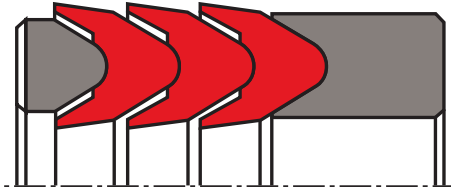


rod seal S1315-T

seal spec

description

chevron sealing set, design with flexible sealing lips, good sealing ability in higher pressure range. for heavy industry hydraulics, water-hydraulic systems.



- symmetric single-acting rod sealing set consisting of several chevrons, combined with pressure and support ring to form a set.
- various materials are available for different purposes.
- good sealing in the higher pressure range.
- due to the strong trailing side suitable for pressures up to 600 bar as a seal between pressurized space and atmosphere.
- excellent static and dynamic sealing.
- suitable for short and long travel.
- very sturdy and wear-resistant.
- insensitive to thermal damage caused by air in the oil.
- open mounting space required (see mode of installation).
- the sealing packing can be used both as a rod seal and single-acting piston seal.
- by varying the number of packings, friction as well as leakage behavior can be influenced.
- mainly used for repair purposes. use more modern systems for new designs.
- friction is less than with the S1012 type, but greater than with more modern sealing systems (S09-E and S01-P combination). the mechanical efficiency of this packing is thus less than that of more state-of-the-art systems.
- the central support prevents wedging of the individual packings under pressure. therefore the frictional forces in the high pressure range are relatively low.

application



not bolded symbols; please consult our technical for application limitations

category of profile

machined only.

single acting

the S1315-T seal is designed for use as a rod seal.

area of application: hydraulics

- linearly acting rods on hydraulic cylinders; small swiveling motion also permissible. especially for heavy hydraulic applications or heavy-duty operating conditions and in the case of tread wear.
- used for sealing pistons and plungers of upstroke presses, where the return stroke is generated by it's own weight.

note

- expensive and complex design.
- no adjustment possible.
- split repair version is not possible.

function

S1315-T profiles are single-acting rod seal sets designed to seal pressurised space against the atmosphere; mainly for reciprocating movements. the design is based on application in standard hydraulic systems with conventional hydraulic oils. the operating parameters are as defined in the sealing data sheet and material data. requirements deviating from these parameters can be met to a certain degree by changing the geometry in the software program.

**operating parameters & material**

diameter range: up to 600 mm

material			temperature	max. surface speed	max. pressure ¹	hydrolysis	dry running	wear resistance
header ring S13-A	sealing element S14-T	back-up ring S15-T						
s-mart PU	s-mart POM / s-mart PA ²	s-mart PU	-30 °C ... +100 °C	0,5 m/s	600 bar (60 MPa)	-	+	+
s-mart HPU	s-mart POM / s-mart PA ²	s-mart HPU	-20 °C ... +100 °C	0,5 m/s	600 bar (60 MPa)	+	+	+
s-mart LTPU	s-mart POM / s-mart PA ²	s-mart LTPU	-40 °C ... +100 °C	0,5 m/s	600 bar (60 MPa)	-	+	+
s-mart SPU	s-mart POM / s-mart PA ²	s-mart SPU	-20 °C ... +100 °C	0,7 m/s	600 bar (60 MPa)	+	+	+
s-mart GPU	s-mart POM / s-mart PA ²	s-mart GPU	-30 °C ... +100 °C	0,5 m/s	600 bar (60 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.

² POM up to ø260 mm, PA above ø260 mm

++ ... particularly suitable

o ... conditional suitable

+ ... suitable

- ... not suitable

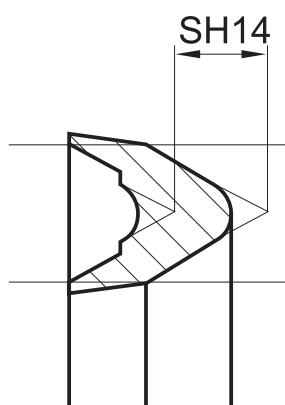
for detailed information regarding chemical resistance please refer to our „list of resistance“. for increased chemical and thermal resistance rubber materials are to be preferred, polyurethane materials increase wear resistance. for higher gliding speeds another sealing system should be used (e.g. PTFE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

gap dimension

when using a pressure ring, the extrusion gap is already integrated in the seal. the gap between piston rod and housing should not exceed cs-0.05.

manufacturing notes

the following nominal widths are preferred. the theoretical packing height SH11 should be designed in accordance with the recommended values;



CS	SH14
(4)	2.2
5	2.5
(6)	3.0
7.5	3.5
10	5.0
12.5	6.0
15	7.5
20	10
(25)	12.5
(30)	15

in order to be able to maintain the required height irrespective of the accumulated stack height 'h', the pressure ring is individually adjusted during the production of the V-packing set. to do so, a control dimension is provided by the NG40 software with a view to assisting this process.

