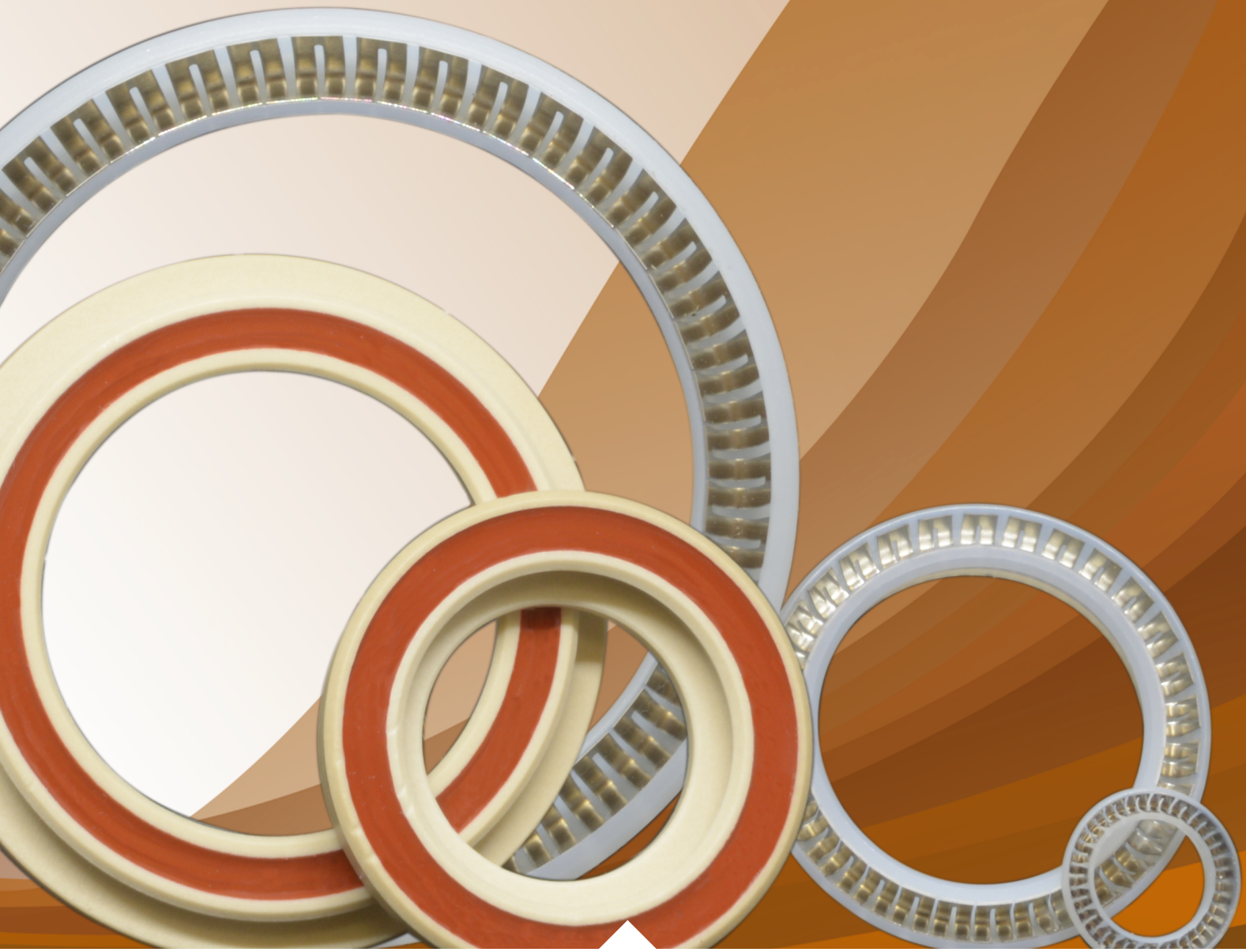
Interseal

P8.0

Varioslide®

The solution for multiple applications



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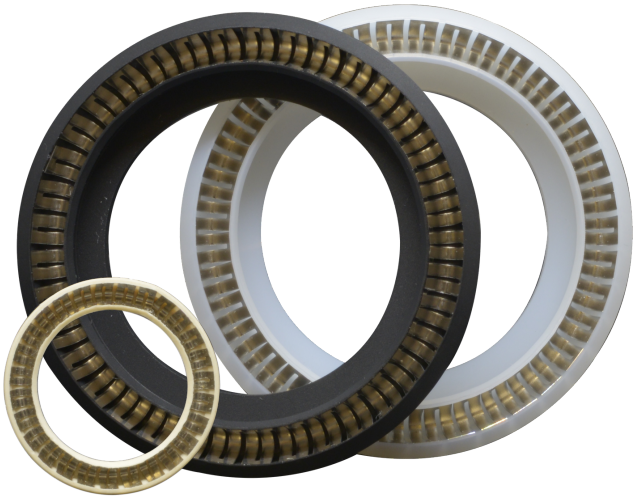
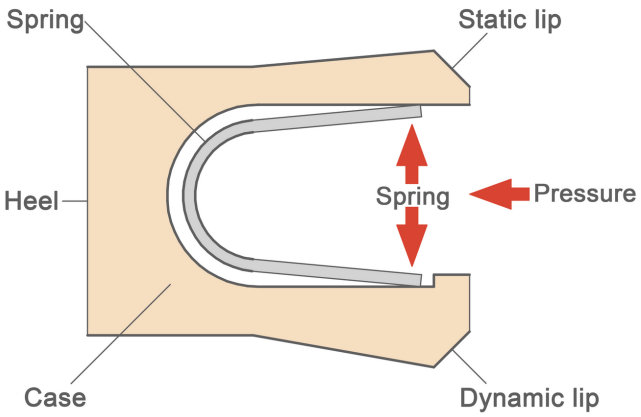
About Varioslide® seals



Overview

Varioslide® seals are designed to provide a leak-tight joint in extreme conditions.
They are used in all types of plant that transfer gases or liquids under pressure.

- Made to withstand the most aggressive chemical agents
- Outstanding performance at high and low temperatures
- Controlled friction, even when running dry
- Suitable for the highest pressures as well as for vacuum
- Can be made in large diameters while taking up little room
- Very long service life and even longer shelf life (unlike elastomers)



Discover the Varioslide® seal for you

- The case is machined from high-performance polymer
- The stainless steel spring presses the case lips against the surface being sealed, taking up wear while correcting any concentricity errors
- Multiple case shapes and materials and the many spring types and steel grades make them easily adaptable to different uses
- The pressure differential helps the case expand
- The heel is creep resistant and can be reinforced for use in high stress conditions
- The dynamic lip provides a perfect seal with sliding, rotating, or oscillating surfaces
- The static lip ensures perfect sealing against the base of the groove. Both lips can be static when used between flange faces or similar

Typical uses of Varioslide

The huge number of different case and spring geometries, coupled with a wide choice of polymers, make Varioslide® seals a good fit for almost all applications across a wide range of industries :

- Chemical
- Pharmaceutical
- Food
- Mechanical
- Aerospace
- Automotive
- Oil and gas

etc.

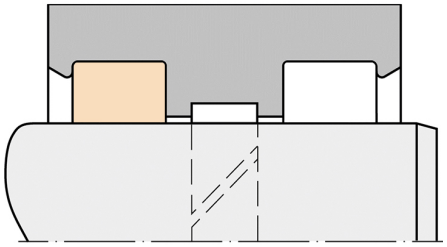
General operating conditions

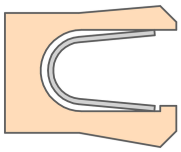
Temperature limits : -250 to +260°C
Maximum pressure in static use : < 120 MPa
Maximum linear motion speed : < 15 m/s
Maximum rotary motion speed : < 2,5 m/s
Fluids : just about any

Important :
These usage limits do not necessarily apply all at the same time.
Maximum pressure or maximum speed can be attained only after analysing all the parameters: nature of fluid, temperature, case profile and material, mating surface material and roughness, working clearance, etc.

