AUTOMOTIVE | AEROSPACE | FOOD & BEVERAGE | FLUID TECHNOLOGIES | MOBILE MACHINERY

FRANCEJOINT

SEALING SYSTEMS

STATIC SEALS

FRANCEJOINT
SEALING SYSTEMS

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SEALING SYSTEMS

Contents

STATIC SEALS

FRANCEJOINT
SEALING SYSTEMS

Site n°1: Compression Molding – Injection Molding – Water Jet Cutting – Finition – Quality Control – Logistics

Site N°2: Administrative Area – Research & Development – Machining – Tooling

FRANCEJOINT
SEALING SYSTEMS

Since 1981, FRANCE JOINT – SEALING SYSTEMS has been designing, manufacturing and distributing seals and precision rubber parts for its customers for whom quality is a determining factor.

Faced with tough competition among the big decision-makers of the industrial world, FRANCE JOINT has responded with innovation, research and development, experience in Best-Cost manufacturing, and a consistently high level of quality, thanks to certificates ISO 9001, IATF 16949, EN/AS 9100 and ISO 14001.

Today, FRANCE JOINT is working in close collaboration with its customers, meeting challenges head on with success. Automotive, Aeronautics, Mobile hydraulics, Beverages & Foods, Fluid engineering industries... every solution emerges from a uniquely individual partnership, constantly fostered and renewed.

Our prime objective, based on unrivalled quality, is to find the most suitable solutions for ensuring that you will stand out in what has become an extremely competitive domain. Our position of excellence has led us since the birth of our company to acquire the tools necessary to anticipate and prevent risks and maximize our service; the ultimate objective being of course to help you keep ahead of developments in this more and more technological market.

- AUTOMOTIVE
- AERONAUTICS
- BEVERAGES & FOODS
- FLUID ENGINEERING
- MOBILE HYDRAULICS


Compression molding


Injection molding


Machining / Tooling

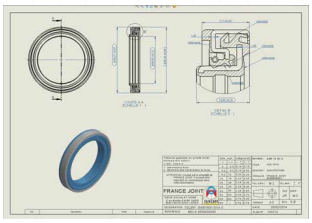

Logistics / Packaging

RESEARCH & **DEVELOPMENT**

Innovation, reliability, safety, minimization of risk: your expectations are our daily concern. To get from the idea to the finished product demands firm managerial control over a wide range of projects in addition to expertise in manufacturing.

FRANCE JOINT's contributors, who are as much inventors as technicians, get the best of fully automated, state-of-the-art technology that takes them from drawing-board to prototype and finally to assembly line. From writing specifications to putting on a major technical event through designing (3D Solidwrks software) and testing for validation and compliance, FRANCE JOINT engineering works hand in hand with you to find the best solutions guaranteeing the level of expected performance.

More than 1000 compounds integrating elastomers, PTFE materials, Polyurethane, or even thermoplastics, as many solutions vis-a-vis the new most complex requirements which will put you in pole position today so that we can all be winners tomorrow. FRANCE JOINT puts in place qualifications in order to examine the behavior of its seals according to various parameters intervening on frictions, pressures, temperatures, speeds, strokes, leakages…



QUALITY **IN OUR CONCERNS**

Several certificates obtained, ISO 9001, IATF 16949, EN/AS 9100 and ISO 14001, testify to the quality department's commitment to constant progress at every level of the company, at all stages of the realization, particularly where continual improvement is what has made FRANCE JOINT the name it is today.

Ambitious with customer satisfaction a priority, FRANCE JOINT has thus obtained the most powerful methods (PPAP, AMDEC, value analysis, Audits, MRP, 8D analysis, SPC, R&R ...) in order to optimize simultaneously the capacity of machines and processes, operational manpower performances, organizational methods, and finally, product and financial results.

FRANCE JOINT guarantees the best technology and pursues its daily objectives of a "Zero defects" production, through physico chemical controls (rheometer, spectrometer, durometer…), through dimensional and final aspects (unit controlling equipment, 3D camera ...). This is because the search for competitiveness is as important as the search for continuous improvement.

3D test device

CERTIFIÉ ISO 9001 CERTIFIED

CERTIFIÉ ISO 14001 CERTIFIED

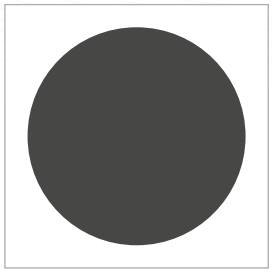
CERTIFIÉ IATF 16949 CERTIFIED

CERTIFIÉ EN 9100 CERTIFIED

O'RINGS

BECA 010
010 PU
010 PTFE
010 FEP

BECA 010



DESCRIPTION

The BECA 010 profile is an O'Ring, a circular ring with a round cross-section, made from rubber.

ADVANTAGES

Compact design

Easy assembly

Economic solution

A symmetry that reduces the risk of errors during fitting

MATERIALS

ACM 70 Shore A

AEM 70 Shore A

EPDM 70 Shore A

FKM 70 Shore A

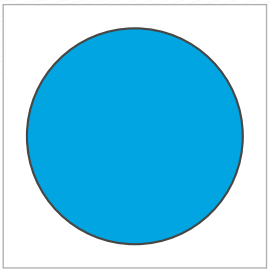
HNBR 70 Shore A

NBR 70 Shore A

VMQ 70 Shore A

Other materials may be used

BECA 010 PU



DESCRIPTION

The BECA 010 PU is an O'Ring, a circular ring with a round cross-section, made from polyurethane.

ADVANTAGES

Excellent abrasion and wear resistance

Excellent extrusion resistance; accepts large extrusion gaps

Very good mechanical properties

Low friction

MATERIALS

PU 70 Shore A moulded

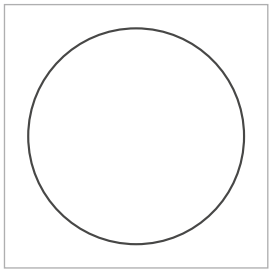
PU 93 Shore A injected

PU 95 Shore A machined

PU 96 Shore A injected

Other materials may be used

BECA 010 PTFE



DESCRIPTION

The BECA 010 PTFE is an O'Ring, a circular ring with a round cross-section, made from virgin PTFE (polytetrafluoroethylene). It is made by machining, which means that any size can be manufactured without having to first produce any kind of tools.

ADVANTAGES

Good chemical resistance

Sensitive to attacks from molten alkaline metals or those in compound or fluorine form

Good dielectric properties independent of the temperature and hygrometry

Non-stick

Resistant to friction wearing

Resistant to loads

Physiological inertia

Resistance to limited wear

Low sensitivity to steam and corrosion

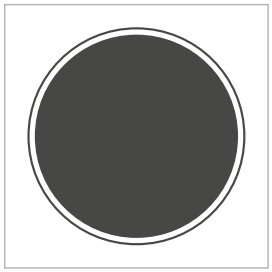
Temperature resistance

MATERIALS

Virgin PTFE

Filled PTFE possible

BECA 010 FEP



DESCRIPTION

The BECA 010 FEP profile is a rubber O'Ring, a circular ring with a round cross-section, wrapped in a FEP impermeable sheath (fluorinated ethylene propylene). Unlike PTFE O'Rings, FEP O'Rings retain their elastic properties, as with standard O'Rings, and have a great chemical resistance thanks to the FEP envelope.

ADVANTAGES

Wide temperature range

Excellent chemical resistance

Low friction coefficient; no stick-slip effect

MATERIALS

FKM with FEP envelope

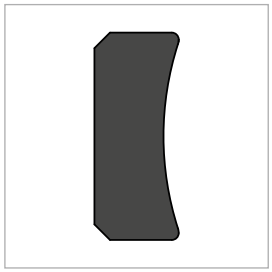
VMQ with FEP envelope

For more technical details, please refer to the "O'Rings & Back-up Rings" catalogue.

BACK-UP RINGS

BECA 008
008P
011
012

BECA 008



DESCRIPTION

The BECA 008 profile is an uncut back-up ring with a concave shape that allows it to fit snugly against the O'Ring. The ring is systematically assembled in tandem with an O'Ring and an X'Ring.

ADVANTAGES

Preferable for use in static applications

May be used for alternating movement applications

Large contact surface area, which protects the O'Ring from deformation caused by pulsating pressures

Easy assembly by deformation

Its production method makes it an economic solution

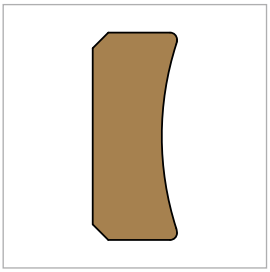
MATERIALS

NBR 90 Shore A as standard

FKM 90 Shore A to deal with temperature and chemical compatibility issues

Other materials can be used for special applications

BECA 008P



DESCRIPTION

The BECA 008P profile is back-up ring cut at 30° with a concave shape that allows it to fit snugly against the O'Ring. The ring is systematically assembled in tandem with an O'Ring and an X'Ring. An uncut version of this profile can be made.

ADVANTAGES

Used in static and dynamic applications

May be used for alternating movement applications

Large contact surface area, which protects the O'Ring from deformation caused by pulsating pressures

Preferred assembly in a closed groove for profiles cut at 30°

Assembly in open groove for uncut profiles

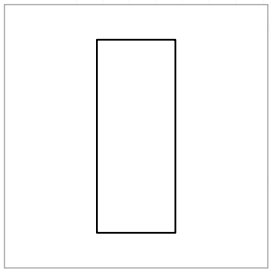
MATERIALS

Standard virgin PTFE

Filled PTFE (fibreglass, carbon, bronze, etc.) for special applications

Other materials may be used

BECA 011



DESCRIPTION

The BECA 011 Rod profile is a back-up ring cut at 30° with a rectangular profile. The ring is systematically assembled in tandem with an O'Ring and an X'Ring. An uncut version of this profile can be made.

ADVANTAGES

Used in static and dynamic applications

May be used for alternating and rotating applications

Large contact surface area, which protects the O'Ring from deformation caused by pulsating pressures

Preferred assembly in a closed groove for profiles cut at 30°

Assembly in open groove for uncut profiles

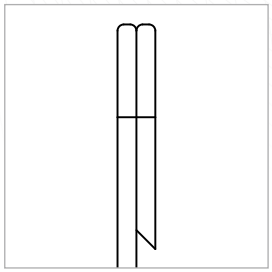
MATERIALS

Standard virgin PTFE

Filled PTFE (fibreglass, carbon, bronze, etc.) for special applications

Other materials may be used

BECA 012



DESCRIPTION

The BECA 012 Rod profile is a coiled back-up ring with a rectangular profile. The ring is systematically assembled in tandem with an O'Ring and an X'Ring.

ADVANTAGES

Used in static and dynamic applications

Only for alternating movements

Large contact surface area, which protects the O'Ring from deformation caused by pulsating pressures

Preferred assembled in a closed groove

Suitable for non-standard dimensions as the back-up ring can be shortened and then adjusted

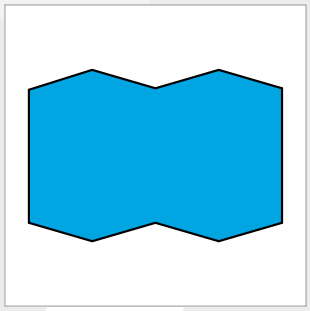
MATERIALS

Standard virgin PTFE

Filled PTFE (fibreglass, carbon, bronze, etc.) for special applications

Other materials may be used

For more technical details, please refer to the "O'Rings & Back-up Rings" catalogue.



STATIC SEALS

BECA 014

DESCRIPTION

The BECA 014 profile is a polyurethane static seal.

It provides an alternative solution to combining an O'Ring (possible twisting during fitting) with a back-up ring (positioning is not always optimal).

ADVANTAGES

Excellent resistance to twisting

Easy assembly

Excellent extrusion resistance

APPLICATIONS

Mobile hydraulics

Injection presses

Presses

Standard cylinders

MATERIALS

PU 93 Shore A - Blue

PU 96 Shore A - Blue

High temp. PU 96 Shore A - Beige

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

TECHNICAL DATA

Temperature	-30°C / +110°C depending on the material selected
Pressure	50 MPa
Speed	0.5 m/sec
Media	Mineral hydraulic oils

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

PREFERENTIAL EXTRUSION GAPS

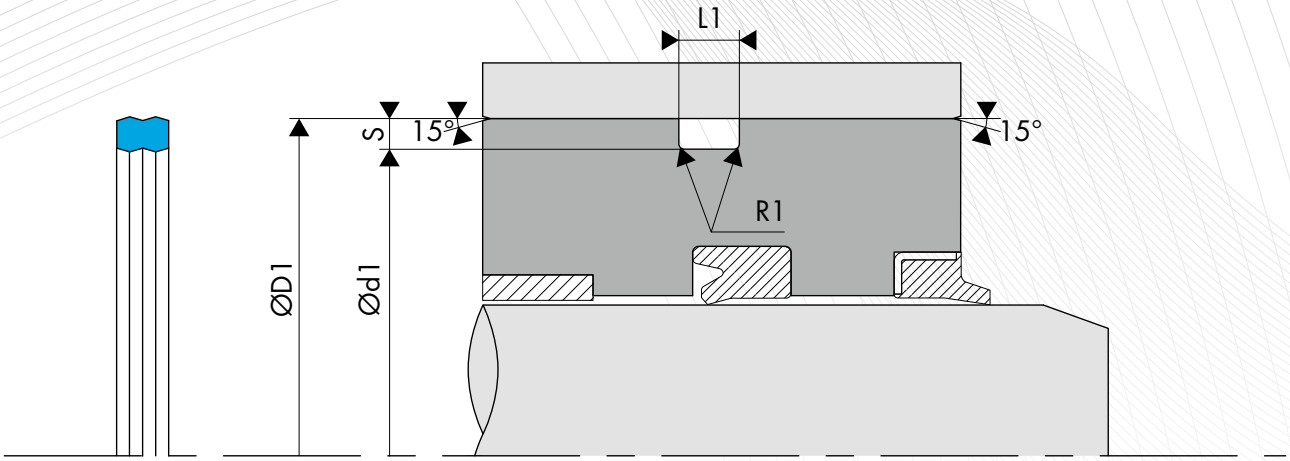
The mechanical tolerances below are recommended for optimal operation:
Bore diameter: H8
Groove diameter: g6
A radial extrusion gap of F/2 at 0.20 mm is acceptable, depending on the shape of the seal and the type of material that makes up the seal.

