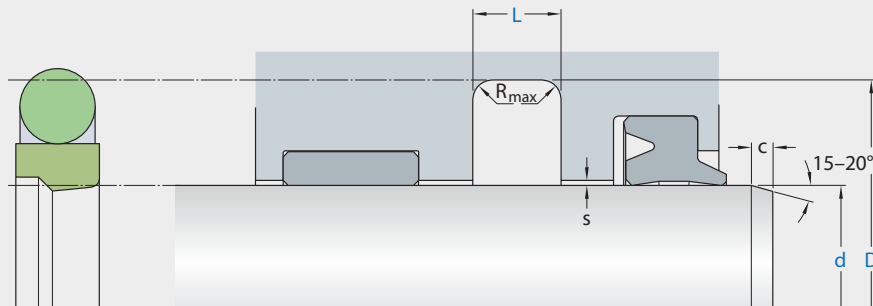


S09-P



Ordering dimensions in blue

Surface roughness	R_{tmax}	R_a
Sliding surface	$\leq 2,5 \mu m$	$0,05-0,3 \mu m$
Bottom of groove	$\leq 6,3 \mu m$	$\leq 1,6 \mu m$
Groove face	$\leq 15 \mu m$	$\leq 3 \mu m$

Bearing area: 50-95% and a cutting depth of $0,5 R_z$, based on $C_{ref} = 0\%$

Standard dimensions		D H10	L +0,2	R_{max}	c	OD	Maximal radial extrusion gap s^*		
d f8 over	incl.						100 bar	160 bar	250 bar
mm							mm		
4	8	$d + 4,9$	2,2	0,4	2,5	1,78	0,30	0,25	0,20
8	19	$d + 7,3$	3,2	0,6	3,5	2,62	0,40	0,30	0,25
19	38	$d + 10,7$	4,2	1,0	4,5	3,53	0,50	0,35	0,25
38	200	$d + 15,1$	6,3	1,3	5,0	5,33	0,50	0,40	0,30
200	256	$d + 20,5$	8,1	1,8	6,0	7,00	0,70	0,50	0,35
256	600	$d + 24,0$	8,1	1,8	8,0	7,00	0,70	0,50	0,35

application



not bolded symbols; please consult our technical for application limitations

* Extrusion gap values shown above are valid for a temperature of 70 °C, higher temperatures require lower values.

operating parameters & material

diameter range: up to 600 mm

material		temperature	max. surface speed	max. pressure ¹	hydrolysis	dry running	wear resistance
sealing element	energizer						
ECOPUR	Ecorubber 1	-30 °C ... +100 °C	1 m/s	250 bar (25 MPa)	-	+	++
H-ECOPUR	Ecorubber 1	-20 °C ... +100 °C	1 m/s	250 bar (25 MPa)	-	+	++
T-ECOPUR	Ecorubber 1	-30 °C ... +100 °C	1 m/s	250 bar (25 MPa)	-	+	++
S-ECOPUR	Ecorubber 1	-20 °C ... +100 °C	1,4 m/s	250 bar (25 MPa)	-	++	++
G-ECOPUR	Ecorubber 1	-30 °C ... +100 °C	1 m/s	250 bar (25 MPa)	-	+	++

the stated operation conditions represent general indications. it is recommended not to use all maximum values simultaneously. surface speed limits apply only to the presence of adequate lubrication film.

¹ pressure ratings are dependent on the size of the extrusion gap.
 ++ ... particularly suitable o ... conditional suitable
 + ... suitable - ... not suitable

for detailed information regarding chemical resistance please refer to our „list of resistance“. for increased chemical and thermal resistance rubber materials are to be preferred, attention should be paid to restrictions for pressure range and wear resistance. for higher gliding speeds another system should be used (e.g. PTFE materials).

note on special materials:

as temperature limit and chemical resistance are determined by the preload element, the temperature range can be increased and the resistance to chemical influences improved, if a special material is used for the preload element.

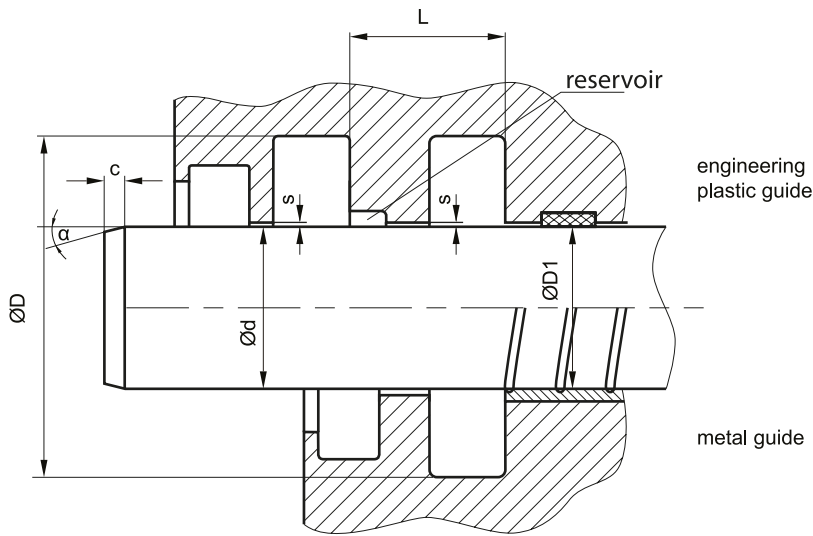
mode of installation

for inside diameters of 25 mm or more, and dependant on the radial cross section (cs), seal can be snapped into the housing.

∅d	type of installation
≤ 6•cs	open mounting space required
> 6•cs ≤ 10•cs	snap mounting with tool
> 10•cs	snap mounting by hand

recommended mounting space:

version 1



version 2

two types of mounting space are recommended depending on application:

	secondary seal	secondary seal
version 1	S09-E	S09-P
version 2	S09-P	-

the choice of the sealing system does not depend on the guide elements.

recommended guide tolerance D1:

in most cases the guiding elements are integrated in the piston seal system on both sides. if not use below recommendations for D1 (=inside diameter of the guiding elements):

d f8 [mm]	p ≤ 100 [bar]	100 < p ≤ 200 [bar]	p > 200 [bar]
≤ 100	H10	H8	H8
> 100 ≤ 200	H10	H8	H7
>200	H9	H8	H7

insertion chamfer:

in order to avoid damage to the rod seal during installation, the piston rod is to be chamfered and rounded as shown in the "recommended mounting space" drawing. the size of chamfer depends on the seal type and profile width.

cs (mm)	c (mm)	
	$\alpha = 15^\circ \dots 20^\circ$	$\alpha = 20^\circ \dots 30^\circ$
2,45	2,5	1,5
3,65	3,5	2
5,35	4,5	3
7,55	5	3,5
10,25	6	5
12	8	6