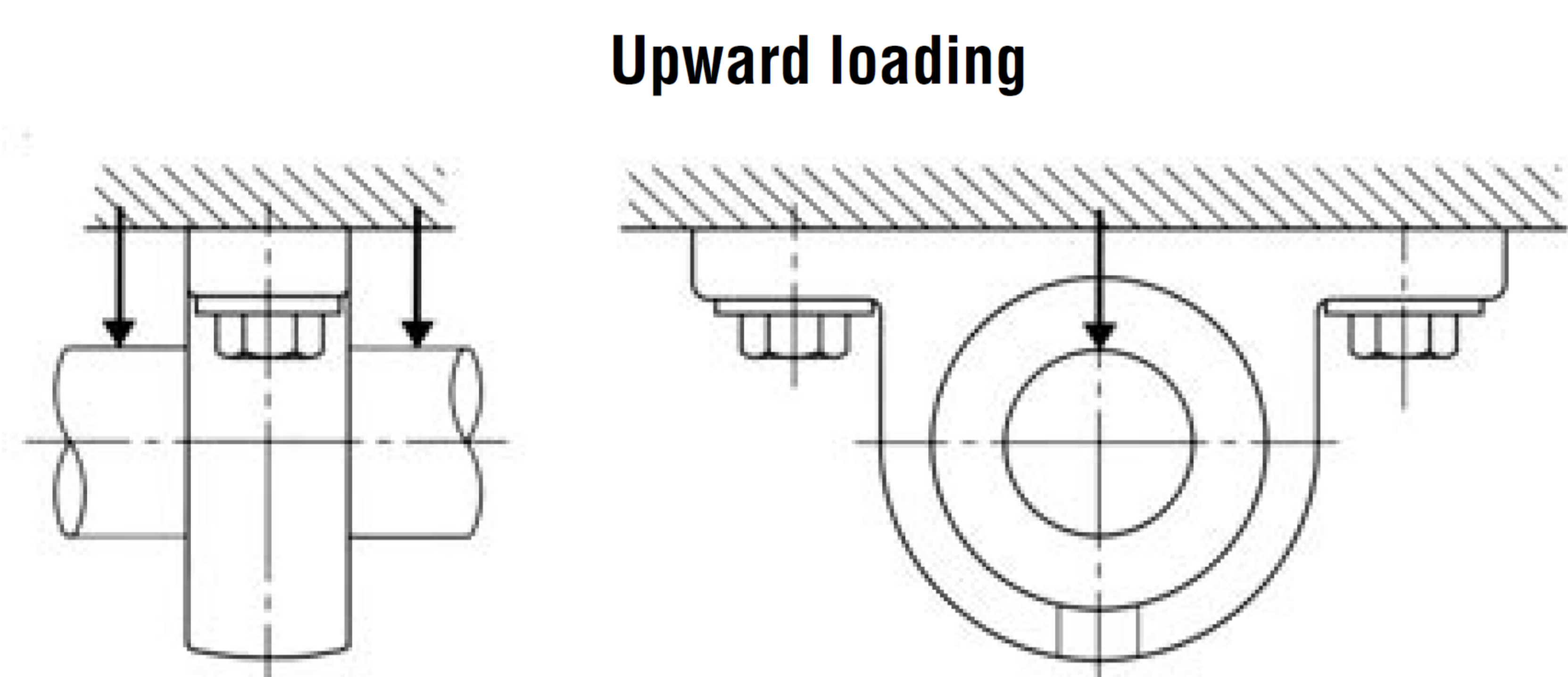
2. Bearing housing material

The bearing housings use material classified as SS400 of JIS G 3101 (Rolled Steel for General Structures). The table below lists the material's general mechanical properties.

| Class code | Tension test | | | | |
|------------|-------------------------|-------------------------------------|---------------------------------------|--------------|------------|
| | Steel thickness mm | Yield strength N/mm ² | Tensile strength N/mm ² | Elongation | |
| | | | | Sample piece | % |
| SS400 | Thickness from 16 to 40 | 235 or more | 400~510 | No. 1A | 21 or more |
| | Thicker than 40 | 215 or more | | No. 4 | 23 or more |

