

ROTO SEALS

BECA

741-743



DESCRIPTION

The BECA 741 - 743 roto seals are single or double acting rod rotary seals composed of a filled PTFE grooved friction ring and a rubber O'Ring.

ADVANTAGES

Low friction coefficient; no stick-slip effect on start up
 Excellent abrasion and extrusion resistance
 The grooves provide an integrated lubrication system
 Excellent dimensional stability

APPLICATIONS

Rotary distributors
 Handlers
 Hydraulic motors

MATERIALS

Friction ring

Bronze-filled PTFE
 Carbon-filled PTFE
 Virgin PTFE

O'Ring

NBR 70 Shore A
 FKM 70 Shore A

TECHNICAL DATA

| | |
|--------------------|---|
| Temperature | -30°C / +200°C |
| Pressure | 30 MPa |
| Speed | 2 m/s |
| Media | Mineral hydraulic oils Fire-resistant liquids Biocompatible fluids Water Others (contact our experts) |

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

EXTRUSION GAPS

| Radial section S | Radial gap F/2 | |
|---------------------|-------------------|--------|
| | 10 MPa | 20 MPa |
| 2.45 | 0.15 | 0.10 |
| 3.75 | 0.20 | 0.15 |
| 5.50 | 0.25 | 0.20 |
| 7.75 | 0.30 | 0.25 |
| 10.50 | 0.30 | 0.25 |
| 14.00 | 0.45 | 0.30 |

SURFACE ROUGHNESS

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

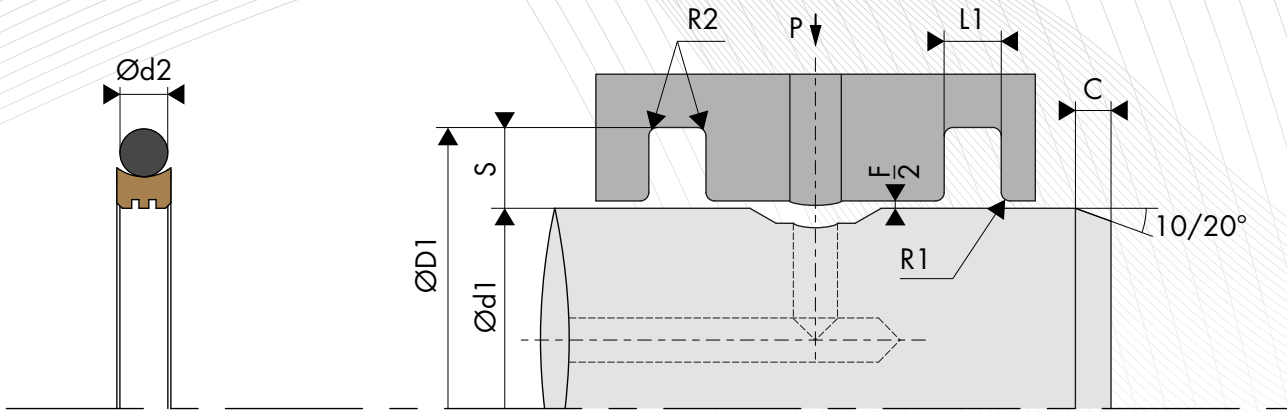
CHAMFERS AND RADIUS

| Radial section S | Radius R1 | Radius R2 | Chamfer C |
|---------------------|--------------|--------------|--------------|
| 2.45 | 0.20 | 0.40 | 2.00 |
| 3.75 | 0.20 | 0.60 | 2.50 |
| 5.50 | 0.20 | 1.00 | 3.50 |
| 7.75 | 0.20 | 1.30 | 5.00 |
| 10.50 | 0.20 | 1.80 | 6.50 |
| 14.00 | 0.20 | 2.50 | 17.50 |

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 | 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 | | |
| 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 Well-suited to applications with rotational and simultaneous alternating movements | 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 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 | | |
| 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 | | | | | 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 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 | Steel Chrome steel Cast iron | |
| | | | | | G6 | FKM 70 Shore A | -20°C/+200°C | | |
| B4 | B | PTFE + 40% Bronze | Dark brown | 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

