

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

FRANCEJOINT

SEALING SYSTEMS



PRODUCT RANGE
INDUSTRIAL SEALING





FRANCEJOINT

SEALING SYSTEMS

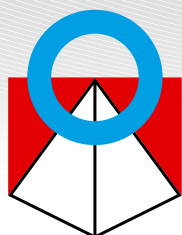
Content

HYDRAULIC SEALS	6	CASSETTE SEALS	28
○ Rod seals	6	COMBI SEALS	29
○ Piston seals	8	FACE SEALS - FLOATING SEALS	30
○ Rod/Piston seals	10	SEAL KITS	31
○ Wiper seals - Scraper seals	10	AEROSPACE SEALS	32
PNEUMATIC SEALS	12	○ Rod seals	32
○ Rod seals	12	○ Piston seals	33
○ Piston seals	13	○ Wiper seals - Scraper seals	33
○ Wiper seals - Scraper seals	13	○ Wear rings	33
O'RINGS	14	SANITARY SEALS	34
QUAD'RINGS - X'RINGS	15	AUTOMOTIVE SEALS	35
BACK-UP RINGS	16	PRECISION SEALS	36
STATIC SEALS	17	○ Rubber precision seals	36
GUIDING COMPONENTS	18	○ Metal to rubber seals	36
○ Wear rings	18	○ Plastic precision parts	37
○ Guide strips	18	○ Protective bellows	37
ROTARY SEALS	19	SLEEVES	38
○ Standard shaft seals	19		
○ High pressure shaft seals	21		
○ Triple-lip shaft seals	22		
○ Flanged shaft seals - Type 5	22		
○ Flanged shaft seals - Type 6	23		
○ Rotary hub seals	23		
○ Shaft seals for linear motion	24		
○ Shaft seals with PTFE-coated on sealing lips	25		
○ Shaft seals with PTFE sealing lips	25		
○ PTFE shaft seals	25		
○ Pin dust seals	26		
○ Roto'Seals	26		
○ V'Rings	26		
○ Gamma seals	27		
○ End covers	27		



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 and IATF 16949.

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, and IATF 16949, 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.



Appareil de contrôle 3D

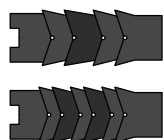




HYDRAULIC SEALS

A hydraulic seal is used to contain fluids and maintain the hydraulic pressure (piston seal, rod seal, back-up ring), and to stop the inlet of impurities and to preserve the lubricating film on the rod (wiper seal)..

Rod seals



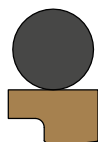
BECA 002

Materials	NBR + Fabric NBR + TPE
Temperature	-30°C / +110°C
Pressure	40 MPa
Speed	0,5 m/s



BECA 161 - 163 - 165

Materials	PU + Elastomer
Temperature	-30°C / +100°C
Pressure	25 MPa
Speed	0,5 m/s



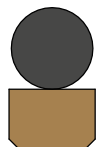
BECA 150 - 152 - 154

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Pressure	50 MPa
Speed	5 m/s



BECA 170 - 179

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Pressure	35 MPa
Speed	5 m/s



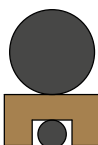
BECA 151 - 153 - 155

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Pressure	50 MPa
Speed	5 m/s



BECA 190

Materials	Elastomer + POM/PTFE
Temperature	-30°C / +200°C
Pressure	50 MPa
Speed	0,5 m/s



BECA 157 - 158

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Pressure	50 MPa
Speed	2 m/s



BECA 200

Materials	Elastomer + POM/PTFE
Temperature	-30°C / +200°C
Pressure	70 MPa
Speed	0,5 m/s

**BECA 201**

Materials	Elastomer + POM/PTFE
Temperature	-30°C / +200°C
Pressure	70 MPa
Speed	0,5 m/s

**BECA 202**

Materials	NBR + POM + TPE
Temperature	-30°C / +110°C
Pressure	70 MPa
Speed	0,5 m/s

**BECA 230**

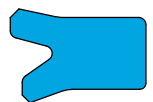
Materials	Elastomer
Temperature	-30°C / +200°C
Pressure	15 MPa
Speed	0,5 m/s

**BECA 230/AE**

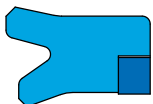
Materials	Elastomer + POM/PTFE
Temperature	-30°C / +200°C
Pressure	25 MPa
Speed	0,5 m/s

**BECA 230/B**

Materials	Elastomer
Temperature	-30°C / +200°C
Pressure	15 MPa
Speed	0,5 m/s

**BECA 231**

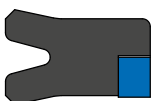
Materials	PU
Temperature	-30°C / +110°C
Pressure	40 MPa
Speed	0,5 m/s

**BECA 231/AE**

Materials	PU + POM
Temperature	-30°C / +110°C
Pressure	45 MPa
Speed	0,5 m/s

**BECA 231/B**

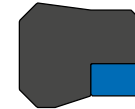
Materials	PU
Temperature	-30°C / +110°C
Pressure	40 MPa
Speed	0,5 m/s

**BECA 235T/AE**

Materials	Elastomer + POM/PTFE
Temperature	-30°C / +200°C
Pressure	25 MPa
Speed	0,5 m/s

**BECA 239**

Materials	Elastomer + PTFE
Temperature	-30°C / +200°C
Pressure	25 MPa
Speed	0,5 m/s

**BECA 300**

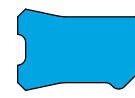
Materials	Elastomer + POM/PTFE
Temperature	-30°C / +200°C
Pressure	27,5 MPa
Speed	0,5 m/s

**BECA 301/AE**

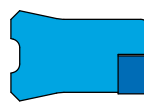
Materials	Fabric NBR + POM
Temperature	-30°C / +110°C
Pressure	35 MPa
Speed	0,5 m/s

**BECA 302/AE**

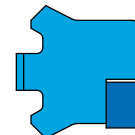
Materials	FKM + PTFE
Temperature	-20°C / +200°C
Pressure	35 MPa
Speed	0,5 m/s

**BECA 310/B**

Materials	PU
Temperature	-30°C / +110°C
Pressure	40 MPa
Speed	0,5 m/s

**BECA 312**

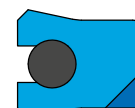
Materials	PU + POM
Temperature	-30°C / +110°C
Pressure	50 MPa
Speed	0,5 m/s

**BECA 315**

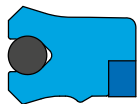
Materials	PU + POM
Temperature	-30°C / +110°C
Pressure	40 MPa (Peak at 60 MPa)
Speed	0,5 m/s

**BECA 316**

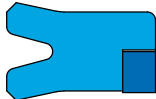
Materials	PU + POM
Temperature	-30°C / +110°C
Pressure	40 MPa (Peak at 60 MPa)
Speed	1 m/s

**BECA 322**

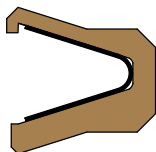
Materials	PU + NBR + POM
Temperature	-30°C / +100°C
Pressure	45 MPa
Speed	0,5 m/s

**BECA 325**

Materials	PU + NBR + POM
Temperature	-30°C / +100°C
Pressure	45 MPa
Speed	0,5 m/s

**BECA 335T/AE**

Materials	PU + POM
Temperature	-30°C / +110°C
Pressure	45 MPa
Speed	0,5 m/s

**BECA 340 - 349**

Materials	PTFE + STL steel
Temperature	-200°C / +260°C
Pressure	40 MPa
Speed	15 m/s

**BECA 385**

Materials	Elastomer
Temperature	-30°C / +200°C
Pressure	8 MPa
Speed	0,5 m/s

**BECA 640**

Materials	PA6 + NBR
Temperature	-30°C / +100°C
Pressure	40 MPa
Speed	0,5 m/s

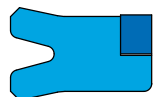
Piston seals

**BECA 003**

Materials	NBR + Fabric NBR
Temperature	-30°C / +110°C
Pressure	40 MPa
Speed	0,5 m/s

**BECA 235P/AE**

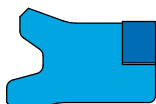
Materials	Elastomer + POM/PTFE
Temperature	-30°C / +200°C
Pressure	25 MPa
Speed	0,5 m/s

**BECA 335P/AE**

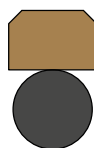
Materials	PU + POM
Temperature	-30°C / +110°C
Pressure	45 MPa
Speed	0,5 m/s

**BECA 336**

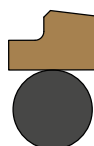
Materials	PU
Temperature	-30°C / +110°C
Pressure	40 MPa
Speed	0,5 m/s

**BECA 336/AE**

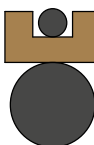
Materials	PU + POM
Temperature	-30°C / +110°C
Pressure	50 MPa
Speed	0,5 m/s

**BECA 500 - 502 - 504**

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Pressure	50 MPa
Speed	5 m/s

**BECA 501 - 503 - 505**

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Pressure	50 MPa
Speed	5 m/s

**BECA 507 - 508**

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Pressure	50 MPa
Speed	2 m/s

**BECA 510**

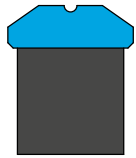
Materials	PU + NBR + POM
Temperature	-30°C / +100°C
Pressure	40 MPa
Speed	0,5 m/s

**BECA 512**

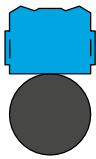
Materials	PTFE + NBR + POM
Temperature	-30°C / +100°C
Pressure	50 MPa
Speed	1,5 m/s

**BECA 513**

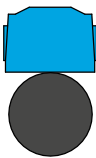
Materials	PU + NBR + POM
Temperature	-30°C / +100°C
Pressure	40 MPa
Speed	0,5 m/s

**BECA 519**

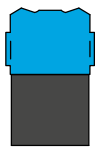
Materials	PU + NBR
Temperature	-30°C / +100°C
Pressure	40 MPa
Speed	0,5 m/s

**BECA 520 - 522 - 524**

Materials	PU + NBR
Temperature	-30°C / +100°C
Pressure	25 MPa
Speed	0,5 m/s

**BECA 525**

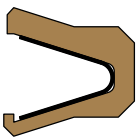
Materials	PU + NBR
Temperature	-30°C / +100°C
Pressure	25 MPa
Speed	0,5 m/s

**BECA 530**

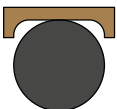
Materials	PU + NBR
Temperature	-30°C / +100°C
Pressure	25 MPa
Speed	0,5 m/s

**BECA 535**

Materials	PU + NBR
Temperature	-30°C / +100°C
Pressure	25 MPa
Speed	0,5 m/s

**BECA 540 - 549**

Materials	PTFE + STL steel
Temperature	-200°C / +260°C
Pressure	30 MPa
Speed	15 m/s

**BECA 550 - 559**

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Pressure	35 MPa
Speed	5 m/s

**BECA 560**

Materials	Elastomer + POM/PTFE
Temperature	-30°C / +200°C
Pressure	40 MPa
Speed	0,5 m/s

**BECA 570**

Materials	Fabric NBR + POM
Temperature	-30°C / +110°C
Pressure	40 MPa
Speed	0,5 m/s

**BECA 571**

Materials	Elastomer + POM/PTFE
Temperature	-30°C / +200°C
Pressure	40 MPa
Speed	0,5 m/s

**BECA 572**

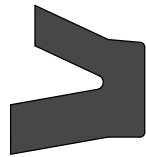
Materials	PU + POM + POM
Temperature	-30°C / +110°C
Pressure	40 MPa
Speed	0,5 m/s

**BECA 579**

Materials	NBR + PU + POM
Temperature	-30°C / +100°C
Pressure	50 MPa
Speed	0,5 m/s

