

# PISTON/ROD SEALS

## BECA 338



### DESCRIPTION

The BECA 338 profile is a single acting symmetrical seal composed of a profiled, filled PTFE seal and two V-springs that are resistant to corrosion. Each of the springs acts individually on one of the seal's lips. This profile is particularly suited to applications where it is necessary to have a significant seal radial cross-section.

### ADVANTAGES

- Wide temperature range and excellent chemical resistance
- Low friction coefficient; no stick-slip effect
- Excellent abrasion resistance
- Good dimensional stability
- Non-toxic material

### APPLICATIONS

- Food & Beverage
- Measuring devices
- Pumps
- Separators
- Valves

### MATERIALS

- Profiled seal**  
Carbon-filled PTFE
- V-Shaped springs**  
Stainless steel

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

### TECHNICAL DATA

<b>Temperature</b>	-200°C / +260°C
<b>Pressure</b>	30 MPa
<b>Speed</b>	15 m/s
<b>Media</b>	Practically all types of fluids, and chemical and gas products

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			
	2 MPa	10 MPa	20 MPa	30 MPa
7.00	0.10	0.08	0.05	0.05
8.00	0.10	0.08	0.05	0.05
10.00	0.15	0.10	0.08	0.05
12.50	0.15	0.10	0.08	0.05
15.00	0.15	0.10	0.08	0.05

### 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

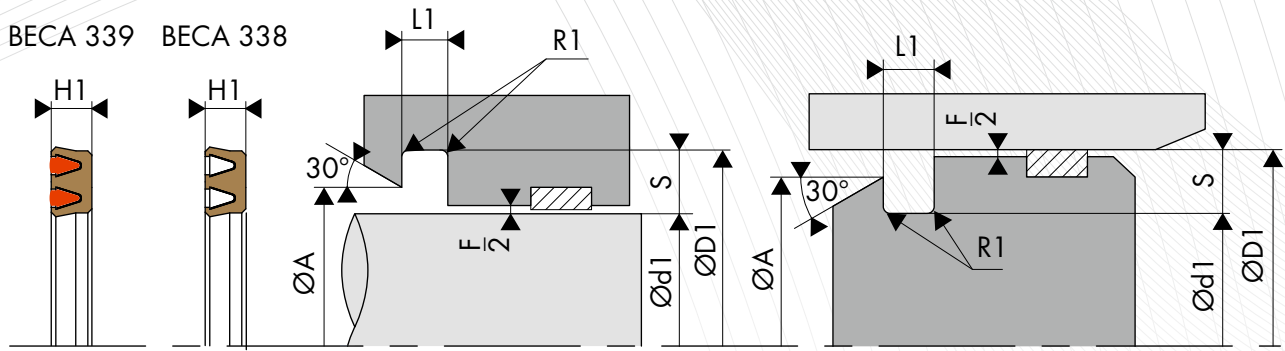
### CHAMFERS AND RADIUS

Radial section S	Radius R1	Chamfer C
7.00	0.80	4.50
8.00	0.80	4.50
10.00	0.80	6.50
12.50	0.80	6.50
15.00	1.00	8.00

○ TABLE MATERIALS

Profiled seal					V-springs			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	I	X10 Cr Ni 18-8	-200°C/+260°C	Steel Stainless steel Chrome steel Aluminium Bronze Cast iron Treated surface
DC	C	PTFE + 25% Carbon	Grey	<b>Improvements</b> • <b>Wear properties</b> • <b>Compression set</b> Good resistance to chemical products Thermal and electrical conductivity Anti-static High-performing in compression-based dynamic applications	I	X10 Cr Ni 18-8	-200°C/+260°C	
CG	C	PTFE + 23% Carbon + 2% Graphite	Black	Good resistance to chemical products Thermal and electrical conductivity Anti-static High-performing in compression-based dynamic applications	I	X10 Cr Ni 18-8	-200°C/+260°C	
DV	V	PTFE + 25 % Glass	Blue	<b>Improvements</b> • <b>Wear properties</b> • <b>Mechanical strength</b> 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	I	X10 Cr Ni 18-8	-200°C/+260°C	Steel Chrome steel Cast iron
VM	M	PTFE + 15 % Glass + 5% MOS2	Grey	Maintains its chemical and dielectric properties Well-suited to applications with rotational and simultaneous alternating movements	I	X10 Cr Ni 18-8	-200°C/+260°C	
DX	X	PTFE GL Blue + Glass + Metal oxides	Turquoise blue	Resistance to compression Resistance to wear Excellent chemical stability Good thermal conductivity	I	X10 Cr Ni 18-8	-200°C/+260°C	
DG	G	PTFE + 15% Graphite	Black	<b>Improvements</b> • <b>Wear properties</b> 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	I	X10 Cr Ni 18-8	-200°C/+260°C	Steel Stainless steel Chrome steel Aluminium Bronze Cast iron Treated surface
K1	K	PTFE + 10% Ekonol	Light brown	<b>Improvements</b> • <b>Better abrasion resistance</b> • <b>Better dimensional stability at high temperatures</b> Use up to +300°C Good friction coefficient and low permeability	I	X10 Cr Ni 18-8	-200°C/+260°C	
K2	K	PTFE + 20% Ekonol	Light brown	Use up to +300°C Good friction coefficient and low permeability	I	X10 Cr Ni 18-8	-200°C/+260°C	
DB	B	PTFE + 60% Bronze	Dark brown	<b>Improvements</b> • <b>Wear properties</b> • <b>Warping resistance and creep strength</b> • <b>Compression resistance</b> 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	I	X10 Cr Ni 18-8	-200°C/+260°C	Steel Chrome steel Cast iron
B4	B	PTFE + 40% Bronze	Dark brown	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	I	X10 Cr Ni 18-8	-200°C/+260°C	
HG	HG	PE-UHMW	White or off-white	Excellent wear resistance on contact with water and air	I	X10 Cr Ni 18-8	-70°C/+80°C	Steel Stainless steel Chrome steel Aluminium Bronze Cast iron Treated surface