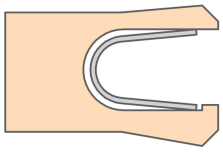
The 10 main seal formats

Figure 1. Radial types for rod outside diameters, main use : linear motion

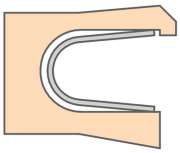




Standard

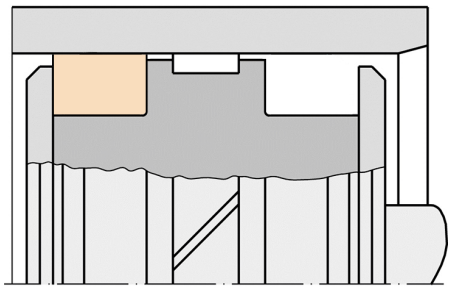


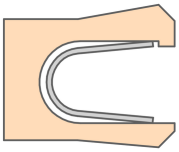
Reinforced heel option



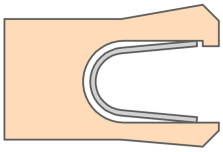
Square lip for squeegee action

Figure 2. Radial types for cylinder bores, main use : linear motion

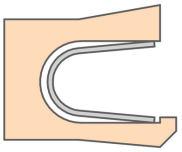




Standard

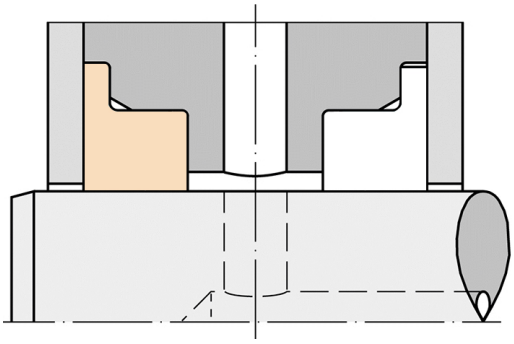


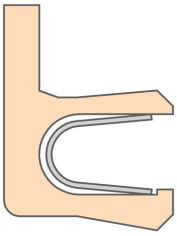
Reinforced heel option



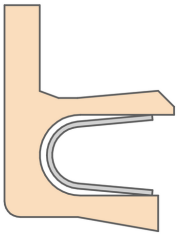
Square lip for squeegee action

Figure 3. Radial flanged types for spindles, main use : rotary motion



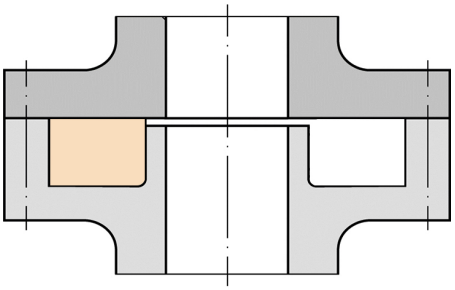


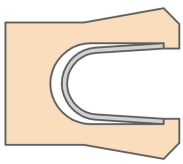
Standard



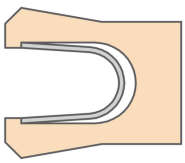
Option lèvre dynamique droite (effet de raclage)

Figure 4. Axial type (face seal) for flanges, main use : static or slow turning





Internal pressure



External pressure

The Varioslide® range contains a huge number of models in various shapes, dimensions, and spring types. Enquire with our engineering service...

Silicone filling, invaluable for avoiding contamination

Our Varioslide® seals are also available in a silicone filled (SF version).

To prevent any particles accumulating, the spring seat in this version is filled with HT silicone.

The SF design is mainly intended for applications where potential contamination is an issue, as in the food, pharma, and cosmetic industries.

It can also be useful in seals for viscous or particle laden products that could cause clogging of the spring seat and stop the seal working efficiently.

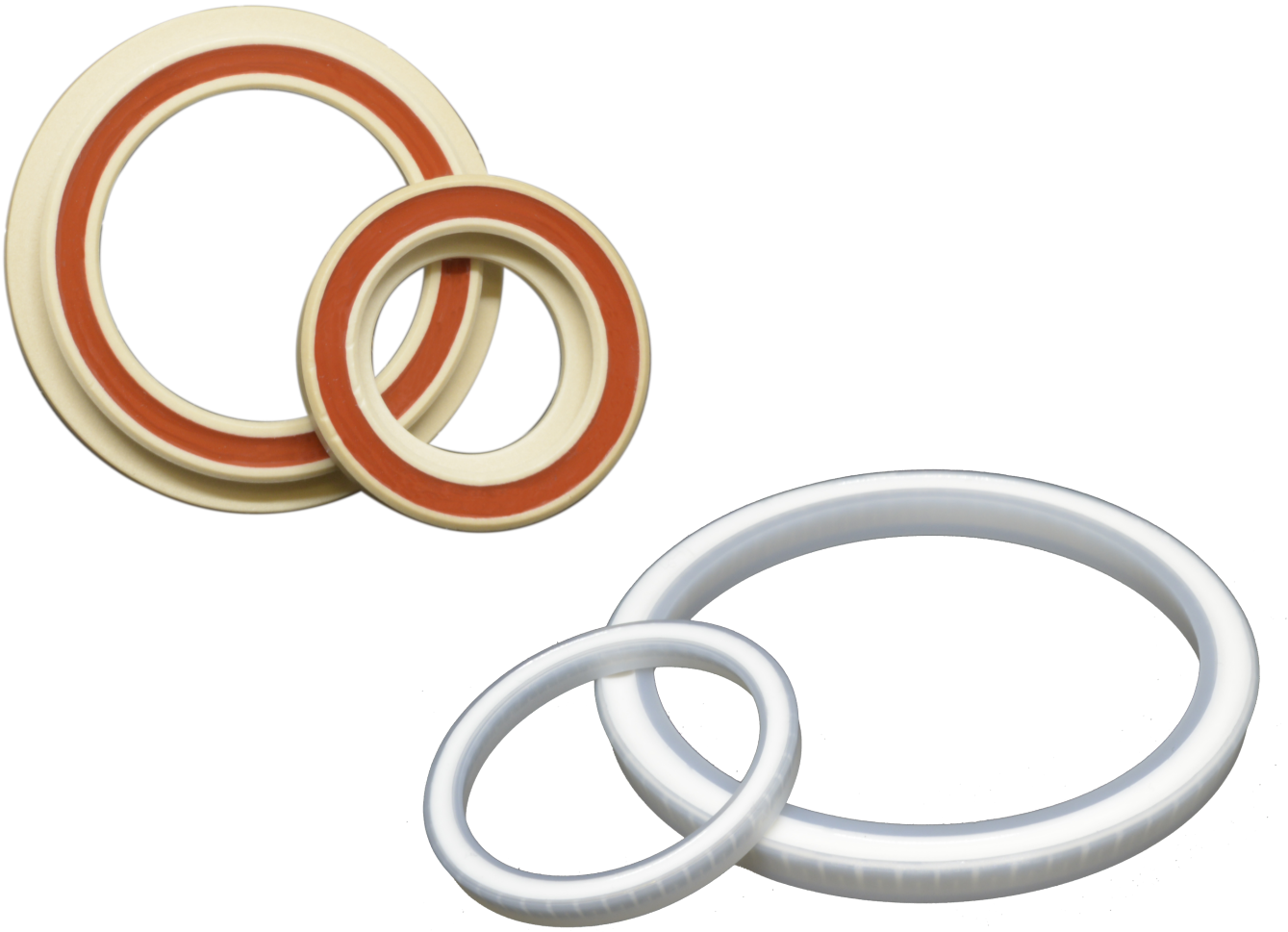
To summarize :

→ Decreases empty space
→ Easy to clean and sterilize
→ Silicone filling assists the spring action

The silicone used in the standard SF version is usually coloured red.
A white or translucent version can also be used depending on production requirements.

Irrespective of colour, all our silicones comply with FDA 21 CFR 177.2600 regulations.

Please indicate SF (silicone filled) in your enquiries where relevant



Materials used in Varioslide® seals

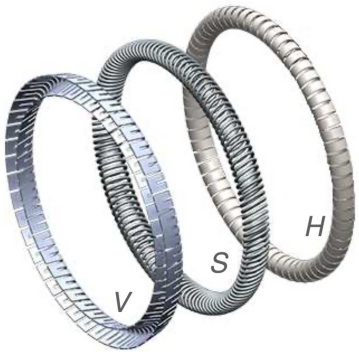
Code	Material	Continuous T°C		Advantages/Restrictions	Applications	Colour
		–	+			
4702	Premium grade PTFE	200	210	• Optimum chemical resistance • Minimal friction • Low gas permeability ⚠ *Limited wear and pressure resistance*	• Static, low pressure • Dynamic, intermittent movements with very low P.V • Moderate vacuum, cryogenic gases	White
5401	High density PTFE	200	220	• Optimum chemical resistance • Minimal friction → compared with standard PTFE: • Impermeability to the higher gases • Improved creep and extrusion resistance • Better surface state	• Static, medium pressure • Dynamic possible, with provisos (low P.V) • High vacuums, cryogenic gases • Light gases under low pressure	White
4708	Modified PTFE	200	210	• Excellent chemical resistance • Minimal friction → Compared with standard PTFE: • Improved wear resistance • Improved extrusion resistance • Identification by colour	• Large range of use • Static, medium pressure • Dynamic low P.V • All fluids • Light gases under low pressure, vacuum	Turquoise
4912	Graphite PTFE	200	240	• Excellent chemical resistance • Non-abrasive to delicate surfaces • Good thermal conductivity • Low start-up friction ⚠ *Sensitive to strong oxidizers*	• Dynamic low pressures • High rotational speed on hard shafts • Water and steam applications • Dry environments possible, with provisos	Dark grey
5205	Mineral PTFE	110	250	• Low friction • High wear resistance in dry or lightly lubricated environments • Non-abrasive to delicate surfaces	• Dynamic medium P.V • Dry or lightly lubricated environments	White
4901	Carbon PTFE	185	260	• Very good all-round properties • Wear resistance • Pressure and extrusion resistance • Thermal conductivity ⚠ *Sensitive to strong oxidizers*	• High pressure hydraulic seals • Hot water, steam, and non-lubricated environments	Black
4902	Carbon PTFE	185	260	• Very good all-round properties • Wear resistance • Pressure resistance • Thermal conductivity • Sensitive to strong oxidizers	• Standard Varioslide® use • Hot water, steam, and non-lubricated environments	Black
4916	Carbon PTFE	155	230	• Wear resistance • Low friction ⚠ *Use limited to vacuum and low pressure gas* ⚠ *Sensitive to strong oxidizers*	• Usage very large • Lubricated, non-lubricated, or even mildly abrasive environments • Especially suited to water (water hydraulics)	Dark grey
4802	Glass PTFE	190	240	• Wear resistance • Extrusion resistance • *Abrasive to delicate surfaces if speeds are high*	• Very good for dynamic with lubrication • Excellent for anti-extrusion washers	White
4804	Glass PTFE	155	250	• Low friction • High wear resistance • Good pressure resistance • Good extrusion resistance under vacuum and in inert gases ⚠ *Abrasive to delicate surfaces*	• Alternative high speed applications (hydraulic) • Lubricated rotating applications on hard shafts	Bluish grey
5109	Polymer PTFE	130	260	• Wear resistance • Hear resistance • Non-abrasive to delicate mating surfaces • Good chemical resistance	• All-round use • Medium speed and pressure • Use on delicate mating surfaces • Inert gases, vacuum, dry environments	Buff
5007	Bronze PTFE	150	280	• High pressure and creep resistance • High thermal conductivity • Wear resistance ⚠ *Sensitive to acid and water*	• Standard use in high pressure hydraulics • Guide strips and anti-extrusion washers	Greenish brown
J104	PEHD	200	80	• Wear and shock resistance even at temperatures under –200°C • Very good chemical resistance	• Exceptional for linear motion • Particle laden fluids • Cryogenics • Chemicals, agri-food, general mechanical	White
X101	PEEK	60	250	• High pressure resistance • Good thermal resistance • Fairly good chemical resistance • Radiation resistance up to 10^9 rad	• Anti-extrusion washers • Special seals for linear motion	Buff