**BECA 579S**

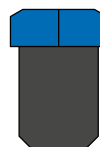
Materials	NBR + PU + POM
Temperature	-30°C / +100°C
Pressure	50 MPa
Speed	0,5 m/s

**BECA 580 - 581**

Materials	Elastomer
Temperature	-30°C / +200°C
Pressure	8 MPa
Speed	0,5 m/s

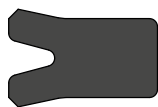
**BECA 650**

Materials	PA6 + NBR
Temperature	-30°C / +100°C
Pressure	40 MPa
Speed	0,5 m/s

**BECA 655**

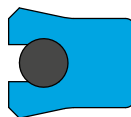
Materials	PA6 + NBR
Temperature	-30°C / +100°C
Pressure	50 MPa
Speed	0,5 m/s

Rod/Piston seals



BECA 235

Materials	Elastomer
Temperature	-30°C / +200°C
Pressure	15 MPa
Speed	0,5 m/s



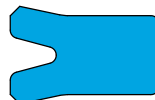
BECA 320

Materials	PU + NBR
Temperature	-30°C / +100°C
Pressure	40 MPa
Speed	0,5 m/s



BECA 301

Materials	Fabric NBR
Temperature	-30°C / +110°C
Pressure	25 MPa
Speed	0,5 m/s



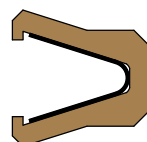
BECA 335

Materials	PU
Temperature	-30°C / +110°C
Pressure	30 MPa
Speed	0,5 m/s



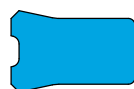
BECA 302

Materials	FKM
Temperature	-20°C / +200°C
Pressure	25 MPa
Speed	0,5 m/s



BECA 337 - 339

Materials	PTFE + STL steel
Temperature	-200°C / +260°C
Pressure	30 MPa
Speed	15 m/s



BECA 310

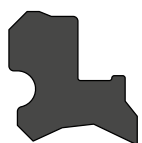
Materials	PU
Temperature	-30°C / +110°C
Pressure	40 MPa
Speed	0,5 m/s



BECA 338

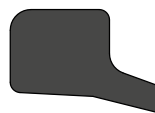
Materials	PTFE + STL steel
Temperature	-200°C / +260°C
Pressure	30 MPa
Speed	15 m/s

Wiper seals - Scraper seals



BECA 382

Materials	Elastomer
Temperature	-30°C / +200°C
Speed	1 m/s



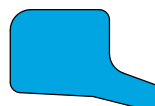
BECA 460

Materials	Elastomer
Temperature	-30°C / +200°C
Speed	1 m/s



BECA 417

Materials	Elastomer
Temperature	-30°C / +200°C
Speed	1 m/s



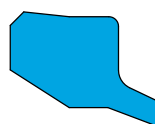
BECA 461

Materials	PU
Temperature	-30°C / +110°C
Speed	1 m/s



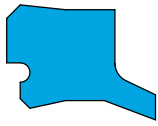
BECA 455

Materials	PU
Temperature	-30°C / +110°C
Speed	1 m/s



BECA 464

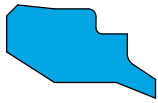
Materials	PU
Temperature	-30°C / +110°C
Speed	1 m/s

**BECA 465**

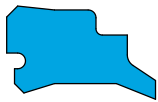
Materials	PU
Temperature	-30°C / +110°C
Speed	1 m/s

**BECA 466**

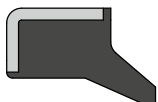
Materials	Elastomer
Temperature	-30°C / +200°C
Speed	1 m/s

**BECA 467**

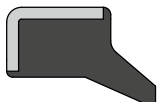
Materials	PU
Temperature	-30°C / +110°C
Speed	1 m/s

**BECA 468**

Materials	PU
Temperature	-30°C / +110°C
Speed	1 m/s

**BECA 470**

Materials	NBR + Steel
Temperature	-30°C / +100°C
Speed	1 m/s

**BECA 471**

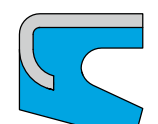
Materials	FKM + Steel
Temperature	-20°C / +200°C
Speed	1 m/s

**BECA 472**

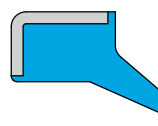
Materials	Elastomer + Steel
Temperature	-30°C / +200°C
Speed	1 m/s

**BECA 473**

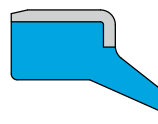
Materials	PU + Steel
Temperature	-30°C / +110°C
Speed	1 m/s

**BECA 475**

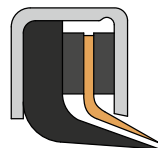
Materials	PU + Steel
Temperature	-30°C / +110°C
Speed	1 m/s

**BECA 476**

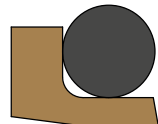
Materials	PU + Steel
Temperature	-30°C / +110°C
Speed	1 m/s

**BECA 477**

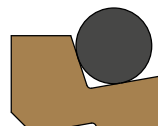
Materials	PU + Steel
Temperature	-30°C / +110°C
Speed	1 m/s

**BECA 478**

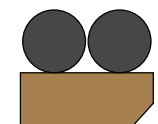
Materials	NBR + Steel + Brass
Temperature	-40°C / +100°C
Speed	1 m/s

**BECA 480**

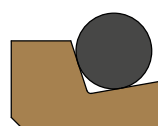
Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Speed	5 m/s

**BECA 482**

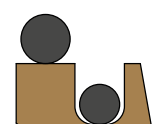
Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Speed	5 m/s

**BECA 483**

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Speed	5 m/s

**BECA 485**

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Speed	5 m/s

**BECA 486**

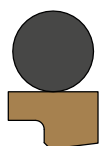
Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Speed	5 m/s



○ PNEUMATIC SEALS

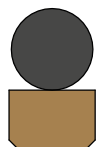
The pneumatic seal is mainly used to contain fluids such as compressed air and gas. To make pneumatic seals, materials with advanced properties are used, which offer the best compromise between friction loads, the type of fluids and the effects of temperature and pressure.

○ Rod seals



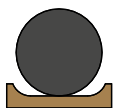
BECA 150 - 152 - 154

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Pressure	1,6 MPa
Speed	5 m/s



BECA 151 - 153 - 155

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Pressure	1,6 MPa
Speed	5 m/s



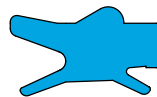
BECA 170 - 179

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Pressure	1,6 MPa
Speed	5 m/s



BECA 380 - 383

Materials	Elastomer + Steel
Temperature	-30°C / +150°C
Pressure	1,6 MPa
Speed	1 m/s



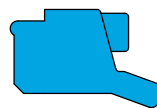
BECA 384

Materials	PU
Temperature	-30°C / +110°C
Pressure	1,6 MPa
Speed	1 m/s



BECA 385

Materials	Elastomer
Temperature	-30°C / +150°C
Pressure	1,6 MPa
Speed	1 m/s



BECA 390

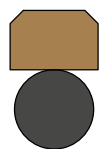
Materials	PU
Temperature	-30°C / +110°C
Pressure	1,6 MPa
Speed	1 m/s



BECA 391

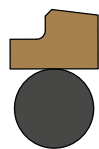
Materials	Elastomer
Temperature	-30°C / +150°C
Pressure	1,6 MPa
Speed	1 m/s

Piston seals



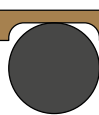
BECA 500 - 502 - 504

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Pressure	1,6 MPa
Speed	5 m/s



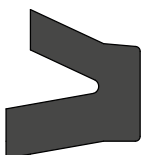
BECA 501 - 503 - 505

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Pressure	1,6 MPa
Speed	5 m/s



BECA 550 - 559

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Pressure	1,6 MPa
Speed	5 m/s



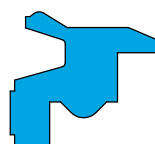
BECA 580 - 581

Materials	Elastomer
Temperature	-30°C / +150°C
Pressure	1,6 MPa
Speed	1 m/s



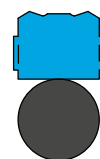
BECA 584

Materials	PU
Temperature	-30°C / +110°C
Pressure	1,6 MPa
Speed	1 m/s



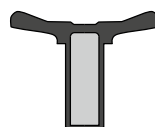
BECA 587

Materials	PU
Temperature	-30°C / +110°C
Pressure	1,6 MPa
Speed	1 m/s



BECA 590

Materials	PU + NBR
Temperature	-30°C / +100°C
Pressure	1,6 MPa
Speed	1 m/s



PKC

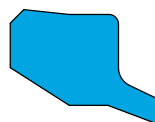
Materials	NBR + Steel
Temperature	-30°C / +100°C
Pressure	1,6 MPa
Speed	1 m/s

Wiper seals - Scraper seals



BECA 417

Materials	Elastomer
Temperature	-30°C / +150°C
Speed	1 m/s



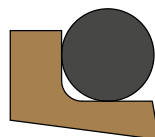
BECA 464

Materials	PU
Temperature	-30°C / +110°C
Speed	1 m/s



BECA 455

Materials	PU
Temperature	-30°C / +110°C
Speed	1 m/s



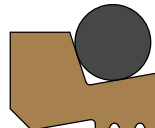
BECA 480

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Speed	5 m/s



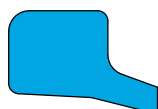
BECA 460

Materials	Elastomer
Temperature	-30°C / +150°C
Speed	1 m/s



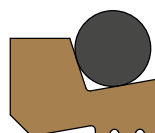
BECA 482

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Speed	5 m/s



BECA 461

Materials	PU
Temperature	-30°C / +110°C
Speed	1 m/s



BECA 485

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Speed	5 m/s



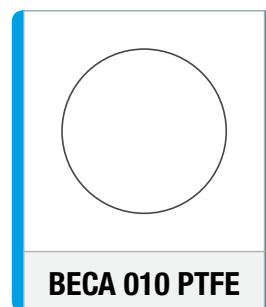
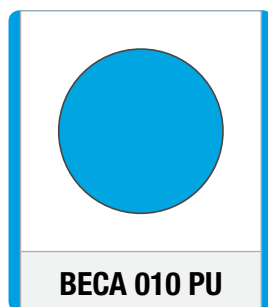
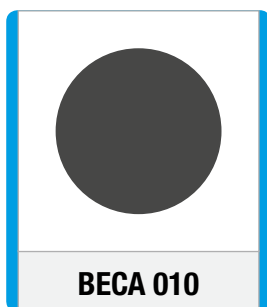
O'RINGS

The O'Rings, because of their simple shape and efficiency, have been used for a number of years in diverse industrial applications - valves, industrial engines, medical equipment, agricultural equipment and construction machinery, machine tools, etc. In short, in situations where a compact design is required for a good sealing effect.

These O'Rings are made (among others) from very varied chemical synthetic rubber: ACM, AEM, EPDM, FKM, HNBR, NBR, VMQ, as well as Polyurethane, PTFE, FKM-FEP or VMQ-FEP, which provides a large selection of materials that are chemically compatible with a wide

range of products and fluids. The dimensions of the housing are defined by the O'Ring cross-section $\varnothing d2$.

These O'Rings are extremely easy to use, both for static and dynamic applications, and do not require any maintenance or adjustment. They can be used under pressure and at significant speeds and temperatures by selecting the right quality and by carefully following the installation instructions. The O'Rings are a simple, efficient and economic solution.