3. Allowable load for bearing housings

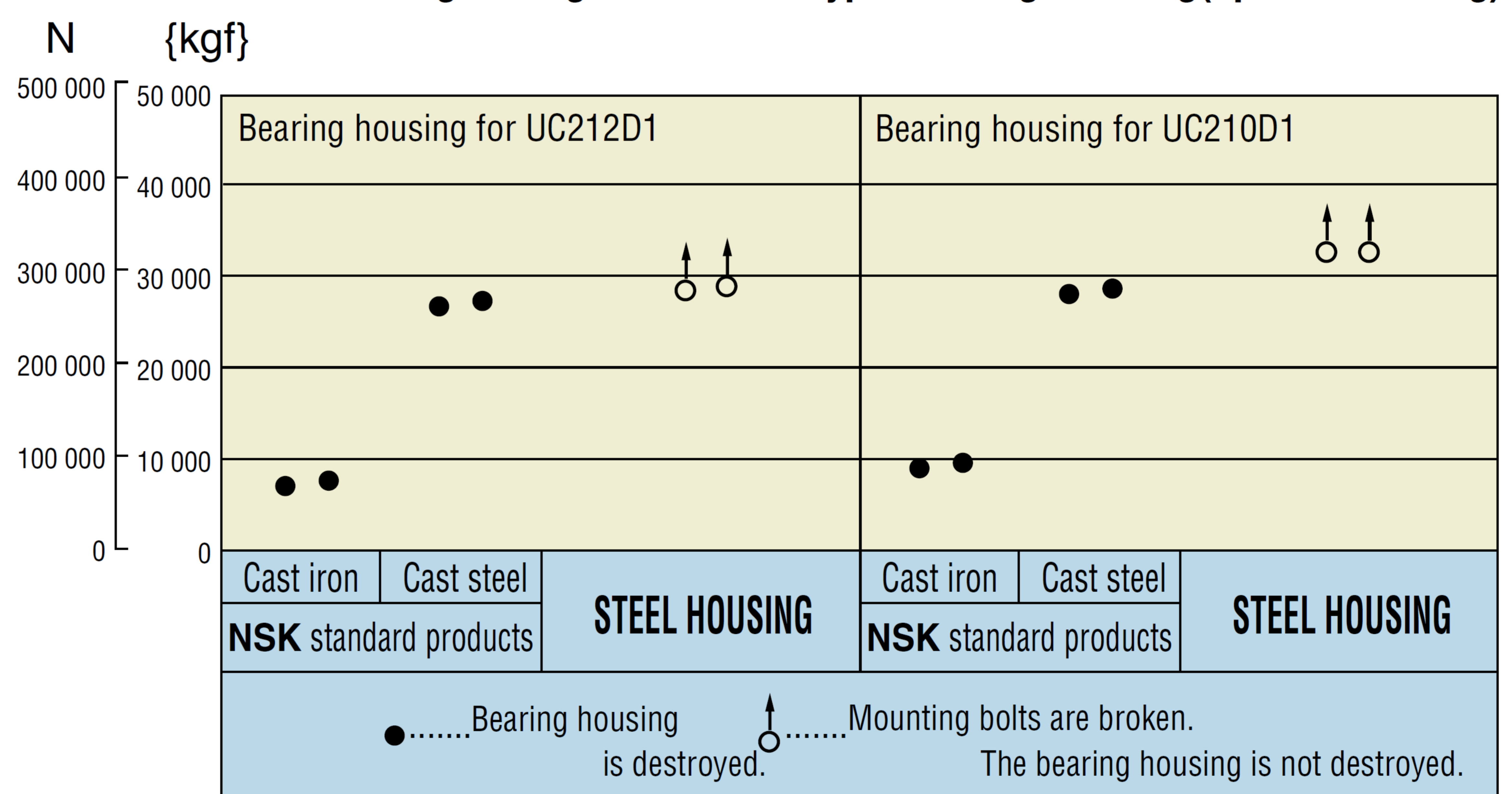
The allowable load for rolled steel housings is approximately 5 times the insert bearing's dynamic capacity. In most applications the load is transmitted through the bearing into the housing. As shown below, the static fracture strength of NSK rolled steel housings is considerably higher than that of cast iron and cast steel housings.



(Reference) Basic dynamic rated load of bearings Cr
 UC210D1=35000N {3600kgf}
 UC212D1=52500N {5350kgf}

※The above sketch shows the application of an upward load. This loading was applied for testing purposes only and is not recommended for actual use.

Static Breaking Strength of Pillow Type Bearing Housing(upward loading)