Comparison chart of material properties and functions

Relative friction	Wear resistance (high speeds)		Pressure/extrusion resistance	Chemical resistance	Mating surface hardness HRC	P.V (MPa.m/s)	Food contact	Varioslide® configuration			Guidance	Anti-extrusion	Code
	⇄	↻						⇄	↻	→			
5	1	1	1	5	25	-	■	■				■	4702
4	1	1	2	5	25	-	■	■				■	5401
5	2	1	2	4	35	0.3		■	■	■		■	4708
5	2	3	3	4	25	0.45	■	■	■	■	■		4912
4	3	3	3	4	25	0.36	■		■	■			5205
4	4	3	4	4	50	0.48					■	■	4901
4	4	4	4	4	50	0.48	■	■	■	■	■		4902
4	5	4	4	4	45	0.48	■	■	■	■		■	4916
4	4	4	3	4	55	0.36	■	■	■	■		■	4802
5	5	5	4	4	60	0.6	■	■	■	■			4804
3	3	3	4	4	25	0.36	■	■	■	■	■		5109
3	4	3	4	3	45	0.36					■	■	5007
2	5	1	5	2	35	0.3	■	■	■		■	■	J104
1	3	1	4	3		0.12	■		■			■	X101

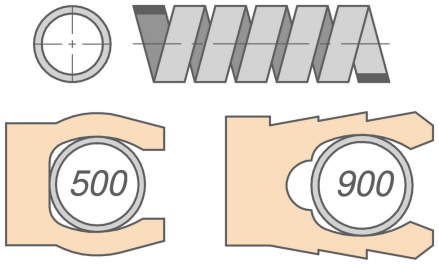
Varioslide® series and springs

An important point to consider when choosing a spring is the force/deflection ratio, which governs the essential factors of sealing force, friction, and wear.
We mainly use the three spring types shown below, namely V, S, and H.



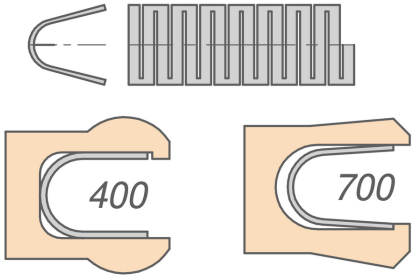
- **Ressort type HH type spring** (helicoidally wound strip)

→ Fitted to our 500 & 900 series
→ Near-linear relation between force and deflection
→ The normal deflection of 15% generates substantial force
→ Static and dynamic low-speed applications where friction is not a crucial factor
→ Standard material: 1.4310 (AISI 301)*



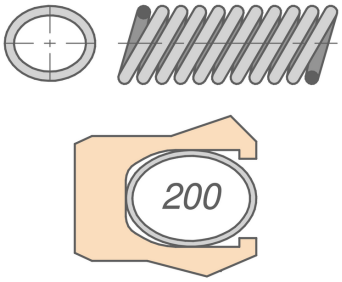
- **RV type spring** (slotted, folded strip)

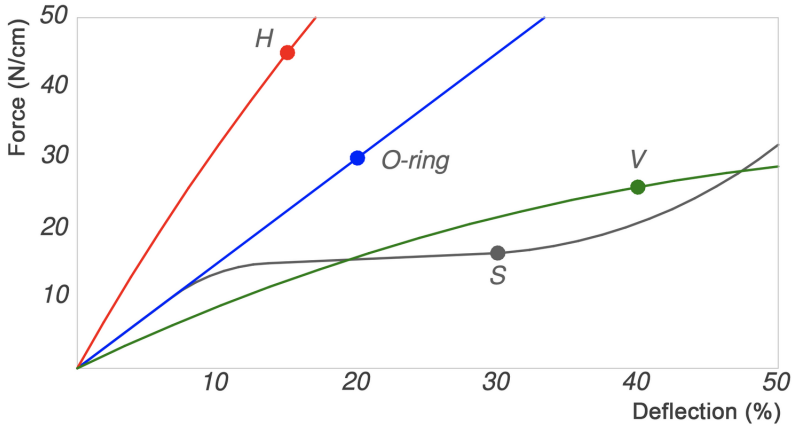
→Fitted to our 400 & 700 series
→ Near-linear relation between force and deflection
→ Bigger deflections possible (up to 40%), while the corresponding forces remain moderate
→ Static and dynamic applications: this spring's flexibility enables it to take up small concentricity or alignment errors
→ Standard material: 1.4310 (AISI 301)*



- **S type spring** (slanted coils of round wire)

→ Fitted to our 200 series
→ Nonlinear relation between force and deflection
→ The force stays fairly constant for deflections between 10% and 30%
→ Dynamic applications where controlled friction is required
→ Standard material: 1.4310 (AISI 301)*



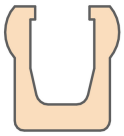


Spring force/deflection for a given seal section

Selecting the right Varioslide®

Main lip shapes

Item 1



→ Contact over wide rounded bulge near lip end
→ Spring type V only (400 series)
→ Low contact force
→ Low friction and reduced wear
→ Linear/rotary/oscillatory motion
→ High speed

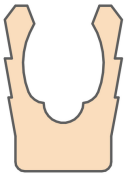
Item 2

→ Contact on chamfered edge
→ Spring types S (200 series) or V (700 series)
→ Contact and friction force greater than for Item 1
→ Faster wear than Item 1 if the mating surface is not smooth enough
→ Very good sealing
→ Linear motion and static

Item 3

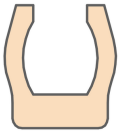
→ Contact on square corner, "squeegee" action
→ Spring types S (200 series) or V (500 series)
→ Medium contact force
→ Medium friction and wear levels
→ Mainly linear motion
→ Suitable for particle laden fluids

Item 4



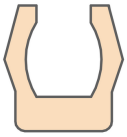
→ Primary contact on chamfered edge backed by two squeegee-type square edges
→ Spring type H (900 series) or O-ring
→ High contact force
→ Higher friction than with other types
→ Excellent sealing
→ Fast wear if mating surface not smooth enough
→ Linear motion and rotation
→ Suitable for particle laden fluids

Item 5



→ Contact over wide rounded profile, similar to Item 1
→ Spring type H (500 series) or O-ring
→ Medium contact force
→ Fairly low friction
→ Rotary motion and static
→ Medium speed
→ Gas and cryogenics
→ The wide rounded contact area facilitates fitting if there is too little bevel

Item 6



→ Contact minimal en forme de pointe
→ Ressort type H (série 500) ou joint O-ring
→ Force de contact importante
→ Très bonne étanchéité
→ Applications statiques
→ Gaz et fluides volatils

Selection chart

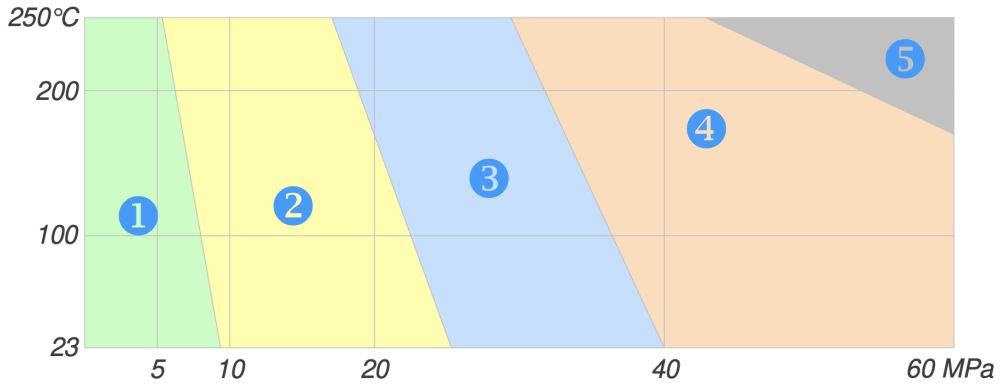
Series		Profile (1)	Spring (2)	Friction (3)	T°C (4)	Seal technical characteristics (5)				
						Pressure (MPa)			Speed (m/s)	
						→|	⇄	↻	⇄	↻
	**200**	No	S	Medium	+300 ↑ -50	40	20	15	10	2.5
	**400**	Yes	V	Low	+300 ↑ -50	40	20	15	10	2.5
	**500**	Yes	H	Medium	+200 ↑ -100	40	20	15	2.5	0.25
	**700**	No	V	Low	+300 ↑ -50	40	20	15	10	2.5
	**900**	No	H	High	+200 ↑ -100	60	30	15	2.5	0.25