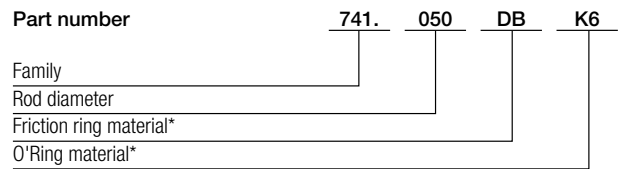
| Rod diameter Ød1 f8/h9 | | Groove diameter | Groove width | Radial section | O'Ring cross-section | Number of grooves |
|----------------------------|------------------------------|-----------------|--------------|----------------|-------------------------|-------------------|
| BECA 743 Standard range | BECA 741 Heavy-duty range | ØD1 H9 | L1 0/+0.20 | S | Ød2 | |
| 6.0 - 18.9 | --- | d1 + 4.90 | 2.20 | 2.45 | 1.78 | 1 |
| 19.0 - 37.9 | 6.0 - 18.9 | d1 + 7.50 | 3.20 | 3.75 | 2.62 | 1 |
| 38.0 - 199.9 | 19.0 - 37.9 | d1 + 11.00 | 4.20 | 5.50 | 3.53 | 2 |
| 200.0 - 255.9 | 38.0 - 199.9 | d1 + 15.50 | 6.30 | 7.75 | 5.33 | 2 |
| 256.0 - 649.9 | 200.0 - 255.9 | d1 + 21.00 | 8.10 | 10.50 | 6.99 | 2 |
| 650.0 - 999.9 | 256.0 - 649.9 | d1 + 28.00 | 9.50 | 14.00 | 8.40 | 2 |

For special applications > 30 MPa, we recommend using an H8/f8 tolerance (groove/rod) or selecting other, more suitable materials. Please contact our experts.

○ 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 = 65.50 mm
Part number _____ : 741. 050DBK6



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

DIMENSIONS

| Part number | Shaft diameter Ød1 f8/h9 | Bore diameter ØD1 H9 | Groove width L1 0/+0.20 |
|-------------|--------------------------|----------------------|-------------------------|
| 743.006 | 6.00 | 10.90 | 2.20 |
| 741.006 | 6.00 | 13.50 | 3.20 |
| 743.008 | 8.00 | 12.90 | 2.20 |
| 741.008 | 8.00 | 15.50 | 3.20 |
| 743.010 | 10.00 | 14.90 | 2.20 |
| 741.010 | 10.00 | 17.50 | 3.20 |
| 743.012 | 12.00 | 16.90 | 2.20 |
| 741.012 | 12.00 | 19.50 | 3.20 |
| 743.014 | 14.00 | 18.90 | 2.20 |
| 741.014 | 14.00 | 21.50 | 3.20 |
| 743.015 | 15.00 | 19.90 | 2.20 |
| 741.015 | 15.00 | 22.50 | 3.20 |
| 743.016 | 16.00 | 20.90 | 2.20 |
| 741.016 | 16.00 | 23.50 | 3.20 |
| 743.018 | 18.00 | 22.90 | 2.20 |
| 741.018 | 18.00 | 25.50 | 3.20 |
| 743.020 | 20.00 | 27.50 | 3.20 |
| 741.020 | 20.00 | 31.00 | 4.20 |
| 743.022 | 22.00 | 29.50 | 3.20 |
| 741.022 | 22.00 | 33.00 | 4.20 |
| 743.025 | 25.00 | 32.50 | 3.20 |
| 741.025 | 25.00 | 36.00 | 4.20 |
| 743.028 | 28.00 | 35.50 | 3.20 |
| 741.028 | 28.00 | 39.00 | 4.20 |
| 743.030 | 30.00 | 37.50 | 3.20 |
| 741.030 | 30.00 | 41.00 | 4.20 |
| 743.032 | 32.00 | 39.50 | 3.20 |
| 741.032 | 32.00 | 43.00 | 4.20 |
| 743.035 | 35.00 | 42.50 | 3.20 |
| 741.035 | 35.00 | 46.00 | 4.20 |
| 743.036 | 36.00 | 43.50 | 3.20 |
| 741.036 | 36.00 | 47.00 | 4.20 |
| 743.038 | 38.00 | 49.00 | 4.20 |
| 741.038 | 38.00 | 53.50 | 6.30 |
| 743.040 | 40.00 | 51.00 | 4.20 |
| 741.040 | 40.00 | 55.50 | 6.30 |
| 743.042 | 42.00 | 53.00 | 4.20 |
| 741.042 | 42.00 | 57.50 | 6.30 |
| 743.045 | 45.00 | 56.00 | 4.20 |
| 741.045 | 45.00 | 60.50 | 6.30 |
| 743.048 | 48.00 | 59.00 | 4.20 |
| 741.048 | 48.00 | 63.50 | 6.30 |
| 743.050 | 50.00 | 61.00 | 4.20 |
| 741.050 | 50.00 | 65.50 | 6.30 |
| 743.052 | 52.00 | 63.00 | 4.20 |
| 741.052 | 52.00 | 67.50 | 6.30 |
| 743.055 | 55.00 | 66.00 | 4.20 |
| 741.055 | 55.00 | 70.50 | 6.30 |
| 743.056 | 56.00 | 67.00 | 4.20 |
| 741.056 | 56.00 | 71.50 | 6.30 |
| 743.058 | 58.00 | 69.00 | 4.20 |
| 741.058 | 58.00 | 73.50 | 6.30 |
| 743.060 | 60.00 | 71.00 | 4.20 |
| 741.060 | 60.00 | 75.50 | 6.30 |
| 743.062 | 62.00 | 73.00 | 4.20 |
| 741.062 | 62.00 | 77.50 | 6.30 |
| 743.063 | 63.00 | 74.00 | 4.20 |
| 741.063 | 63.00 | 78.50 | 6.30 |
| 743.065 | 65.00 | 76.00 | 4.20 |
| 741.065 | 65.00 | 80.50 | 6.30 |
| 743.068 | 68.00 | 79.00 | 4.20 |
| 741.068 | 68.00 | 83.50 | 6.30 |
| 743.070 | 70.00 | 81.00 | 4.20 |