SURFACE ROUGHNESS

In static radial applications	Ra µm	Rt µm	Rz µm
Contact surface area	≤1.6 µm	≤10.0 µm	≤6.3 µm
Groove diameter surface	≤3.2 µm	≤16.0 µm	≤6.3 µm
Groove flanks	≤3.2 µm	≤16.0 µm	≤6.3 µm

CHAMFERS AND RADIUS

Radial section S	Chamfer and angle C x °
≤ 3.00 mm	3 x 15°
> 3.00 mm	5 x 15°



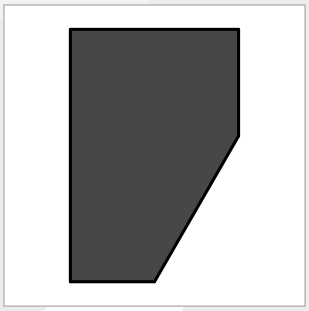
DIMENSIONS

Part number	Bore diameter ØD1 H8	Groove diameter Ød1 h9	Groove width L1 0/+0.20	Radius R1
014.0060042	6.00	4.60	2.40	0.30
014.0100073	10.00	7.60	3.60	0.30
014.0110082	11.00	8.60	2.60	0.30
014.0120093	12.00	9.60	3.60	0.30
014.0130093	13.80	9.20	3.10	0.30
014.0150123	15.00	12.60	3.60	0.30
014.0150133	15.50	13.10	3.60	0.30
014.0160133	16.00	13.60	3.60	0.30
014.0160123	16.60	12.00	3.10	0.30
014.0170142	17.00	14.60	2.60	0.30
014.0170143	17.00	14.60	3.60	0.30
014.0170152	17.50	15.10	2.60	0.30
014.0170153	17.50	15.10	3.60	0.30
014.0180145	18.00	14.00	5.80	0.30
014.0180153	18.00	15.60	3.60	0.30
014.0190154	19.00	15.60	4.40	0.30
014.0190153	19.00	15.60	3.60	0.30
014.0190162	19.00	16.60	2.60	0.30
014.0190163	19.00	16.60	3.60	0.30
014.0200165	20.00	16.00	5.80	0.30
014.0200164	20.00	16.60	4.40	0.30
014.0200163	20.00	16.60	3.60	0.30
014.0200173	20.00	17.60	3.60	0.30
014.0200175	20.50	17.20	5.00	0.30
014.0210174	21.00	17.60	4.40	0.30
014.0210183	21.00	18.60	3.60	0.30
014.0210184	21.50	18.10	4.40	0.30
014.0210192	21.50	19.10	2.60	0.30
014.0220193	22.00	19.60	3.60	0.30
014.0230194	23.00	19.60	4.40	0.30
014.0230203	23.00	20.60	3.60	0.30
014.0240204	24.00	20.00	4.80	0.30
014.0240213	24.00	21.60	3.60	0.30
014.0260224	26.00	22.00	4.40	0.30
014.0260225	26.80	22.00	5.40	0.30
014.0280235	28.00	23.80	5.30	0.30
014.0280253	28.60	25.60	3.60	0.30
014.0300254	30.00	25.10	4.40	0.30
014.0300255	30.00	25.40	5.40	0.30
014.0310265	31.00	26.40	5.00	0.30
014.0320275	32.00	27.40	5.40	0.30
014.0330201	33.00	20.00	15.60	0.60
014.0340285	34.00	28.40	5.30	0.30

Part number	Bore diameter ØD1 H8	Groove diameter Ød1 h9	Groove width L1 0/+0.20	Radius R1
014.0340313	34.00	31.10	3.60	0.30
014.0350305	35.00	30.40	5.00	0.30
014.3550305	35.50	30.90	5.00	0.30
014.0360326	36.00	32.00	6.20	0.30
014.0380325	38.00	32.40	5.30	0.30
014.0403525	40.00	35.20	5.40	0.30
014.0403545	40.00	35.40	5.40	0.30
014.0420386	42.80	38.00	6.80	0.30
014.0430376	43.40	37.80	6.20	0.30
014.0450359	45.00	35.80	9.70	0.30
014.0450405	45.00	40.00	5.40	0.30
014.0500409	50.00	40.80	9.70	0.60
014.0500435	50.00	43.80	5.60	0.30
014.0500446	50.00	44.60	6.20	0.30
014.0500455	50.00	45.40	5.40	0.30
014.0500453	50.00	45.40	3.90	0.30
014.0550459	55.00	45.80	9.80	0.30
014.0550496	55.00	49.60	6.20	0.30
014.0550495	55.00	49.90	5.30	0.30
014.0550506	55.00	50.00	6.70	0.30
014.0550513	55.00	51.00	3.60	0.30
014.0570524	57.00	52.20	4.10	0.30
014.0580509	58.00	50.00	9.00	0.30
014.0600509	60.00	50.80	9.70	0.60
014.0600545	60.00	54.40	5.80	0.30
014.0600546	60.00	54.60	6.20	0.30
014.0630539	63.00	53.80	9.70	0.30
014.0630566	63.00	56.60	6.40	0.30
014.0630574	63.00	57.40	4.80	0.30
014.0630576	63.00	57.60	6.20	0.30
014.0630585	63.00	58.40	5.40	0.30
014.0650595	65.00	59.40	5.00	0.30
014.0650596	65.00	59.60	6.20	0.30
014.0650605	65.00	60.00	5.00	0.30
014.0680625	68.00	62.70	5.00	0.30
014.0690653	69.60	65.00	3.90	0.30
014.0700655	70.00	65.00	5.00	0.30
014.0700666	70.00	66.40	6.20	0.30
014.0720665	72.00	66.40	5.00	0.30
014.0730705	73.50	70.00	5.00	0.30
014.0740703	74.60	70.00	3.80	0.30
014.0750659	75.00	65.80	9.70	0.60
014.0750695	75.00	69.40	5.30	0.30
014.0750696	75.00	69.60	6.20	0.40
014.0760724	76.60	72.00	4.80	0.30
014.0770706	77.00	70.80	6.20	0.30
014.0780735	78.00	73.00	5.00	0.30
014.0800709	80.00	70.80	9.00	0.60
014.0807089	80.00	70.80	9.70	0.60
014.0807366	80.00	73.60	6.40	0.30
014.0807386	80.00	73.80	6.90	0.30
014.0800745	80.00	74.40	5.30	0.30
014.0800755	80.00	75.40	5.40	0.30
014.0800763	80.00	76.00	3.60	0.30
014.0850795	85.00	79.40	5.30	0.30
014.0850803	85.10	80.50	3.90	0.30
014.0900819	90.00	81.40	9.00	0.30
014.0900836	90.00	83.00	6.50	0.30
014.0900844	90.00	84.40	4.80	0.30
014.0930875	93.00	87.40	5.30	0.30
014.0950896	95.00	89.40	6.20	0.30
014.0970914	97.00	91.40	4.80	0.30
014.1000909	100.00	90.80	9.70	0.30

Part number	Bore diameter ØD1 H8	Groove diameter Ød1 h9	Groove width L1 0/+0.20	Radius R1
014.1000919	100.00	91.40	9.00	0.30
014.1000918	100.00	91.60	8.60	0.30
014.1000936	100.00	93.80	6.90	0.30
014.1020956	102.00	95.80	6.20	0.30
014.1050969	105.00	96.40	9.00	0.30
014.1101009	110.00	100.80	9.70	0.60
014.1101019	110.00	101.40	9.00	0.30
014.1141076	114.00	107.80	6.20	0.30
014.1151068	115.00	106.60	8.60	0.60
014.1251159	125.00	115.80	9.70	0.60
014.1251169	125.00	116.40	9.00	0.30
014.1251168	125.00	116.60	8.60	0.30
014.1401281	140.00	128.40	12.30	0.60
014.1401309	140.00	130.80	9.70	0.60
014.1401318	140.00	131.60	8.60	0.30
014.1501381	150.00	138.40	12.30	0.60
014.1501409	150.00	140.80	9.70	0.60
014.1501418	150.00	141.60	8.60	0.30
014.1601481	160.00	148.40	12.30	0.60
014.1601509	160.00	150.80	9.70	0.60
014.1651531	165.00	153.40	12.30	0.60
014.1651559	165.00	155.80	9.70	0.60
014.1651568	165.00	156.60	8.60	0.30
014.1701581	170.00	158.40	12.30	0.60
014.1701609	170.00	160.80	9.70	0.60
014.1801681	180.00	168.40	12.30	0.60
014.1801709	180.00	170.80	9.70	0.60
014.1801718	180.00	171.60	8.60	0.30
014.1901781	190.00	178.40	12.30	0.60
014.2001881	200.00	188.40	12.30	0.60
014.2001909	200.00	190.80	9.70	0.60
014.2001918	200.00	191.60	8.60	0.30
014.2252131	225.00	213.00	10.90	0.60
014.2502381	250.00	238.00	10.90	0.60
014.2502382	250.00	238.40	12.30	0.60
014.2502409	250.00	240.80	9.70	0.60
014.2702581	270.00	258.40	12.30	0.60
014.2802681	280.00	268.00	10.90	0.60

Other intermediate sizes can be provided.



STATIC SEALS

BECA 015

DESCRIPTION

The BECA 015 profile is a fluid connector seal for hydraulic systems, in line with standards DIN 3869, ISO 11926, ISO 9974 and ISO 1179.

ADVANTAGES

Reduced mechanical deformation in the seal cross-section

The seal does not twist during assembly

Excellent dimensional stability, even when pressurised

MATERIALS

NBR 85 Shore A

FKM 80 Shore A

TECHNICAL DATA

Temperature	-25°C / +200°C
Pressure	60 MPa

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

APPLICATIONS

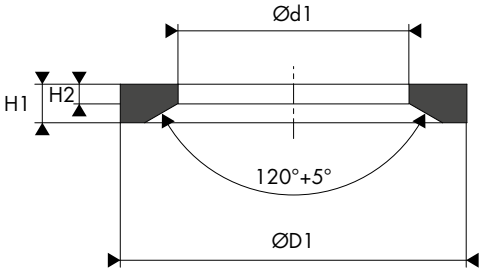
Agriculture

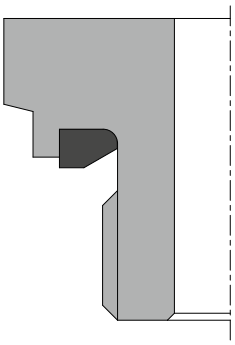
Construction

Machine tools

Presses

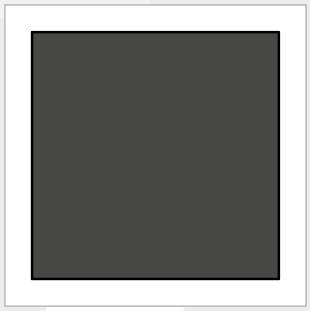
Hydraulic systems





DIMENSIONS

Part number	Series	Threading (metric)	Threading (inch)	Seal dimensions			
		ØDN		Inside diameter Ød1	Outside diameter ØD1	Seal height H1	Seal height H2
015.084119	10	M 10 x 1	G 1/8 A	8.40	11.90	1.00	0.50
015.098144	21	M 12 x 1.5	---	9.80	14.40	1.50	0.70
015.116165	14	M 14 x 1.5	G 1/4 A	11.60	16.50	1.50	0.70
015.138189	16	M 16 x 1.5	---	13.80	18.90	1.50	0.70
015.147189	17	---	G 3/8 A	14.70	18.90	1.50	0.70
015.157209	18	M 18 x 1.5	---	15.70	20.90	1.50	0.70
015.178229	20	M 20 x 1.5	---	17.80	22.90	1.50	0.70
015.185239	21	---	G 1/2 A	18.50	23.90	1.50	0.70
015.196243	22	M 22 x 1.5	---	19.60	24.30	1.50	0.70
015.239292	27	M 27 x 2	G 3/4 A	23.90	29.20	1.50	0.70
015.297357	33	M 33 x 2	G 1 A	29.70	35.70	2.00	1.00
015.388458	42	M 42 x 2	G 1 1/4 A	38.80	45.80	2.00	1.00
015.447507	48	M 48 x 2	G 1 1/2 A	44.70	50.70	2.00	1.00



STATIC SEALS

BECA 016

DESCRIPTION

The BECA 016 profile is a rubber square ring suitable for an axial static seal and is an alternative solution for O'Rings.