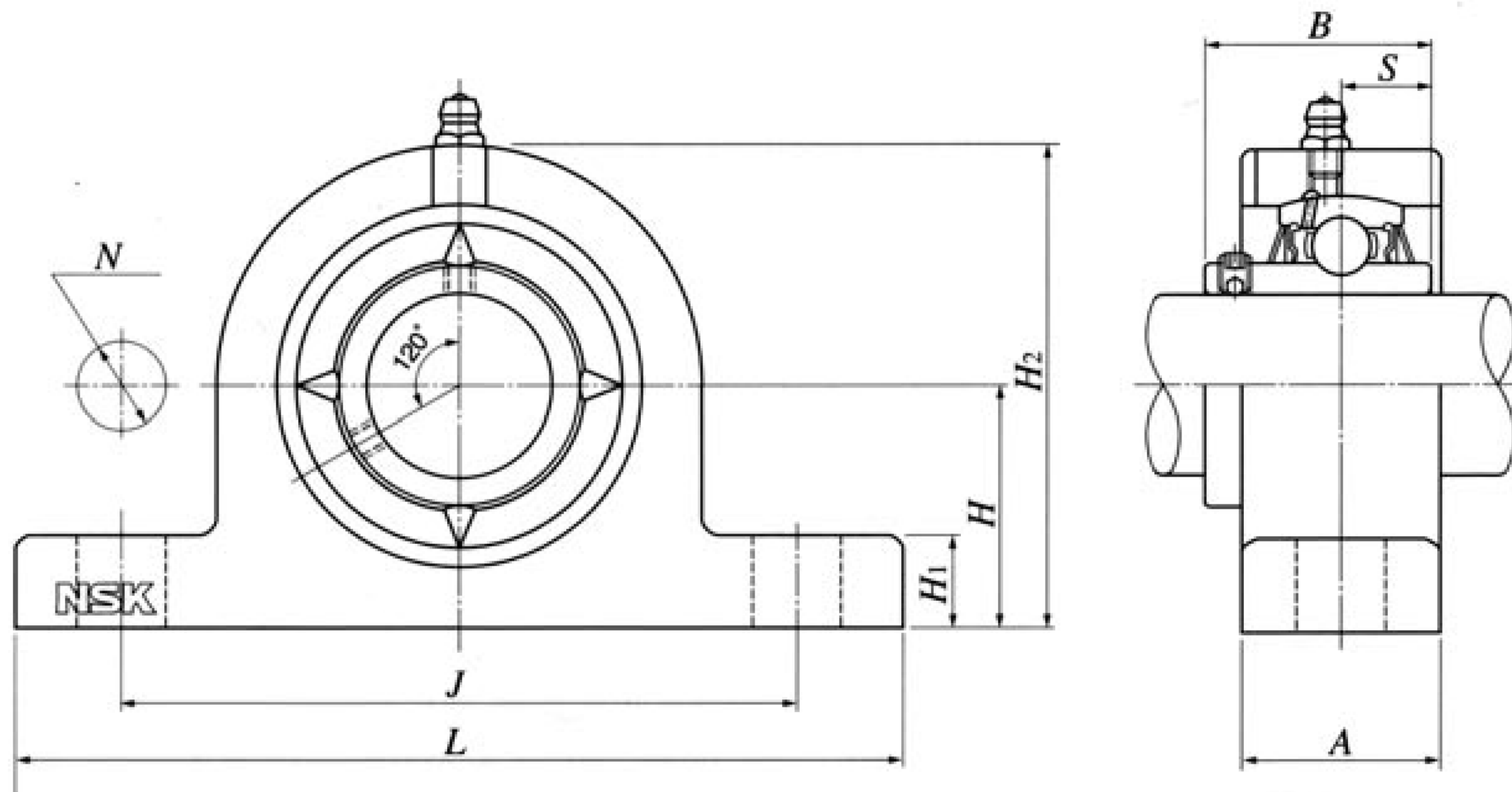
4. Applications

NSK rolled steel housings provide superior strength to cast steel and cast iron. Their ability to resist impact loads makes them suitable for applications involving heavy loads and vibration. Possible applications for NSK rolled steel housings include but are not limited to conveyors, trucks and overhead cranes at steel mills, mining machinery and pollution control equipment.

- Care should be taken when loads do not act through the base of the housing. For applications where loads are acting axially or at a 45 degree angle, an external retainer may be needed to prevent the housing from moving.
- The grease nipple is not installed prior to shipment to prevent breaking. It should be installed prior to using the unit.
- Other housing configurations, such as the 300 series square flange, the thick pillow block, the diamond shaped flange, the piloted round flange, the piloted square flange and the take-up type units are available. Stamped steel or cast iron dust covers are also available upon request. Ask your NSK representative about these available options.

