

PISTON SEALS

BECA 650



DESCRIPTION

The BECA 650 profile is a double acting composite piston seal composed of a rubber O'Ring or square ring, and a polyamide friction ring.

ADVANTAGES

The square ring does not twist
 Low friction coefficient
 Excellent extrusion resistance
 Compatible with hydraulic oils

APPLICATIONS

Agriculture
 Mobile machinery
 Hydraulic cylinders

MATERIALS

Friction ring

Polyamide PA6

O'Ring or square ring

NBR 70 Shore A

Other grades of materials are available.
 Please contact our experts.

TECHNICAL DATA

| | |
|--------------------|---|
| Temperature | -30°C / +100°C |
| Pressure | 40 MPa |
| Speed | 0.5 m/sec |
| 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

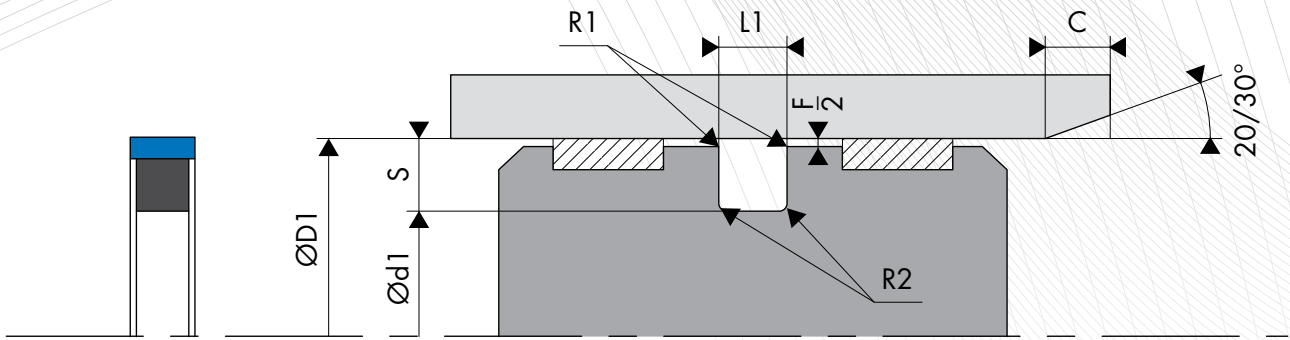
| Pressure MPa | Radial gap F/2 |
|--------------|----------------|
| 20 MPa | 0.25 |
| 35 MPa | 0.20 |
| 40 MPa | 0.15 |

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 |

CHAMFERS AND RADIUS

| Radial section S | Radius R1 | Radius R2 | Chamfer C |
|------------------|-----------|-----------|-----------|
| 1.30 | 0.30 | 0.20 | 2.00 |
| 2.00 | 0.30 | 0.20 | 2.00 |
| 2.60 | 0.30 | 0.20 | 2.00 |
| 3.25 | 0.30 | 0.20 | 3.00 |
| 3.90 | 0.30 | 0.20 | 3.00 |
| 4.55 | 0.30 | 0.30 | 4.00 |
| 5.20 | 0.30 | 0.30 | 4.50 |
| 5.85 | 0.30 | 0.40 | 5.00 |
| 6.50 | 0.30 | 0.40 | 5.50 |
| 7.80 | 0.30 | 0.60 | 6.00 |
| 10.40 | 0.30 | 0.80 | 8.00 |
| 13.00 | 0.30 | 0.80 | 10.00 |



○ INSTALLATION DIMENSIONS

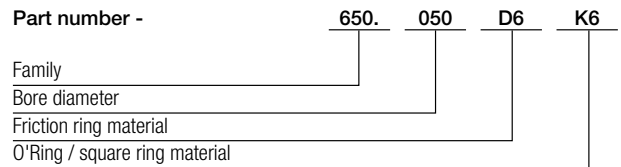
| Bore diameter | Groove diameter | Groove width | Radial section | Cross-section / Ring thickness |
|---------------|-----------------|--------------|----------------|--------------------------------|
| ØD1 H9 | Ød1 h9 | L1 0/+0.20 | S | Ød2 / E |
| 6.0 - 11.9 | D1 - 2.60 | 1.35 | 1.30 | 1.00 |
| 12.0 - 23.9 | D1 - 4.00 | 2.00 | 2.00 | 1.78 |
| 24.0 - 33.9 | D1 - 5.20 | 2.60 | 2.60 | 2.00 |
| 34.0 - 45.9 | D1 - 6.50 | 3.20 | 3.25 | 2.62 |
| 46.0 - 58.9 | D1 - 7.80 | 3.85 | 3.90 | 3.00 |
| 59.0 - 80.9 | D1 - 9.10 | 4.50 | 4.55 | 3.53 |
| 81.0 - 129.9 | D1 - 10.20 | 5.10 | 5.20 | 4.00 |
| 130.0 - 199.9 | D1 - 11.70 | 5.70 | 5.85 | 5.00 |
| 200.0 - 299.9 | D1 - 13.00 | 6.35 | 6.50 | 5.33 |
| 300.0 - 399.9 | D1 - 15.60 | 7.60 | 7.80 | 6.99 |
| 400.0 - 599.9 | D1 - 20.80 | 10.10 | 10.40 | 8.40 |
| 600.0 - ** | D1 - 26.00 | 12.60 | 13.00 | 12.00 |