ADVANTAGES

Good extrusion resistance, little sensitivity to extrusion gaps

Good compression set

No twisting in the seal

No need for a connected back-up ring

Limited mechanical deformation on the seal cross-section

Long lifespan

APPLICATIONS

Flanges

Locks

Valves

MATERIALS

NBR 70 - 90 Shore A

FKM 70 - 90 Shore A

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

TECHNICAL DATA

Temperature	-30°C / +200°C
Pressure	54 MPa
Media	Mineral hydraulic oils Air 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.

SURFACE ROUGHNESS

On axial static applications	Ra µm	Rt µm	Rz µm
Contact surface area	≤1.6 µm	≤10.0 µm	≤6.3 µm
Groove diameter surface	≤1.6 µm	≤16.0 µm	≤6.3 µm
Groove flanks	≤1.6 µm	≤16.0 µm	≤6.3 µm
With pulsating pressures	**Ra µm**	**Rt µm**	**Rz µm**
Contact surface area	≤0.8 µm	≤6.3 µm	≤6.3 µm
Groove diameter surface	≤1.6 µm	≤10.0 µm	≤6.3 µm
Groove flanks	≤1.6 µm	≤10.0 µm	≤6.3 µm

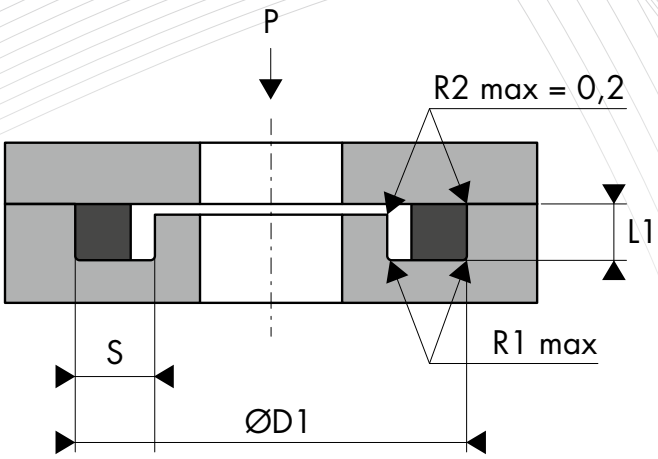
TOLERANCES ON THE THICKNESS Th AND ON THE HEIGHT H1 OF THE SEAL

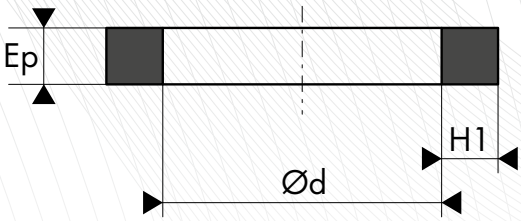
Seal height H1	Tolerance on H1	Seal thickness (Th)	Tolerance on Th
1.68	+/- 0.15	1.68	+/- 0.08
2.51	+/- 0.15	2.51	+/- 0.10
3.40	+/- 0.15	3.40	+/- 0.10
5.16	+/- 0.15	5.16	+/- 0.10
6.73	+/- 0.15	6.73	+/- 0.10

TOLERANCES ON THE INSIDE DIAMETER Ød OF THE SEAL

Inside diameter Ød	Tolerance
4.00 - 14.00	+/- 0.13
14.01 - 15.60	+/- 0.18
15.61 - 25.12	+/- 0.23
25.13 - 29.78	+/- 0.25
29.79 - 34.65	+/- 0.28
34.66 - 44.17	+/- 0.33
44.18 - 50.52	+/- 0.38
50.53 - 66.40	+/- 0.46
66.41 - 75.92	+/- 0.51
75.93 - 94.97	+/- 0.61
94.98 - 107.67	+/- 0.69

Inside diameter Ød	Tolerance
107.68 - 126.72	+/- 0.76
126.73 - 133.07	+/- 0.94
133.08 - 158.42	+/- 0.89
158.43 - 183.82	+/- 1.02
183.83 - 209.22	+/- 1.14
209.23 - 234.62	+/- 1.27
234.63 - 278.99	+/- 1.40
279.00 - 405.26	+/- 1.65
405.27 - 430.66	+/- 1.91
430.67 - 456.07	+/- 2.03





DIMENSIONS

Part number	Housing dimensions				Seal dimensions		
	Outside diameter ØD1 H11	Axial section S 0/+0.20	Width L1 -0.05/0	Radius R1 max	Inside diameter Ød	Seal height H1	Seal thickness EP
016.00724	7.92	2.40	1.45	0.40	4.47	1.68	1.68
016.00824	8.71	2.40	1.45	0.40	5.28	1.68	1.68
016.00924	9.53	2.40	1.45	0.40	6.07	1.68	1.68
016.01124	11.10	2.40	1.45	0.40	7.65	1.68	1.68
016.01224	12.70	2.40	1.45	0.40	9.25	1.68	1.68
016.01424	14.27	2.40	1.45	0.40	10.82	1.68	1.68
016.01524	15.88	2.40	1.45	0.40	12.42	1.68	1.68
016.01724	17.45	2.40	1.45	0.40	14.00	1.68	1.68
016.01924	19.05	2.40	1.45	0.40	15.60	1.68	1.68
016.02024	20.62	2.40	1.45	0.40	17.17	1.68	1.68
016.02224	22.23	2.40	1.45	0.40	18.77	1.68	1.68
016.02324	23.80	2.40	1.45	0.40	20.35	1.68	1.68
016.02524	25.40	2.40	1.45	0.40	21.95	1.68	1.68
016.02624	26.97	2.40	1.45	0.40	23.52	1.68	1.68
016.02824	28.58	2.40	1.45	0.40	25.12	1.68	1.68
016.03024	30.15	2.40	1.45	0.40	26.70	1.68	1.68
016.03124	31.75	2.40	1.45	0.40	28.30	1.68	1.68
016.03324	33.32	2.40	1.45	0.40	29.87	1.68	1.68
016.03424	34.93	2.40	1.45	0.40	31.47	1.68	1.68
016.03624	36.50	2.40	1.45	0.40	33.05	1.68	1.68
016.03824	38.10	2.40	1.45	0.40	34.65	1.68	1.68
016.04124	41.28	2.40	1.45	0.40	37.82	1.68	1.68
016.04424	44.45	2.40	1.45	0.40	41.00	1.68	1.68
016.04724	47.63	2.40	1.45	0.40	44.17	1.68	1.68
016.05024	50.80	2.40	1.45	0.40	47.35	1.68	1.68
016.05324	53.98	2.40	1.45	0.40	50.52	1.68	1.68
016.05724	57.15	2.40	1.45	0.40	53.70	1.68	1.68
016.06024	60.33	2.40	1.45	0.40	56.87	1.68	1.68
016.06324	63.50	2.40	1.45	0.40	60.05	1.68	1.68
016.06624	66.68	2.40	1.45	0.40	63.22	1.68	1.68
016.06924	69.85	2.40	1.45	0.40	66.40	1.68	1.68
016.07324	73.03	2.40	1.45	0.40	69.57	1.68	1.68
016.07624	76.20	2.40	1.45	0.40	72.75	1.68	1.68
016.07924	79.38	2.40	1.45	0.40	75.92	1.68	1.68
016.08524	85.73	2.40	1.45	0.40	82.27	1.68	1.68
016.09224	92.08	2.40	1.45	0.40	88.62	1.68	1.68
016.09824	98.43	2.40	1.45	0.40	94.97	1.68	1.68
016.10724	107.95	2.40	1.45	0.40	101.32	1.68	1.68
016.11124	111.13	2.40	1.45	0.40	107.67	1.68	1.68
016.11724	117.48	2.40	1.45	0.40	114.02	1.68	1.68
016.12324	123.83	2.40	1.45	0.40	120.37	1.68	1.68

Part number	Housing dimensions				Seal dimensions		
	Outside diameter ØD1 H11	Axial section S 0/+0.20	Width L1 -0.05/0	Radius R1 max	Inside diameter Ød	Seal height H1	Seal thickness EP
016.13024	130.18	2.40	1.45	0.40	126.72	1.68	1.68
016.13624	136.53	2.40	1.45	0.40	133.07	1.68	1.68
016.00936	9.53	3.60	2.30	0.40	4.42	2.51	2.51
016.01036	10.31	3.60	2.30	0.40	5.23	2.51	2.51
016.01136	11.10	3.60	2.30	0.40	6.02	2.51	2.51
016.01236	12.70	3.60	2.30	0.40	7.59	2.51	2.51
016.01436	14.27	3.60	2.30	0.40	9.19	2.51	2.51
016.01536	15.88	3.60	2.30	0.40	10.77	2.51	2.51
016.01736	17.45	3.60	2.30	0.40	12.37	2.51	2.51
016.01936	19.05	3.60	2.30	0.40	13.94	2.51	2.51
016.02036	20.62	3.60	2.30	0.40	15.54	2.51	2.51
016.02236	22.23	3.60	2.30	0.40	17.12	2.51	2.51
016.02336	23.80	3.60	2.30	0.40	18.72	2.51	2.51
016.02536	25.40	3.60	2.30	0.40	20.29	2.51	2.51
016.02636	26.97	3.60	2.30	0.40	21.89	2.51	2.51
016.02836	28.58	3.60	2.30	0.40	23.47	2.51	2.51
016.03036	30.15	3.60	2.30	0.40	25.07	2.51	2.51
016.03136	31.75	3.60	2.30	0.40	26.64	2.51	2.51
016.03336	33.32	3.60	2.30	0.40	28.24	2.51	2.51
016.03436	34.93	3.60	2.30	0.40	29.82	2.51	2.51
016.03636	36.50	3.60	2.30	0.40	31.42	2.51	2.51
016.03836	38.10	3.60	2.30	0.40	32.99	2.51	2.51
016.03936	39.67	3.60	2.30	0.40	34.59	2.51	2.51
016.04136	41.28	3.60	2.30	0.40	36.17	2.51	2.51
016.04236	42.85	3.60	2.30	0.40	37.77	2.51	2.51
016.04436	44.45	3.60	2.30	0.40	39.34	2.51	2.51
016.04636	46.02	3.60	2.30	0.40	40.94	2.51	2.51
016.04736	47.63	3.60	2.30	0.40	42.52	2.51	2.51
016.04936	49.20	3.60	2.30	0.40	44.12	2.51	2.51
016.05036	50.80	3.60	2.30	0.40	45.69	2.51	2.51
016.05236	52.37	3.60	2.30	0.40	47.29	2.51	2.51
016.05336	53.98	3.60	2.30	0.40	48.90	2.51	2.51
016.05536	55.55	3.60	2.30	0.40	50.47	2.51	2.51
016.05736	57.15	3.60	2.30	0.40	52.07	2.51	2.51
016.05836	58.72	3.60	2.30	0.40	53.64	2.51	2.51
016.06036	60.33	3.60	2.30	0.40	55.25	2.51	2.51
016.06136	61.90	3.60	2.30	0.40	56.82	2.51	2.51
016.06336	63.50	3.60	2.30	0.40	58.42	2.51	2.51
016.06536	65.07	3.60	2.30	0.40	60.00	2.51	2.51
016.06636	66.68	3.60	2.30	0.40	61.60	2.51	2.51
016.06836	68.25	3.60	2.30	0.40	63.17	2.51	2.51
016.06936	69.85	3.60	2.30	0.40	64.77	2.51	2.51
016.07136	71.42	3.60	2.30	0.40	66.34	2.51	2.51
016.07336	73.03	3.60	2.30	0.40	67.95	2.51	2.51
016.07436	74.60	3.60	2.30	0.40	69.52	2.51	2.51
016.07636	76.20	3.60	2.30	0.40	71.12	2.51	2.51
016.07736	77.77	3.60	2.30	0.40	72.69	2.51	2.51
016.08036	80.95	3.60	2.30	0.40	75.87	2.51	2.51
016.08736	87.30	3.60	2.30	0.40	82.22	2.51	2.51
016.09336	93.65	3.60	2.30	0.40	88.57	2.51	2.51
016.10036	100.00	3.60	2.30	0.40	94.92	2.51	2.51
016.10636	106.35	3.60	2.30	0.40	101.27	2.51	2.51
016.11236	112.70	3.60	2.30	0.40	107.62	2.51	2.51
016.11936	119.05	3.60	2.30	0.40	113.97	2.51	2.51
016.12536	125.40	3.60	2.30	0.40	120.32	2.51	2.51
016.13136	131.75	3.60	2.30	0.40	126.67	2.51	2.51
016.13836	138.10	3.60	2.30	0.40	133.02	2.51	2.51
016.14436	144.45	3.60	2.30	0.40	139.37	2.51	2.51
016.15036	150.80	3.60	2.30	0.40	145.72	2.51	2.51
016.15736	157.15	3.60	2.30	0.40	152.07	2.51	2.51
016.16336	163.50	3.60	2.30	0.40	158.42	2.51	2.51