Pillow Block Unit; UCPG2 series

Cylindrical bore with set screw



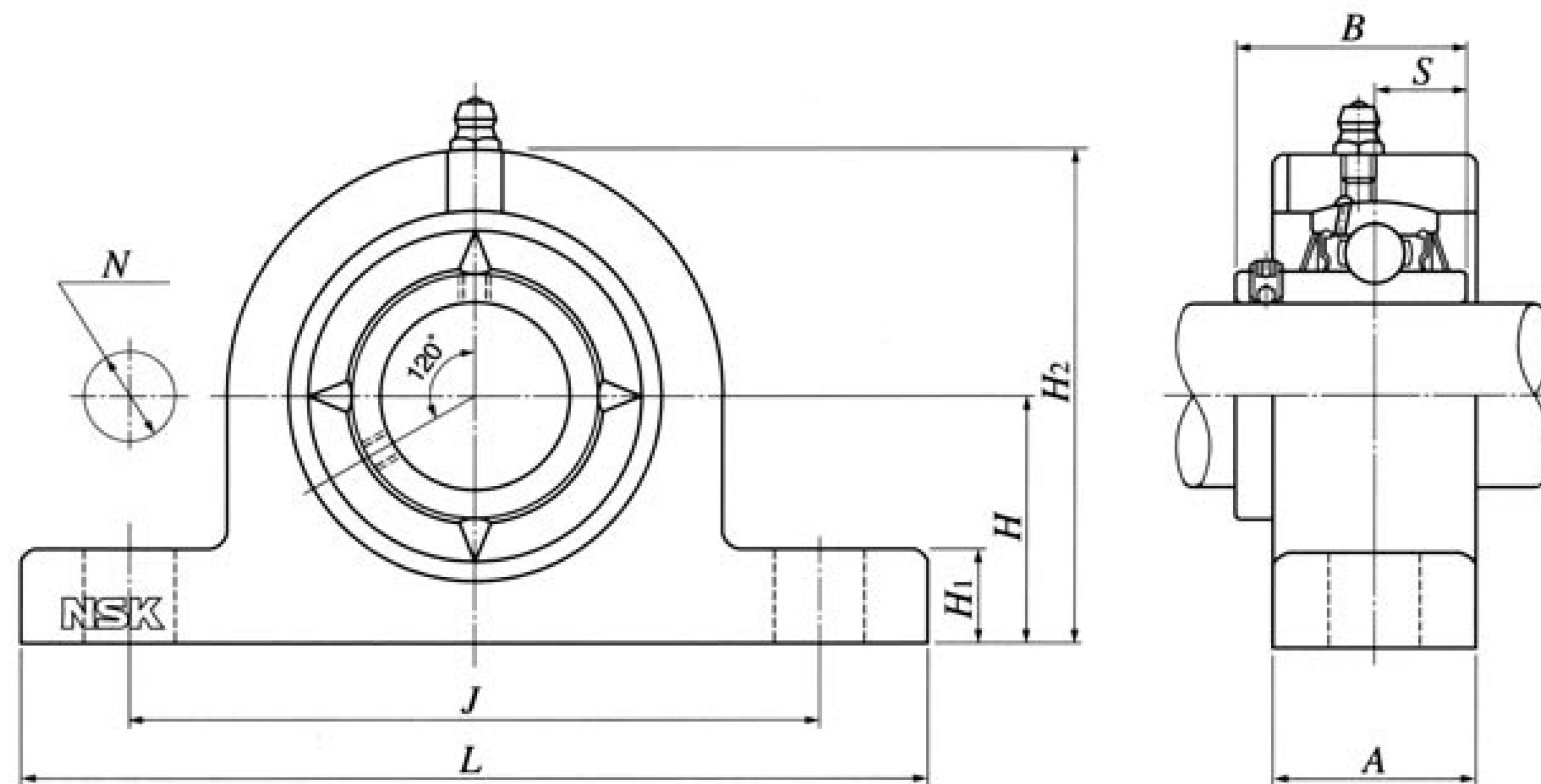
| Shaft dia. mm | Unit number | Nominal dimensions mm | | | | | | | | | Bolt size | Bearing number | Basic load rating kN | | Housing number | Mass of Unit kg (Ref.) | | |
|------------------|-------------|-----------------------|-----|---------|---------|----|----------------|----------------|------|---------|-----------|----------------|------------------------|------------------------|----------------|------------------------|---------|---------|
| | | H | L | J | A | N | H ₁ | H ₂ | B | S | | | dynamic C _r | static C _{0r} | | | | |
| 12 | UCPG201D1 | 30.2 | 127 | 95 | 25 | 12 | 14 | 62 | 31 | 12.7 | M10 | UC201D1 | 12.8 | 6.65 | PG203D1 | 0.7 | | |
| 15 | UCPG202D1 | | | | | | | UC202D1 | | | | | | | | | | |
| 17 | UCPG203D1 | | | | | | | UC203D1 | | | | | | | | | | |
| 20 | UCPG204D1 | 33.3 | 65 | UC204D1 | PG204D1 | | | | | | | | | | | | | |
| 25 | UCPG205D1 | 36.5 | 140 | 105 | 30 | 15 | 71 | 34.1 | 14.3 | UC205D1 | 14.0 | 7.85 | PG205D1 | 0.8 | | | | |
| 30 | UCPG206D1 | 42.9 | 165 | 121 | 35 | 17 | 17 | 83 | 38.1 | 15.9 | M14 | UC206D1 | 19.5 | 11.3 | PG206D1 | 1.3 | | |
| 35 | UCPG207D1 | 47.6 | 167 | 127 | | | 18 | 93 | 42.9 | 17.5 | | UC207D1 | 25.7 | 15.3 | PG207D1 | 1.6 | | |