(1) Symmetrical profile or not. Items (2) & (3): see page 07
(4) Seal working temperature, also depends on material type: see page 04
(5) Guide figures that can be exceeded with specially adapted seals (consult our technical service)

See important note, page 01

Pressure, temperature, running clearance

Under high pressures, the running clearance J must be closely controlled to avoid Seal extrusion and premature failure. The extrusion risk is substantial when high pressure and temperature both exist. We offer a range of solutions to avoid extrusion risks, such as bolstering the seal's heel or adding extra washers made of high-strength Dynaflon® or Nyltec®. Our Nyltec® X101 material is recommended for highly stressed anti-extrusion washers. It is important to keep clearance "J" below the values indicated in table 02 with respect to the operating bands depicted on graph 01.



Graph 01 - operating pressure and temperature bands

	Zone →	1			2			3			4			5
	Type →	A	B1	C2	A	B1	C2	A	B1	C2	A	B1	C2	
S (sections)	1.45	0.06	0.08	0.13	0.04	0.06	0.09	-	0.04	0.08	-	-	0.06	Please enquire
	2.25	0.09	0.12	0.21	0.06	0.09	0.15	-	0.06	0.12	-	-	0.09	
	3.10	0.12	0.16	0.29	0.08	0.12	0.20	0.06	0.08	0.16	-	0.06	0.12	
	4.7 / 5.0	0.19	0.25	0.44	0.12	0.18	0.31	0.09	0.12	0.24	-	0.08	0.18	
	6.0 / 6.1	0.24	0.32	0.57	0.16	0.24	0.40	0.11	0.16	0.32	-	0.11	0.23	
	7.5	0.30	0.40	0.70	0.20	0.29	0.49	0.14	0.20	0.39	-	0.14	0.29	
	9.5 / 10.0	0.38	0.50	0.88	0.25	0.37	0.62	0.17	0.25	0.49	-	0.17	0.37	
	12.5 / 12.7	0.50	0.67	1.18	0.33	0.50	0.83	0.23	0.33	0.66	-	0.23	0.49	
	15.0	0.60	0.80	1.39	0.39	0.59	0.98	0.27	0.39	0.78	-	0.27	0.58	
	20.0	0.80	1.06	1.86	0.52	0.78	1.30	0.36	0.52	1.04	-	0.36	0.77	

Table 02 - Clearances per usage band, type, and section

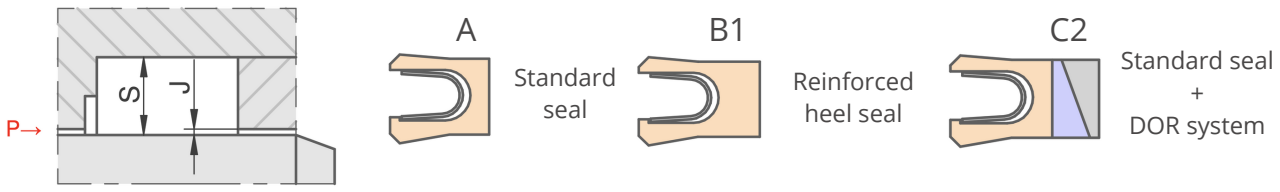
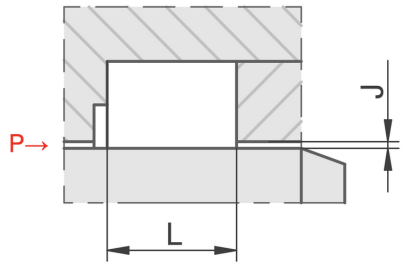
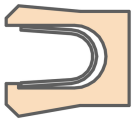


Table 02 shows clearance values "J" for a standard height seal, reinforced heel seal, and seal with DOR system, as depicted earlier.
Housing widths for seals with anti-extrusion systems are shown in table 03 on page 09.

Extrusion prevention devices

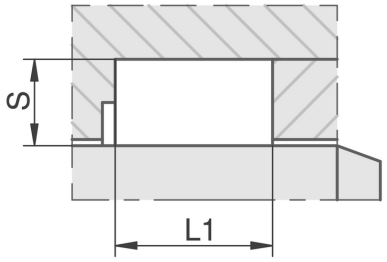


A

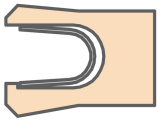


Standard seal

Table 03 below also shows the maximum bearable pressures in static use at ambient temperature for most seals with anti-extrusion systems.

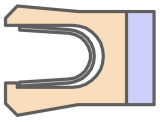


B1



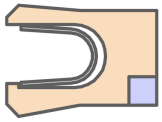
Reinforced heel seal

B2



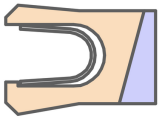
Standard seal + flat washer

B3

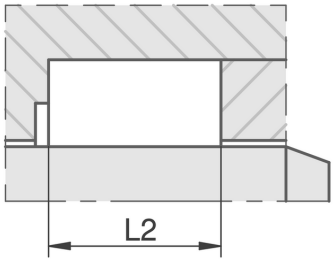


Reinforced heel + inlaid washer

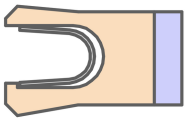
B4



Seal + bevel washer

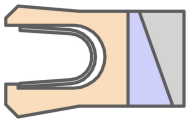


C1



Reinforced heel + flat washer

C2



Standard seal + DOR system

Section code	S (Section)	W 0/+0.3	W1 0/+0.3	W2 0/+0.3	Maximum pressure (MPa) per type						
					A	B1	B2	B3	B4	C1	C2
0145	1.45	2.4	3.4	4.4	10	14	-	-	-	20	-
0225	2.25	3.6	5	6.4	15	21	-	-	-	30	-
0310	3.1	4.8	6.2	7.6	20	29	33	40	40	40	50
0470	4.7	7.1	9	10.9	30	43	50	60	60	60	75
0500	5.0	7.5	9.4	11.3	30	43	50	60	60	60	75
0600	6.0	9.0	10.9	12.8	30	43	50	60	60	60	75
0610	6.1	9.5	12.3	15.1	30	43	50	60	60	60	75
0750	7.5	11.3	14.1	16.9	35	50	58	70	70	70	88
0950	9.5	14.3	17.1	19.9	40	57	67	80	80	80	100
1000	10.0	15.0	17.8	20.6	40	57	67	80	80	80	100
1250	12.5	18.8	21.6	24.4	45	64	75	90	90	90	113
1270	12.7	19.1	21.9	24.7	45	64	75	90	90	90	113
1500	15.0	22.5	25.3	28.1	50	72	84	100	100	100	125
2000	20.0	30.0	34	38	60	86	100	120	120	120	150

Table 03

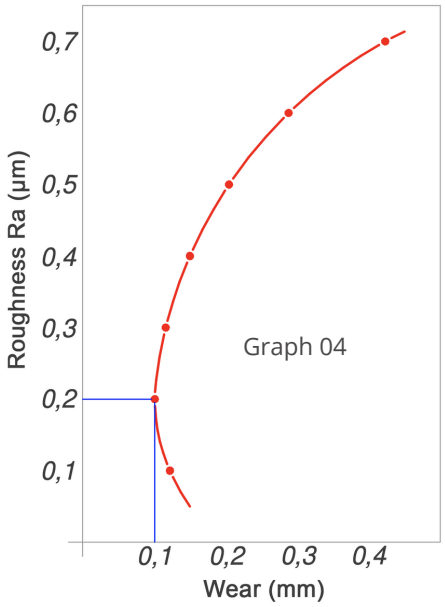
Surface state of mechanical parts

Hardness of mating surface

Seal wear greatly depends on the hardness of the mating surface. Generally speaking, the harder the surface, the better Varioslide® performs.
We recommend the following values :
Linear motion : 40–50 HRC
Rotary motion : 55–65 HRC to a depth of 0.5 mm minimum
Softer surfaces (20–35 HRC) may be usable after analysis of the general parameters : motion type, speed, sealed fluid, case material, temperature, and pressure.
Please get in touch with our technical service.

Surface roughness

If a dynamic mating surface is too rough, the seal case will wear very quickly.
Conversely, if the mating surface is too smooth, it can impair creation of the PTFE hydrodynamic film that is indispensable to proper running.
Graph 04 shows the relation between wear and roughness. In this non-normalized test, the lowest wear was observed where the seal contacts a mating surface of roughness Ra 0.2.
For sealing applications, the Ra value alone is not enough to evaluate the mating surface. Values Rz, Rmax, and the load length ratio Rmr must also be factored in, using standard ISO 4287 as the basis.
Table 05 shows optimum Ra, Rz, and Rmax values for good sustainable running. The load length ratio Rmr can vary by a factor of four for a given Rz value, making its evaluation very important.
We advise an Rmr of 50% to 70%, measured at the height of a section whereby c = 0.25 x Rz (reference line Cref. 5%).