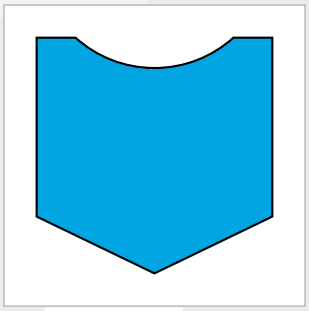
Part number	Housing dimensions				Seal dimensions		
	Outside diameter ØD1 H11	Axial section S 0/+0.20	Width L1 -0.05/0	Radius R1 max	Inside diameter Ød	Seal height H1	Seal thickness EP
016.16936	169.85	3.60	2.30	0.40	164.77	2.51	2.51
016.17636	176.20	3.60	2.30	0.40	171.12	2.51	2.51
016.18236	182.55	3.60	2.30	0.40	177.47	2.51	2.51
016.18836	188.90	3.60	2.30	0.40	183.82	2.51	2.51
016.19536	195.25	3.60	2.30	0.40	190.17	2.51	2.51
016.20136	201.60	3.60	2.30	0.40	196.52	2.51	2.51
016.20736	207.95	3.60	2.30	0.40	202.87	2.51	2.51
016.21436	214.30	3.60	2.30	0.40	209.22	2.51	2.51
016.22036	220.65	3.60	2.30	0.40	215.57	2.51	2.51
016.22736	227.00	3.60	2.30	0.40	221.92	2.51	2.51
016.23336	233.35	3.60	2.30	0.40	228.27	2.51	2.51
016.23936	239.70	3.60	2.00	0.40	234.62	2.51	2.51
016.24636	246.05	3.60	2.30	0.40	240.97	2.51	2.51
016.25236	252.40	3.60	2.30	0.40	247.32	2.51	2.51
016.01148	11.10	4.80	3.10	0.60	4.34	3.40	3.40
016.01248	12.70	4.80	3.10	0.60	5.94	3.40	3.40
016.01448	14.27	4.80	3.10	0.60	7.52	3.40	3.40
016.01548	15.88	4.80	3.10	0.60	9.12	3.40	3.40
016.01748	17.45	4.80	3.10	0.60	10.69	3.40	3.40
016.01948	19.05	4.80	3.10	0.60	12.29	3.40	3.40
016.02048	20.62	4.80	3.10	0.60	13.87	3.40	3.40
016.02248	22.23	4.80	3.10	0.60	15.47	3.40	3.40
016.02348	23.80	4.80	3.10	0.60	17.04	3.40	3.40
016.02548	25.40	4.80	3.10	0.60	18.64	3.40	3.40
016.02648	26.97	4.80	3.10	0.60	20.22	3.40	3.40
016.02848	28.58	4.80	3.10	0.60	21.82	3.40	3.40
016.03048	30.15	4.80	3.10	0.60	23.39	3.40	3.40
016.03148	31.75	4.80	3.10	0.60	24.99	3.40	3.40
016.03348	33.32	4.80	3.10	0.60	26.57	3.40	3.40
016.03448	34.93	4.80	3.10	0.60	28.17	3.40	3.40
016.03648	36.50	4.80	3.10	0.60	29.74	3.40	3.40
016.03848	38.10	4.80	3.10	0.60	31.34	3.40	3.40
016.03948	39.67	4.80	3.10	0.60	32.92	3.40	3.40
016.04148	41.28	4.80	3.10	0.60	34.52	3.40	3.40
016.04248	42.85	4.80	3.10	0.60	36.09	3.40	3.40
016.04448	44.45	4.80	3.10	0.60	37.69	3.40	3.40
016.04748	47.63	4.80	3.10	0.60	40.87	3.40	3.40
016.05048	50.80	4.80	3.10	0.60	44.04	3.40	3.40
016.05348	53.98	4.80	3.10	0.60	47.22	3.40	3.40
016.05748	57.15	4.80	3.10	0.60	50.39	3.40	3.40
016.06048	60.33	4.80	3.10	0.60	53.57	3.40	3.40
016.06348	63.50	4.80	3.10	0.60	56.74	3.40	3.40
016.06648	66.68	4.80	3.10	0.60	59.92	3.40	3.40
016.06948	69.85	4.80	3.10	0.60	63.09	3.40	3.40
016.07348	73.03	4.80	3.10	0.60	66.27	3.40	3.40
016.07648	76.20	4.80	3.10	0.60	69.44	3.40	3.40
016.07948	79.38	4.80	3.10	0.60	72.62	3.40	3.40
016.08248	82.55	4.80	3.10	0.60	75.79	3.40	3.40
016.08548	85.73	4.80	3.10	0.60	78.97	3.40	3.40
016.08848	88.90	4.80	3.10	0.60	82.14	3.40	3.40
016.09248	92.08	4.80	3.10	0.60	85.32	3.40	3.40
016.09548	95.25	4.80	3.10	0.60	88.49	3.40	3.40
016.09848	98.43	4.80	3.10	0.60	91.67	3.40	3.40
016.10148	101.60	4.80	3.10	0.60	94.84	3.40	3.40
016.10448	104.78	4.80	3.10	0.60	98.02	3.40	3.40
016.10748	107.95	4.80	3.10	0.60	101.19	3.40	3.40
016.11148	111.13	4.80	3.10	0.60	104.37	3.40	3.40
016.11448	114.30	4.80	3.10	0.60	107.54	3.40	3.40
016.11748	117.48	4.80	3.10	0.60	110.72	3.40	3.40
016.12048	120.65	4.80	3.10	0.60	113.89	3.40	3.40
016.12348	123.83	4.80	3.10	0.60	117.07	3.40	3.40

Part number	Housing dimensions				Seal dimensions		
	Outside diameter ØD1 H11	Axial section S 0/+0.20	Width L1 -0.05/0	Radius R1 max	Inside diameter Ød	Seal height H1	Seal thickness EP
016.12748	127.00	4.80	3.10	0.60	120.24	3.40	3.40
016.13048	130.18	4.80	3.10	0.60	123.42	3.40	3.40
016.13348	133.35	4.80	3.10	0.60	126.59	3.40	3.40
016.13648	136.53	4.80	3.10	0.60	129.77	3.40	3.40
016.13948	139.70	4.80	3.10	0.60	132.94	3.40	3.40
016.14248	142.88	4.80	3.10	0.60	136.12	3.40	3.40
016.14648	146.05	4.80	3.10	0.60	139.29	3.40	3.40
016.14948	149.23	4.80	3.10	0.60	142.47	3.40	3.40
016.15348	153.40	4.80	3.10	0.60	145.64	3.40	3.40
016.15548	155.58	4.80	3.10	0.60	148.82	3.40	3.40
016.15848	158.75	4.80	3.10	0.60	151.99	3.40	3.40
016.16548	165.10	4.80	3.10	0.60	158.34	3.40	3.40
016.17148	171.45	4.80	3.10	0.60	164.69	3.40	3.40
016.17748	177.80	4.80	3.10	0.60	171.04	3.40	3.40
016.18448	184.15	4.80	3.10	0.60	177.39	3.40	3.40
016.19048	190.50	4.80	3.10	0.60	183.74	3.40	3.40
016.19648	196.85	4.80	3.10	0.60	190.09	3.40	3.40
016.20348	203.20	4.80	3.10	0.60	196.44	3.40	3.40
016.20948	209.55	4.80	3.10	0.60	202.79	3.40	3.40
016.21548	215.90	4.80	3.10	0.60	209.14	3.40	3.40
016.22248	222.25	4.80	3.10	0.60	215.49	3.40	3.40
016.22848	228.60	4.80	3.10	0.60	221.84	3.40	3.40
016.23448	234.95	4.80	3.10	0.60	228.19	3.40	3.40
016.24148	241.30	4.80	3.10	0.60	234.54	3.40	3.40
016.24748	247.65	4.80	3.10	0.60	240.89	3.40	3.40
016.25448	254.00	4.80	3.10	0.60	247.24	3.40	3.40
016.26048	260.35	4.80	3.10	0.60	253.59	3.40	3.40
016.27348	273.05	4.80	3.10	0.60	266.29	3.40	3.40
016.28548	285.75	4.80	3.10	0.60	278.99	3.40	3.40
016.29848	298.45	4.80	3.10	0.60	291.69	3.40	3.40
016.31148	311.15	4.80	3.10	0.60	304.39	3.40	3.40
016.33648	336.55	4.80	3.10	0.60	329.79	3.40	3.40
016.36148	361.95	4.80	3.10	0.60	355.19	3.40	3.40
016.38748	387.35	4.80	3.10	0.60	380.59	3.40	3.40
016.41248	412.75	4.80	3.10	0.60	405.26	3.40	3.40
016.43848	438.15	4.80	3.10	0.60	430.66	3.40	3.40
016.46348	463.55	4.80	3.00	0.60	456.06	3.40	3.40
016.02071	20.62	7.10	4.75	0.80	10.46	5.16	5.16
016.02271	22.23	7.10	4.75	0.80	12.07	5.16	5.16
016.02371	23.80	7.10	4.75	0.80	13.64	5.16	5.16
016.02571	25.40	7.10	4.75	0.80	15.24	5.16	5.16
016.02671	26.97	7.10	4.75	0.80	16.81	5.16	5.16
016.02871	28.58	7.10	4.75	0.80	18.42	5.16	5.16
016.03071	30.15	7.10	4.75	0.80	19.99	5.16	5.16
016.03171	31.75	7.10	4.75	0.80	21.59	5.16	5.16
016.03371	33.32	7.10	4.70	0.80	23.16	5.16	5.16
016.03471	34.93	7.10	4.75	0.80	24.77	5.16	5.16
016.03671	36.50	7.10	4.75	0.80	26.34	5.16	5.16
016.03871	38.10	7.10	4.75	0.80	27.94	5.16	5.16
016.03971	39.67	7.10	4.75	0.80	29.51	5.16	5.16
016.04171	41.28	7.10	4.75	0.80	31.12	5.16	5.16
016.04271	42.85	7.10	4.75	0.80	32.69	5.16	5.16
016.04471	44.45	7.10	4.75	0.80	34.29	5.16	5.16
016.04771	47.63	7.10	4.75	0.80	37.47	5.16	5.16
016.05071	50.80	7.10	4.75	0.80	40.64	5.16	5.16
016.05371	53.98	7.10	4.75	0.80	43.82	5.16	5.16
016.05771	57.15	7.10	4.75	0.80	46.99	5.16	5.16
016.06071	60.33	7.10	4.75	0.80	50.17	5.16	5.16
016.06371	63.50	7.10	4.75	0.80	53.34	5.16	5.16
016.06671	66.68	7.10	4.75	0.80	56.52	5.16	5.16
016.06971	69.85	7.10	4.75	0.80	59.69	5.16	5.16