**Round cord
BECA 001 CD**



**O'Ring sets
BECA 004**

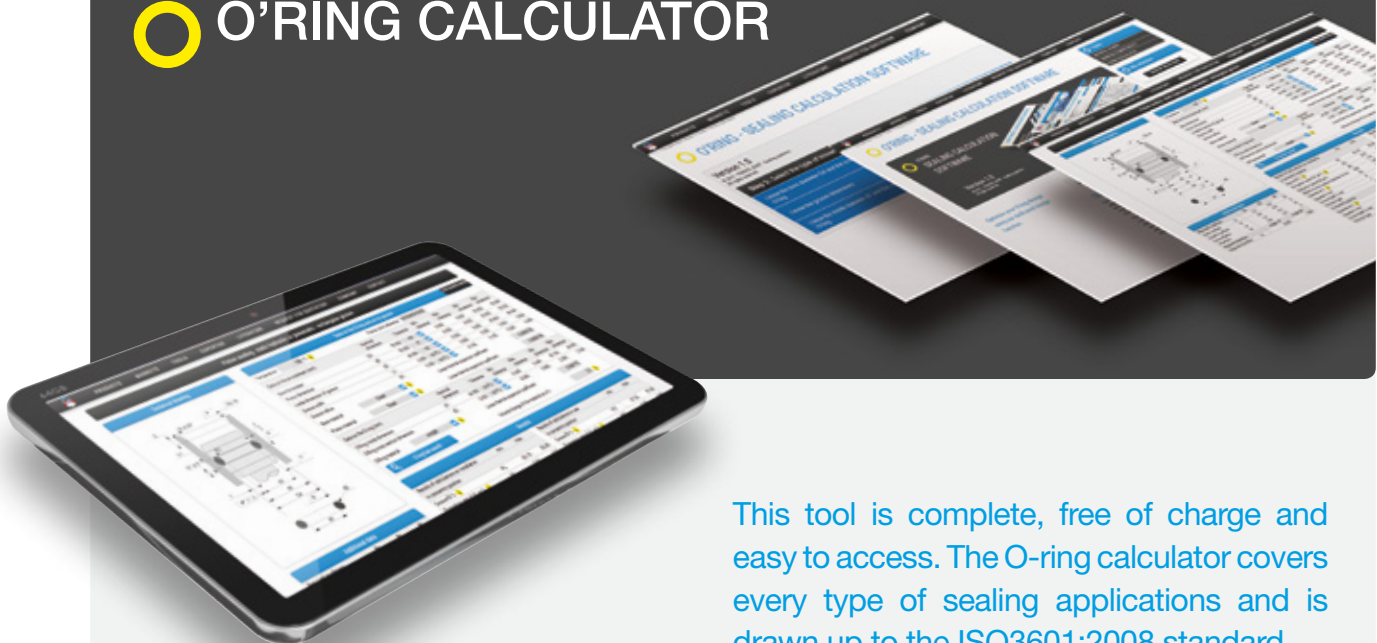
○ QUAD'RINGS - X'RINGS



The X'Rings, also called Quad'rings, are four-lobed double-acting seals used in static and dynamic applications. Usually made from EPDM, FKM, NBR, VMQ and other types of materials, they provide a better sealing and lower friction than conventional O'Rings.



○ O'RING CALCULATOR



It offers free and independent parameter setting up of any sealing system with clear recommendations to guide users toward an optimum seal design.

This tool is complete, free of charge and easy to access. The O-ring calculator covers every type of sealing applications and is drawn up to the ISO3601:2008 standard.

It is simple to use, offering a possibility of quickly defining the right seal or seals for the desired application. It covers the entire range of existing France Joint tools, offering a fast and accurate way of setting up the parameters of nonstandard complementary sizes; simplified searching for the dimensional standards of O-rings is also a way of choosing between various types of seals and incorporates the possibility of PDF saving or print-out, results are displayed in a concentric and eccentric position (fill groove, squeeze, compression, elongation, ...).

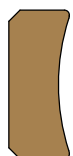
BACK-UP RINGS

The back-up rings are generally combined with primary seals (or O'Rings) and are used to help the O'Rings resist the effects of extrusion. A back-up ring is required for increased pressures or significant extrusion gaps in the system.



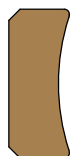
BECA 008

Materials	NBR/FKM
Temperature	-30°C / +200°C
Pressure	< 250 MPa static < 20 MPa reciprocating
Speed	2 m/s reciprocating



BECA 008P Piston

Materials	PTFE
Temperature	-200°C / +260°C
Pressure	< 250 MPa static < 20 MPa reciprocating
Speed	2 m/s reciprocating



BECA 008P Rod

Materials	PTFE
Temperature	-200°C / +260°C
Pressure	< 250 MPa static < 20 MPa reciprocating
Speed	2 m/s reciprocating



BECA 011 Piston

Materials	PTFE
Temperature	-200°C / +260°C
Pressure	< 250 MPa static < 40 MPa reciprocating < 15 MPa oscillating / rotating
Speed	2 m/s reciprocating or rotating



BECA 011 Rod

Materials	PTFE
Temperature	-200°C / +260°C
Pressure	< 250 MPa static < 40 MPa reciprocating < 15 MPa oscillating / rotating
Speed	2 m/s reciprocating or rotating



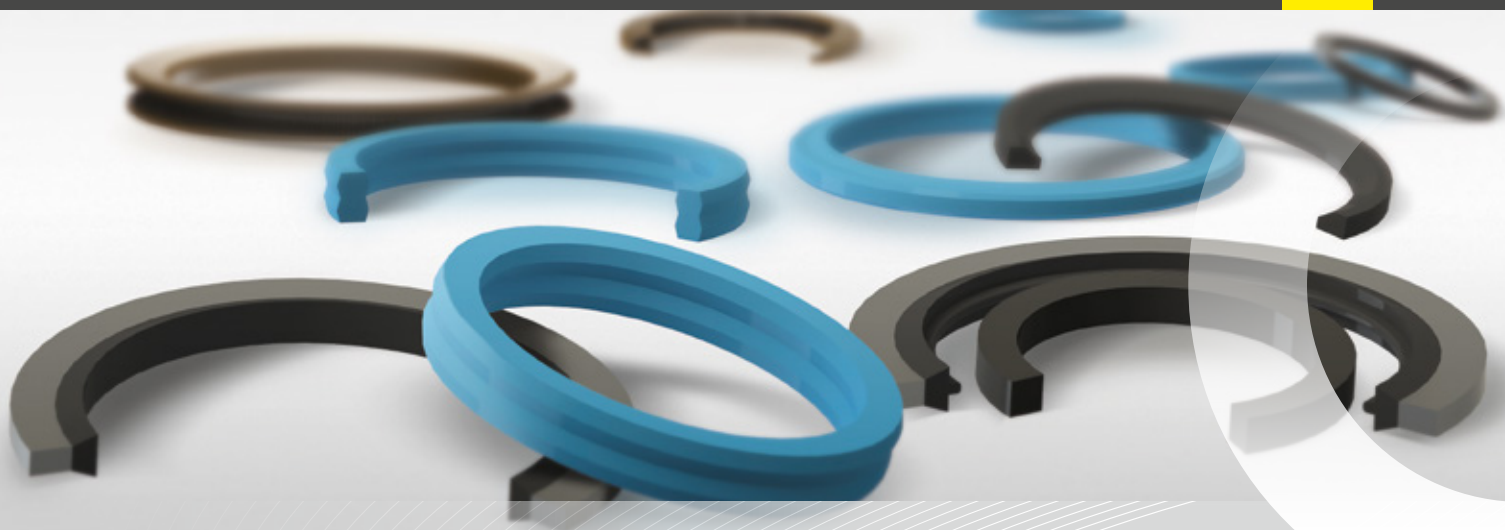
BECA 012 Piston

Materials	PTFE
Temperature	-200°C / +260°C
Pressure	< 250 MPa static < 40 MPa reciprocating
Speed	2 m/s reciprocating



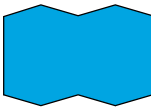
BECA 012 Rod

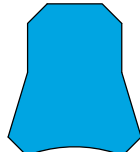
Materials	PTFE
Temperature	-200°C / +260°C
Pressure	< 250 MPa static < 40 MPa reciprocating
Speed	2 m/s reciprocating




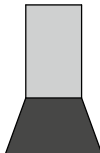
○ STATIC SEALS


The static seals are used for specific applications, where relative movement does not exist. As well as O'Rings and square seals (or washers) sometimes combined with back-up rings where increased pressures are involved, we offer a complete range of dual seals, flange seals (in line with standard SAE J518), fluid connector seals, BS rings (or Bonded seals) and facial effect seals.

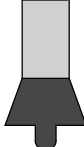
	BECA 014	
	Materials	PU
	Temperature	-30°C / +110°C
	Pressure	50 MPa
	Speed	0,5 m/s

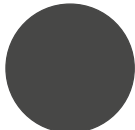
	BECA 710 SAE J518	
	Materials	PU
	Temperature	-30°C / +110°C
	Pressure	40 MPa


	BECA 015	
	Materials	Elastomer
	Temperature	-25°C / +200°C
	Pressure	60 MPa


	BECA 114	
	Materials	Elastomer + Steel
	Temperature	-45°C / +150°C
	Breaking resistance	540 MPa


	BECA 016	
	Materials	Elastomer
	Temperature	-30°C / +200°C
	Pressure	54 MPa

	BECA 115	
	Materials	Elastomer + Steel
	Temperature	-45°C / +150°C
	Breaking resistance	540 MPa

	BECA 010 SAE J518	
	Materials	Elastomer
	Temperature	-30°C / +200°C
	Pressure	20 MPa

	BECA 740 - 749	
	Materials	PTFE + STL steel
	Temperature	-200°C / +260°C
	Pressure	30 MPa
	Speed	15 m/s

	BECA 016 SAE J518	
	Materials	Elastomer
	Temperature	-30°C / +200°C
	Pressure	40 MPa

	BECA 760 - 769	
	Materials	PTFE + STL steel
	Temperature	-200°C / +260°C
	Pressure	30 MPa
	Speed	15 m/s





○ GUIDING COMPONENTS


The wear rings and the guide strips are used to resist deformation under radial load by guiding the piston and the rod in the system.


The effects of metal on metal contact between the different components can lead to a complete deterioration of the system; that's why France Joint provides its expertise when developing different types of wear rings - Polyoxymethylene, PTFE with different fillings and phenolic resin, among others.