For special applications > 40 MPa, we recommend using an H8/f8 tolerance (bore/piston) or selecting other, more suitable materials. Please contact our experts.

○ EXAMPLE OF CODIFICATION

STANDARD CODIFICATION

Materials _____ : Polyamide friction ring - Code D6
 _____ : NBR 70 Shore A O'Ring / square ring - Code K6
Bore diameter _____ : ØD1 = 50.00 mm
Groove diameter _____ : Ød1 + 42.20 mm
Part number _____ : 650.050D6K6



DIMENSIONS

| Part number | Bore diameter ØD1 H9 | Groove diameter Ød1 h9 | Groove width L1 0/+0.10 |
|----------------|-------------------------|---------------------------|----------------------------|
| 650.006 | 6.20 | 3.60 | 1.35 |
| 650.021 | 21.00 | 17.00 | 2.00 |
| 650.360 | 360.00 | 344.40 | 7.60 |
| 650.370 | 370.00 | 354.40 | 7.60 |
| 650.380 | 380.00 | 364.40 | 7.60 |
| 650.390 | 390.00 | 374.40 | 7.60 |
| 650.400 | 400.00 | 379.20 | 10.10 |
| 650.410 | 410.00 | 389.20 | 10.10 |
| 650.420 | 420.00 | 399.20 | 10.10 |
| 650.430 | 430.00 | 409.20 | 10.10 |
| 650.440 | 440.00 | 419.20 | 10.10 |
| 650.450 | 450.00 | 429.20 | 10.10 |
| 650.022 | 22.00 | 18.00 | 2.00 |
| 650.460 | 460.00 | 439.20 | 10.10 |
| 650.470 | 470.00 | 449.20 | 10.10 |
| 650.480 | 480.00 | 459.20 | 10.10 |
| 650.490 | 490.00 | 469.20 | 10.10 |
| 650.500 | 500.00 | 479.20 | 10.10 |
| 650.024 | 24.00 | 18.80 | 2.60 |
| 650.025 | 25.00 | 19.80 | 2.60 |
| 650.028 | 28.00 | 22.80 | 2.60 |
| 650.030 | 30.00 | 24.80 | 2.60 |
| 650.032 | 32.00 | 26.80 | 2.60 |
| 650.035 | 35.00 | 28.50 | 3.20 |
| 650.036 | 36.00 | 29.50 | 3.20 |
| 650.038 | 38.00 | 31.50 | 3.20 |
| 650.008 | 8.00 | 5.40 | 1.35 |
| 650.040 | 40.00 | 33.50 | 3.20 |
| 650.041 | 41.00 | 34.50 | 3.20 |
| 650.042 | 42.00 | 35.50 | 3.20 |
| 650.045 | 45.00 | 38.50 | 3.20 |
| 650.046 | 46.00 | 38.20 | 3.85 |
| 650.048 | 48.00 | 40.20 | 3.85 |
| 650.050 | 50.00 | 42.20 | 3.85 |
| 650.052 | 52.00 | 44.20 | 3.85 |
| 650.053 | 53.00 | 45.20 | 3.85 |
| 650.055 | 55.00 | 47.20 | 3.85 |
| 650.010 | 10.00 | 7.40 | 1.35 |
| 650.057 | 57.00 | 49.20 | 3.85 |
| 650.058 | 58.00 | 50.20 | 3.85 |
| 650.060 | 60.00 | 50.90 | 4.50 |
| 650.062 | 62.00 | 52.90 | 4.50 |
| 650.063 | 63.00 | 53.90 | 4.50 |
| 650.065 | 65.00 | 55.90 | 4.50 |
| 650.068 | 68.00 | 58.90 | 4.50 |
| 650.070 | 70.00 | 60.90 | 4.50 |
| 650.072 | 72.00 | 62.90 | 4.50 |
| 650.075 | 75.00 | 65.90 | 4.50 |
| 650.012 | 12.00 | 8.00 | 2.00 |
| 650.080 | 80.00 | 70.90 | 4.50 |
| 650.082 | 82.00 | 71.60 | 5.10 |
| 650.085 | 85.00 | 74.60 | 5.10 |
| 650.087 | 87.00 | 76.60 | 5.10 |
| 650.090 | 90.00 | 79.60 | 5.10 |
| 650.092 | 92.00 | 81.60 | 5.10 |
| 650.095 | 95.00 | 84.60 | 5.10 |
| 650.098 | 98.00 | 87.60 | 5.10 |