Part number	Housing dimensions				Seal dimensions		
	Outside diameter ØD1 H11	Axial section S 0/+0.20	Width L1 -0.05/0	Radius R1 max	Inside diameter Ød	Seal height H1	Seal thickness EP
016.07371	73.03	7.10	4.75	0.80	62.87	5.16	5.16
016.07671	76.20	7.10	4.75	0.80	66.04	5.16	5.16
016.07971	79.38	7.10	4.75	0.80	69.22	5.16	5.16
016.08271	82.55	7.10	4.75	0.80	72.39	5.16	5.16
016.08571	85.73	7.10	4.75	0.80	75.57	5.16	5.16
016.08871	88.90	7.10	4.75	0.80	78.74	5.16	5.16
016.09271	92.08	7.10	4.75	0.80	81.92	5.16	5.16
016.09571	95.25	7.10	4.75	0.80	85.09	5.16	5.16
016.09871	98.43	7.10	4.75	0.80	88.27	5.16	5.16
016.10171	101.60	7.10	4.75	0.80	91.44	5.16	5.16
016.10471	104.78	7.10	4.75	0.80	94.62	5.16	5.16
016.10771	107.95	7.10	4.75	0.80	97.79	5.16	5.16
016.11171	111.13	7.10	4.75	0.80	100.97	5.16	5.16
016.11471	114.30	7.10	4.75	0.80	104.14	5.16	5.16
016.11771	117.48	7.10	4.75	0.80	107.32	5.16	5.16
016.12071	120.65	7.10	4.75	0.80	110.49	5.16	5.16
016.12371	123.83	7.10	4.75	0.80	113.67	5.16	5.16
016.12771	127.00	7.10	4.75	0.80	116.84	5.16	5.16
016.13071	130.18	7.10	4.75	0.80	120.02	5.16	5.16
016.13371	133.35	7.10	4.75	0.80	123.19	5.16	5.16
016.13671	136.53	7.10	4.75	0.80	126.37	5.16	5.16
016.13971	139.70	7.10	4.75	0.80	129.54	5.16	5.16
016.14271	142.88	7.10	4.75	0.80	132.72	5.16	5.16
016.14671	146.05	7.10	4.75	0.80	135.89	5.16	5.16
016.14971	149.23	7.10	4.75	0.80	139.07	5.16	5.16
016.15271	152.40	7.10	4.75	0.80	142.24	5.16	5.16
016.15571	155.58	7.10	4.75	0.80	145.42	5.16	5.16
016.15871	158.75	7.10	4.75	0.80	148.59	5.16	5.16
016.16171	161.93	7.10	4.75	0.80	151.77	5.16	5.16
016.16871	168.28	7.10	4.75	0.80	158.12	5.16	5.16
016.17471	174.63	7.10	4.75	0.80	164.47	5.16	5.16
016.18071	180.98	7.10	4.75	0.80	170.82	5.16	5.16
016.18771	187.33	7.10	4.75	0.80	177.17	5.16	5.16
016.19371	193.68	7.10	4.75	0.80	183.52	5.16	5.16
016.20071	200.03	7.10	4.75	0.80	189.87	5.16	5.16
016.20671	206.38	7.10	4.75	0.80	196.22	5.16	5.16
016.21271	212.73	7.10	4.75	0.80	202.57	5.16	5.16
016.21971	219.08	7.10	4.75	0.80	208.92	5.16	5.16
016.22571	225.43	7.10	4.75	0.80	215.27	5.16	5.16
016.23171	231.78	7.10	4.75	0.80	221.62	5.16	5.16
016.23871	238.13	7.10	4.75	0.80	227.97	5.16	5.16
016.24471	244.48	7.10	4.75	0.80	234.32	5.16	5.16
016.25071	250.83	7.10	4.75	0.80	240.67	5.16	5.16
016.25771	257.18	7.10	4.75	0.80	247.02	5.16	5.16
016.26371	263.53	7.10	4.75	0.80	253.37	5.16	5.16
016.27671	276.23	7.10	4.75	0.80	266.07	5.16	5.16
016.28871	288.93	7.10	4.75	0.80	278.77	5.16	5.16
016.30171	301.63	7.10	4.75	0.80	291.47	5.16	5.16
016.31471	314.33	7.10	4.75	0.80	304.17	5.16	5.16
016.33971	339.73	7.10	4.75	0.80	329.57	5.16	5.16
016.36571	365.13	7.10	4.75	0.80	354.97	5.16	5.16
016.39071	390.53	7.10	4.75	0.80	380.37	5.16	5.16
016.41571	415.93	7.10	4.75	0.80	405.27	5.16	5.16
016.44171	441.33	7.10	4.75	0.80	430.67	5.16	5.16
016.46671	466.73	7.10	4.75	0.80	456.07	5.16	5.16
016.12795	127.00	9.50	6.10	0.80	113.67	6.73	6.73
016.13095	130.18	9.50	6.10	0.80	116.84	6.73	6.73
016.13395	133.35	9.50	6.10	0.80	120.02	6.73	6.73
016.13695	136.53	9.50	6.10	0.80	123.19	6.73	6.73
016.13995	139.70	9.50	6.10	0.80	126.37	6.73	6.73
016.14295	142.88	9.50	6.10	0.80	129.54	6.73	6.73

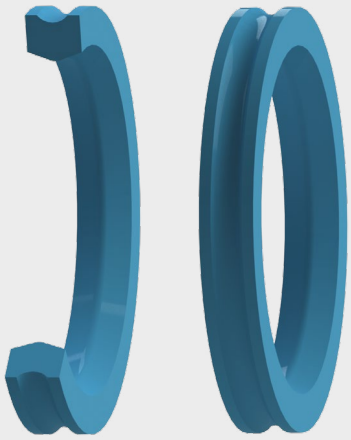
Part number	Housing dimensions				Seal dimensions		
	Outside diameter ØD1 H11	Axial section S 0/+0.20	Width L1 -0.05/0	Radius R1 max	Inside diameter Ød	Seal height H1	Seal thickness EP
016.14695	146.05	9.50	6.10	0.80	132.72	6.73	6.73
016.14995	149.23	9.50	6.10	0.80	135.89	6.73	6.73
016.15295	152.40	9.50	6.10	0.80	139.07	6.73	6.73
016.15595	155.58	9.50	6.10	0.80	142.24	6.73	6.73
016.15895	158.75	9.50	6.10	0.80	145.42	6.73	6.73
016.16195	161.93	9.50	6.10	0.80	148.59	6.73	6.73
016.16595	165.10	9.50	6.10	0.80	151.77	6.73	6.73
016.17195	171.45	9.50	6.10	0.80	158.12	6.73	6.73
016.17795	177.80	9.50	6.10	0.80	164.47	6.73	6.73
016.18495	184.15	9.50	6.10	0.80	170.82	6.73	6.73
016.19095	190.50	9.50	6.10	0.80	177.17	6.73	6.73
016.19695	196.85	9.50	6.10	0.80	183.52	6.73	6.73
016.20395	203.20	9.50	6.10	0.80	189.87	6.73	6.73
016.20995	209.55	9.50	6.10	0.80	196.22	6.73	6.73
016.21595	215.90	9.50	6.10	0.80	202.57	6.73	6.73
016.22895	228.60	9.50	6.10	0.80	215.27	6.73	6.73
016.24195	241.30	9.50	6.10	0.80	227.97	6.73	6.73
016.25495	254.00	9.50	6.10	0.80	240.67	6.73	6.73
016.26695	266.70	9.50	6.10	0.80	253.37	6.73	6.73
016.27995	279.40	9.50	6.10	0.80	266.07	6.73	6.73
016.29295	292.10	9.50	6.10	0.80	278.77	6.73	6.73
016.30495	304.80	9.50	6.10	0.80	291.47	6.73	6.73
016.31795	317.50	9.50	6.10	0.80	304.17	6.73	6.73
016.33095	330.20	9.50	6.10	0.80	316.87	6.73	6.73
016.34295	342.90	9.50	6.10	0.80	329.57	6.73	6.73
016.35595	355.60	9.50	6.10	0.80	342.27	6.73	6.73
016.36895	368.30	9.50	6.10	0.80	354.97	6.73	6.73
016.38195	381.00	9.50	6.10	0.80	367.67	6.73	6.73
016.39395	393.70	9.50	6.10	0.80	380.37	6.73	6.73
016.40695	406.40	9.50	6.10	0.80	393.07	6.73	6.73
016.41995	419.10	9.50	6.10	0.80	405.27	6.73	6.73
016.43195	431.80	9.50	6.10	0.80	417.97	6.73	6.73
016.44495	444.50	9.50	6.10	0.80	430.67	6.73	6.73
016.45795	457.20	9.50	6.10	0.80	443.37	6.73	6.73
016.46995	469.90	9.50	6.10	0.80	456.07	6.73	6.73

Other intermediate sizes can be provided.



STATIC SEALS

BECA 040



DESCRIPTION

The BECA 040 profile is a polyurethane static seal for inner sealing.

ADVANTAGES

High reliability

Interchangeable for O'Ring and O'Ring with back-up ring

Easy and secure installation

No need for additional back-up ring

High wear resistant

APPLICATIONS

Mobile hydraulics

Injection presses

Presses

Standard cylinders

MATERIALS

PU 93 Shore A - Blue

PU 96 Shore A - Blue

High temp. PU 96 Shore A - Beige

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

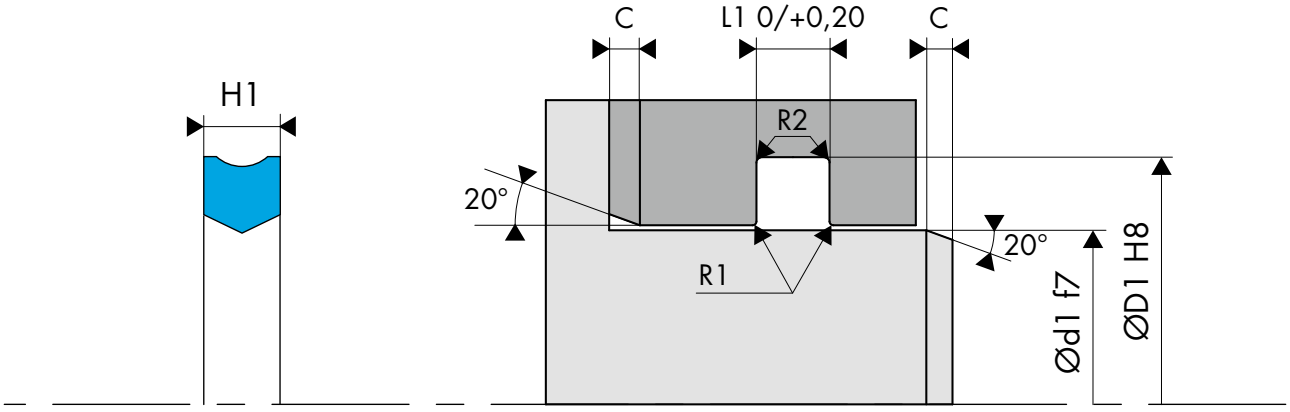
TECHNICAL DATA

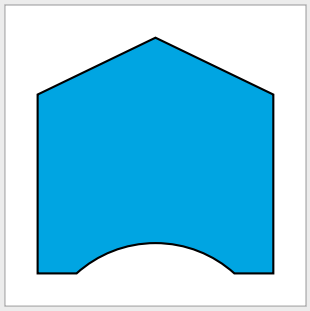
Temperature	30°C / +110°C depending on the material selected
Pressure	50 MPa
Media	Mineral hydraulic oils

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

CHAMFERS AND RADIUS

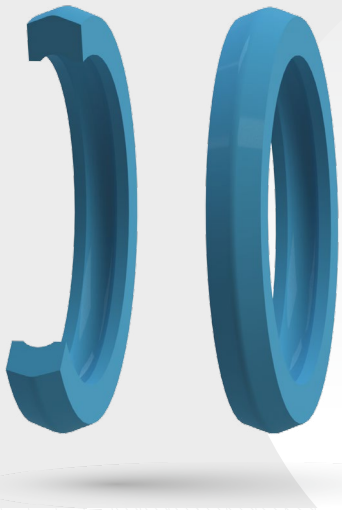
Radial section S	Chamfer C	Radius R1	Radius R2
S ≤ 2.30	2.50	≤ 0.40	≤ 0.20
2.30 < S ≤ 3.00	3.00	≤ 0.40	≤ 0.20
3.00 < S ≤ 4.00	3.50	≤ 0.40	≤ 0.20
4.00 < S ≤ 4.50	4.00	≤ 0.40	≤ 0.20
4.50 < S ≤ 5.00	4.50	≤ 0.40	≤ 0.20
5.00 < S ≤ 6.00	5.00	≤ 0.40	≤ 0.20
6.00 < S ≤ 8.00	6.00	≤ 0.40	≤ 0.20





STATIC SEALS

BECA 042



DESCRIPTION

The BECA 042 profile is a polyurethane static seal for outer sealing.

ADVANTAGES

High reliability

Interchangeable for O'Ring and O'Ring with back-up ring

Easy and secure installation

No need for additional back-up ring

High wear resistant

APPLICATIONS

Mobile hydraulics

Injection presses

Presses

Standard cylinders

MATERIALS

PU 93 Shore A - Blue

PU 96 Shore A - Blue

High temp. PU 96 Shore A - Beige

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

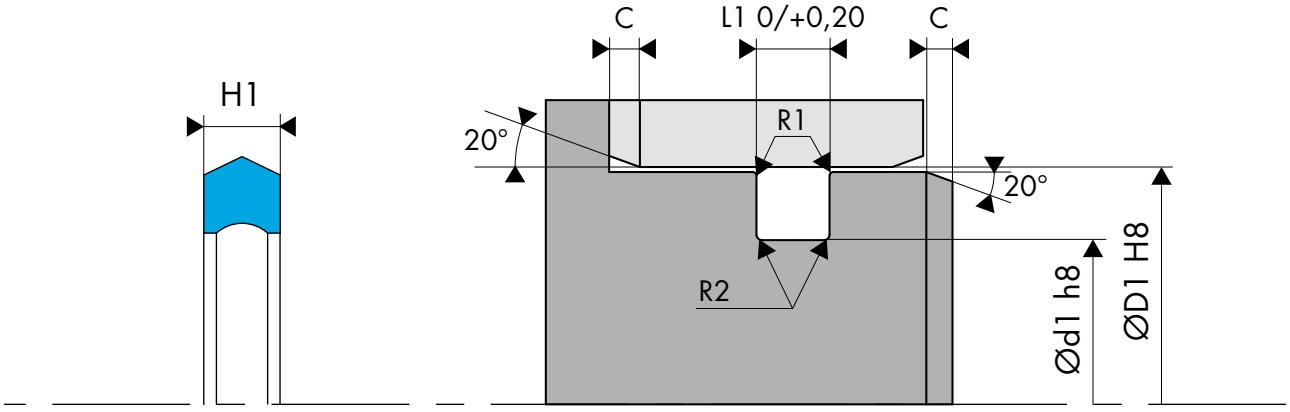
TECHNICAL DATA

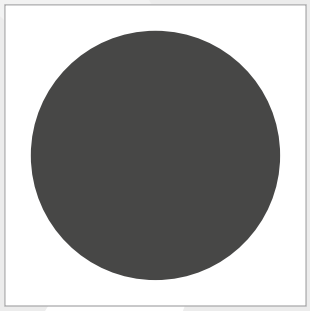
Temperature	-30°C / +110°C depending on the material selected
Pressure	50 MPa
Media	Mineral hydraulic oils

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

CHAMFERS AND RADIUS

Radial section S	Chamfer C	Radius R1	Radius R2
S ≤ 2.30	2.50	≤ 0.40	≤ 0.20
2.30 < S ≤ 3.00	3.00	≤ 0.40	≤ 0.20
3.00 < S ≤ 4.00	3.50	≤ 0.40	≤ 0.20
4.00 < S ≤ 4.50	4.00	≤ 0.40	≤ 0.20
4.50 < S ≤ 5.00	4.50	≤ 0.40	≤ 0.20
5.00 < S ≤ 6.00	5.00	≤ 0.40	≤ 0.20
6.00 < S ≤ 8.00	6.00	≤ 0.40	≤ 0.20





STATIC SEALS

BECA 010 SAE J518

DESCRIPTION

The BECA 010 profile is an O'Ring, a rubber circular ring with a round cross-section suitable for hydraulic fittings SAE J518.