○ Wear rings


	BECA 005 Piston	
	Materials	PF Phenolics
	Temperature	-40°C / +130°C
	Speed	1 m/s

	BECA 005 Rod	
	Materials	PF Phenolics
	Temperature	-40°C / +130°C
	Speed	1 m/s


	BECA 006 Piston	
	Materials	PTFE / UHMW
	Temperature	PTFE : -60°C / +150°C UHMW : -60°C / +80°C
	Speed	PTFE : 15 m/s UHMW : 2 m/s

	BECA 006 Rod	
	Materials	PTFE / UHMW
	Temperature	PTFE : -60°C / +150°C UHMW : -60°C / +80°C
	Speed	PTFE : 15 m/s UHMW : 2 m/s

	BECA 007 Piston	
	Materials	POM
	Temperature	-50°C / +115°C
	Speed	1 m/s

	BECA 007 Rod	
	Materials	POM
	Temperature	-50°C / +115°C
	Speed	1 m/s

○ Guide strips

	BECA 006/B	
	Materials	PTFE
	Temperature	-60°C / +150°C
	Speed	15 m/s

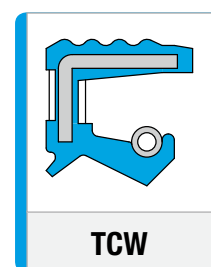
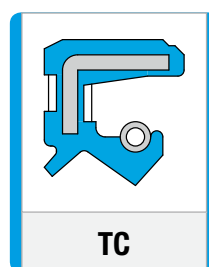
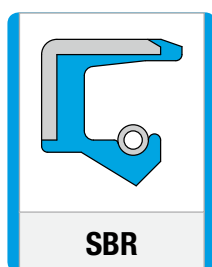
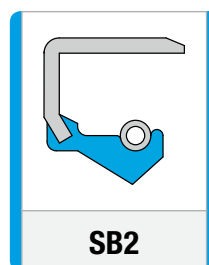
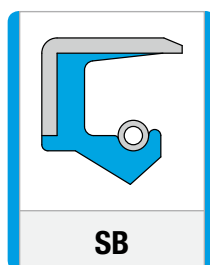
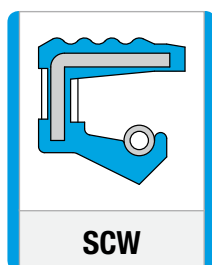
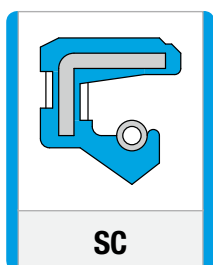


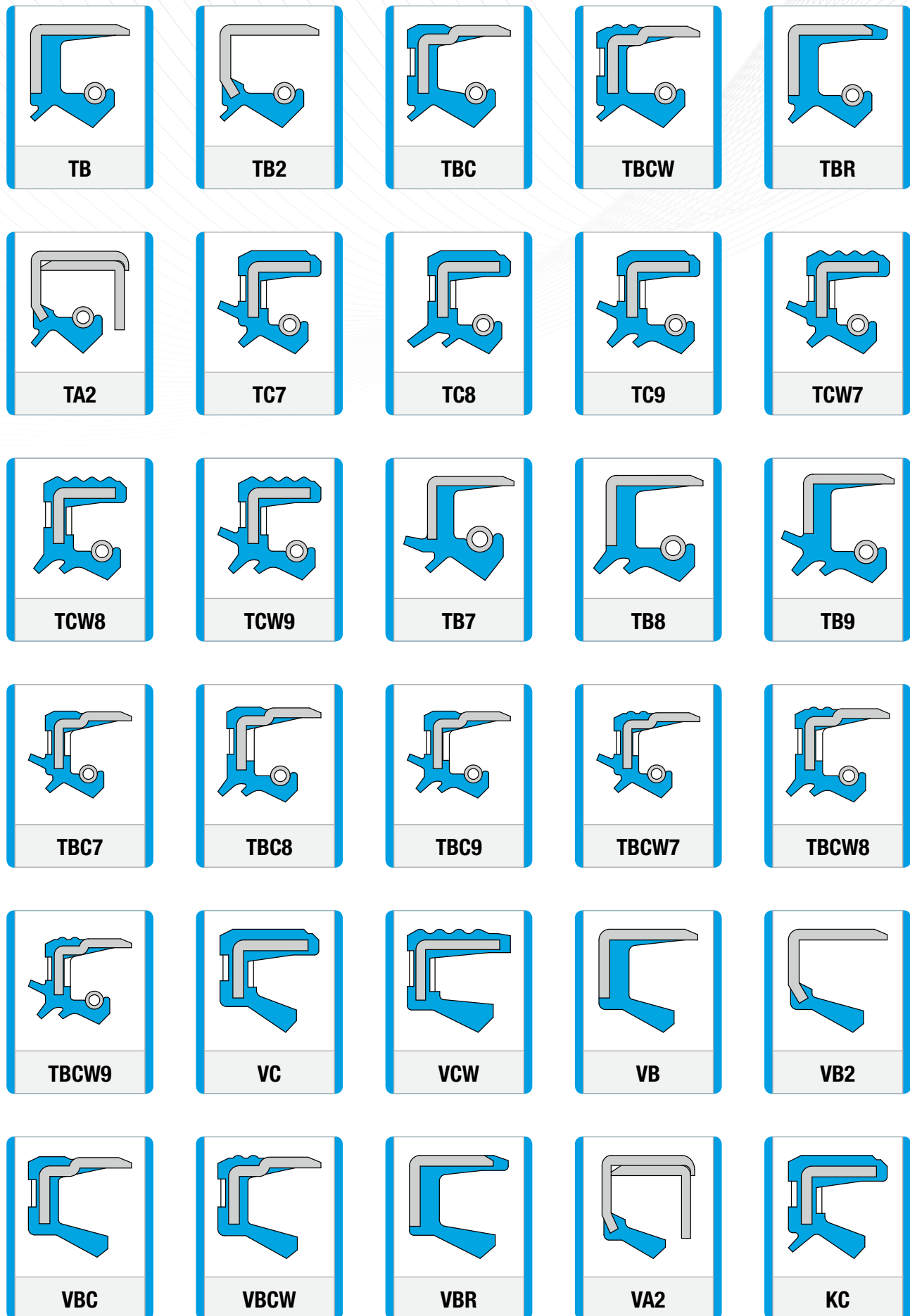
○ ROTARY SEALS

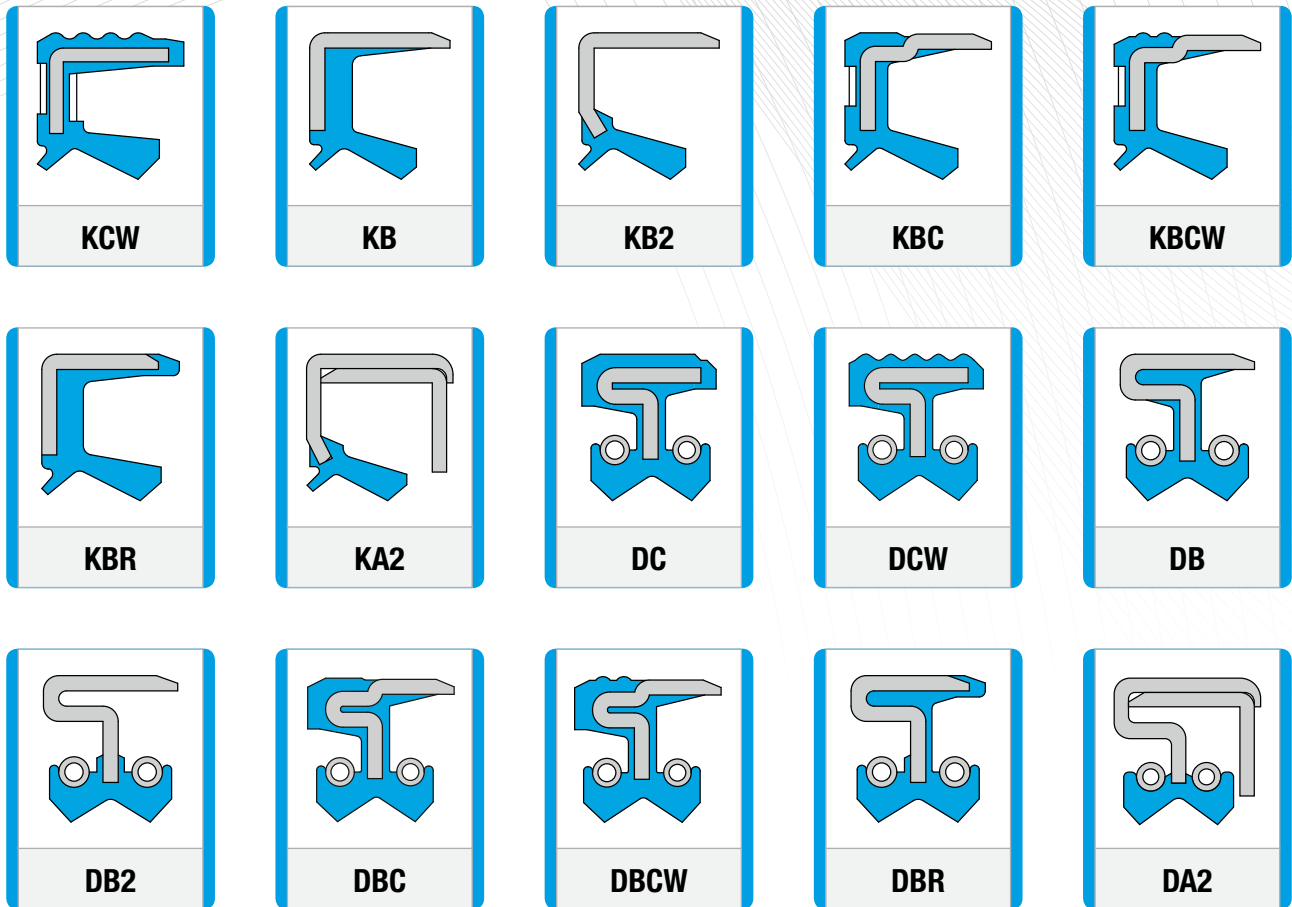
The rotary seal is mainly used as a sealant maintain fluids (oils, greases) in the rotating system.

France Joint has a complete range of rotary seals - shaft seals, cassette seals, combi seals, floating seals, V'Rings, gamma seals - ensuring the sealing of rotating shafts.