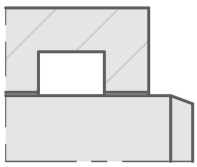


Graph 04

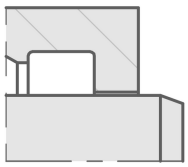
Sealed medium	Value	⇄	↻	→|
Cryogenics Hydrogen, helium, Freon, oxygen, nitrogen	R_a	0.2	0.1	0.3
	R_z	1.6	0.63	2.2
	R_{max}	2.5	1.0	3.5
Low viscosity fluids Water, alcohols Gaseous nitrogen, natural gas, argon, air	R_a	0.3	0.2	0.6
	R_z	2.2	1.6	3.5
	R_{max}	3.5	2.5	5.0
High viscosity fluids Crude oil, hydraulic oils, motor oils, mastics and glues Dairy products	R_a	0.4	0.2	0.8
	R_z	2.5	1.6	5.0
	R_{max}	4.0	2.5	6.5

Table 05 (roughness in µm)

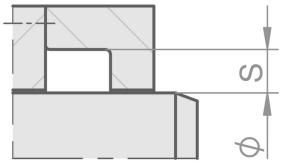
Recommended diameters per section profile



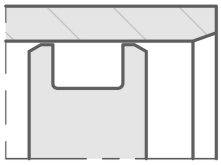
Closed grooves

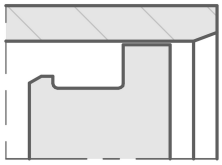


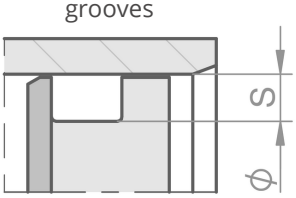
Semi-open grooves

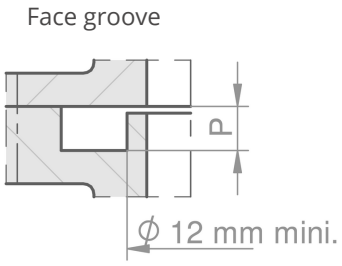


Separable grooves



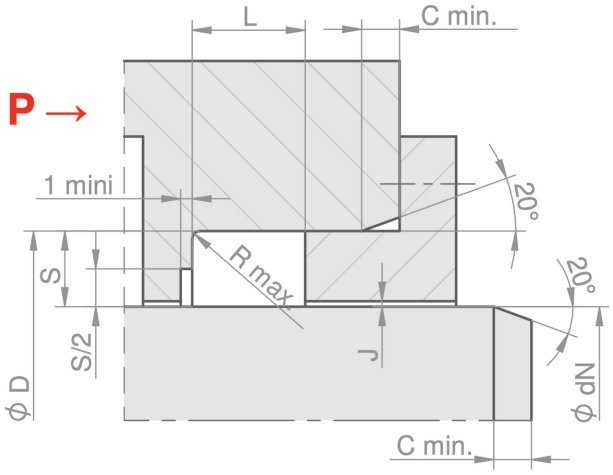


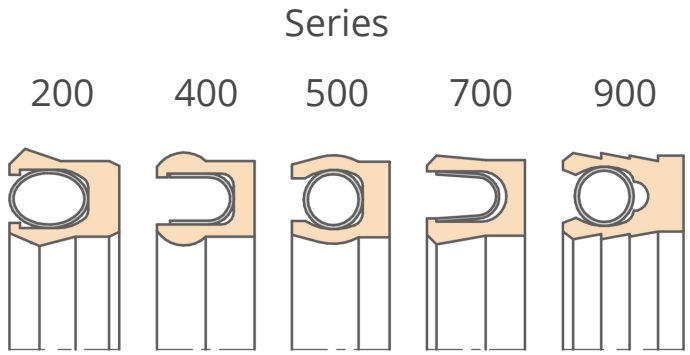


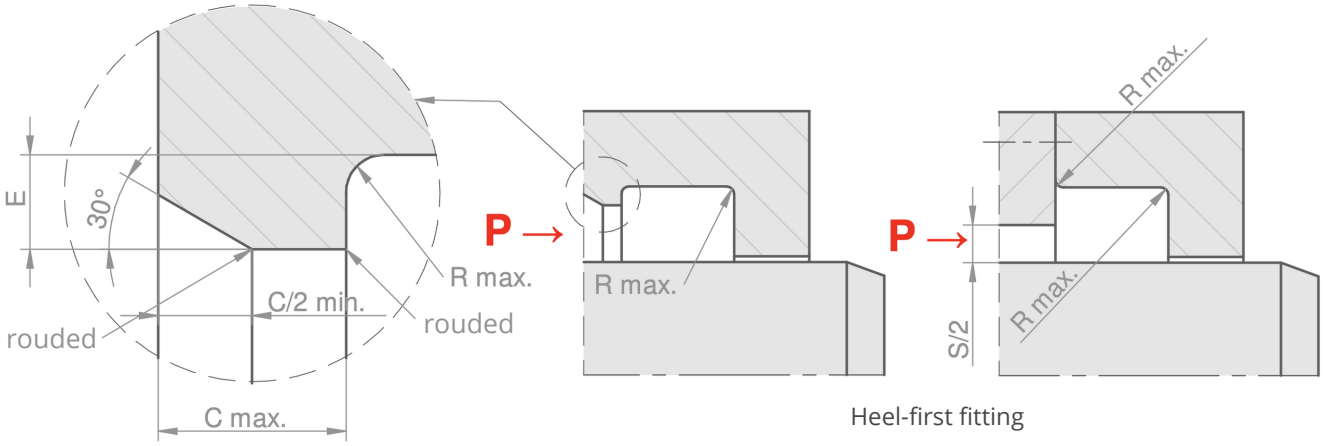


S or P section (mm)	Inside diameter of Varioslide® seal (mm)					
	Separable groove				Semi-open Groove	Closed groove
	Minimum possible	Suggested minimum	Suggested maximum	Maximum possible	Dictated minimum	Dictated minimum
1.00	2	3	10	14	-	Only for 200 and 500 series Assembly tools may be needed Please consult our technical service
1.45 – 1.50 – 1.59	4	6	14	24	20	
2.00	6	10	24	40	30	
2.25 – 2.38 – 2.50	9	14	20	50	30	
3.00 – 3.10 – 3.18	12	18	50	65	40	
3.50	16	24	65	100	50	
3.97 – 4.00	20	30	80	120	60	
4.70 – 4.76	24	40	100	140	60	
5.00	30	50	120	180	60	
5.25	40	50	140	225	70	
6.00 – 6.10	40	65	160	250	80	
6.35	50	80	200	315	90	
7.00	50	80	225	355	100	
7.50	65	100	250	400	100	
7.94 – 8.00	65	100	280	450	110	
9.50 – 9.53	100	160	400	630	120	
10.00	120	160	450	630	150	
12.00	160	225	630	1000	X	
12.50 – 12.70	160	250	630	1000	X	
15.00	250	355	1000	1600	X	
15.88	280	400	1000	1600	X	
17.50	315	500	1250	2000	X	
19.05 – 20.00	400	630	1600	2500	X	

