

WIPER SEALS BECA 480



DESCRIPTION

The BECA 480 profile is a composite wiper seal composed of a filled PTFE friction ring and a pre-tightened rubber O'Ring.

ADVANTAGES

Low friction coefficient;
no stick-slip effect

Wide temperature range and excellent chemical resistance, depending on the materials selected

Excellent abrasion and wear resistance

Very good wiping effect against external pollutions

APPLICATIONS

Shock absorbers
Standard cylinders

MATERIALS

Friction ring

Bronze-filled PTFE
Carbon-filled PTFE
Virgin PTFE

O'Ring

NBR 70 Shore A

Other grades of materials are available. Please refer to the materials table on the next page.

TECHNICAL DATA

| | |
|-------------|--------------------------------------------------------|
| Temperature | -30°C / +200°C |
| Speed | 5 m/s |
| Media | Lubricated air Oil-free air Non-aggressive gases |

The figures above indicate the maximum values and may not be cumulated. They may be developed, depending on the materials used.

SURFACE ROUGHNESS

| Roughness | Dynamic surface area | Static surface area | Groove flanks |
|-----------|----------------------|---------------------|---------------|
| Ra | 0.05 - 0.2 µm | ≤1.6 µm | ≤3.2 µm |
| Rz | 0.4 - 1.6 µm | ≤6.3 µm | ≤10.0 µm |
| Rmax | 0.63 - 2.5 µm | ≤10.0 µm | ≤16.0 µm |

RADIUS

| Radial section S | Radius R1 | Radius R2 |
|------------------|-----------|-----------|
| 2.40 | 0.20 | 0.40 |
| 3.40 | 0.20 | 0.80 |
| 4.40 | 0.20 | 1.00 |
| 6.10 | 0.20 | 1.50 |
| 8.00 | 0.20 | 1.50 |

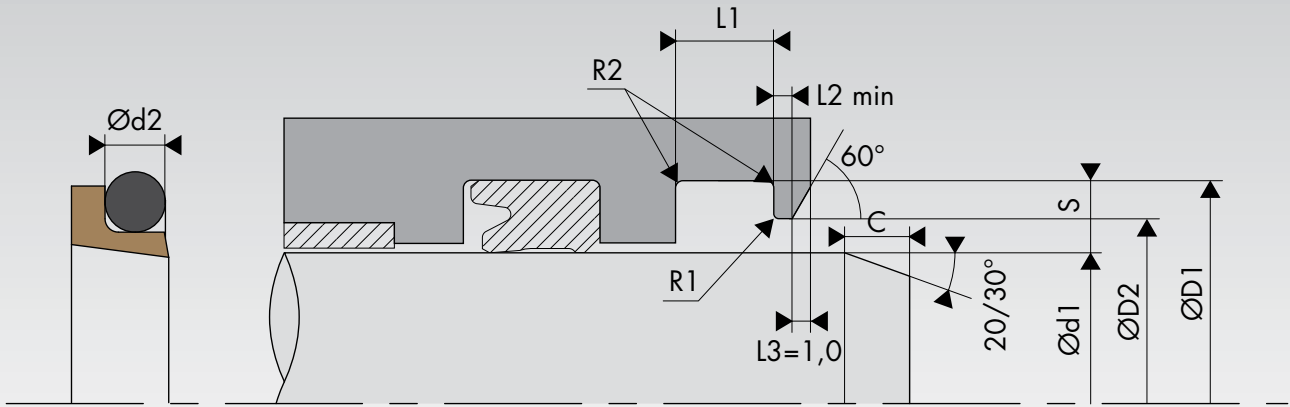
CHAMFER

The chamfer length as well as the chamfer angle are determined by the rod seal.