| Part number | Shaft diameter Ød1 f8/h9 | Bore diameter ØD1 H9 | Groove width L1 0/+0.20 |
|-------------|--------------------------|----------------------|-------------------------|
| 741.070 | 70.00 | 85.50 | 6.30 |
| 743.075 | 75.00 | 86.00 | 4.20 |
| 741.075 | 75.00 | 90.50 | 6.30 |
| 743.080 | 80.00 | 91.00 | 4.20 |
| 741.080 | 80.00 | 95.50 | 6.30 |
| 743.085 | 85.00 | 96.00 | 4.20 |
| 741.085 | 85.00 | 100.50 | 6.30 |
| 743.090 | 90.00 | 101.00 | 4.20 |
| 741.090 | 90.00 | 105.50 | 6.30 |
| 743.095 | 95.00 | 106.00 | 4.20 |
| 741.095 | 95.00 | 110.50 | 6.30 |
| 743.100 | 100.00 | 111.00 | 4.20 |
| 741.100 | 100.00 | 115.50 | 6.30 |
| 743.105 | 105.00 | 116.00 | 4.20 |
| 741.105 | 105.00 | 120.50 | 6.30 |
| 743.110 | 110.00 | 121.00 | 4.20 |
| 741.110 | 110.00 | 125.50 | 6.30 |
| 743.115 | 115.00 | 126.00 | 4.20 |
| 741.115 | 115.00 | 130.50 | 6.30 |
| 743.120 | 120.00 | 131.00 | 4.20 |
| 741.120 | 120.00 | 135.50 | 6.30 |
| 743.125 | 125.00 | 136.00 | 4.20 |
| 741.125 | 125.00 | 140.50 | 6.30 |
| 743.130 | 130.00 | 141.00 | 4.20 |
| 741.130 | 130.00 | 145.50 | 6.30 |
| 743.135 | 135.00 | 146.00 | 4.20 |
| 741.135 | 135.00 | 150.50 | 6.30 |
| 743.140 | 140.00 | 151.00 | 4.20 |
| 741.140 | 140.00 | 155.50 | 6.30 |
| 743.145 | 145.00 | 156.00 | 4.20 |
| 741.145 | 145.00 | 160.50 | 6.30 |
| 743.150 | 150.00 | 161.00 | 4.20 |
| 741.150 | 150.00 | 165.50 | 6.30 |
| 743.155 | 155.00 | 166.00 | 4.20 |
| 741.155 | 155.00 | 170.50 | 6.30 |
| 743.160 | 160.00 | 171.00 | 4.20 |
| 741.160 | 160.00 | 175.50 | 6.30 |
| 743.165 | 165.00 | 176.00 | 4.20 |
| 741.165 | 165.00 | 180.50 | 6.30 |
| 743.170 | 170.00 | 181.00 | 4.20 |
| 741.170 | 170.00 | 185.50 | 6.30 |
| 743.175 | 175.00 | 186.00 | 4.20 |
| 741.175 | 175.00 | 190.50 | 6.30 |
| 743.180 | 180.00 | 191.00 | 4.20 |
| 741.180 | 180.00 | 195.50 | 6.30 |
| 743.185 | 185.00 | 196.00 | 4.20 |
| 741.185 | 185.00 | 200.50 | 6.30 |
| 743.190 | 190.00 | 201.00 | 4.20 |
| 741.190 | 190.00 | 205.50 | 6.30 |
| 743.195 | 195.00 | 206.00 | 4.20 |
| 741.195 | 195.00 | 210.50 | 6.30 |
| 743.200 | 200.00 | 215.50 | 6.30 |
| 741.200 | 200.00 | 221.00 | 8.10 |
| 743.205 | 205.00 | 220.50 | 6.30 |
| 741.205 | 205.00 | 226.00 | 8.10 |
| 743.210 | 210.00 | 225.50 | 6.30 |
| 741.210 | 210.00 | 231.00 | 8.10 |
| 743.215 | 215.00 | 230.50 | 6.30 |
| 741.215 | 215.00 | 236.00 | 8.10 |
| 743.220 | 220.00 | 235.50 | 6.30 |
| 741.220 | 220.00 | 241.00 | 8.10 |
| 743.230 | 230.00 | 245.50 | 6.30 |
| 741.230 | 230.00 | 251.00 | 8.10 |