Seal housing construction
Radial type - external (rod) fitting





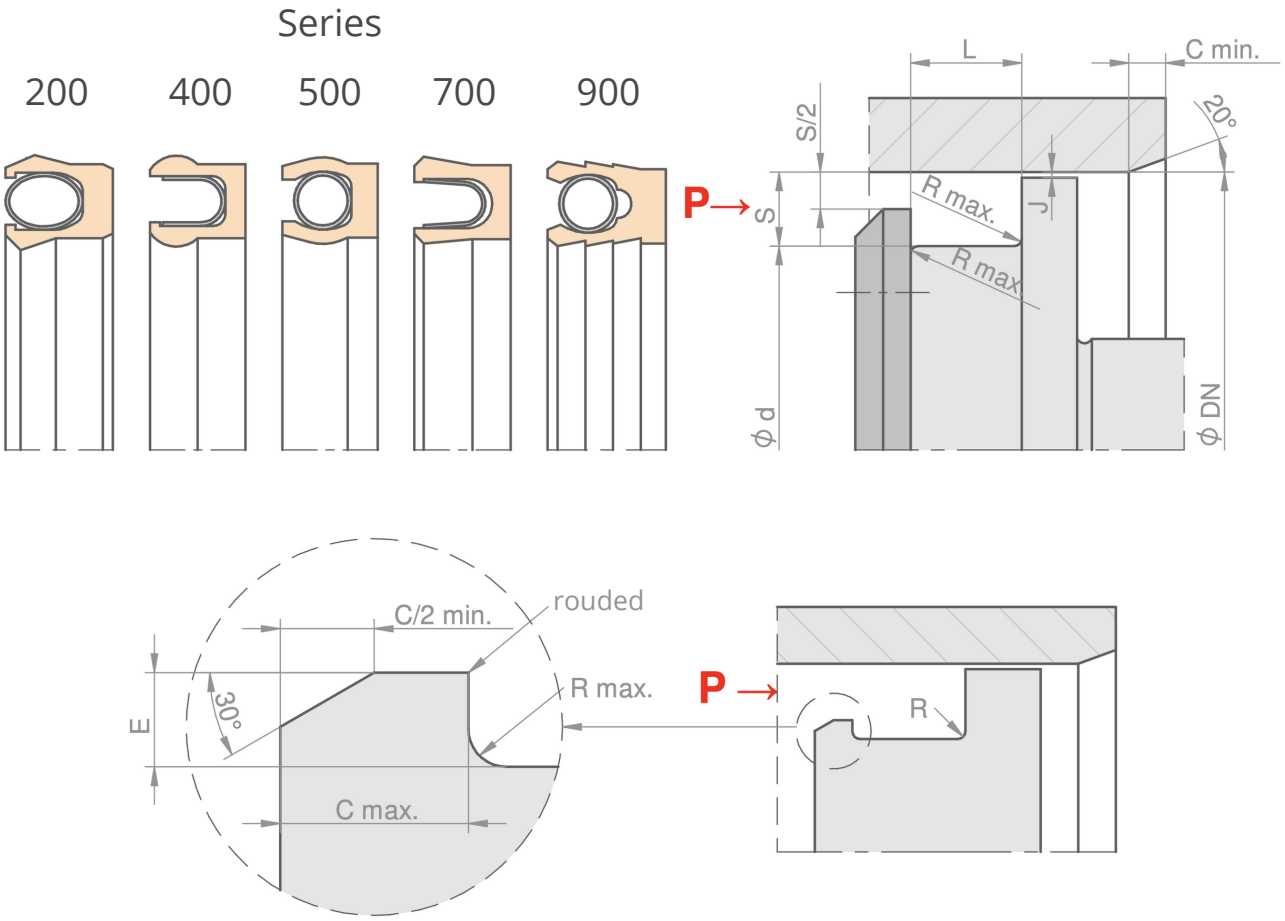


Heel-first fitting

Series					Section code	S	Ø dN f7	ØD H8	W 0/+0.3	C	R	E ± 0.05
200	400	500	700	900								
■	■	■	■		0145	1.45	Per table on page 11	Ø dN + 2.9	2.4	2.0	0.15	0.35
■	■	■	■		0225	2.25		Ø dN + 4.5	3.6	2.5	0.20	0.45
■	■	■	■		0310	3.10		Ø dN + 6.2	4.8	3.1	0.20	0.60
■	■	■	■		0470	4.70		Ø dN + 9.4	7.1	4.2	0.25	0.80
				■	0500	5.00		Ø dN + 10.0	7.5	4.4	0.30	0.85
				■	0600	6.00		Ø dN + 12.0	9.0	5.0	0.30	1.00
■	■	■	■		0610	6.10		Ø dN + 12.2	9.5	5.1	0.30	1.00
				■	0750	7.50		Ø dN + 15.0	11.3	6.0	0.40	1.20
■	■	■	■		0950	9.50		Ø dN + 19.0	14.3	7.4	0.45	1.50
				■	1000	10.00		Ø dN + 20.0	15.0	7.7	0.45	1.60
				■	1250	12.50		Ø dN + 25.0	18.8	9.4	0.55	NA
■	■	■	■		1270	12.70		Ø dN + 25.4	19.1	9.5	0.55	NA
				■	1500	15.00		Ø dN + 30.0	22.5	11.0	0.65	NA
				■	2000	20.00		Ø dN + 40.0	30.0	14.0	0.85	NA

■ Quick manufacture ■ Made to order. Other sections possible on request. NA: not applicable

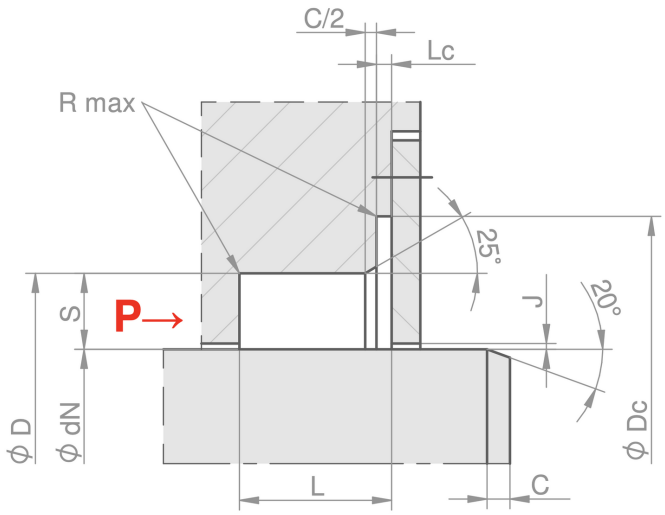
Seal housing construction
Radial type - internal (cylinder) fitting

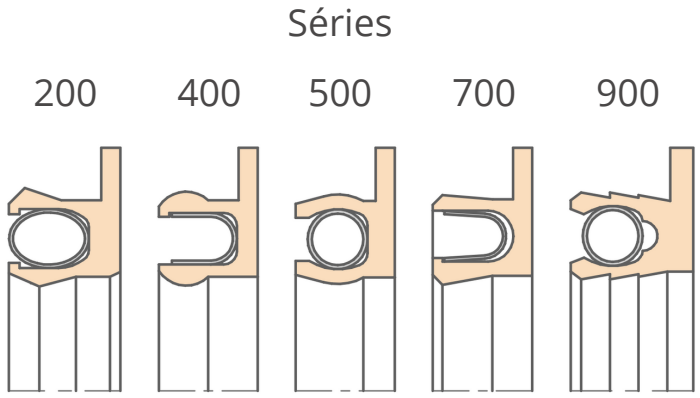


Series					Section code	S	Ø DN H8	Ød h8	W 0/+0.3	C	R	E ± 0.05
200	400	500	700	900								
■	■	■	■		0145	1.45	Per table on page 11	Ø DN - 2.9	2.4	2.0	0.15	0.35
■	■	■	■		0225	2.25		Ø DN - 4.5	3.6	2.5	0.20	0.45
■	■	■	■		0310	3.10		Ø DN - 6.2	4.8	3.1	0.20	0.60
■	■	■	■		0470	4.70		Ø DN - 9.4	7.1	4.2	0.25	0.80
				■	0500	5.00		Ø DN - 10.0	7.5	4.4	0.30	0.85
				■	0600	6.00		Ø DN - 12.0	9.0	5.0	0.30	1.00
■	■	■	■		0610	6.10		Ø DN - 12.2	9.5	5.1	0.30	1.00
				■	0750	7.50		Ø DN - 15.0	11.3	6.0	0.40	1.20
■	■	■	■		0950	9.50		Ø DN - 19.0	14.3	7.4	0.45	1.50
				■	1000	10.00		Ø DN - 20.0	15.0	7.7	0.45	1.60
				■	1250	12.50		Ø DN - 25.0	18.8	9.4	0.55	NA
■	■	■	■		1270	12.70		Ø DN - 25.4	19.1	9.5	0.55	NA
				■	1500	15.00		Ø DN - 30.0	22.5	11.0	0.65	NA
				■	2000	20.00		Ø DN - 40.0	30.0	14.0	0.85	NA

■ Quick manufacture ■ Made to order. Other sections possible on request. NA: not applicable

Seal housing construction
Radial types - flanged seals

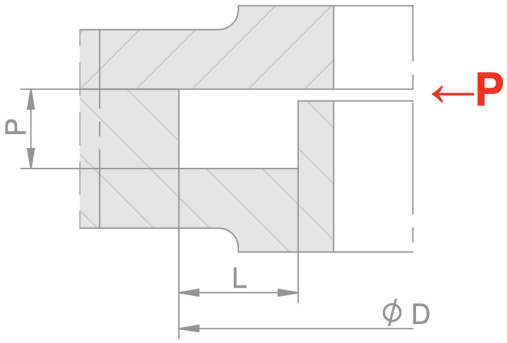




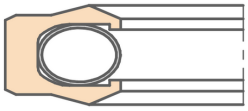
Series					Section code	S	Ø dN f7	ØD H8	ØDc H11	W 0/+0.3	Lc ±0.5	C	R
200	400	500	700	900									
■	■	■	■		0145	1.45	Per table on page 11	Ø dN + 2.9	Ø d + 6.8	3.8	0.4	2.0	0.15
■	■	■	■		0225	2.25		Ø dN + 4.5	Ø d + 8.6	4.6	0.6	2.5	0.20
			■		0250	2.50		Ø dN + 5.0	Ø d + 9.0	3.6	0.8	2.8	0.20
■	■	■	■		0310	3.10		Ø dN + 6.2	Ø d + 11.0	6.0	0.7	3.1	0.20
			■		0350	3.50		Ø dN + 7.0	Ø d + 12.5	4.8	1.3	3.5	0.20
■	■	■	■		0470	4.70		Ø dN + 9.4	Ø d + 16.8	8.5	0.8	4.2	0.25
				■	0500	5.00		Ø dN + 10.0	Ø d + 20.0	8.0	1.25	4.4	0.30
			■		0525	5.25		Ø dN + 10.5	Ø d + 17.5	7.1	1.75	4.6	0.30
				■	0600	6.00		Ø dN + 12.0	Ø d + 22.0	8.5	1.75	5.0	0.30
■	■	■	■		0610	6.10		Ø dN + 12.2	Ø d + 23.2	12.1	1.2	5.1	0.30
			■		0700	7.00		Ø dN + 14.0	Ø d + 22.0	9.5	2.75	5.8	0.35
				■	0750	7.50		Ø dN + 15.0	Ø d + 27.0	11.5	2.25	6.0	0.40
■	■	■	■		0950	9.50		Ø dN + 19.0	Ø d + 28.8	14.4	2.3	7.4	0.45
				■	1000	10.00		Ø dN + 20.0	Ø d + 35.0	15.5	2.75	7.7	0.45
■				■	1250	12.50		Ø dN + 25.0	Ø d + 37.6	18.9	2.3	9.4	0.55
■	■	■	■		1270	12.70		Ø dN + 25.4	Ø d + 37.6	19.4	2.3	9.5	0.55