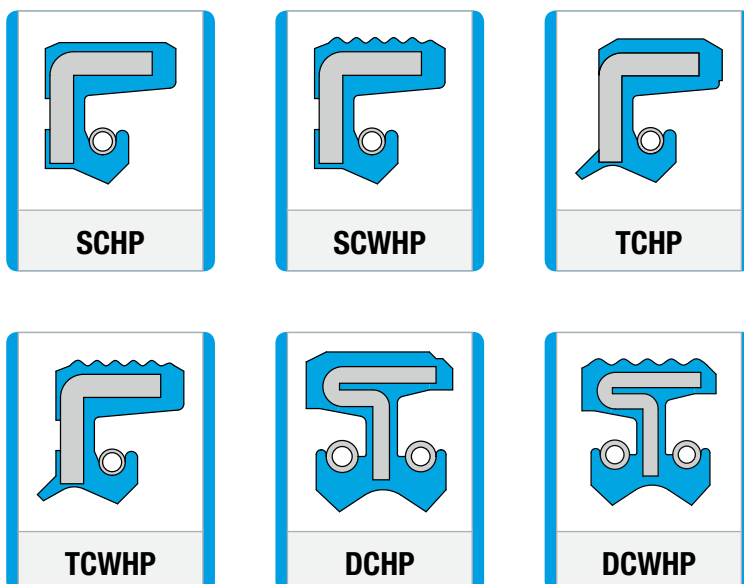
○ Standard shaft seals



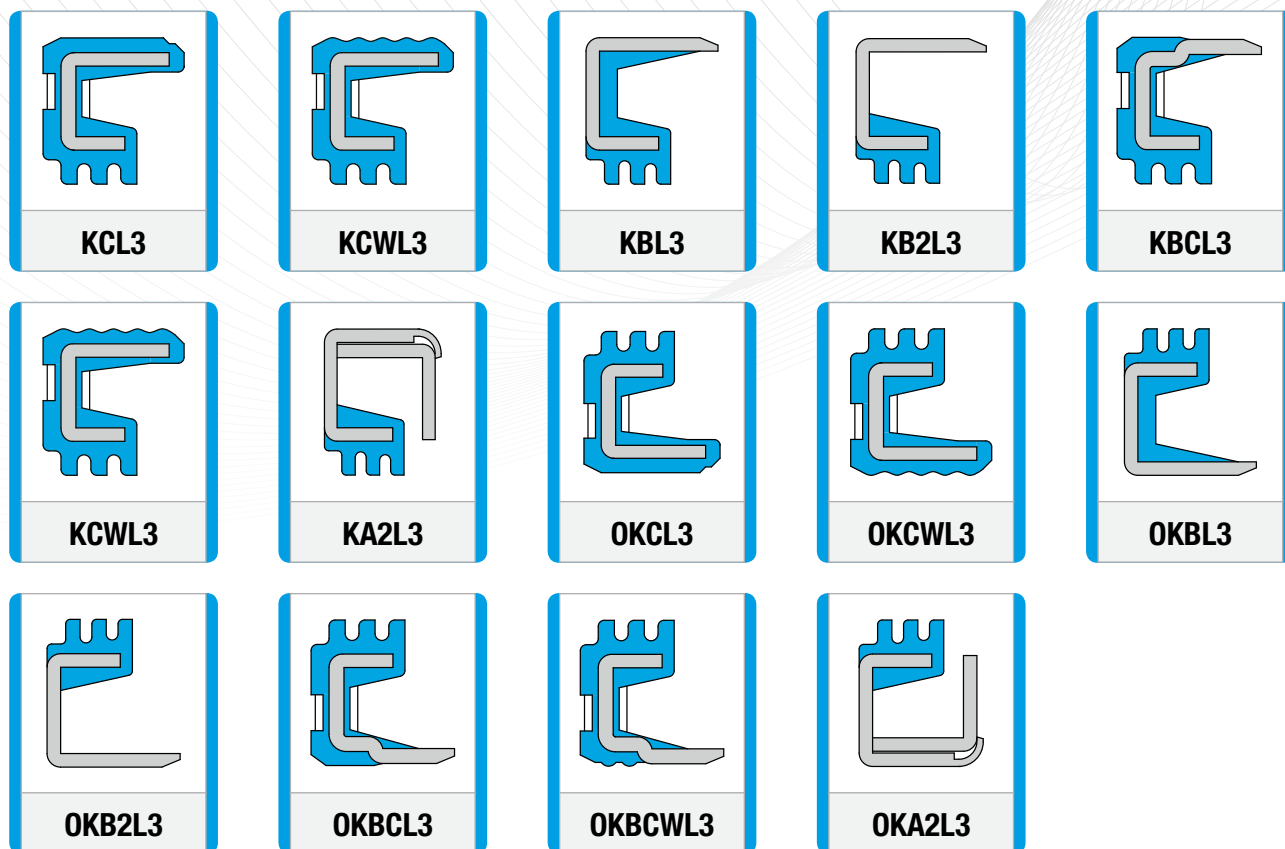




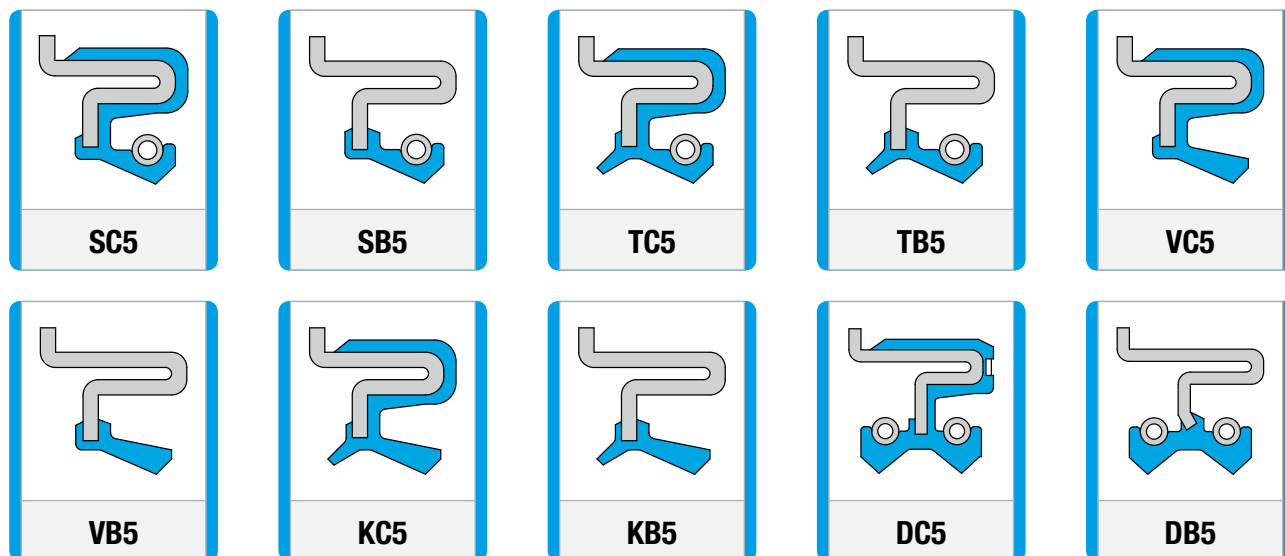
● High pressure shaft seals



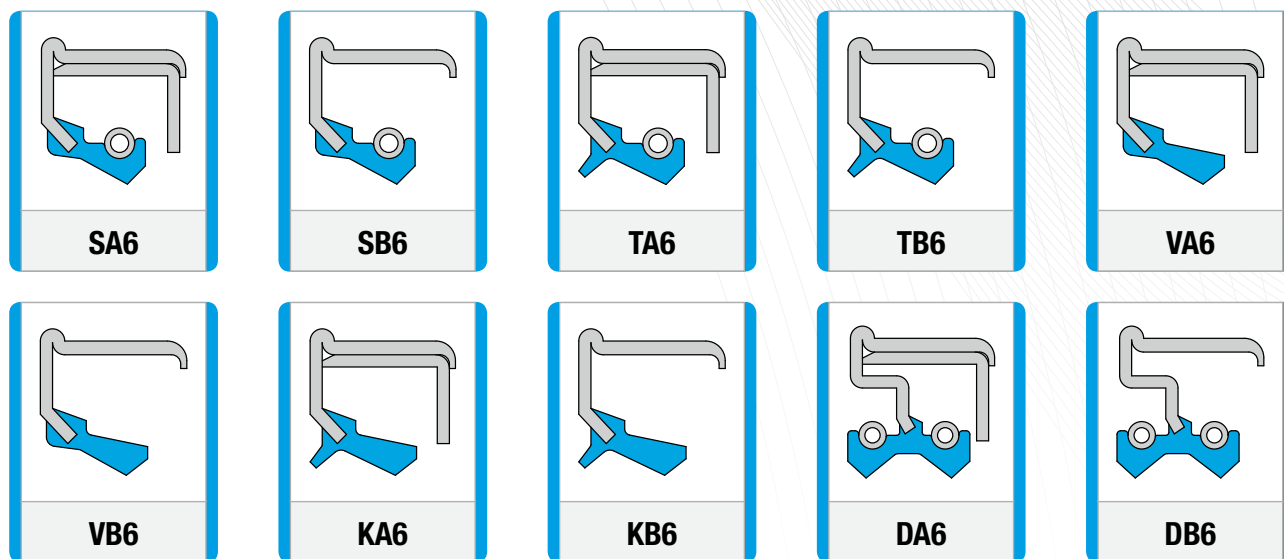
Triple-lip shaft seals



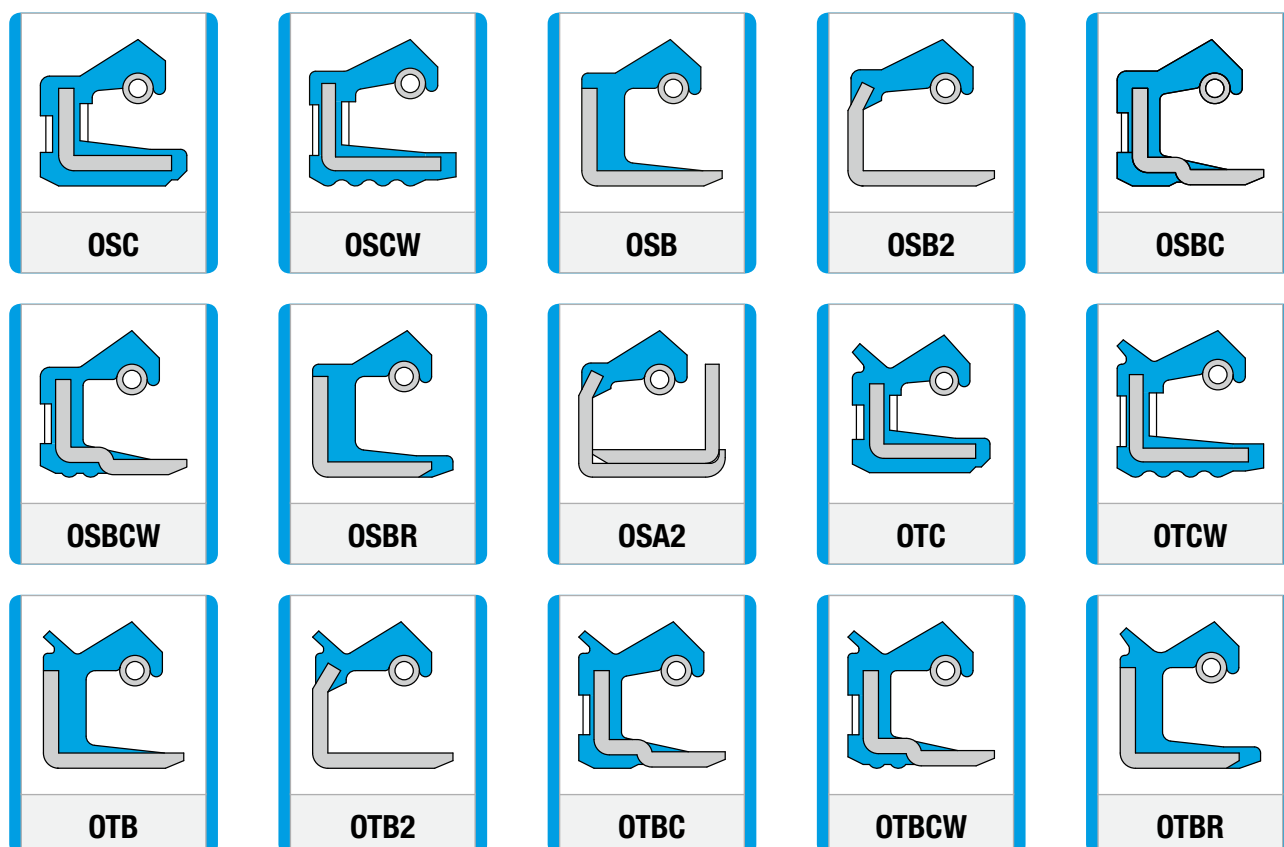
Flanged shaft seals - Type 5

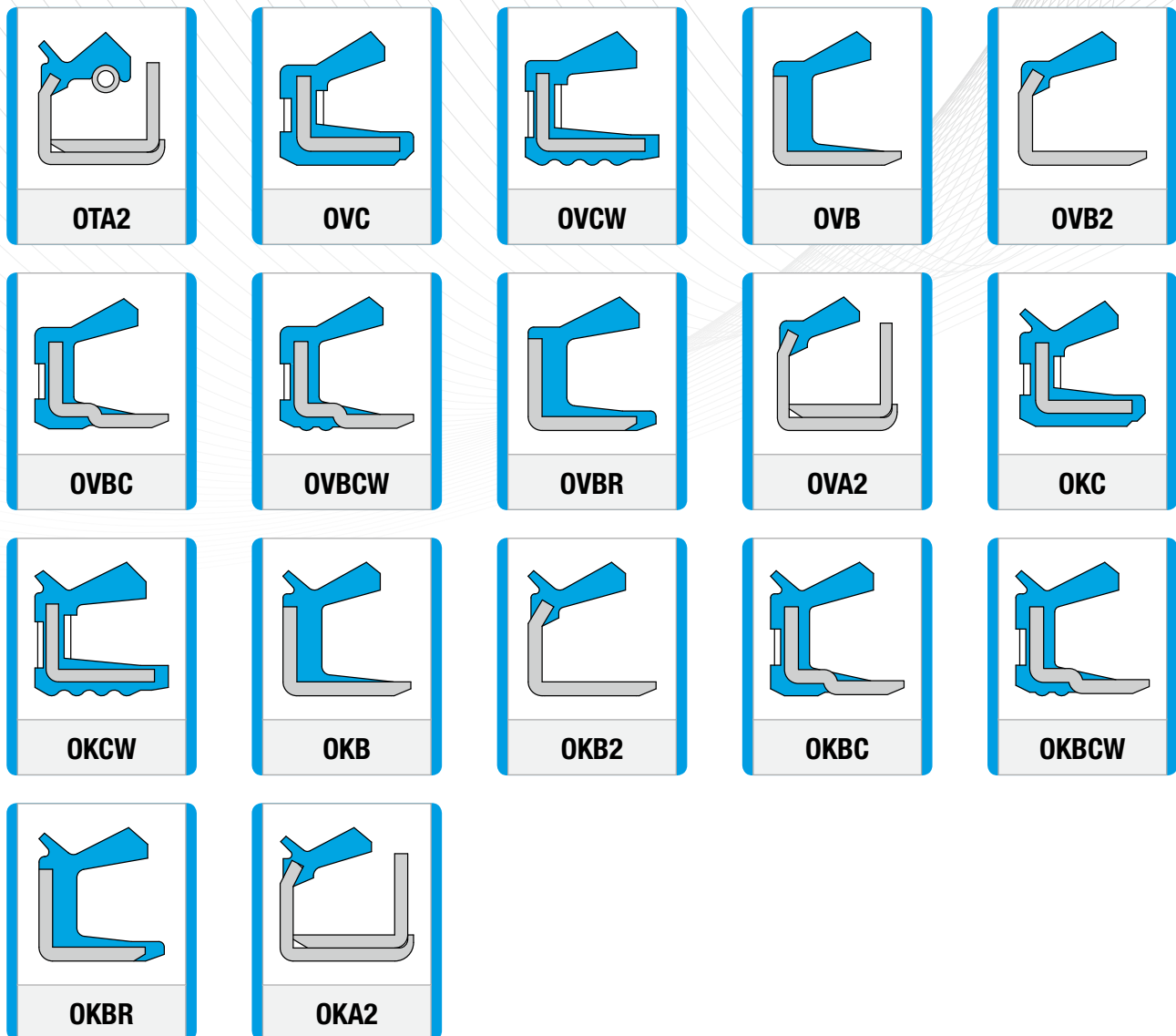


Flanged shaft seals - Type 6

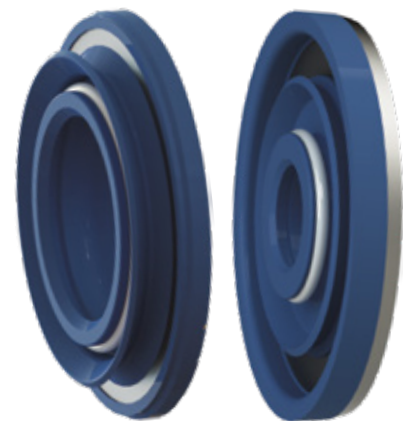
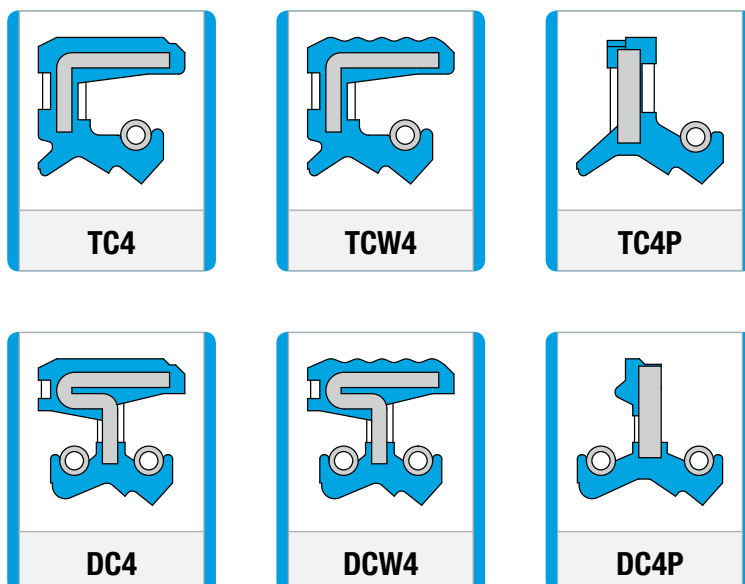


Rotary hub seals

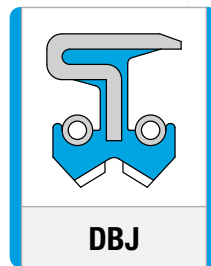
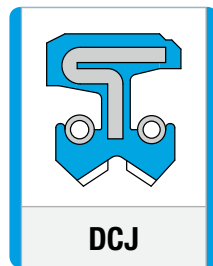
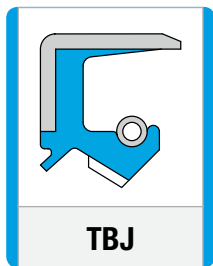
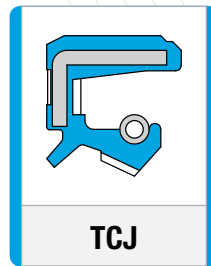
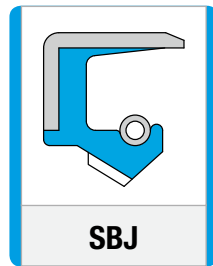
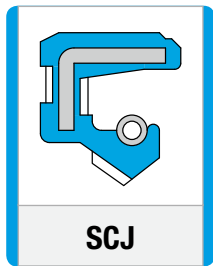




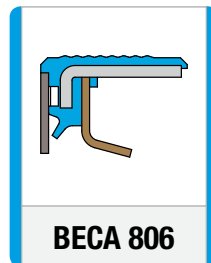
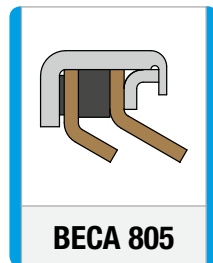
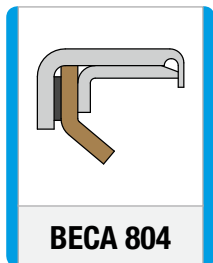
● Shaft seals for linear motion



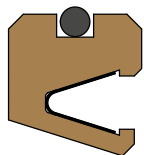
Shaft seals with PTFE-coated on sealing lips



Shaft seals with PTFE sealing lips

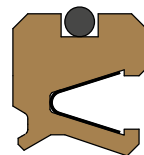


PTFE shaft seals



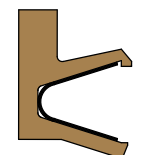
BECA 860 - 869

Materials	PTFE + STL steel + Elastomer
Temperature	-30°C / +200°C
Pressure	1 MPa
Speed	15 m/s



BECA 862 - 869

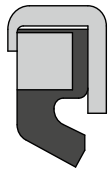
Materials	PTFE + STL steel + Elastomer
Temperature	-30°C / +200°C
Pressure	1 MPa
Speed	15 m/s



BECA 880 - 889

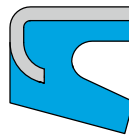
Materials	PTFE+ STL steel
Temperature	-100°C / +260°C
Pressure	15 MPa dynamic 25 MPa static
Speed	15 m/s

Pin dust seals



VAY

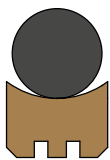
Materials	Elastomer + Steel
Temperature	-30°C / +200°C
Speed	1 m/s



BECA 475

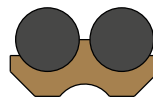
Materials	PU + Steel
Temperature	-30°C / +110°C
Speed	1 m/s

Roto'Seals