ADVANTAGES

Compact design

Easy assembly

Economic solution

A symmetry that reduces the risk of errors during fitting

APPLICATIONS

Flanges

Fittings

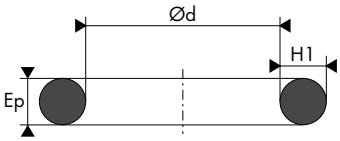
MATERIALS

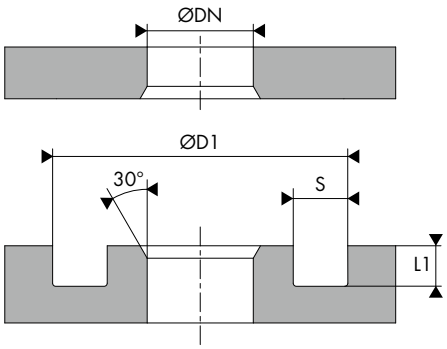
NBR 90 Shore A

TECHNICAL DATA

Temperature	-20°C / +100°C
Pressure	20 MPa
Media	Mineral hydraulic oils HL HLP HETG HEPG HEES HFC 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.



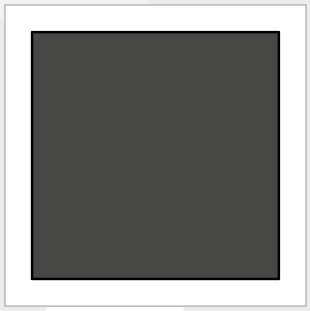


DESIGN DATA FOR THE HOUSING

Nominal flange size	Nominal diameter ØDN	Outside diameter ØD1 min - max	Axial section S min - max	Width L1 min - max
1/2"	13	25.40 - 25.83	3.94 - 4.45	2.79 - 2.92
3/4"	19	31.75 - 31.88	3.94 - 4.45	2.79 - 2.92
1"	25	39.62 - 39.75	3.94 - 4.45	2.79 - 2.92
1 1/4"	32	44.45 - 44.58	3.94 - 4.45	2.79 - 2.92
1 1/2"	38	53.72 - 53.98	3.94 - 4.45	2.79 - 2.92
2"	51	63.25 - 63.50	3.94 - 4.45	2.79 - 2.92

SEAL DIMENSIONS

Part number	Nominal flange size	Nominal diameter ØDN	Inside diameter Ød1	O'Ring cross-section Ød2
010.1A367	1/2"	13	18.64	3.53
010.1A371	3/4"	19	24.99	3.53
010.1A377	1"	25	32.92	3.53
010.1A380	1 1/4"	32	37.69	3.53
010.1A388	1 1/2"	38	47.22	3.53
010.1A397	2"	51	56.74	3.53



STATIC SEALS

BECA 016 SAE J518

DESCRIPTION

The BECA 016 profile is a rectangular rubber flange seal suitable for hydraulic fittings SAE J518.

ADVANTAGES

Good extrusion resistance, little sensitivity to extrusion gaps

Good compression set

No twisting in the seal

No need for a connected back-up ring

Limited mechanical deformation on the seal cross-section

Long lifespan

APPLICATIONS

Flanges

Fittings

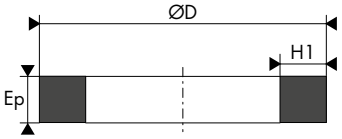
MATERIALS

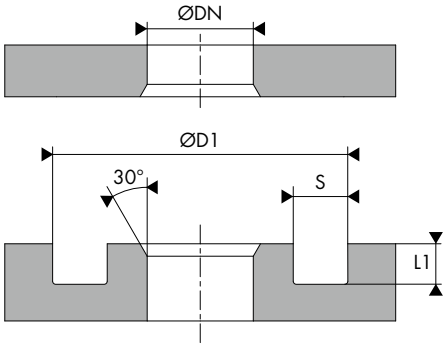
NBR 90 Shore A

TECHNICAL DATA

Temperature	-20°C / +100°C
Pressure	40 MPa
Media	Mineral hydraulic oils HL HLP HETG HEPG HEES HFC 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.



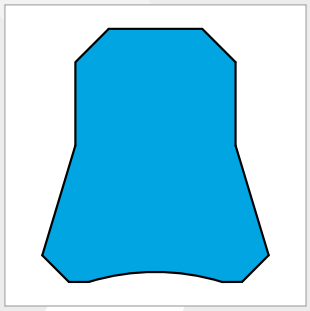


DESIGN DATA FOR THE HOUSING

Nominal flange size	Nominal diameter ØDN	Outside diameter ØD1 min - max	Axial section S min - max	Width L1 min - max
1/2"	13	25.40 - 25.83	3.94 - 4.45	2.79 - 2.92
3/4"	19	31.75 - 31.88	3.94 - 4.45	2.79 - 2.92
1"	25	39.62 - 39.75	3.94 - 4.45	2.79 - 2.92
1 1/4"	32	44.45 - 44.58	3.94 - 4.45	2.79 - 2.92
1 1/2"	38	53.72 - 53.98	3.94 - 4.45	2.79 - 2.92
2"	51	63.25 - 63.50	3.94 - 4.45	2.79 - 2.92

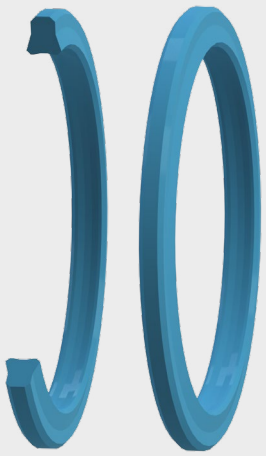
SEAL DIMENSIONS

Part number	Nominal flange size	Nominal diameter ØDN	Outside diameter ØD	Height H1	Thickness Ep
016.25853	1/2"	13	25.85	3.40	2.80
016.32303	3/4"	19	32.30	3.40	2.80
016.40153	1"	25	40.15	3.40	2.80
016.45053	1 1/4"	32	45.05	3.40	2.80
016.54403	1 1/2"	38	54.40	3.40	2.80
016.63903	2"	51	63.90	3.40	2.80



STATIC SEALS

BECA 710
SAE J518



DESCRIPTION

The BECA 710 profile is a polyurethane flange seal suitable for hydraulic fittings SAE J518.

ADVANTAGES

Good abrasion resistance
Optimised sealing effect
Very good extrusion resistance
Low compression set

APPLICATIONS

Flanges
Fittings

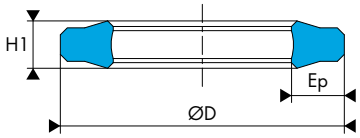
MATERIALS

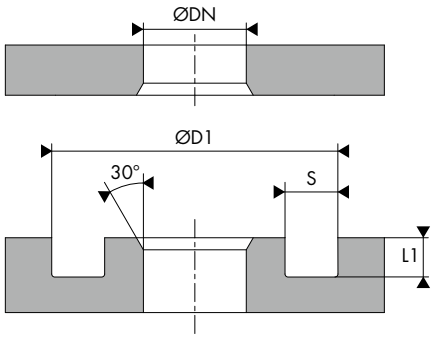
PU 93 Shore A - Blue
PU 96 Shore A - Blue
High temp. PU 96 Shore A - Beige

TECHNICAL DATA

Temperature	-30°C / +110°C
Pressure	40 MPa
Media	Mineral hydraulic oils

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



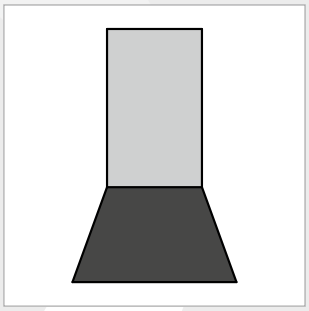


DESIGN DATA FOR THE HOUSING

Nominal flange size	Nominal diameter ØDN	Outside diameter ØD1 min - max	Axial section S min - max	Width L1 min - max
1/2"	13	25.40 - 25.83	3.94 - 4.45	2.79 - 2.92
3/4"	19	31.75 - 31.88	3.94 - 4.45	2.79 - 2.92
1"	25	39.62 - 39.75	3.94 - 4.45	2.79 - 2.92
1 1/4"	32	44.45 - 44.58	3.94 - 4.45	2.79 - 2.92
1 1/2"	38	53.72 - 53.98	3.94 - 4.45	2.79 - 2.92
2"	51	63.25 - 63.50	3.94 - 4.45	2.79 - 2.92

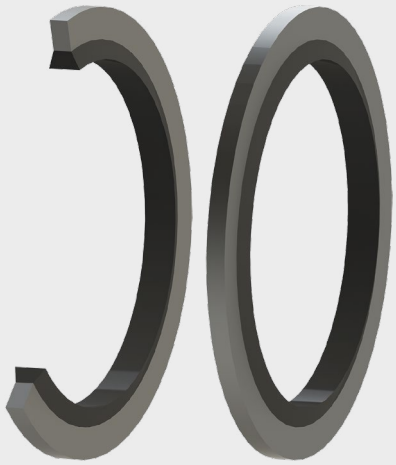
SEAL DIMENSIONS

Part number	Nominal flange size	Nominal diameter ØDN	Outside diameter ØD	Height H1	Thickness Ep
710.25634	1/2"	13	25.60	3.40	3.80
710.31834	3/4"	19	31.80	3.40	3.80
710.39834	1"	25	39.80	3.40	3.80
710.44834	1 1/4"	32	44.80	3.40	3.80
710.54334	1 1/2"	38	54.30	3.40	3.80
710.63834	2"	51	63.80	3.40	3.80



STATIC SEALS

BECA 114



DESCRIPTION

The BECA 114 is a BS ring composed of a metal ring with a rectangular cross-section, to the inside of which a rubber ring with a trapezoidal cross-section has been bonded and vulcanised.

ADVANTAGES

Economic solution

Precise positioning of the ring

Can be disassembled and reused

Reliable sealing at both high and low pressures

Reduced assembly time

APPLICATIONS

Sealing under the screw heads and bolts

General mechanics

Motors

Pipe fittings

Valves

MATERIALS

Rubber

NBR 70 and 90 Shore A

FKM 70 and 90 Shore A

EPDM 70 and 90 Shore A

Metal insert

Cadmium-plated steel

Stainless steel

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

TECHNICAL DATA

Temperature	-45°C / +200°C
Media	Mineral hydraulic oils Water Water/oil emulsions gas
Breaking resistance	540 MPa

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

SURFACE ROUGHNESS

Roughness	Contact surface area
Ra	≤3.0 µm
Rmax	≤15.0 µm

COUNTERBORE L

Metric	Counterbore ØL (mm)
M3 at M8.5	ØA +0.20
M9 at M33	ØA +0.40
M34 at M60	ØA +0.60

The overlapping of the metal ring (T) must be at least 0.70 mm and the overlapping of the rubber ring (S) must be at least 75% (S ≥ 0,75 R).

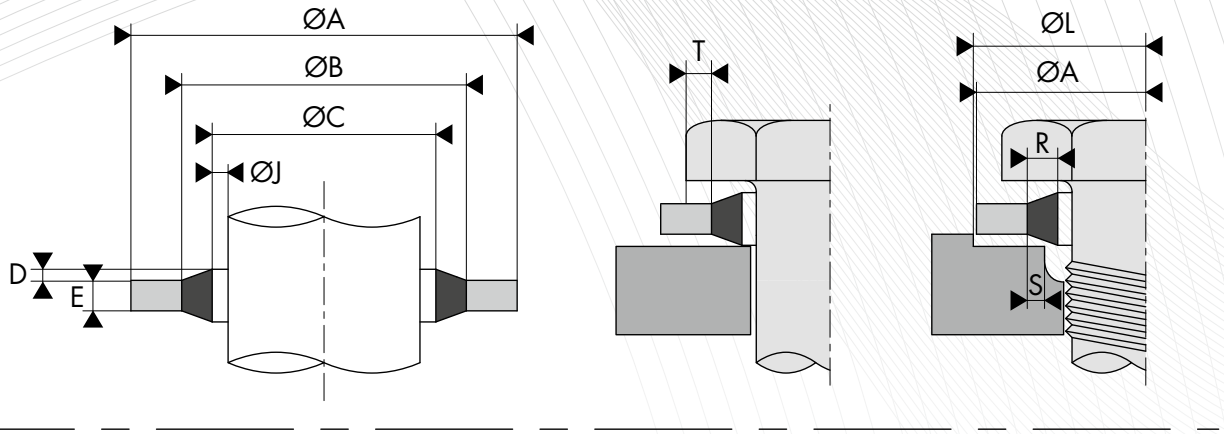
RADIAL GAP J

The non-self-centred BECA 114 BS ring is not composed of a centring lip. The following recommendations allow for a good positioning.