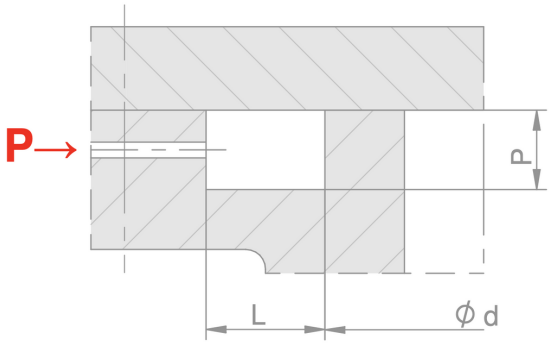
■ Quick manufacture ■ Made to order. Other sections possible on request. NA: not applicable

Seal housing construction
Axial (face seal) types

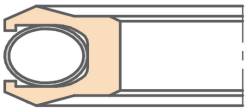


Internal pressure



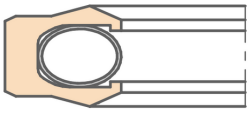


External pressure
(or internal vacuum)

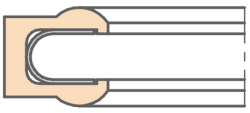


Series

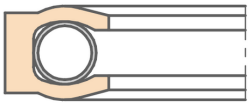
200



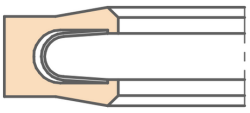
400



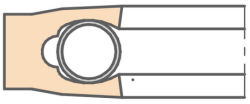
500



700



900

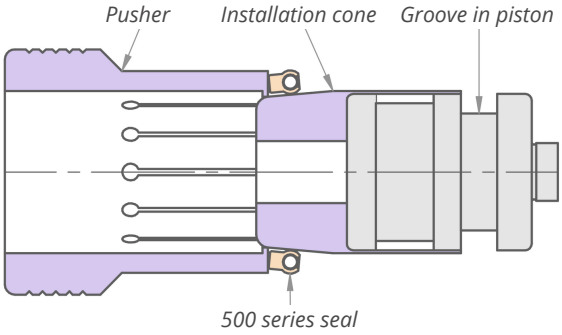


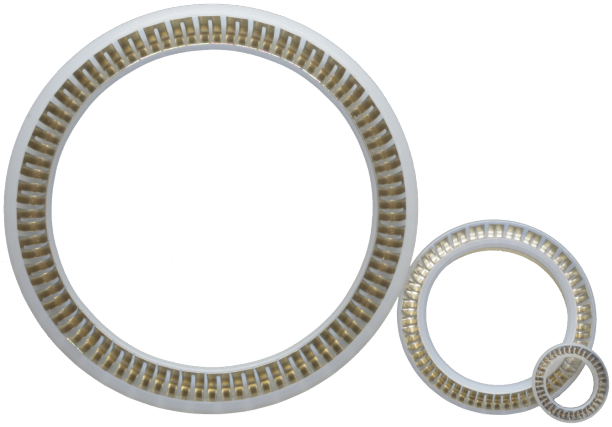
Series					Section code	P 0/+0.1	Ø D H10 Or Ø d h10	W 0/+0.3
200	400	500	700	900				
■	■	■	■		0145	1.45	Per table on page 11	2.4
■	■	■	■		0225	2.25		3.6
■	■	■	■		0310	3.10		4.8
■	■	■	■		0470	4.70		7.1
				■	0500	5.00		7.5
				■	0600	6.00		9.0
■	■	■	■		0610	6.10		9.5
				■	0750	7.50		11.3
■	■	■	■		0950	9.50		14.3
				■	1000	10.00		15.0
				■	1250	12.50		18.8
■	■	■	■		1270	12.70		19.1
				■	1500	15.00		22.5
				■	2000	20.00		30.0

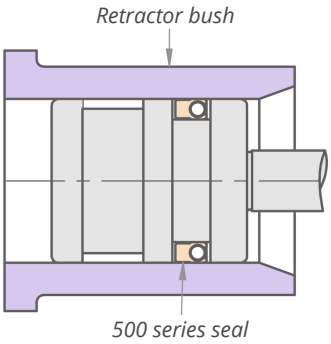
■ Quick manufacture ■ Made to order. Other sections possible on request. NA: not applicable

Assembly & fitting precautions

We highly recommend using separable seal housings, which make our Varioslide® seals easier to install.
Installation in closed grooves is possible only for series 200 and 500 fitted with coil springs.
Only large diameter/cross section ratios are practical for installation in closed grooves and the operation will probably require special tools.
Please contact our technical service if you are constrained to fitting the seals into closed grooves.
The staff can provide all necessary information for making a tool like the one shown opposite.



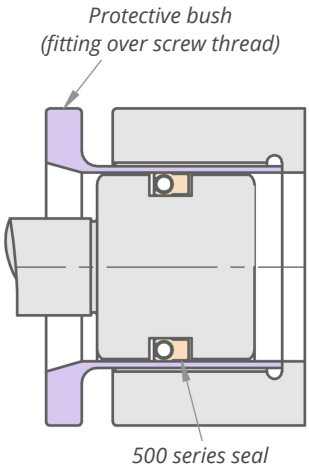




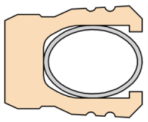
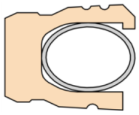
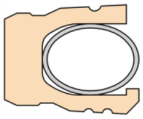
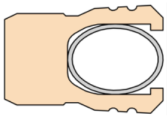
In all cases,great care is needed when fitting Varioslide® seals, since scratching the lips or deforming the springs can result in leaks or a reduction in service life.

- The fitting operation must take place in a clean area
- Unwrap the seals at the last moment to avoid soiling them
- Lubricate the seal with a lubricant compatible with the sealed fluid to make fitting easier
- Soaking the seal in boiling water for a few minutes can also facilitate assembly
- Make sure all necessary rounded corners or bevels exist as indicated on the seal housing construction pages
- Make certain there are no ragged edges in the assembly
- Do not use common tools like screwdrivers; the arrangement must allow the seals to be pressed in by hand
- Take care with assemblies where the seal must pass over a screw thread (see diagram opposite)

In the vast majority of cases you will find that the Varioslide® can be fitted with no problems. If you come across any difficulties, please feel free to contact our technicians.



Varioslide® models - 200 series

200 Series				
				
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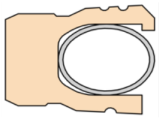	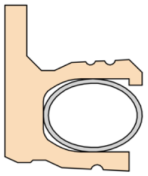	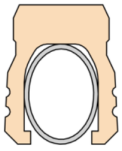	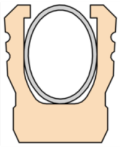	
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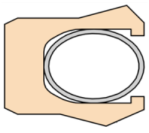	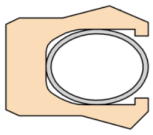			
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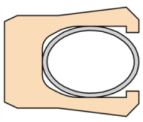		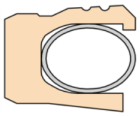	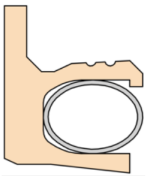	
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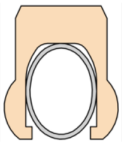	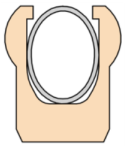			
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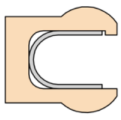
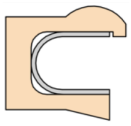
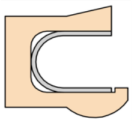
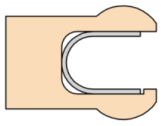
Varioslide® models - 400 series

400 Series				
				
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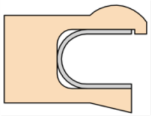	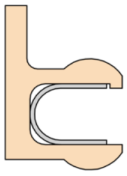	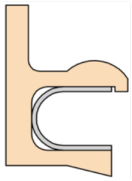	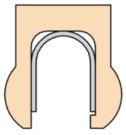	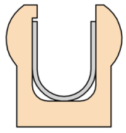
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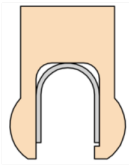
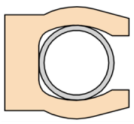
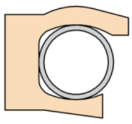
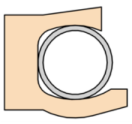
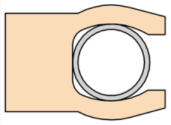
				
