

ROTO SEALS

BECA

745-747



DESCRIPTION

The BECA 745 - 747 roto seals are single or double acting rod rotary seals composed of a filled PTFE grooved friction ring and two rubber O'Rings.

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'Rings

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

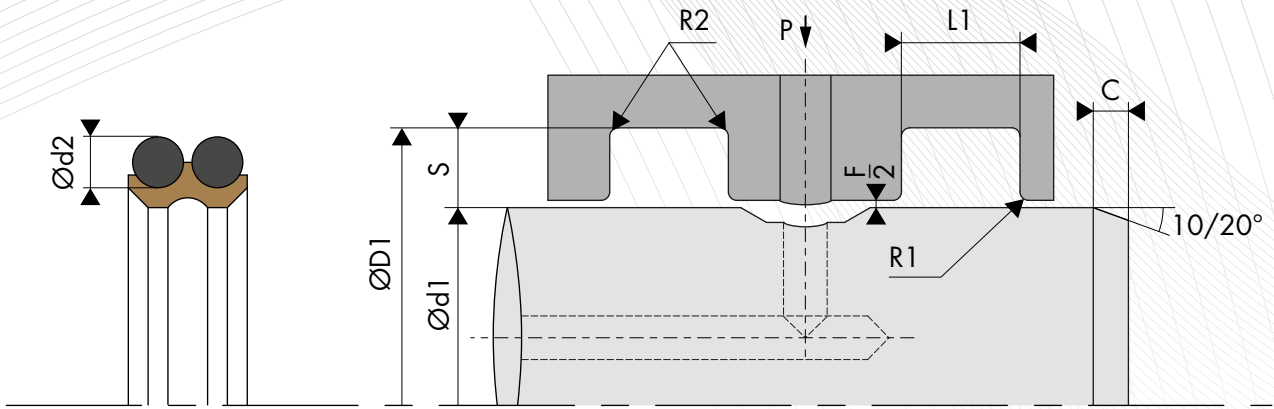
CHAMFERS AND RADIUS

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'Rings			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	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 ØD1 H9					Groove width	O'Rings cross-section
BECA 745 Standard range	BECA 747 Heavy-duty range	$v < 0.2$ $p < 2.5$	$0.2 < v < 0.5$ $2.5 < p < 5.0$	$0.5 < v < 1.0$ $5.0 < p < 25.0$	$1.0 < v < 2.0$ $25.0 < p < 40.0$	$2.0 < v < 5.0$ $40.0 < p < 50.0$	L1 0/+0.20	Ød2
6.0 - 18.9	---	d1 + 4.20	d1 + 4.40	d1 + 4.50	d1 + 4.60	d1 + 4.70	4.30	1.78
19.0 - 37.9	6.0 - 18.9	d1 + 6.20	d1 + 6.40	d1 + 6.60	d1 + 6.80	d1 + 6.90	6.30	2.62
38.0 - 199.9	19.0 - 37.9	d1 + 8.40	d1 + 8.60	d1 + 8.90	d1 + 9.10	d1 + 9.30	8.50	3.53
200.0 - 255.9	38.0 - 199.9	d1 + 12.70	d1 + 13.00	d1 + 13.40	d1 + 13.80	d1 + 14.00	12.90	5.33
256.0 - 649.9	200.0 - 255.9	d1 + 16.60	d1 + 17.00	d1 + 17.50	d1 + 18.00	d1 + 18.30	16.90	6.99

The speed "v" is expressed in m/s

The pressure "p" is expressed in MPa

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

○ EXAMPLE OF CODIFICATION

STANDARD CODIFICATION

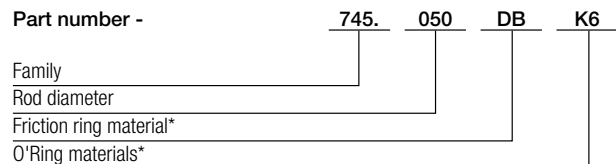
Materials _____ : Friction ring, PTFE + 60% Bronze - Code DB

_____ : NBR 70 Shore A O'Rings - Code K6

Rod diameter _____ : Ød1 = 50.00 mm

Groove diameter _____ : ØD1 = 58.40 mm

Part number _____ : 745. 050DBK6



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