| Part number | Bore diameter ØD1 H9 | Groove diameter Ød1 h9 | Groove width L1 0/+0.10 |
|----------------|-------------------------|---------------------------|----------------------------|
| 650.100 | 100.00 | 89.60 | 5.10 |
| 650.105 | 105.00 | 94.60 | 5.10 |
| 650.014 | 14.00 | 10.00 | 2.00 |
| 650.108 | 108.00 | 97.60 | 5.10 |
| 650.110 | 110.00 | 99.60 | 5.10 |
| 650.115 | 115.00 | 104.60 | 5.10 |
| 650.118 | 118.00 | 107.60 | 5.10 |
| 650.120 | 120.00 | 109.60 | 5.10 |
| 650.125 | 125.00 | 114.60 | 5.10 |
| 650.127 | 127.00 | 116.60 | 5.10 |
| 650.130 | 130.00 | 118.30 | 5.70 |
| 650.132 | 132.00 | 120.30 | 5.70 |
| 650.135 | 135.00 | 123.30 | 5.70 |
| 650.015 | 15.00 | 11.00 | 2.00 |
| 650.138 | 138.00 | 126.30 | 5.70 |
| 650.140 | 140.00 | 128.30 | 5.70 |
| 650.144 | 144.50 | 132.80 | 5.70 |
| 650.145 | 145.00 | 133.30 | 5.70 |
| 650.150 | 150.00 | 138.30 | 5.70 |
| 650.155 | 155.00 | 143.30 | 5.70 |
| 650.156 | 156.00 | 144.30 | 5.70 |
| 650.158 | 158.70 | 147.00 | 5.70 |
| 650.160 | 160.00 | 148.30 | 5.70 |
| 650.164 | 164.00 | 152.30 | 5.70 |
| 650.016 | 16.00 | 12.00 | 2.00 |
| 650.165 | 165.00 | 153.30 | 5.70 |
| 650.166 | 166.00 | 154.30 | 5.70 |
| 650.170 | 170.00 | 158.30 | 5.70 |
| 650.175 | 175.00 | 163.30 | 5.70 |
| 650.177 | 177.00 | 165.30 | 5.70 |
| 650.180 | 180.00 | 168.30 | 5.70 |
| 650.185 | 185.00 | 173.30 | 5.70 |
| 650.190 | 190.00 | 178.30 | 5.70 |
| 650.195 | 195.00 | 183.30 | 5.70 |
| 650.200 | 200.00 | 187.00 | 6.35 |
| 650.018 | 18.00 | 14.00 | 2.00 |
| 650.205 | 205.00 | 192.00 | 6.35 |
| 650.210 | 210.00 | 197.00 | 6.35 |
| 650.215 | 215.00 | 202.00 | 6.35 |
| 650.216 | 216.00 | 203.00 | 6.35 |
| 650.220 | 220.00 | 207.00 | 6.35 |
| 650.225 | 225.00 | 212.00 | 6.35 |
| 650.230 | 230.00 | 217.00 | 6.35 |
| 650.240 | 240.00 | 227.00 | 6.35 |
| 650.250 | 250.00 | 237.00 | 6.35 |
| 650.260 | 260.00 | 247.00 | 6.35 |
| 650.020 | 20.00 | 16.00 | 2.00 |
| 650.268 | 268.00 | 255.00 | 6.35 |
| 650.270 | 270.00 | 257.00 | 6.35 |
| 650.280 | 280.00 | 267.00 | 6.35 |
| 650.290 | 290.00 | 277.00 | 6.35 |
| 650.300 | 300.00 | 284.40 | 7.60 |
| 650.310 | 310.00 | 294.40 | 7.60 |
| 650.320 | 320.00 | 304.40 | 7.60 |
| 650.330 | 330.00 | 314.40 | 7.60 |
| 650.340 | 340.00 | 324.40 | 7.60 |
| 650.350 | 350.00 | 334.40 | 7.60 |

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