| 40 | UCPG208D1 | 49.2 | 184 | 137 | 40 | | 18 | 98 | 49.2 | 19 | | UC208D1 | 29.1 | 17.8 | PG208D1 | 1.9 | | |
| 45 | UCPG209D1 | 54 | 190 | 146 | | 20 | | 106 | | | | UC209D1 | 32.5 | 20.4 | PG209D1 | 2.2 | | |
| 50 | UCPG210D1 | 57.2 | 206 | 159 | 45 | 19 | 21 | 114 | 51.6 | 22.2 | M16 | UC210D1 | 35.0 | 23.2 | PG210D1 | 2.6 | | |
| 55 | UCPG211D1 | 63.5 | 219 | 171 | | | 23 | 126 | 55.6 | | | UC211D1 | 43.5 | 29.2 | PG211D1 | 3.3 | | |
| 60 | UCPG212D1 | 69.8 | 241 | 184 | 50 | | 25 | 138 | 65.1 | 25.4 | | UC212D1 | 52.5 | 36.0 | PG212D1 | 4.6 | | |
| 65 | UCPG213D1 | 76.2 | 265 | 203 | | 27 | | 151 | | | | 74.6 | 30.2 | UC213D1 | 57.5 | 40.0 | PG213D1 | 5.9 |
| 70 | UCPG214D1 | 79.4 | 266 | 210 | 55 | | 28 | 157 | 77.8 | 33.3 | M20 | | | UC214D1 | 62.0 | 44.0 | PG214D1 | 6.6 |
| 75 | UCPG215D1 | 82.6 | 275 | 217 | | 24 | | 30 | | | | 175 | 82.6 | UC215D1 | 66.0 | 49.5 | PG215D1 | 7.4 |
| 80 | UCPG216D1 | 88.9 | 292 | 232 | | | | | | | | 60 | | 32 | 187 | 85.7 | 34.1 | UC216D1 |
| 85 | UCPG217D1 | 95.2 | 310 | 247 | 26 | 33 | 200 | 96 | 39.7 | M22 | | | UC217D1 | | 83.5 | | | 64.0 |
| 90 | UCPG218D1 | 101.6 | 327 | 262 | 65 | 26 | 33 | 200 | 96 | 39.7 | M22 | UC218D1 | 96.0 | 71.5 | PG218D1 | 13 | | |