Metric	Max. gap of the radius J (mm)
M3 at M8.5	0.30
M9 at M33	0.35
M34 at M60	0.50

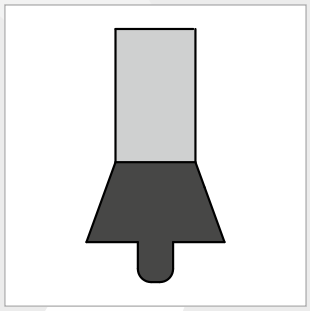
TIGHTENING TORQUE

Dimensions			Torque (Nm)	
Metric	BSW	BSP	1 ring	2 rings
up to M8	5/16	-	5.3	8.5
M10	3/8	1/8	7.1	11.4
M11	7/16	-	11.8	15.3
M12	1/2	1/4	15.8	20.5
M14	9/16	-	22.6	29.4
M16	5/8	3/8	30.5	39.7
M18	3/4	-	40.7	52.9
M20	13/16	1/2	56.5	67.8
M22	7/8	5/8	67.8	74.6
M24	1.0	3/4	73.4	73.4
from M27	1.1/16	-	79.0	79.0



DIMENSIONS

Part number	Standard	BS ring dimensions					Min. breaking pressure (bar)
		ØA +0.13/0	ØB ±0.13	ØC ±0.13	ØD +0.25/0	ØE ±0.13	
114.1E001	BSW 6BA	6.35	4.09	3.05	0.20 / 0.38	1.22	2150
114.1E201	M3.5	7.20	5.20	4.10	0.30	1.00	1600
114.1E002	BSW 4BA	7.26	5.26	4.12	0.20 / 0.38	1.22	1570
114.1E301	M3	7.50	5.00	3.60	0.30	1.00	1980
114.1E003	BSW 2BA	8.38	6.35	5.21	0.20 / 0.38	1.22	1375
114.1E302	M4	9.00	6.00	4.60	0.30	1.00	2000
114.1E205	M5.5	9.20	7.20	6.20	0.30	1.00	1220
114.1E210	M6.7	10.20	8.60	7.30	0.30	1.00	850
114.1E209	M6.5	12.00	8.81	7.10	0.30	1.00	1560
114.1E020	BSW 3/8 - BSP 1/8	15.88	11.48	10.37	0.25/0.51	2.03	1480
114.1E009	BSW 7/16	19.05	13.08	11.69	0.25/0.51	2.03	1890
114.1E224	M13	20.00	15.40	13.70	0.40	1.50	1340
114.1E315	M13	20.10	15.20	13.80	0.40	1.50	1430
114.1E225	M13	22.00	15.40	13.70	0.40	1.50	1810
114.1E022	BSW 0.60	22.23	17.30	15.83	0.25/0.51	2.03	1290
114.1E228	M15	22.70	17.78	16.00	0.40	1.50	1260
114.1E319	M16.5	23.90	18.70	17.20	0.30	2.10	1970
114.1E231	M17.5	24.70	20.10	18.00	0.40	1.50	1070
114.1E322	M20.63	28.60	23.00	21.50	0.40	2.50	1130
114.1E234	M21	28.70	23.30	21.50	0.40	2.50	1080
114.1E323	M21	30.00	23.40	21.70	0.30	2.00	1290
114.1E325	M23	32.00	25.40	23.70	0.40	2.00	965
114.1E240	M27	36.00	29.00	27.20	0.40	2.00	1130
114.1E328	M27	36.00	29.40	27.70	0.40	2.00	1060
114.1E329	M28	36.00	30.30	28.60	0.40	2.00	720
114.1E014	BSW 1 1/6	36.58	30.86	29.33	0.25/0.51	2.34	880
114.1E241	M28	37.00	30.40	28.70	0.40	2.00	1030
114.1E330	M28.5	37.50	30.90	29.20	0.40	2.00	810
114.1E331	M30	39.00	32.40	30.70	0.40	2.00	970
114.1E242	M30	39.00	33.00	31.00	0.40	2.00	870
114.1E332	M33	42.00	35.40	33.70	0.40	2.00	900
114.1E243	M33	42.00	35.80	33.70	0.40	2.00	840
114.1E244	M33	43.00	20.10	18.00	0.40	2.00	1070
114.1E016	BSW 1 3/8	44.45	38.99	35.94	0.25/0.51	3.25	680
114.1E246	M39	51.00	41.90	40.00	0.40	2.50	1030
114.1E334	M39	51.00	42.60	40.00	0.40	2.50	950
114.1E336	M45	57.00	48.60	46.00	0.40	2.50	860
114.1E248	M48	59.00	50.80	48.70	0.40	3.00	790
114.1E337	M48	60.00	51.60	49.00	0.40	2.50	790
114.1E249	M51	60.00	54.10	52.00	0.40	3.00	540
114.1E019	BSW 2	63.50	54.74	51.69	0.25/0.51	3.25	780
114.1E250	M52	64.50	56.40	53.30	0.40	3.00	710
114.1E251	M60	73.00	63.00	60.70	0.40	3.00	780
114.1E038	BSP 2 1/4	79.50	69.98	66.68	0.25/0.51	3.25	670
114.1E252	M68	79.50	72.10	68.60	0.40	3.50	510
114.1E253	M75	90.30	79.10	76.08	0.40	3.38	700
114.1E039	BSP 2 1/2	90.30	79.38	76.08	0.25/0.51	3.25	680
114.1E254	M88	101.48	92.10	89.09	0.40	3.25	510
114.1E255	M125	143.67	132.70	127.00	0.40	5.00	420



STATIC SEALS

BECA 115

DESCRIPTION

The BECA 115 profile is a self-centring BS ring composed of a metal ring with a rectangular cross-section, the inside of which has a bonded and vulcanised rubber ring with a trapezoidal cross-section. Self-centring is through a thin membrane, in which the inside diameter is equal to the central diameter of the threading (without the thread).

ADVANTAGES

Economic solution

Precise positioning of the ring

Can be disassembled and reused

Reliable sealing at both high and low pressures

Reduced assembly time

APPLICATIONS

Sealing under the screw heads and bolts

General mechanics

Motors

Pipe fittings

Valves

MATERIALS

Rubber

NBR 70 and 90 Shore A

FKM 70 and 90 Shore A

EPDM 70 and 90 Shore A

Metal insert

Cadmium-plated steel

Stainless steel

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

TECHNICAL DATA

Temperature	-45°C / +150°C
Media	Mineral hydraulic oils Water Water/oil emulsions gas
Breaking resistance	540 MPa

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

SURFACE ROUGHNESS

Roughness	Contact surface area
Ra	≤3.0 µm
Rmax	≤15.0 µm

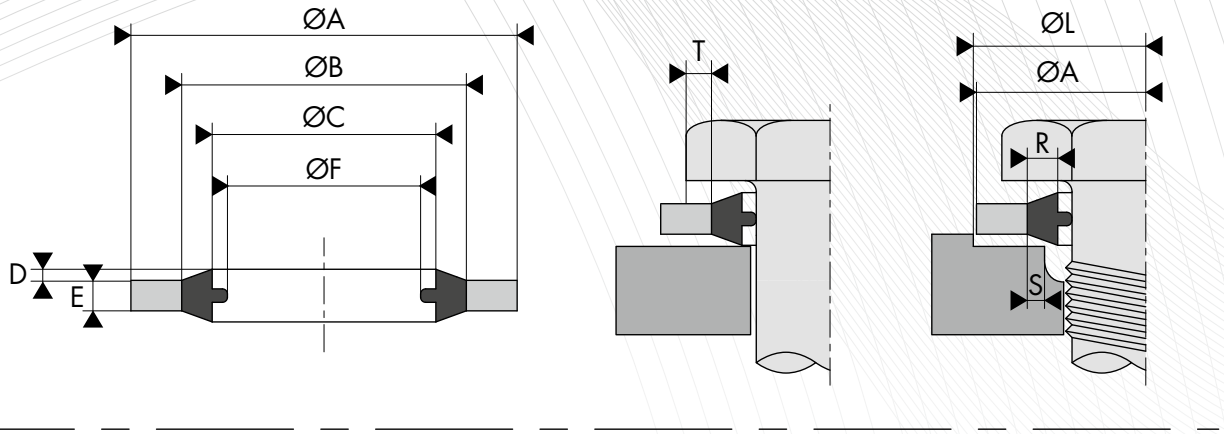
COUNTERBORE L

Metric	Counterbore ØL (mm)
M3 at M8.5	ØA +0.20
M9 at M33	ØA +0.40
M34 at M60	ØA +0.60

The overlapping of the metal ring (T) must be at least 0.70 mm and the overlapping of the rubber ring (S) must be at least 75% (S ≥ 0,75 R).

TIGHTENING TORQUE

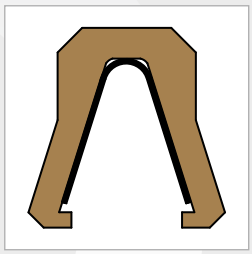
Dimensions			Torque (Nm)	
Metric	**BSW**	**BSP**	**1 ring**	**2 rings**
up to M8	5/16	-	5.3	8.5
M10	3/8	1/8	7.1	11.4
M11	7/16	-	11.8	15.3
M12	1/2	1/4	15.8	20.5
M14	9/16	-	22.6	29.4
M16	5/8	3/8	30.5	39.7
M18	3/4	-	40.7	52.9
M20	13/16	1/2	56.5	67.8
M22	7/8	5/8	67.8	74.6
M24	1.0	3/4	73.4	73.4
from M27	1.1/16	-	79.0	79.0

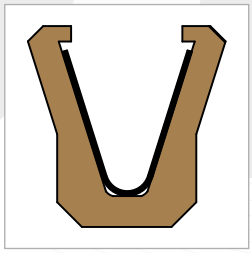


DIMENSIONS

Part number	Standard	BS ring dimensions						Min. breaking pressure (bar)
		ØA +0.13/0	ØB ±0.13	ØC ±0.13	ØD +0.25/0	ØE ±0.13	ØF ±0.20	
115.1E202	M4	7.00	5.40	4.50	0.30	1.00	3.40	1270
115.1E203	M5	9.00	6.80	5.70	0.30	1.00	4.50	1400
115.1E303	M5	10.00	7.00	5.60	0.30	1.00	4.50	1780
115.1E204	M5	10.00	7.40	5.70	0.30	1.00	4.50	1510
115.1E206	M6	10.00	8.00	6.70	0.30	1.00	4.70	1120
115.1E304	M6	11.00	8.00	6.60	0.30	1.00	4.70	1680
115.1E207	M6	11.00	8.20	6.70	0.30	1.00	4.70	1480
115.1E208	M6	11.00	8.20	6.70	0.30	2.50	4.70	1480
115.1E306	M6	11.40	8.40	7.00	0.30	1.00	4.70	1540
115.1E307	M8	13.00	10.00	8.60	0.30	1.00	6.40	1330
115.1E212	M8	13.00	10.00	8.70	0.30	1.00	6.40	1330
115.1E004	BSW 1/4	13.21	8.00	6.86	0.20 / 0.38	1.22	4.70	1950
115.1E305	M6	13.27	8.00	6.85	0.30	1.30	4.70	1970
115.1E215	M8.5	13.30	10.50	9.30	0.30	1.00	6.90	1200
115.1E005	BSW 1/4	13.34	9.53	6.99	0.20 / 0.38	1.22	4.70	1680
115.1E006	BSW 5/16	13.34	9.53	8.31	0.20 / 0.38	1.22	6.10	1700
115.1E211	M8	13.40	9.40	8.50	0.30	1.00	6.40	1780
115.1E213	M8	14.00	10.40	8.70	0.30	1.00	6.40	1510
115.1E007	BSW 5/16	14.22	10.04	8.64	0.20 / 0.38	1.22	6.10	1750
115.1E214	M8	16.00	10.40	8.70	0.30	1.00	6.40	2150
115.1E216	M10	16.00	12.00	10.35	0.40	2.00	8.56	1470
115.1E217	M10	16.00	12.40	10.70	0.40	1.50	8.56	1300
115.1E219	M11	16.30	12.70	11.40	0.40	1.50	9.80	1280
115.1E310	M10	17.00	12.10	10.70	0.30	1.50	8.56	1730
115.1E218	M10	18.00	12.40	10.70	0.40	1.50	8.56	1880
115.1E222	M12	18.00	14.40	12.70	0.40	1.50	9.73	1150
115.1E312	M11	18.10	13.20	11.80	0.30	1.50	9.80	1610
115.1E008	BSW 2/5	18.36	12.45	11.26	0.25/0.51	2.03	8.56	1950
115.1E220	M11	18.50	13.70	11.80	0.40	1.50	9.80	1540
115.1E226	M13.5	18.70	15.70	14.00	0.40	1.50	11.30	900
115.1E313	M12	19.00	14.10	12.70	0.30	1.50	9.73	1530
115.1E221	M11	19.10	13.50	11.80	0.40	1.50	9.80	1760
115.1E223	M12	20.00	14.40	12.70	0.40	1.50	9.73	1680
115.1E021	BSW 1/2 - BSP 1/4	20.57	15.21	13.74	0.25/0.51	2.03	11.45	1550
115.1E227	M14	22.00	16.40	14.70	0.40	1.50	11.38	1510
115.1E010	BSW 9/16	22.23	16.39	14.86	0.25/0.51	2.03	11.58	1560
115.1E317	M16	23.00	18.10	16.70	0.30	1.50	13.41	1240
115.1E318	M17	23.70	18.80	17.40	0.40	1.50	13.08	1200
115.1E023	BSP 3/8	23.80	18.75	17.28	0.25/0.51	2.03	14.96	1230
115.1E229	M16	24.00	18.40	16.70	0.40	1.50	13.41	1370
115.1E230	M17	24.00	19.20	17.40	0.40	1.50	13.08	1150
115.1E011	BSW 5/8	25.40	18.75	16.51	0.25/0.51	2.03	12.90	1560
115.1E012	BSW 11/16	25.40	19.69	18.16	0.25/0.51	2.34	14.50	1310