surface quality

surface roughness	Rtmax [µm]	Ra [µm]
sliding surface	≤2,5	≤0,1-0,5
bottom of groove	≤6,3	≤1,6
groove face	≤15	≤3

tolerance recommendation

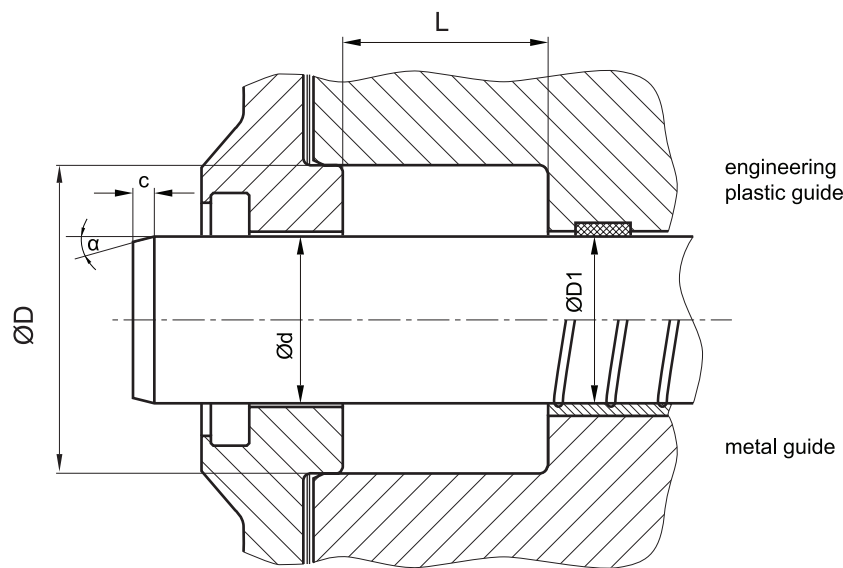
seal housing tolerances	
Ød	f8
ØD	H10

mode of installation

insert the male ring first, then the packing and finally the pressure ring (well greased) into the installation space. insert the metal insert without load, complete mounting of the system, tighten metal inserts slightly, let run in (10 to 20 idle strokes). finally tighten the metal insert to nominal height.



recommended mounting space:



the adjustment range of the mounting space height (L) should correspond to approx. 10% of the theoretical mounting length.

recommended guide tolerance D1:

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:

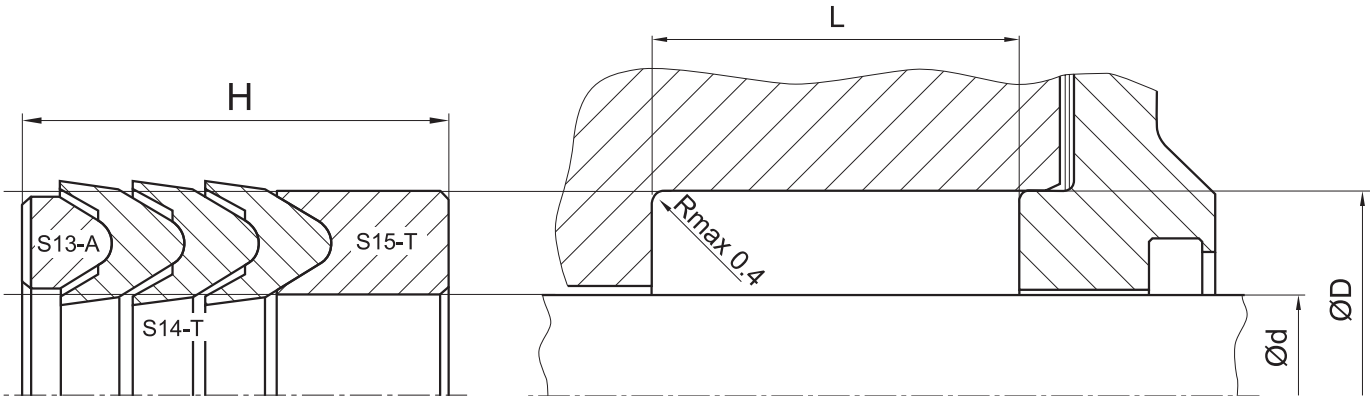
in order to avoid damage to the rod seal during installation, the piston rod is to be chamfered and rounded as shown in the “recommended mounting space” drawing. the size of chamfer depends on the seal type and profile width.

cs (mm)	c (mm)	
	α = 15° ... 20°	α = 20° ... 30°
4	3,5	2
5	4	2,5
6	4,5	3
8	5	4
10	6	5
12,5	8,5	6,5
15	10	7,5
20	13	10



seal & housing recommendations

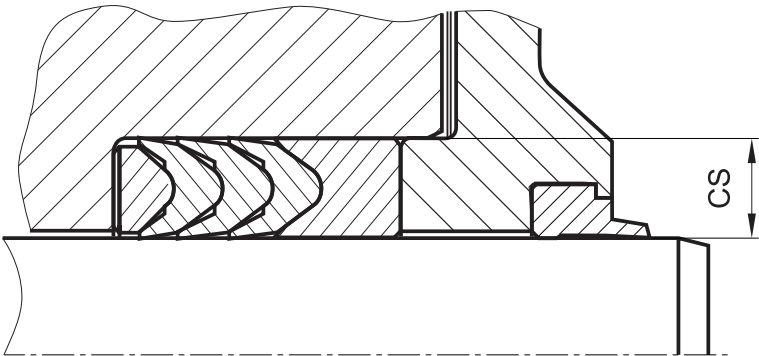
please note that we are able to produce those profiles to your specific need or any non standard housing. for detail measurements, please see seal-mart catalog...



the ratio between nominal width and seal height should be in accordance with following recommendations (see also manufacturing notes)

Ød [mm]	ØD [mm]	L [mm]	cs = (ØD - Ød)/2 [mm]
10 - 39,9	ød + 10	16	5
40 - 74,9	ød + 15	25	7,5
75 - 149,9	ød + 20	32	10
150 - 199,9	ød + 25	40	12,5
200 - 300	ød + 30	50	15
> 300	ød + 40	63	20

fitted:



don't hesitate to contact our technical department for further information or for special requirements (temperature, speed etc.), so that suitable materials and/or designs can be recommended.