| Part number | Shaft diameter Ød1 f8/h9 | Bore diameter ØD1 H9 | Groove width L1 0/+0.20 |
|----------------|-----------------------------|-------------------------|----------------------------|
| 743.240 | 240.00 | 255.50 | 6.30 |
| 741.240 | 240.00 | 261.00 | 8.10 |
| 743.250 | 250.00 | 265.50 | 6.30 |
| 741.250 | 250.00 | 271.00 | 8.10 |
| 743.260 | 260.00 | 281.00 | 8.10 |
| 741.260 | 260.00 | 288.00 | 9.50 |
| 743.270 | 270.00 | 291.00 | 8.10 |
| 741.270 | 270.00 | 298.00 | 9.50 |
| 743.280 | 280.00 | 301.00 | 8.10 |
| 741.280 | 280.00 | 308.00 | 9.50 |
| 743.290 | 290.00 | 311.00 | 8.10 |
| 741.290 | 290.00 | 318.00 | 9.50 |
| 743.300 | 300.00 | 321.00 | 8.10 |
| 741.300 | 300.00 | 328.00 | 9.50 |
| 743.310 | 310.00 | 331.00 | 8.10 |
| 741.310 | 310.00 | 338.00 | 9.50 |
| 743.320 | 320.00 | 341.00 | 8.10 |
| 741.320 | 320.00 | 348.00 | 9.50 |
| 743.330 | 330.00 | 351.00 | 8.10 |
| 741.330 | 330.00 | 358.00 | 9.50 |
| 743.340 | 340.00 | 361.00 | 8.10 |
| 741.340 | 340.00 | 368.00 | 9.50 |
| 743.350 | 350.00 | 371.00 | 8.10 |
| 741.350 | 350.00 | 378.00 | 9.50 |
| 743.360 | 360.00 | 381.00 | 8.10 |
| 741.360 | 360.00 | 388.00 | 9.50 |
| 743.370 | 370.00 | 391.00 | 8.10 |
| 741.370 | 370.00 | 398.00 | 9.50 |

| Part number | Shaft diameter Ød1 f8/h9 | Bore diameter ØD1 H9 | Groove width L1 0/+0.20 |
|-------------|-----------------------------|-------------------------|----------------------------|
| 743.380 | 380.00 | 401.00 | 8.10 |
| 741.380 | 380.00 | 408.00 | 9.50 |
| 743.390 | 390.00 | 411.00 | 8.10 |
| 741.390 | 390.00 | 418.00 | 9.50 |
| 743.400 | 400.00 | 421.00 | 8.10 |
| 741.400 | 400.00 | 428.00 | 9.50 |
| 743.450 | 450.00 | 471.00 | 8.10 |
| 741.450 | 450.00 | 478.00 | 9.50 |
| 743.500 | 500.00 | 521.00 | 8.10 |
| 741.500 | 500.00 | 528.00 | 9.50 |
| 743.550 | 550.00 | 571.00 | 8.10 |
| 741.550 | 550.00 | 578.00 | 9.50 |
| 743.600 | 600.00 | 621.00 | 8.10 |
| 741.600 | 600.00 | 628.00 | 9.50 |
| 743.650 | 650.00 | 678.00 | 9.50 |
| 741.650 | 650.00 | 678.00 | 9.50 |
| 743.700 | 700.00 | 728.00 | 9.50 |
| 741.700 | 700.00 | 728.00 | 9.50 |
| 743.750 | 750.00 | 778.00 | 9.50 |
| 741.750 | 750.00 | 778.00 | 9.50 |
| 743.800 | 800.00 | 828.00 | 9.50 |
| 741.800 | 800.00 | 828.00 | 9.50 |
| 743.850 | 850.00 | 878.00 | 9.50 |
| 741.850 | 850.00 | 878.00 | 9.50 |
| 743.900 | 900.00 | 928.00 | 9.50 |
| 741.900 | 900.00 | 928.00 | 9.50 |
| 743.950 | 950.00 | 978.00 | 9.50 |
| 741.950 | 950.00 | 978.00 | 9.50 |

The figures highlighted in bold correspond to the rod diameters that are recommended by standard ISO 3320. Other intermediate sizes can be provided.