Part number	Standard	BS ring dimensions						Min. breaking pressure (bar)
		ØA +0.13/0	ØB ±0.13	ØC ±0.13	ØD +0.25/0	ØE ±0.13	ØF ±0.20	
115.1E232	M18	26.00	20.40	18.70	0.40	1.50	14.76	1260
115.1E024	BSW 3/4	26.92	21.21	19.69	0.25/0.51	2.34	15.80	1230
115.1E316	M14	27.00	16.10	14.70	0.30	1.50	11.38	1370
115.1E320	M18	27.00	20.40	18.70	0.30	2.00	14.76	1450
115.1E233	M20	28.00	22.50	20.70	0.40	1.50	16.76	1140
115.1E235	M22	28.00	24.20	22.50	0.40	1.50	18.74	760
115.1E025	BSW 13/16 - BSP 1/2	28.58	23.01	21.54	0.25/0.51	2.34	18.64	1120
115.1E321	M20	29.00	22.40	20.70	0.30	2.00	16.76	1340
115.1E236	M22	30.00	24.40	22.70	0.40	2.00	18.74	1080
115.1E237	M22	30.00	24.40	22.70	0.40	3.00	18.74	1080
115.1E324	M22	31.00	24.40	22.70	0.30	2.00	18.74	1240
115.1E026	BSW 7/8 - BSP 5/8	31.75	24.97	23.49	0.25/0.51	2.34	20.60	1240
115.1E238	M24	32.00	26.40	24.70	0.40	2.00	20.11	1000
115.1E326	M24	33.00	26.40	24.70	0.30	2.00	20.11	1160
115.1E013	BSW 15/16	33.27	26.04	24.26	0.25/0.51	2.34	20.20	1275
115.1E027	BSW 1 - BSP 3/4	34.93	28.53	27.05	0.25/0.51	2.34	24.13	1050
115.1E239	M26	35.00	28.40	26.70	0.40	2.00	22.30	1090
115.1E327	M26	35.30	28.70	27.00	0.40	2.00	22.30	1080
115.1E029	BSW 1 3/16 - BSP 7/8	38.10	32.29	30.81	0.25/0.51	2.34	27.89	860
115.1E028	BSW 1 1/16	38.61	30.61	27.82	0.25/0.51	2.34	22.90	1210
115.1E015	BSW 1 1/4	41.40	35.69	32.64	0.25/0.51	3.25	27.10	775
115.1E030	BSW 1 5/16 - BSP 1	42.80	36.88	33.89	0.25/0.51	3.25	30.30	780
115.1E031	BSW 1 5/16 - BSP 1	42.80	36.88	33.89	0.25/0.51	2.34	30.30	780
115.1E245	M36	46.00	38.80	36.70	0.40	2.00	31.10	890
115.1E017	BSW 1 1/2	47.75	42.04	38.96	0.25/0.51	3.25	32.70	660
115.1E333	M36	48.00	39.60	37.00	0.40	2.50	31.10	1010
115.1E032	BSW 1 5/8 - BSP 1 1/4	52.38	45.93	42.93	0.25/0.51	3.25	38.96	690
115.1E247	M42	53.00	44.40	42.70	0.40	3.00	35.60	930
115.1E335	M42	54.00	45.60	43.00	0.40	2.50	36.50	890
115.1E018	BSW 1 3/4	57.15	48.39	45.34	0.25/0.51	3.25	37.90	870
115.1E033	BSW 1 7/8 - BSP 1 1/2	58.60	51.39	48.44	0.25/0.51	3.25	44.86	690
115.1E034	BSW 2 1/8 - BSP 1 3/4	69.85	58.30	54.89	0.25/0.51	3.25	50.80	950
115.1E035	BSW 2 1/8	70.36	61.09	58.04	0.25/0.51	3.25	50.80	740
115.1E036	BSP 2	73.03	63.63	60.58	0.25/0.51	3.25	56.67	720
115.1E037	BSW 2 1/2	77.22	67.44	64.39	0.25/0.51	3.25	72.20	750





STATIC SEALS

BECA 740-749 760-769

DESCRIPTION

The BECA 740 and BECA 760 are symmetrical dynamic and static facial effect U-seals, made from PTFE (different filling options) with lips that are pre-stressed by a spring.

Derived from the BECA 740 and BECA 760 profiles, the BECA 749 and BECA 769 profiles are made specially for food industry applications. The V-spring is replaced with a VMQ O'Ring.

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

Medical

Pharmaceutical

Static hydraulics

MATERIALS

Profiled seal

Bronze-filled PTFE

Carbon-filled PTFE

V-Shaped spring

Stainless steel

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

TECHNICAL DATA

Temperature	-200°C / +260°C
Pressure	30 MPa
Speed	15 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.

SURFACE ROUGHNESS

Roughness	Hydrogen, helium, cryogenic gas, refrigerants	Low viscosity fluids (water, alcohols, natural gases, air)	High viscosity fluids (gear oils, dairy products, adhesives)
Ra	≤0.3 µm	≤0.6 µm	≤0.8 µm
Rz	≤2.2 µm	≤3.5 µm	≤5.0 µm
Rmax	≤3.5 µm	≤5.0 µm	≤6.5 µm

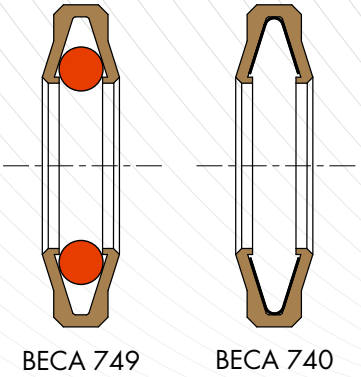
RADIUS

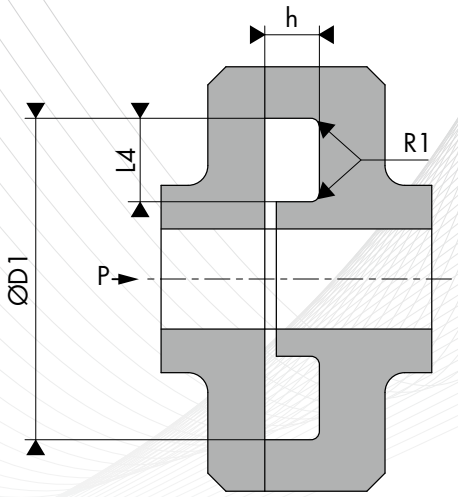
Groove depth h	Radius R1
1.45	0.40
2.25	0.40
3.10	0.60
4.70	0.80
6.10	0.80
9.50	0.80

TABLE MATERIALS

Profiled seal					V-spring			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	**Improvements** **• Wear properties** **• Compression set** 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		I	X10 Cr Ni 18-8	-200°C/+260°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	I	X10 Cr Ni 18-8	-200°C/+260°C	Steel Chrome steel Cast iron
VM	M	PTFE + 15 % Glass + 5% MOS2	Grey		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	**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	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	**Improvements** **• Better abrasion resistance** **• Better dimensional stability at high temperatures** 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		I	X10 Cr Ni 18-8	-200°C/+260°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	I	X10 Cr Ni 18-8	-200°C/+260°C	Steel Chrome steel Cast iron
B4	B	PTFE + 40% Bronze	Dark brown		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.





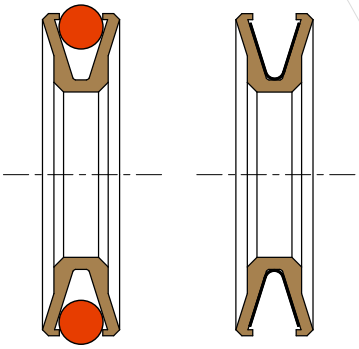
DIMENSIONS - STANDARD SERIES

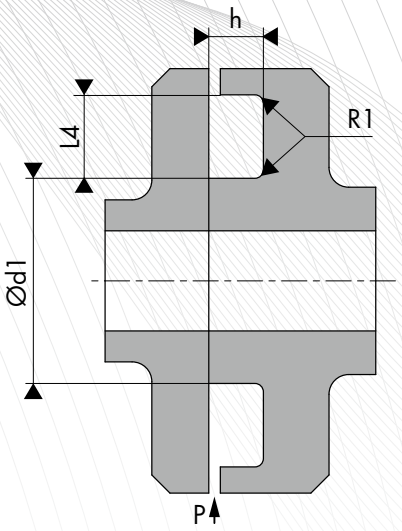
Series	Groove outside diameter ØD1 H10		Groove width L4 0/+0.15	Groove depth	
	Standard range	Extended range		h	Tol.
740.0*	12.0 - 34.9	12.0 - 40.0	2.40	1.45	+0.03
740.1	35.0 - 54.9	35.0 - 200.0	3.60	2.25	+0.05
740.2	35.0 - 54.9	35.0 - 400.0	4.80	3.10	+0.08
740.3	55.0 - 99.9	55.0 - 600.0	7.10	4.70	+0.10
740.4	100.0 - 599.9	100.0 - 600.0	9.50	6.10	+0.15

*Only BECA 740.0 profiles are fitted with an O'Ring instead of a V-spring.

DIMENSIONS - ADDITIONAL SERIES

Series	Groove outside diameter ØD1 H10	Groove width L4 0/+0.15	Groove depth	
			h	Tol.
740.235	35.0 - 200.0	5.00	3.50	+0.08
740.240	35.0 - 200.0	5.00	4.00	+0.08
740.245	35.0 - 200.0	5.50	4.50	+0.08
740.350	35.0 - 200.0	5.50	5.00	+0.10
740.355	55.0 - 400.0	7.50	5.50	+0.10
740.460	55.0 - 400.0	8.00	6.00	+0.15
740.465	55.0 - 400.0	8.50	6.50	+0.15
740.470	55.0 - 400.0	8.50	7.00	+0.15
740.475	55.0 - 400.0	9.00	7.50	+0.15
740.480	100.0 - 600.0	11.00	8.00	+0.20
740.485	100.0 - 600.0	11.00	8.50	+0.20
740.490	100.0 - 600.0	11.00	9.00	+0.20
740.495	100.0 - 600.0	12.00	9.50	+0.20
740.4100	100.0 - 600.0	12.00	10.00	+0.25





DIMENSIONS - STANDARD SERIES

Series	Groove inside diameter Ød1 h10		Groove width L4 0/+0.15	Groove depth	
	Standard range	Extended range		h	Tol.
760.0*	7.0 - 14.9	7.0 - 200.0	2.40	1.45	+0.03
760.1*	15.0 - 24.9	15.0 - 200.0	3.60	2.25	+0.05
760.2	25.0 - 39.9	25.0 - 400.0	4.80	3.10	+0.08
760.3	40.0 - 79.9	40.0 - 600.0	7.10	4.70	+0.10
760.4	80.0 - 599.9	80.0 - 600.0	9.50	6.10	+0.15

*Only BECA 760.0 and 760.1 profiles are fitted with an O'Ring instead of a V-spring.

DIMENSIONS - ADDITIONAL SERIES

Series	Groove inside diameter Ød1 h10	Groove width L4 0/+0.15	Groove depth	
			h	Tol.
760.235	25.0 - 200.0	5.00	3.50	+0.08
760.240	25.0 - 200.0	5.00	4.00	+0.08
760.245	25.0 - 200.0	5.50	4.50	+0.08
760.350	40.0 - 200.0	5.50	5.00	+0.10
760.355	40.0 - 400.0	7.50	5.50	+0.10
760.460	80.0 - 400.0	8.00	6.00	+0.15
760.465	80.0 - 400.0	8.50	6.50	+0.15
760.470	80.0 - 400.0	8.50	7.00	+0.15
760.475	80.0 - 400.0	9.00	7.50	+0.15
760.480	80.0 - 600.0	11.00	8.00	+0.20
760.485	80.0 - 600.0	11.00	8.50	+0.20
760.490	80.0 - 600.0	11.00	9.00	+0.20
760.495	80.0 - 600.0	12.00	9.50	+0.20
760.4100	80.0 - 600.0	12.00	10.00	+0.25

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