Note)

1. Stamped steel or cast iron dust covers are also available upon request.
2. Refer to catalog E 1154.
3. Ball bearing tolerances according to JIS B 1558.
4. Housing tolerances according to JIS B 1559.

Pillow Block Unit; UCPG3 series

Cylindrical bore with set screw



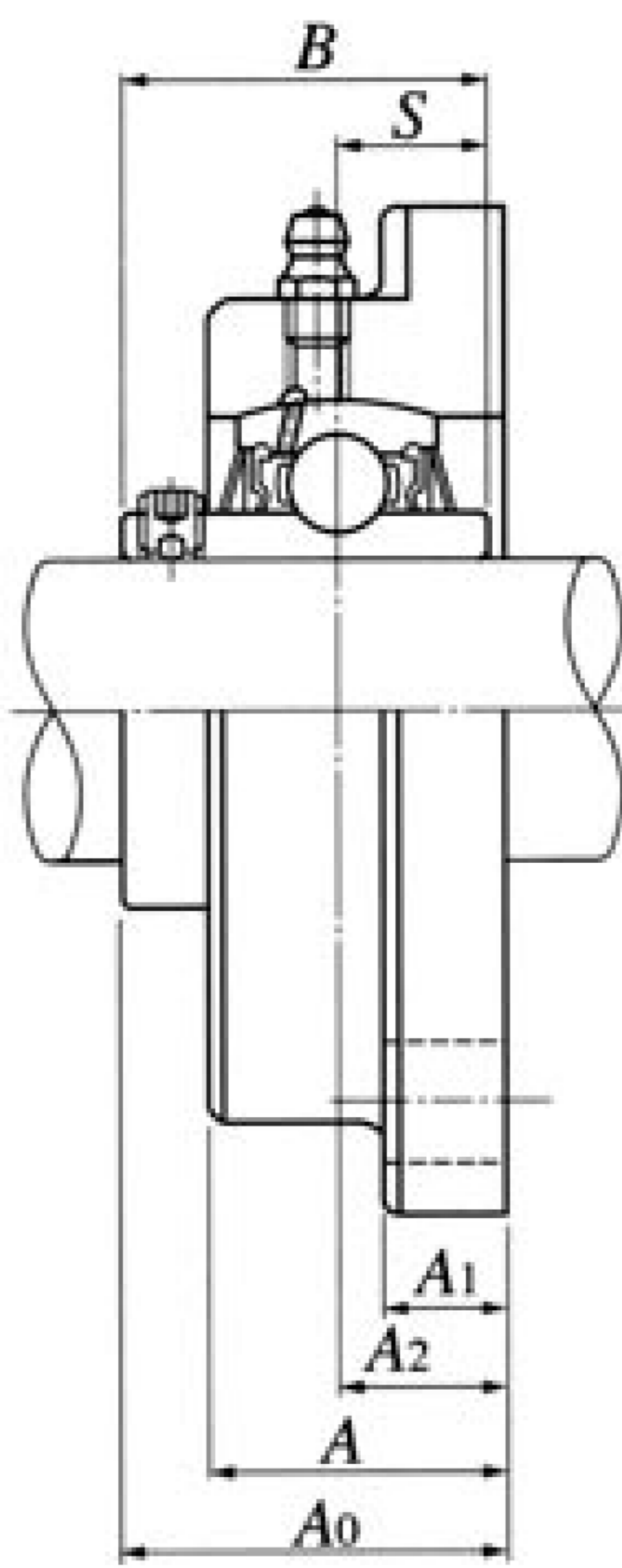
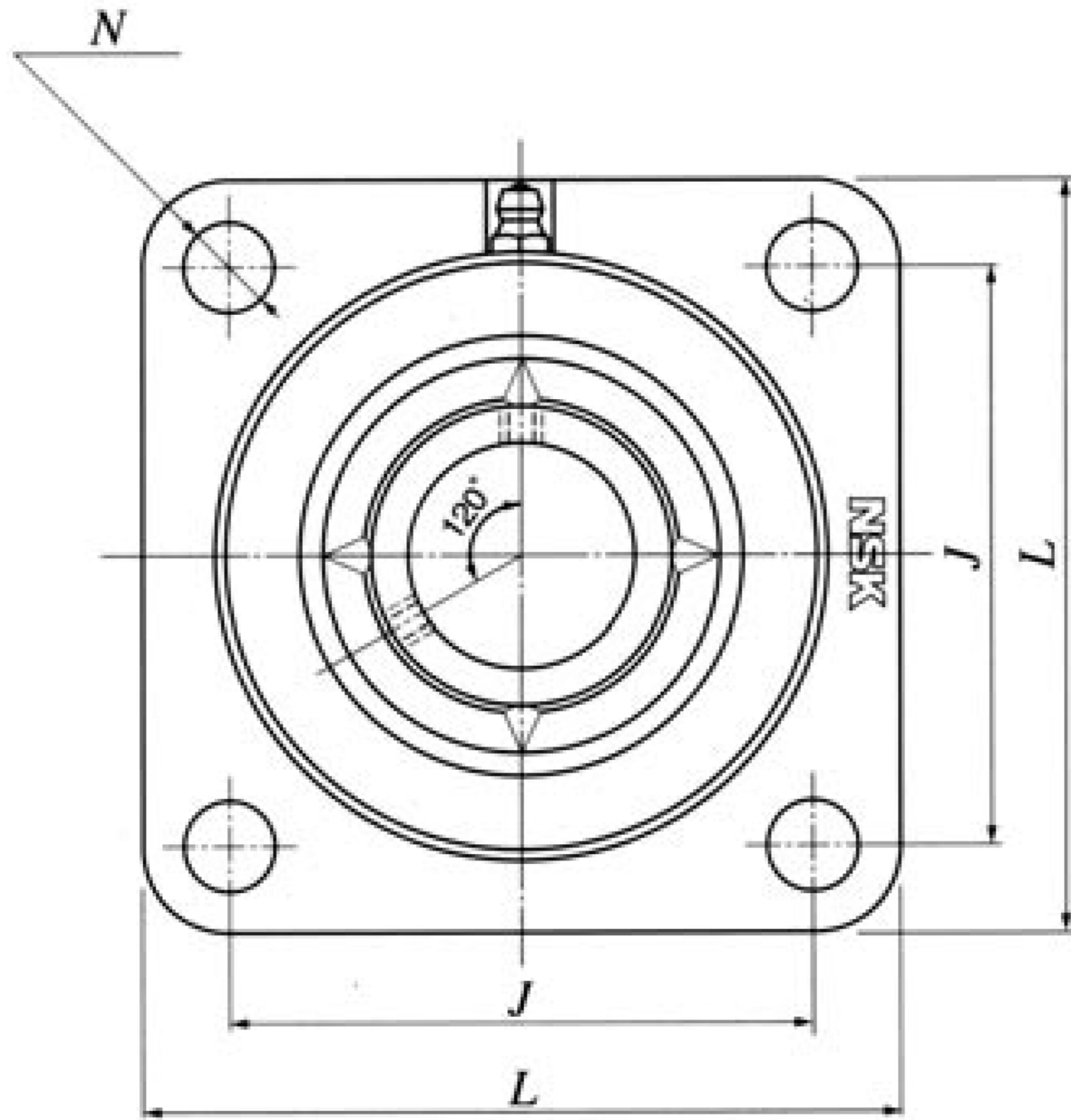
| Shaft dia. mm | Unit number | Nominal dimensions mm | | | | | | | | | Bolt size | Bearing number | Basic load rating kN | | Housing number | Mass of Unit kg (Ref.) | | |
|------------------|-------------|-----------------------|-----|-----|-----|-----|----------------|----------------|-----|---------|-----------|----------------|------------------------|------------------------|----------------|------------------------|---------|----|
| | | H | L | J | A | N | H ₁ | H ₂ | B | S | | | dynamic C _r | static C _{0r} | | | | |
| 25 | UCPG305D1 | 45 | 175 | 132 | 35 | 17 | 15 | 85 | 38 | 15 | M14 | UC305D1 | 21.2 | 10.9 | PG305D1 | 1.4 | | |
| 30 | UCPG306D1 | 50 | 180 | 140 | | | 18 | 95 | 43 | 17 | | UC306D1 | 26.7 | 15.0 | PG306D1 | 1.8 | | |
| 35 | UCPG307D1 | 56 | 210 | 160 | | | 40 | 20 | 106 | 48 | | 19 | UC307D1 | 33.5 | 19.1 | PG307D1 | 2.8 | |
| 40 | UCPG308D1 | 60 | 220 | 170 | | | 45 | 22 | 116 | 52 | | | UC308D1 | 40.5 | 24.0 | PG308D1 | 3.0 | |
| 45 | UCPG309D1 | 67 | 245 | 190 | 50 | 19 | 24 | 129 | 57 | 22 | M16 | UC309D1 | 53.0 | 32.0 | PG309D1 | 4.1 | | |
| 50 | UCPG310D1 | 75 | 275 | 212 | 55 | | 27 | 143 | 61 | | | UC310D1 | 62.0 | 38.5 | PG310D1 | 5.8 | | |