○ TABLE MATERIALS

| Friction ring | | | | | O'Ring | | | Mating surface material | |
|---------------|----------|-------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------------------|---------------------|-------------------------------------------------------------------------------------------------|------------------------------------|
| Standard code | ISO code | Material | Colour | Characteristics | Code | Type of material | Service temperature | | |
| DP | P | Virgin PTFE | White | Resistance to chemical products Impermeability Dielectric Non-stick Low friction coefficient Food industry | K6 | NBR 70 Shore A | -30°C/+100°C | Steel Stainless steel Chrome steel Aluminium Bronze Cast iron Treated surface | |
| | | | | | G6 | FKM 70 Shore A | -20°C/+200°C | | |
| | | | | | C6 | EPDM 70 Shore A | -45°C/+150°C | | |
| | | | | | F6 | VMQ 70 Shore A | -60°C/+200°C | | |
| DC | C | PTFE + 25% Carbon | Grey | Improvements • Wear properties • Compression set Good resistance to chemical products Thermal and electrical conductivity Anti-static High-performing in compression-based dynamic applications | K6 | NBR 70 Shore A | -30°C/+100°C | | |
| | | | | | G6 | FKM 70 Shore A | -20°C/+200°C | | |
| | | | | | C6 | EPDM 70 Shore A | -45°C/+150°C | | |
| CG | C | PTFE + 23% Carbon + 2% Graphite | Black | High-performing in compression-based dynamic applications | K6 | NBR 70 Shore A | -30°C/+100°C | | |
| | | | | | G6 | FKM 70 Shore A | -20°C/+200°C | | |
| | | | | | C6 | EPDM 70 Shore A | -45°C/+150°C | | |
| DV | V | PTFE + 25 % Glass | Blue | Improvements • Wear properties • Mechanical strength Slightly more abrasive, however, this is corrected by adding MOS2 Maintains its chemical and dielectric properties | K6 | NBR 70 Shore A | -30°C/+100°C | | Steel Chrome steel Cast iron |
| | | | | | G6 | FKM 70 Shore A | -20°C/+200°C | | |
| VM | M | PTFE + 15 % Glass + 5% MOS2 | Grey | Well-suited to applications with rotational and simultaneous alternating movements | K6 | NBR 70 Shore A | -30°C/+100°C | | |
| | | | | | G6 | FKM 70 Shore A | -20°C/+200°C | | |
| DX | X | PTFE GL Blue + Glass + Metal oxides | Turquoise blue | Resistance to compression Resistance to wear Excellent chemical stability Good thermal conductivity | K6 | NBR 70 Shore A | -30°C/+100°C | | |
| | | | | | G6 | FKM 70 Shore A | -20°C/+200°C | | |
| DG | G | PTFE + 15% Graphite | Black | Improvements • Wear properties Reduced wear on metal parts Self-lubricating Thermal and electrical conductivity Low permeability Good friction coefficient Anti-static High performing in dynamic self-lubricating applications | K6 | NBR 70 Shore A | -30°C/+100°C | Steel Stainless steel Chrome steel Aluminium Bronze Cast iron Treated surface | |
| | | | | | G6 | FKM 70 Shore A | -20°C/+200°C | | |
| | | | | | C6 | EPDM 70 Shore A | -45°C/+150°C | | |
| K1 | K | PTFE + 10% Ekonol | Light brown | Improvements • Better abrasion resistance • Better dimensional stability at high temperatures | K6 | NBR 70 Shore A | -30°C/+100°C | | |
| | | | | | G6 | FKM 70 Shore A | -20°C/+200°C | | |
| | | | | | C6 | EPDM 70 Shore A | -45°C/+150°C | | |
| K2 | K | PTFE + 20% Ekonol | Light brown | Use up to +300°C Good friction coefficient and low permeability | K6 | NBR 70 Shore A | -30°C/+100°C | | |
| | | | | | G6 | FKM 70 Shore A | -20°C/+200°C | | |
| | | | | | C6 | EPDM 70 Shore A | -45°C/+150°C | | |
| DB | B | PTFE + 60% Bronze | Dark brown | Improvements • Wear properties • Warping resistance and creep strength • Compression resistance Self-lubricating Electrical and thermal conductivity | K6 | NBR 70 Shore A | -30°C/+100°C | Steel Chrome steel Cast iron | |
| | | | | | G6 | FKM 70 Shore A | -20°C/+200°C | | |
| B4 | B | PTFE + 40% Bronze | Dark brown | Does not alter the metal parts Reduced hold with certain chemical products Used for high-compression dynamic seals and has a low level of wear | K6 | NBR 70 Shore A | -30°C/+100°C | | |
| | | | | | G6 | FKM 70 Shore A | -20°C/+200°C | | |