Other grades of materials are available depending on your specificities.



○ INSTALLATION DIMENSIONS

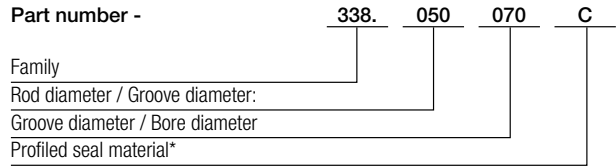
Cylinder sealing		Rod sealing		Groove width	Groove width	Radial section
Bore diameter ØD1 H9	Groove diameter Ød1 h9	Rod diameter Ød1 h9	Groove diameter ØD1 H9	L1 0/+0.20	L according to ISO	S
25.0 - **	D1 - 25.00	25.0 - **	d1 + 25.0	9.00	16.00/20.00/40.00	12.50
25.0 - **	D1 - 30.00	25.0 - **	d1 + 30.0	9.00	20.00/25.00/50.00	15.00

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

○ EXAMPLE OF CODIFICATION

STANDARD CODIFICATION

**Materials** \_\_\_\_\_ : PTFE + 25% Carbon profiled seal - Code ISO C  
 \_\_\_\_\_ : Stainless steel V-Shaped springs - Code I  
**Rod diameter / Groove diameter** \_\_\_\_\_ : Ød1 + 50.00 mm  
**Groove diameter / Bore diameter** \_\_\_\_\_ : ØD1 = 70.00 mm  
**Part number** \_\_\_\_\_ : 338.050070C



\* The codes that define the materials are set out in the materials table.

○ DIMENSIONS

Part number	Rod diameter Ød1 h9	Groove diameter ØD1 H9	Seal height H1	Groove width L1 0/+0.20
	Groove diameter Ød1 h9	Bore diameter ØD1 H9		
338.245422	24.50	42.20	8.70	9.50
<b>338.028042</b>	<b>28.00</b>	<b>42.00</b>	9.70	<b>10.00</b>
<b>338.032052</b>	<b>32.00</b>	<b>52.00</b>	<b>12.20</b>	<b>12.50</b>
<b>338.036052</b>	<b>36.00</b>	<b>52.00</b>	<b>10.20</b>	<b>10.50</b>
<b>338.040056</b>	<b>40.00</b>	<b>56.00</b>	<b>10.20</b>	<b>10.50</b>
<b>338.040060</b>	<b>40.00</b>	<b>60.00</b>	<b>12.20</b>	<b>12.50</b>
<b>338.050070</b>	<b>50.00</b>	<b>70.00</b>	<b>12.20</b>	<b>12.50</b>
338.060080	60.00	80.00	12.20	12.50
338.060085	60.00	85.00	12.00	13.50

Part number	Rod diameter Ød1 h9	Groove diameter ØD1 H9	Seal height H1	Groove width L1 0/+0.20
	Groove diameter Ød1 h9	Bore diameter ØD1 H9		
<b>338.070090</b>	<b>70.00</b>	<b>90.00</b>	<b>12.20</b>	<b>12.50</b>
<b>338.080096</b>	<b>80.00</b>	<b>96.00</b>	<b>10.20</b>	<b>10.50</b>
<b>338.100116</b>	<b>100.00</b>	<b>116.00</b>	<b>10.20</b>	<b>10.50</b>
338.155180	155.00	180.00	13.70	14.50
338.155185	155.00	185.00	16.70	17.00
338.165190	165.00	190.00	16.70	17.00
338.290320	290.00	320.00	16.70	17.00
338.300235	300.00	325.00	8.70	9.00

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