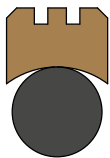
BECA 741 - 743

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Pressure	30 MPa
Speed	2 m/s



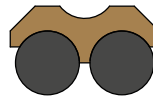
BECA 745 - 747

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Pressure	30 MPa
Speed	2 m/s



BECA 841 - 843

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Pressure	30 MPa
Speed	2 m/s



BECA 845 - 847

Materials	PTFE + Elastomer
Temperature	-30°C / +200°C
Pressure	30 MPa
Speed	2 m/s

V'Rings



BECA 120VA

Materials	Elastomer
Temperature	-30°C / +200°C
Speed	10 m/s



BECA 120VE

Materials	Elastomer
Temperature	-30°C / +200°C
Speed	10 m/s



BECA 120VL

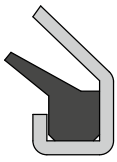
Materials	Elastomer
Temperature	-30°C / +200°C
Speed	10 m/s



BECA 120VS

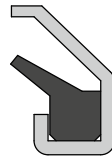
Materials	Elastomer
Temperature	-30°C / +200°C
Speed	10 m/s

Gamma seals



BECA 130

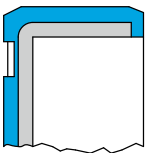
Materials	Elastomer + Steel
Temperature	-30°C / +200°C
Speed	20 m/s



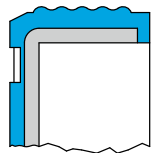
BECA 131

Materials	Elastomer + Steel
Temperature	-30°C / +200°C
Speed	20 m/s

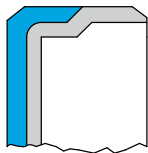
End covers



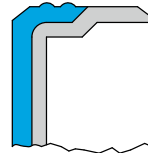
EC



ECW

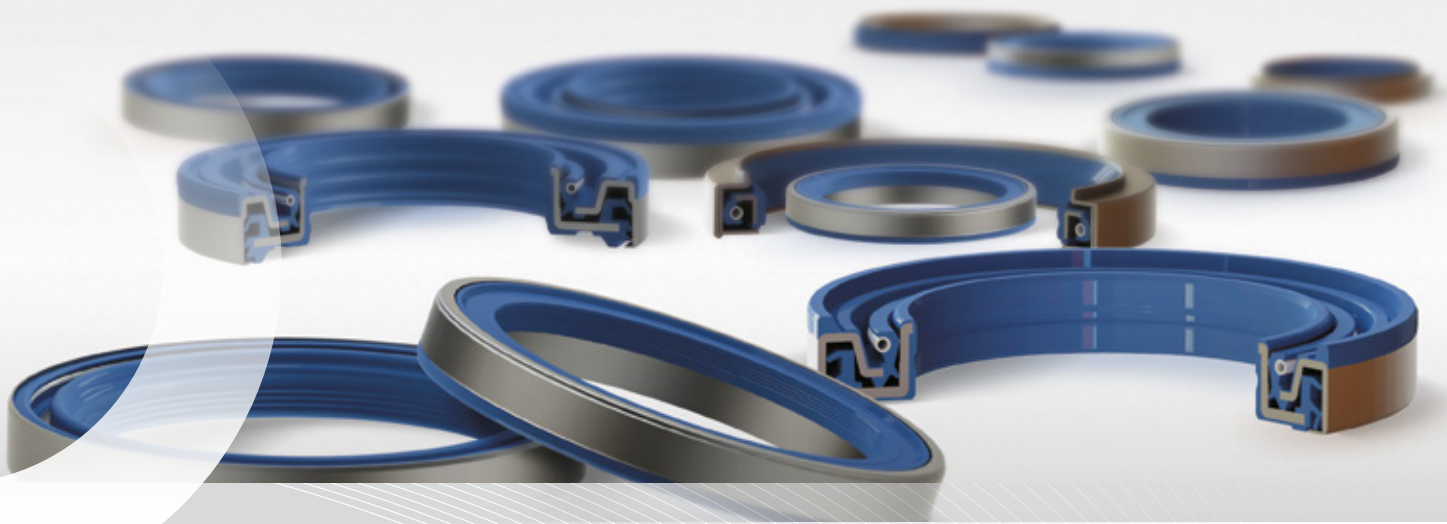


EBC



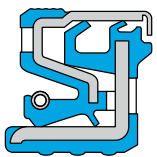
EBCW



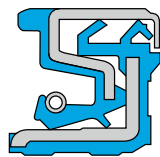


○ CASSETTE SEALS

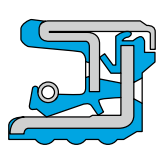
The cassette seals are generally made up of a sleeve, sealing lip with a spring and several anti-dust lips integrated into a labyrinth system to protect against external pollution, and are distinguished by greater system reliability and longevity. Furthermore, their friction surface, which has been adjusted and finished beforehand, does not require any shaft maintenance during replacement.