| 55 | UCPG311D1 | 80 | 310 | 236 | 60 | | 30 | 154 | 66 | | | 25 | UC311D1 | 71.5 | 45.0 | PG311D1 | 7.4 | |
| 60 | UCPG312D1 | 85 | 330 | 250 | 65 | 24 | 32 | 165 | 71 | 26 | M20 | UC312D1 | 82.0 | 52.0 | PG312D1 | 9.4 | | |
| 65 | UCPG313D1 | 90 | 340 | 260 | | | 33 | 176 | 75 | 30 | | UC313D1 | 92.5 | 60.0 | PG313D1 | 10 | | |
| 70 | UCPG314D1 | 95 | 360 | 280 | 75 | 26 | 35 | 187 | 78 | 33 | M22 | UC314D1 | 104 | 68.0 | PG314D1 | 12 | | |
| 75 | UCPG315D1 | 100 | 380 | 290 | | | | 198 | 82 | 32 | | UC315D1 | 113 | 77.0 | PG315D1 | 14 | | |
| 80 | UCPG316D1 | 106 | 400 | 300 | | | 40 | 210 | 86 | 34 | | M27 | UC316D1 | 123 | 86.5 | PG316D1 | 18 | |
| 85 | UCPG317D1 | 112 | 420 | 320 | 80 | 32 | | 220 | 96 | 40 | UC317D1 | | 133 | 97.0 | PG317D1 | 20 | | |
| 90 | UCPG318D1 | 118 | 430 | 330 | | | 45 | 235 | | | 103 | 41 | M30 | UC318D1 | 143 | 107 | PG318D1 | 24 |
| 95 | UCPG319D1 | 125 | 470 | 360 | 90 | 35 | | 250 | 108 | 42 | | | | UC319D1 | 153 | 119 | PG319D1 | 29 |
| 100 | UCPG320D1 | 140 | 490 | 380 | | | 50 | 275 | | | 112 | 44 | M33 | UC320D1 | 173 | 141 | PG320D1 | 35 |
| 105 | UCPG321D1 | | | | | | | 280 | | | | | | UC321D1 | 184 | 153 | PG321D1 | |
| 110 | UCPG322D1 | 150 | 520 | 400 | 100 | 38 | 55 | 300 | 117 | 46 | M33 | UC322D1 | 205 | 179 | PG322D1 | 45 | | |
| 120 | UCPG324D1 | 160 | 570 | 450 | | | 65 | 320 | 126 | 51 | | UC324D1 | 207 | 185 | PG324D1 | 55 | | |
| 130 | UCPG326D1 | 180 | 600 | 480 | | | 110 | 75 | 355 | 135 | | 54 | UC326D1 | 229 | 214 | PG326D1 | 72 | |
| 140 | UCPG328D1 | 200 | 620 | 500 | 390 | 145 | | | 59 | UC328D1 | 253 | 246 | PG328D1 | 89 | | | | |