Other grades of materials are available depending on your specificities.



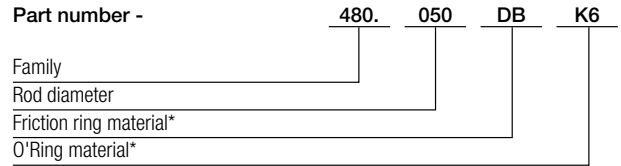
○ INSTALLATION DIMENSIONS

| Rod diameter Ød1 f8/h9 | | Groove diameter | Bore diameter | Groove width | Step width | O'Ring cross-section |
|---------------------------|----------------|-----------------|---------------|--------------|------------|-------------------------|
| Standard range | Extended range | ØD1 H9 | ØD2 H11 | L1 0/+0.20 | L2 min | Ød2 |
| 4.0 - 11.9 | 4.0 - 130.0 | d1 + 4.80 | d1 + 2.70 | 3.70 | 2.00 | 1.78 |
| 12.0 - 64.9 | 10.0 - 245.0 | d1 + 6.80 | d1 + 3.50 | 5.00 | 2.00 | 2.62 |
| 65.0 - 250.9 | 25.0 - 400.0 | d1 + 8.80 | d1 + 4.00 | 6.00 | 3.00 | 3.53 |
| 251.0 - 420.9 | 40.0 - 655.0 | d1 + 12.20 | d1 + 4.50 | 8.40 | 4.00 | 5.33 |
| 421.0 - 650.9 | 110.0 - 655.0 | d1 + 16.00 | d1 + 5.20 | 11.00 | 4.00 | 6.99 |

○ EXAMPLE OF CODIFICATION

STANDARD CODIFICATION

Materials _____ : Friction ring, PTFE + 60% Bronze - Code DB
 _____ : NBR 70 Shore A O'Ring - Code K6
Rod diameter _____ : Ød1 + 50.00 mm
Groove diameter _____ : ØD1 = 58.80 mm
Part number _____ : 480. 050DBK6



* The codes that define the materials are set out in the materials table on the previous page.