UA16



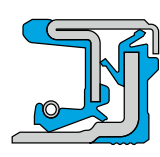
UA16A



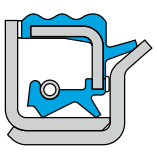
UA17



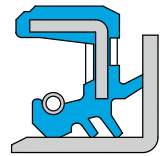
UA18



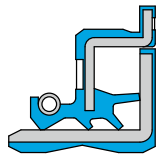
UA50



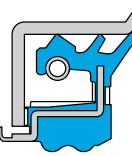
UA52



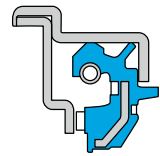
QA



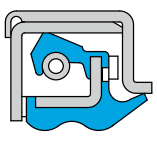
QLF



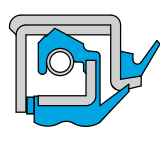
UA01



UA02



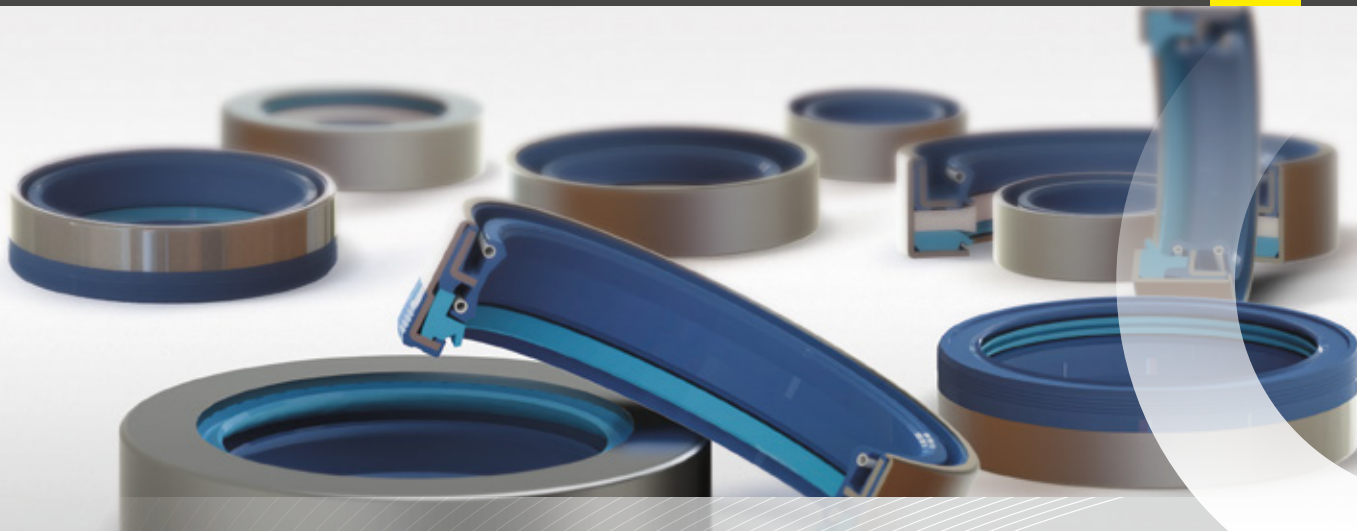
UA03



UA06

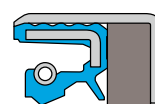
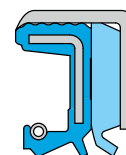
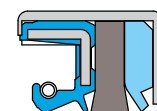


UA07



COMBI SEALS

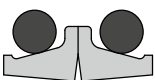
The combi seals, inseparable entities linked by metal frames, composed of standard SC / TC / DC shaft seal rings and polyurethane anti-pollution deflectors, are particularly valued for their great ability to form an anti-pollution barrier. This polyurethane part, whose material and design forms a barrier against external impurities, makes the combi seal highly reliable.


**COMBI1****COMBI2****COMBI3****COMBI4****COMBI5****COMBI6**



○ FACE SEALS - FLOATING SEALS

The face seals - floating seals are characterised by two identical metal friction rings mounted one on top of the other and centred in their groove by two rubber components that exercise a uniform axial pressure between the seal and the housing. The first metal ring remains static in its housing while the other, in rotation, ensures the sealing by creating friction between the two components in contact.

	BECA 830	
	Materials	Steel/Cast iron + Elastomer
	Temperature	-60°C / +180°C
	Pressure	0,15 MPa in Steel in dynamic 0,30 MPa in Cast iron in dynamic 0,50 MPa static
	Speed	2,2 m/s in Steel 3,0 m/s in 15CrMoNi Cast iron 10,0 m/s in Durinit Cast iron

	BECA 831	
	Materials	Steel/Cast iron + Elastomer
	Temperature	-60°C / +180°C
	Pressure	0,15 MPa in Steel in dynamic 0,30 MPa in Cast iron in dynamic 0,50 MPa static
	Speed	2,2 m/s in Steel 3,0 m/s in 15CrMoNi Cast iron 10,0 m/s in Durinit Cast iron





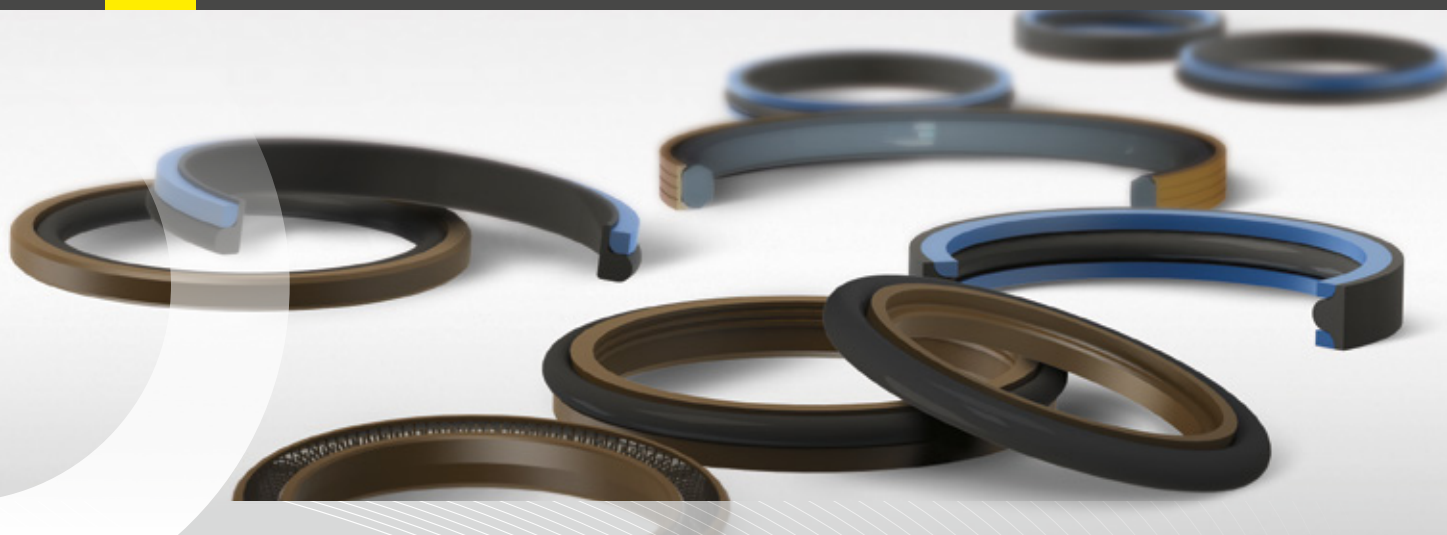
○ SEAL KITS

In Aftermarket world, the custom-made sealing kits are some of the main components in various parts. Among those who purchase these types of parts are industrial vehicle, hydraulic equipment and pneumatic equipment manufacturers. In Aftermarket, the scale of requirements has led these large companies that use the seals, across all fields, to source them from a large number of suppliers, thus multiplying the number of seals sold and included in a kit.

To deal with the sheer weight of organising this, France Joint offers its skill set as a unique supply source, thereby greatly easing the management of your retail seals and custom-made sealing kits for each application; the experience and quality of service provided by France Joint blends with your day-to-day efficiency.

Custom-made sealing kits,
an enhanced and unique
effectiveness.





○ AEROSPACE SEALS

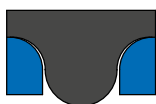
Our cutting edge sealing solutions are made using approved materials and meet the requirements of all types of applications in the aerospace and spacial environment. The aerospace seals mainly include filled PTFE-based composite seals, particularly for rod seals, piston seals, wiper seals and guiding components.

○ Rod seals



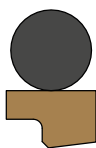
BECA 021

Materials	Elastomer + POM/PTFE
Temperature	-40°C / +200°C
Pressure	35 MPa static 21 MPa dynamic
Speed	1 m/s



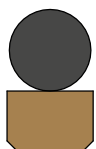
BECA 022

Materials	Elastomer + POM/PTFE
Temperature	-40°C / +200°C
Pressure	35 MPa static 21 MPa dynamic
Speed	1 m/s



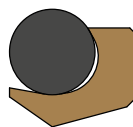
BECA 150 - 152 - 154

Materials	PTFE + Elastomer
Temperature	-40°C / +200°C
Pressure	35 MPa
Speed	5 m/s



BECA 151 - 153 - 155

Materials	PTFE + Elastomer
Temperature	-40°C / +200°C
Pressure	35 MPa
Speed	5 m/s



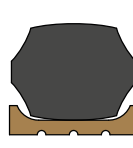
BECA 156M

Materials	PTFE + Elastomer
Temperature	-40°C / +200°C
Pressure	35 MPa
Speed	5 m/s



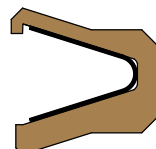
BECA 170 - 179

Materials	PTFE + Elastomer
Temperature	-40°C / +200°C
Pressure	35 MPa
Speed	5 m/s



BECA 172M

Materials	PTFE + Elastomer
Temperature	-40°C / +200°C
Pressure	35 MPa
Speed	5 m/s



BECA 340 - 349

Materials	PTFE + STL steel
Temperature	-200°C / +260°C
Pressure	30 MPa
Speed	15 m/s

Piston seals



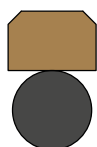
BECA 020

Materials	Elastomer + POM/PTFE
Temperature	-40°C / +200°C
Pressure	35 MPa static 21 MPa dynamic
Speed	1 m/s



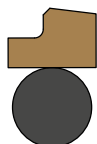
BECA 024

Materials	Elastomer + POM/PTFE
Temperature	-40°C / +200°C
Pressure	35 MPa static 21 MPa dynamic
Speed	1 m/s



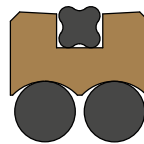
BECA 500 - 502 - 504

Materials	PTFE + Elastomer
Temperature	-40°C / +200°C
Pressure	35 MPa
Speed	5 m/s



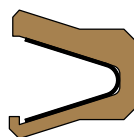
BECA 501 - 503 - 505

Materials	PTFE + Elastomer
Temperature	-40°C / +200°C
Pressure	35 MPa
Speed	5 m/s



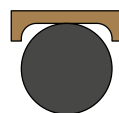
BECA 508S

Materials	PTFE + Elastomer
Temperature	-40°C / +200°C
Pressure	35 MPa
Speed	3 m/s



BECA 540 - 549

Materials	PTFE + STL steel
Temperature	-200°C / +260°C
Pressure	30 MPa
Speed	15 m/s



BECA 550 - 559

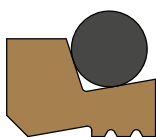
Materials	PTFE + Elastomer
Temperature	-40°C / +200°C
Pressure	35 MPa
Speed	5 m/s



BECA 552M

Materials	PTFE + Elastomer
Temperature	-40°C / +200°C
Pressure	35 MPa
Speed	5 m/s

Wiper seals - Scraper seals



BECA 485

Materials	PTFE + Elastomer
Temperature	-40°C / +200°C
Speed	5 m/s

Wear rings



BECA 006 Piston

Materials	PTFE
Temperature	-60°C / +200°C
Speed	15 m/s



BECA 006 Rod

Materials	PTFE
Temperature	-60°C / +200°C
Speed	15 m/s



○ SANITARY SEALS

Sanitary seals include DIN seals, SMS seals, CLAMP seals and all other types of seals that are primarily found in food, medical, pharmaceutical industries. We offer materials that conform to national and international standards - ACS, FDA, KTW, NSF, USP, WRAS.