Note)

1. Stamped steel or cast iron dust covers are also available upon request.
2. Refer to catalog E 1154.
3. Ball bearing tolerances according to JIS B 1558.
4. Housing tolerances according to JIS B 1559.

Square Flange Unit; UCFG2 series

Cylindrical bore with set screw



| Shaft dia. mm | Unit number | Nominal dimensions mm | | | | | | | | | Bolt size | Bearing number | Basic load rating kN | | Housing number | Mass of Unit kg (Ref.) | | | |
|------------------|-------------|-----------------------|-----|----------------|----------------|------|----|----------------|------|---------|-----------|----------------|------------------------|------------------------|----------------|------------------------|---------|---------|------|
| | | L | J | A ₂ | A ₁ | A | N | A ₀ | B | S | | | dynamic C _r | static C _{0r} | | | | | |
| 12 | UCFG201D1 | 86 | 64 | 15 | 11 | 25.5 | 12 | 33.3 | 31 | 12.7 | M10 | UC201D1 | 12.8 | 6.65 | FG204D1 | 0.7 | | | |
| 15 | UCFG202D1 | | | | | | | | | | | UC202D1 | | | | | | | |
| 17 | UCFG203D1 | | | | | | | | | | | UC203D1 | | | | | | | |
| 20 | UCFG204D1 | | | | | | | | | | | UC204D1 | | | | | | | |
| 25 | UCFG205D1 | 95 | 70 | 16 | 13 | 27 | 12 | 35.8 | 34.1 | 14.3 | M10 | UC205D1 | 14.0 | 7.85 | FG205D1 | 0.8 | | | |
| 30 | UCFG206D1 | 108 | 83 | 18 | | 31 | | 40.2 | 38.1 | 15.9 | | UC206D1 | 19.5 | 11.3 | FG206D1 | 1.0 | | | |
| 35 | UCFG207D1 | 117 | 92 | 19 | 15 | 34 | 14 | 44.4 | 42.9 | 17.5 | M12 | UC207D1 | 25.7 | 15.3 | FG207D1 | 1.4 | | | |
| 40 | UCFG208D1 | 130 | 102 | 21 | | 36 | | 16 | 14 | 51.2 | 49.2 | 19 | M14 | UC208D1 | 29.1 | 17.8 | FG208D1 | 1.8 | |
| 45 | UCFG209D1 | 137 | 105 | 22 | 16 | 38 | 16 | | | | | | | 52.2 | 51.6 | 19 | M14 | UC209D1 | 32.5 |
| 50 | UCFG210D1 | 143 | 111 | | | 40 | | 54.6 | 51.6 | UC210D1 | 35.0 | 23.2 | FG210D1 | | | | | 2.4 | |
| 55 | UCFG211D1 | 162 | 130 | 25 | 18 | 43 | 19 | 58.4 | 55.6 | 22.2 | M16 | UC211D1 | 43.5 | 29.2 | FG211D1 | 3.6 | | | |
| 60 | UCFG212D1 | 175 | 143 | 29 | | 48 | | 19 | 19 | 68.7 | | 65.1 | 25.4 | M16 | UC212D1 | 52.5 | 36.0 | FG212D1 | 4.4 |
| 65 | UCFG213D1 | 187 | 149 | 30 | 22 | 50 | 19 | | | | 69.7 | | | | 74.6 | 30.2 | M16 | UC213D1 | 57.5 |
| 70 | UCFG214D1 | 193 | 152 | 31 | | 54 | | 22 | 19 | 75.4 | 77.8 | 33.3 | M16 | UC214D1 | 62.0 | 44.0 | | FG214D1 | 6.1 |
| 75 | UCFG215D1 | 200 | 159 | 34 | | 56 | | | | | | | | 78.5 | 77.8 | UC215D1 | | 66.0 | 49.5 |
| 80 | UCFG216D1 | 208 | 165 | | 58 | 24 | 23 | 19 | 83.3 | 82.6 | 33.3 | M20 | UC216D1 | 72.5 | 53.0 | FG216D1 | 8.1 | | |
| 85 | UCFG217D1 | 220 | 175 | 36 | 63 | | | | 87.6 | 85.7 | | | 34.1 | UC217D1 | 83.5 | 64.0 | FG217D1 | 9.3 | |
| 90 | UCFG218D1 | 235 | 187 | 40 | 68 | | | | 96.3 | 96 | | | 39.7 | UC218D1 | 96.0 | 71.5 | FG218D1 | 11 | |

Note)

1. Stamped steel or cast iron dust covers are also available upon request.
2. Refer to catalog E 1154.
3. Ball bearing tolerances according to JIS B 1558.
4. Housing tolerances according to JIS B 1559.



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