 DIMENSIONS

| Part number | Rod diameter Ød1 f8/h9 | Groove diameter ØD1 H9 | Bore diameter ØD2 H11 | Groove width L1 0/+0.20 | Step width L2 min |
|-------------|---------------------------|---------------------------|--------------------------|----------------------------|----------------------|
| 480.004 | 4.00 | 8.80 | 6.70 | 3.70 | 2.00 |
| 480.005 | 5.00 | 9.80 | 7.70 | 3.70 | 2.00 |
| 480.006 | 6.00 | 10.80 | 8.70 | 3.70 | 2.00 |
| 480.008 | 8.00 | 12.80 | 10.70 | 3.70 | 2.00 |
| 480.009 | 9.00 | 13.80 | 11.70 | 3.70 | 2.00 |
| 480.010 | 10.00 | 14.80 | 12.70 | 3.70 | 2.00 |
| 480.012 | 12.00 | 18.80 | 15.50 | 5.00 | 2.00 |
| 480.014 | 14.00 | 20.80 | 17.50 | 5.00 | 2.00 |
| 480.015 | 15.00 | 21.80 | 18.50 | 5.00 | 2.00 |
| 480.016 | 16.00 | 22.80 | 19.50 | 5.00 | 2.00 |
| 480.018 | 18.00 | 24.80 | 21.50 | 5.00 | 2.00 |
| 480.020 | 20.00 | 26.80 | 23.50 | 5.00 | 2.00 |
| 480.022 | 22.00 | 28.80 | 25.50 | 5.00 | 2.00 |
| 480.025 | 25.00 | 31.80 | 28.50 | 5.00 | 2.00 |
| 480.028 | 28.00 | 34.80 | 31.50 | 5.00 | 2.00 |
| 480.030 | 30.00 | 36.80 | 33.50 | 5.00 | 2.00 |
| 480.032 | 32.00 | 38.80 | 35.50 | 5.00 | 2.00 |
| 480.035 | 35.00 | 41.80 | 38.50 | 5.00 | 2.00 |
| 480.036 | 36.00 | 42.80 | 39.50 | 5.00 | 2.00 |
| 480.037 | 37.00 | 43.80 | 40.50 | 5.00 | 2.00 |
| 480.038 | 38.00 | 44.80 | 41.50 | 5.00 | 2.00 |
| 480.040 | 40.00 | 46.80 | 43.50 | 5.00 | 2.00 |
| 480.042 | 42.00 | 48.80 | 45.50 | 5.00 | 2.00 |
| 480.045 | 45.00 | 51.80 | 48.50 | 5.00 | 2.00 |
| 480.048 | 48.00 | 54.80 | 51.50 | 5.00 | 2.00 |
| 480.049 | 49.00 | 55.80 | 52.50 | 5.00 | 2.00 |
| 480.050 | 50.00 | 56.80 | 53.50 | 5.00 | 2.00 |
| 480.052 | 52.00 | 58.80 | 55.50 | 5.00 | 2.00 |
| 480.054 | 54.00 | 60.80 | 57.50 | 5.00 | 2.00 |
| 480.055 | 55.00 | 61.80 | 58.50 | 5.00 | 2.00 |
| 480.056 | 56.00 | 62.80 | 59.50 | 5.00 | 2.00 |
| 480.058 | 58.00 | 64.80 | 61.50 | 5.00 | 2.00 |
| 480.060 | 60.00 | 66.80 | 63.50 | 5.00 | 2.00 |
| 480.062 | 62.00 | 68.80 | 65.50 | 5.00 | 2.00 |
| 480.063 | 63.00 | 69.80 | 66.50 | 5.00 | 2.00 |
| 480.065 | 65.00 | 73.80 | 69.00 | 6.00 | 3.00 |
| 480.068 | 68.00 | 76.80 | 72.00 | 6.00 | 3.00 |
| 480.070 | 70.00 | 78.80 | 74.00 | 6.00 | 3.00 |
| 480.075 | 75.00 | 83.80 | 79.00 | 6.00 | 3.00 |
| 480.080 | 80.00 | 88.80 | 84.00 | 6.00 | 3.00 |
| 480.085 | 85.00 | 93.80 | 89.00 | 6.00 | 3.00 |
| 480.090 | 90.00 | 98.80 | 94.00 | 6.00 | 3.00 |
| 480.095 | 95.00 | 103.80 | 99.00 | 6.00 | 3.00 |
| 480.100 | 100.00 | 108.80 | 104.00 | 6.00 | 3.00 |
| 480.105 | 105.00 | 113.80 | 109.00 | 6.00 | 3.00 |
| 480.110 | 110.00 | 118.80 | 114.00 | 6.00 | 3.00 |
| 480.115 | 115.00 | 123.80 | 119.00 | 6.00 | 3.00 |
| 480.120 | 120.00 | 128.80 | 124.00 | 6.00 | 3.00 |
| 480.125 | 125.00 | 133.80 | 129.00 | 6.00 | 3.00 |
| 480.130 | 130.00 | 138.80 | 134.00 | 6.00 | 3.00 |
| 480.135 | 135.00 | 143.80 | 139.00 | 6.00 | 3.00 |
| 480.140 | 140.00 | 148.80 | 144.00 | 6.00 | 3.00 |
| 480.145 | 145.00 | 153.80 | 149.00 | 6.00 | 3.00 |
| 480.150 | 150.00 | 158.80 | 154.00 | 6.00 | 3.00 |
| 480.155 | 155.00 | 163.80 | 159.00 | 6.00 | 3.00 |
| 480.160 | 160.00 | 168.80 | 164.00 | 6.00 | 3.00 |
| 480.165 | 165.00 | 173.80 | 169.00 | 6.00 | 3.00 |
| 480.170 | 170.00 | 178.80 | 174.00 | 6.00 | 3.00 |
| 480.175 | 175.00 | 183.80 | 179.00 | 6.00 | 3.00 |
| 480.180 | 180.00 | 188.80 | 184.00 | 6.00 | 3.00 |
| 480.185 | 185.00 | 193.80 | 189.00 | 6.00 | 3.00 |
| 480.190 | 190.00 | 198.80 | 194.00 | 6.00 | 3.00 |
| 480.195 | 195.00 | 203.80 | 199.00 | 6.00 | 3.00 |