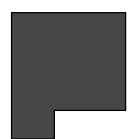
BECA 030



BECA 031



BECA 032



BECA 033



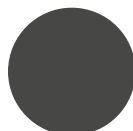
BECA 034



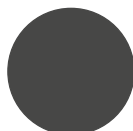
BECA 035



BECA 036



BECA 010 SA



BECA 010 SC





○ AUTOMOTIVE SEALS

Automotive seals are custom-made engineered components that are used in several business fields - Automotive, Heavy-duty trucks, Buses, Military vehicles.

We distinguish ourselves by advanced sealing technologies for Automotive industry - Most complete chemical compatibility, improved resistance to aggressive fluids such as hydrocarbons, refrigerant fluids, mineral and synthetic oils, and greases ..., proven thermal stability, capability to last with fast rotations movements, strong mechanical properties, low friction coefficient, approved materials in the automotive industry, etc.

Air conditioning

- A/C compressor seals
- PTFE precision seals
- O'Rings in EPDM, HNBR

Steering

- Back-up rings
- Non cut wear rings
- Steering column seals
- Steering rack seals
- Steering pump seals
- O'Rings in FKM, HNBR, NBR

Braking

- Square seals for brake caliper pistons
- Input seals for vacuum support systems
- Tank seals
- Dynamic lip seals for master cylinders
- Protective bellows for master cylinders
- Bellows for brake caliper pistons
- Bellows for brake caliper guides
- O'Rings

Engine

- Injector seals
- Valve stem seals
- Crankshaft seals
- Metallic gaskets
- O'Rings in FKM, HNBR, NBR, VMQ

Bearing

- Standard shaft seals
- Deflectors
- Cassette seals

Suspension

- Guide strips
- Twin-tube shock absorber seals
- Low friction PTFE seals
- Mono-tube rubber seals
- O'Rings in FKM, HNBR, NBR

Transmission

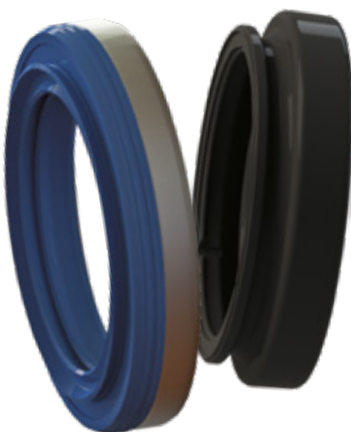
- Standard shaft seals
- Shaft seals with radial and axial lips
- Bonded piston seals
- O'Rings in ACM, AEM, FKM, HNBR, NBR

Gas spring

- Precision lip seals
- O'Rings in HNBR, NBR

Other components

- Grommets
- Retainer gaskets





○ PRECISION SEALS

The custom-made seals (or precision seals) include all types of seals or technical parts that are subject to a special design, with tight tolerances for more precise applications. We are constantly developing innovative sealing solutions to meet your needs.

○ Rubber precision seals

DESCRIPTION

The rubber precision seals are high-precision parts with tight tolerances manufactured by compression, by injection (into the polyurethane (PU) bases) or by machining on the numerical control machine.

We will assist you in the development of rubber precision seals and parts, using the following materials:

RUBBERS

- Polyacrylate - ACM
- Ethylene acrylate rubber - AEM
- Polybutadiene rubber - BR
- Polychloroprene - CR
- Chlorosulfonated polyethylene - CSM
- Epichlorohydrin rubber - ECO
- Ethylene Propylene Diene Monomer rubber - EPDM
- Perfluorinated rubber - FFKM
- Fluorinated rubber - FKM
- Fluorosilicone rubber - FVMQ
- Hydrogenated Nitrile Butadiene rubber - HNBR
- Isobutene isopropene (butyl) rubber - IIR
- Nitrile Butadiene rubber - NBR
- Natural rubber - NR
- Polyurethane - PU
- Styrene butadiene rubber - SBR
- Silicone rubber: Methyl vinyl polysiloxane - VMQ
- Carboxylated nitrile rubber XNBR

○ Metal to rubber seals

DESCRIPTION

Bonded rubber custom-made parts and seals on metal inserts (or metal to rubber parts) are generally made on hydraulic presses using compression moulding.

EXAMPLES OF CUSTOM-MADE PARTS

- Wiper seals
- BS rings or Bonded seals
- Shaft seals
- Pin dust seals
- Cover seals
- Cassette seals
- Combi seals
- Shock absorber seals
- Steering seals
- Bonded piston seals
- Valve stem seal
- Bearing seal
- Gas spring seal
- Crankshaft seals
- Silent blocks - Anti-vibration mountings
- Elastic supports

Plastic precision parts

DESCRIPTION

Plastics are technical materials that are increasingly present in a number of applications and which are likely to replace other materials such as bronze, stainless steel, aluminium or ceramic.

Engineers are increasingly persuaded to use such materials because of their many advantages :

- Extended lifespan of the part
- Reduced or even eliminated need for lubrication
- Reduced friction coefficient
- Reduced wear on parts
- Greater production / productivity
- Corrosion resistance
- Reduced weight

France Joint will assist you in the development and production of advanced plastic seals, such as:

Thermoplastics

- Polyamide - PA
- Polyoxymethylene - POM
- Polycarbonate - PC
- Polymethylmethacrylate - PMMA
- Polyethylene - PE-UHMW
- Polyvinyl chloride - PVC
- Polypropylene - PP

High-performance materials

- Polyamide - Imide - PAI
- Polybenzimidazole - PBI
- Polybutylene Terephthalate - PBT
- Polyetherketone - PEEK
- Polyetherimide - PEI
- Polyethersulfone - PES
- Polyethylene terephthalate - PET-P
- Polyphenylene sulfide - PPS
- Polyphenylsulfone - PPSU
- Polysulfone - PSU

Fluorinated polymers

- Ethylene copolymer - Chlorotrifluoroethylene ECTFE
- Tetrafluoroethylene copolymer - Ethylene - ETFE
- Tetrafluoroethylene copolymer - Hexafluoropropylene - FEP
- Polychlorotrifluoroethylene - PCTFE
- Perfluoroalkoxy copolymer - PFA
- Polytetrafluoroethylene - PTFE
- Polyvinylidene fluoride - PVDF

Protective bellows

DESCRIPTION

The moulded protective bellows can be cylindrical, conical, square, rectangular or can be made in other shapes.

Among the protective bellows made, there are :

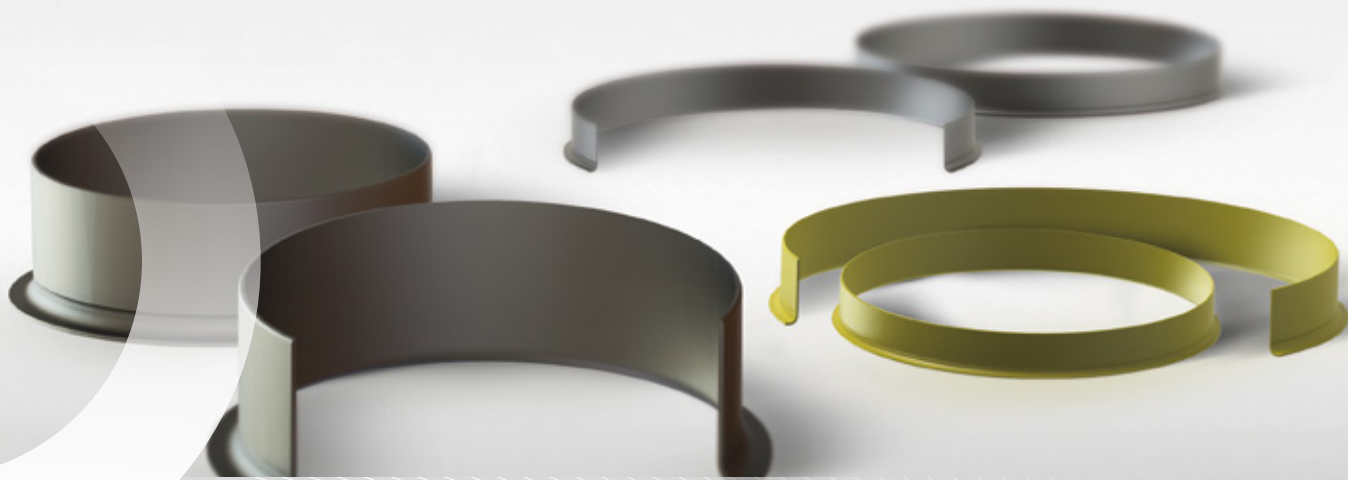
- Rubber bellows - NBR - NR - EPDM - VMQ - PU
- PVC bellows on a Kevlar frame with an excellent tensile strength
- Silicone bellow on a Kevlar or Nomex frame that is very flexible and has an excellent resistance to temperatures (-55°C / +250°C) and the vast majority of fluids

APPLICATIONS

Robot arms
Cylinder rod
Axle and universal joint protection


There are several options for this type of bellow, for example :


- A zipper, which facilitates fitting the bellow
- A stiffener, which ensures better resistance to pressure or depression
- Filters or breathing holes that ensure air circulation when the bellow is in motion




○ SLEEVES

The sleeves are an efficient and economic solution to wear problems on the shaft. Press-fit on the shaft, the sleeves meet the hardness and surface roughness constraints and the dimensions of the rotary seal in contact do not need to be reviewed. We offer standard sleeves as well as those suitable for highly corrosive environments.

	BECA 810	
	Materials	STL steel - AISI 304
	Hardness	More than 220 HV (95 HRB)
	Thickness	0,28 mm (0/-0,05)

	BECA 811	
	Materials	STL steel - AISI 304
	Coating	Hard Chrome HEEF-25
	Hardness	800 - 1100 HV (65 - 72 HRC)
	Thickness	0,28 mm (+/-0,05)

	BECA 812	
	Materials	STL steel - AISI 304
	Coating	Titanium
	Hardness	80 - 85 HRC
	Thickness	0,28 mm (+/-0,05)





www.francejoint.com



www.francejoint.com

QUALITY & EXPERTISE
FOR YOUR SEALING NEEDS



FRANCEJOINT
SEALING SYSTEMS

FRANCE JOINT SAS

Z.A Le Mortier - B.P. 50009 - Cugand - 85613 Montaigu Cedex - France

Ph. **+33 (0)2 51 42 13 76** - Fax **+33 (0)2 51 43 61 14**

E-mail : contact@francejoint.fr - Web site : www.francejoint.com

SAS CAPITAL 1.000.000 Euros - RCS 450 136 809 - VAT N° FR 10 450 136 809 - SIRET 450 136 809 00016 - NAF 2219 Z