V436				

Varioslide® models - 500 series

500 Series				
				
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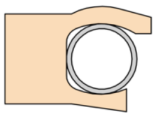	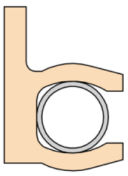	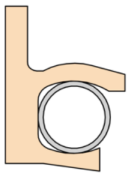	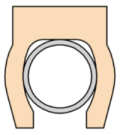	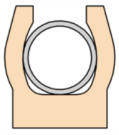
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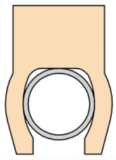	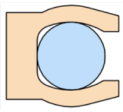			
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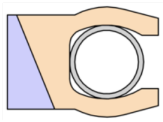	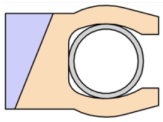	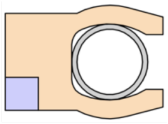	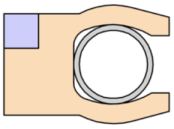	
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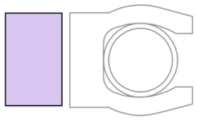
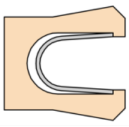
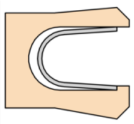
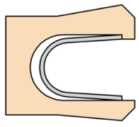
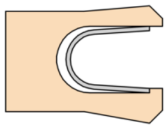
				
AEP	DOR			

Varioslide® models - 700 series

700 Series				
				
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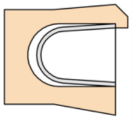	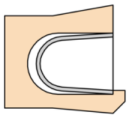	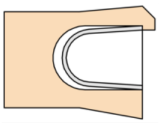		
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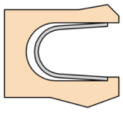
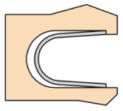
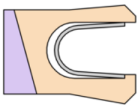
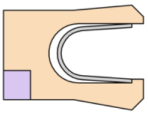
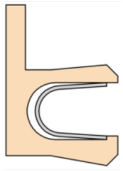
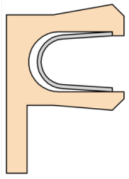
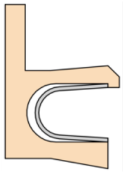
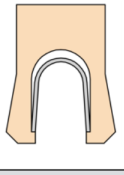
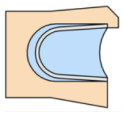
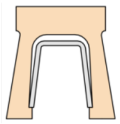
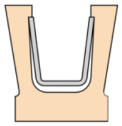
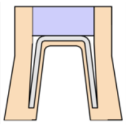
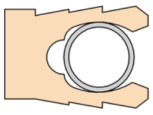
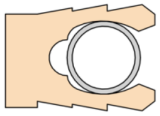
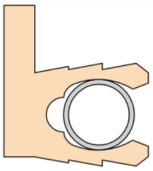
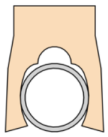
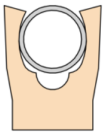
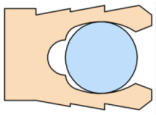
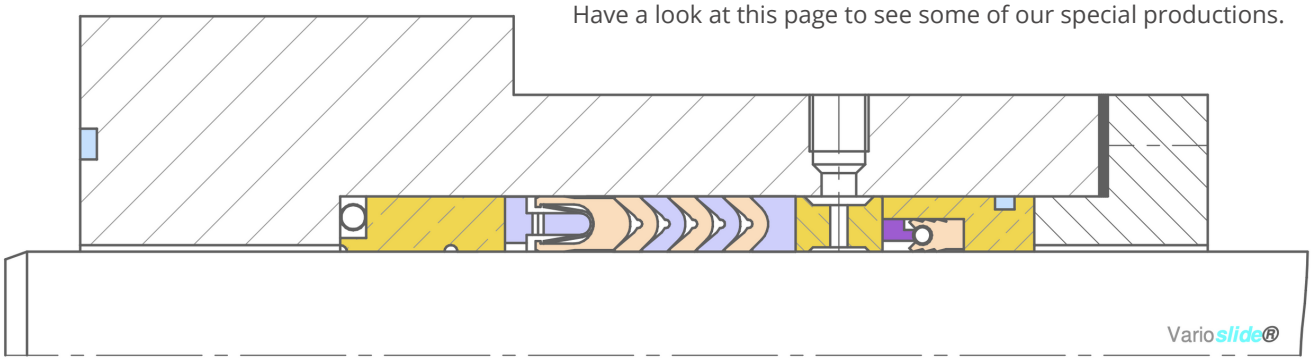
				
V711-OL	V712-OL	V724	V726	
				
V730	V731	V732		
				
V734	V735	V736		
				
V714-SF				

Varioslide® models - 600 and 900 series

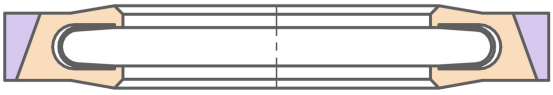
600 Series				
	V634	V635	V634-PS	
900 Series				
	V911	V912	V930	
				
V934	V935	V911-OR		

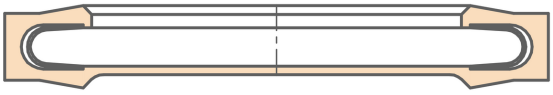
Study and design of special profiles

We design systems that guarantee a good seal in the most testing conditions.
Our experience is yours to take advantage of, so put us to the test.
Have a look at this page to see some of our special productions.

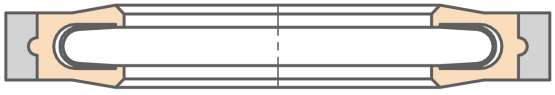


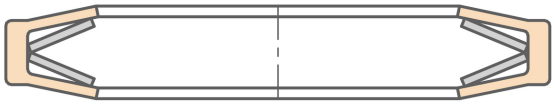
Special axial (face) seals

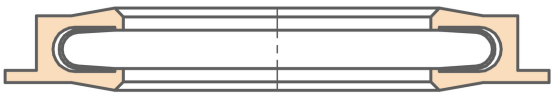

Seal with anti-extrusion washer


Seal with membrane

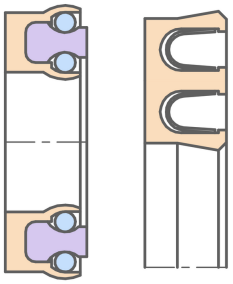

Seal with machined spring

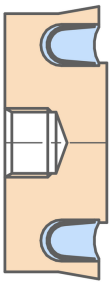

Union seal with cams

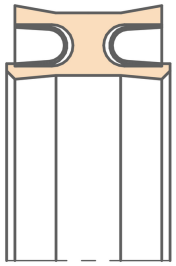

Seal with dished washers

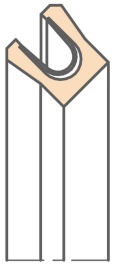

Flanged seal

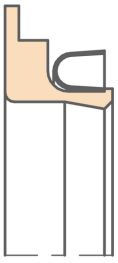
Other special seals

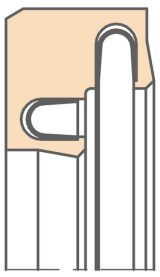

Single action radial seals (dual expander)


Full piston


Double action radial seal


Tapered seal


Cryogenic seal


Radial/axial combined seal

Varioslide® product coding system

Application
A = Rod or spindle seal (radial type, internal dynamic face)
See pages 12 and 14
B = Cylinder seal (radial type, external dynamic face)
See page 13
C = Face seal with internal pressure (axial type)
See page 15
D = Face seal with external pressure (axial type)
See page 15

Profile number
See charts on pages 17–21

Section code
See tables on pages 12–15

Nominal diameter
Value in millimetres multiplied by 100
Examples :
Ø 1250.00 mm → 125000
Ø 247.65 mm → 024765
Ø 15.88 mm → 001588

Case material
See pages 4 and 5

Spring material
U = 1.4301 (AISI 304)
S = 1.4310 (AISI 301) - standard
T = 1.4319 (AISI 302)
V = 1.4401 (AISI 316)
W = 1.4568 (SS 17.7 PH)
Y = 2.4669 (Inconel® X750)
Z = 2.4711 (Elgiloy®)
X = 2.4819 (Hastelloy® C276)

Specific options and designations
OL → Modified dynamic angle (200 and 700 series)
SS → Small sections (200 series)
TL → Two-lobe seal (200 series)
PS → Protected spring (600 series)
SR → Special rotation profile (200 series)
SF → Silicone filling (series 400 and 700)
OR → Spring replacé by O-ring (500 and 900 series)

Example :

A	7 1 1	0 6 1 0	0 2 4 7 6 5	5 1 0 9	S	S F
Rod seal	Profile 711	Section 6,1 mm	Diameter 247,65 mm	Dynaflon® 5109	AISI 301	Silicone

Notes

Other technical catalogues in print

General brochure

P4.1
FFKM

P1.1
ASEPT-RING®

P2.0
Inflatable seals

P3.0
Detectable materials

P5.1
VARIOCHEM® P113-SG

U1.2
Express machining of seals and guides

U2.1
Duoslide IDR & EDT composite seals for rotary joints

A1.1
Test laboratory

Interseal also stands for the development and use of elastomer blends, a materials analysis laboratory, and consultancy, design, and training.

INTERSEAL

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