| Part number | Rod diameter Ød1 f8/h9 | Groove diameter ØD1 H9 | Bore diameter ØD2 H11 | Groove width L1 0/+0.20 | Step width L2 min |
|-------------|---------------------------|---------------------------|--------------------------|----------------------------|----------------------|
| 480.200 | 200.00 | 208.80 | 204.00 | 6.00 | 3.00 |
| 480.205 | 205.00 | 213.80 | 209.00 | 6.00 | 3.00 |
| 480.210 | 210.00 | 218.80 | 214.00 | 6.00 | 3.00 |
| 480.215 | 215.00 | 223.80 | 219.00 | 6.00 | 3.00 |
| 480.220 | 220.00 | 228.80 | 224.00 | 6.00 | 3.00 |
| 480.230 | 230.00 | 238.80 | 234.00 | 6.00 | 3.00 |
| 480.240 | 240.00 | 248.80 | 244.00 | 6.00 | 3.00 |
| 480.250 | 250.00 | 258.80 | 254.00 | 6.00 | 3.00 |
| 480.260 | 260.00 | 272.20 | 264.50 | 8.40 | 4.00 |
| 480.270 | 270.00 | 282.20 | 274.50 | 8.40 | 4.00 |
| 480.280 | 280.00 | 292.20 | 284.50 | 8.40 | 4.00 |
| 480.290 | 290.00 | 302.20 | 294.50 | 8.40 | 4.00 |
| 480.300 | 300.00 | 312.20 | 304.50 | 8.40 | 4.00 |
| 480.310 | 310.00 | 322.20 | 314.50 | 8.40 | 4.00 |
| 480.320 | 320.00 | 332.20 | 324.50 | 8.40 | 4.00 |
| 480.330 | 330.00 | 342.20 | 334.50 | 8.40 | 4.00 |
| 480.340 | 340.00 | 352.20 | 344.50 | 8.40 | 4.00 |
| 480.350 | 350.00 | 362.20 | 354.50 | 8.40 | 4.00 |
| 480.360 | 360.00 | 372.20 | 364.50 | 8.40 | 4.00 |
| 480.370 | 370.00 | 382.20 | 374.50 | 8.40 | 4.00 |
| 480.380 | 380.00 | 392.20 | 384.50 | 8.40 | 4.00 |
| 480.390 | 390.00 | 402.20 | 394.50 | 8.40 | 4.00 |
| 480.400 | 400.00 | 412.20 | 404.50 | 8.40 | 4.00 |
| 480.450 | 450.00 | 466.00 | 455.20 | 11.00 | 4.00 |
| 480.500 | 500.00 | 516.00 | 505.20 | 11.00 | 4.00 |