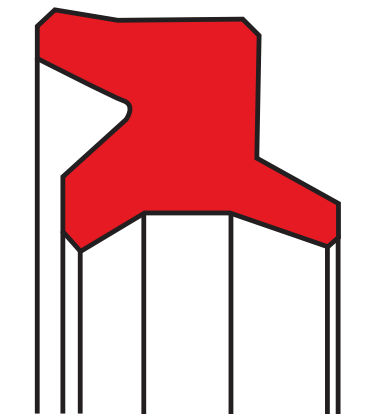


## wiper A11-A

## seal spec



### **description**

wiper including additional sealing lip used in combination with O-ring activated PTFE seals (tandem) to reduce residual oil film. also used as complete solution for pneumatic applications in small diameter range. max. allowed pressure load: 16 bar (230 psi).

- the seal profile and close machining tolerances provide a good static seal for the outside diameter, assisting in the prevention of ingress of humidity and foreign matter via the outside diameter.
- the design of the wiping lip aids recovery of the residual oil film; any dirt is wiped off reliably.
- no special retainers or narrow housing fits are necessary.
- in addition, the sealing lip reduces the residual oil film on the side of the medium if composite seals, on PTFE basis, (e.g. S09) are used (tandem arrangement).
- this design is also used as a complete seal for pneumatic applications with small diameters and leads to a simplification of the sealing structure. in the standard design, pressurisation should be limited to 16 bar.

### **application**



*not bolded symbols; please consult our technical for application limitations*

### **category of profile**

machined or molded/standard/trade product.

### **double acting**

#### **area of application: hydraulics/pneumatic**

- double wiper rings profil A11-A are designed for axially operated rods in hydraulic and pneumatic cylinders, lifters, and rod guides.
- reciprocating rods on hydraulic cylinders.
- push rods and valve stems.
- (materials must be selected according to operating requirements).
- use the A11-I design mounting space according to ISO 6195-1986 type C.
- medium to heavy dirt load.

### **function**

A11-A and A11-I wipers are designed to keep dust, dirt, sand and metal chips away from the sealing and guiding elements, thereby avoiding abrasive damage caused by external contamination. slave sealing applications are possible.

### **advantages**

double wiper for improvement of total tightness; dimensions also for standardised housing according to ISO 6195 Type C

- good scraping effect.
- wear resistant, long service life.
- retaining residual oil film.
- standard elements for standardized installation grooves.
- sealing lips pointing inwards fulfil the function of a U-ring.
- wiper lip with lightly rounded sealing edge reliably wipes away dirt and leaves a residual oil film on the retracting rod.
- tightness, service life and friction behaviour of the entire system are improved.

the A11-A exerts inwards the wiping function of a U-ring, and a wiping action outwards against soiling

- intermediate sizes without mould/tool possible.
- strong wiping action against dirt.
- very good sealing effect against re-sidual film of oil on the extending rod.
- wear-resistant.

**media**

hydraulic oils acc. DIN 51524/51525, lubricating oils, other mineral oil based fluids and HFA, HFB, HFC highly non-flammable hydraulic fluids acc. VDMA 24317.

**operating parameters & material**

diameter range: up to 600 mm

material	temperature	max. surface speed	max. pressure <sup>1</sup>	hydrolysis	dry running	wear resistance
s-mart PU	-30 °C ... +110 °C	4 m/s	16 bar (1,6 MPa)	-	+	++
s-mart HPU	-20 °C ... +110 °C	4 m/s	16 bar (1,6 MPa)	++	+	++
s-mart LTPU	-50 °C ... +110 °C	4 m/s	16 bar (1,6 MPa)	-	+	++
s-mart SPU	-20 °C ... +110 °C	5 m/s	16 bar (1,6 MPa)	++	++	++
s-mart GPU	-30 °C ... +110 °C	4 m/s	16 bar (1,6 MPa)	++	+	++
s-mart NBR	-30 °C ... +100 °C	4 m/s	16 bar (1,6 MPa)	-	-	O
s-mart FKM	-20 °C ... +200 °C	4 m/s	16 bar (1,6 MPa)	-	-	O
s-mart EPDM <sup>2</sup>	-50 °C ... +150 °C	4 m/s	16 bar (1,6 MPa)	++	-	O
s-mart HNBR	-25 °C ... +150 °C	4 m/s	16 bar (1,6 MPa)	+	O	+

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.

<sup>1</sup> pressure ratings are dependent on the size of the extrusion gap.

<sup>2</sup> attention: not suitable for mineral oils!

++ ... 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, polyurethan materials increase wear resistance.

**surface quality**

surface roughness	Rtmax (µm)	Ra (µm)
sliding surface	according to seal data	
bottom of groove	≤6,3	≤1,6
groove face	≤15	≤3

**tolerance recommendation**

seal housing tolerances		cs	R [mm]
L < 10 mm	0,2	≤ 5	max. 0,3
L ≥ 10 mm	0,3	>5.....≤ 7,5	max. 0,4
D1	H11	>7,5.....≤ 10	max. 0,6
D	H11	> 10	max. 0,8

**lead-in chamfers**

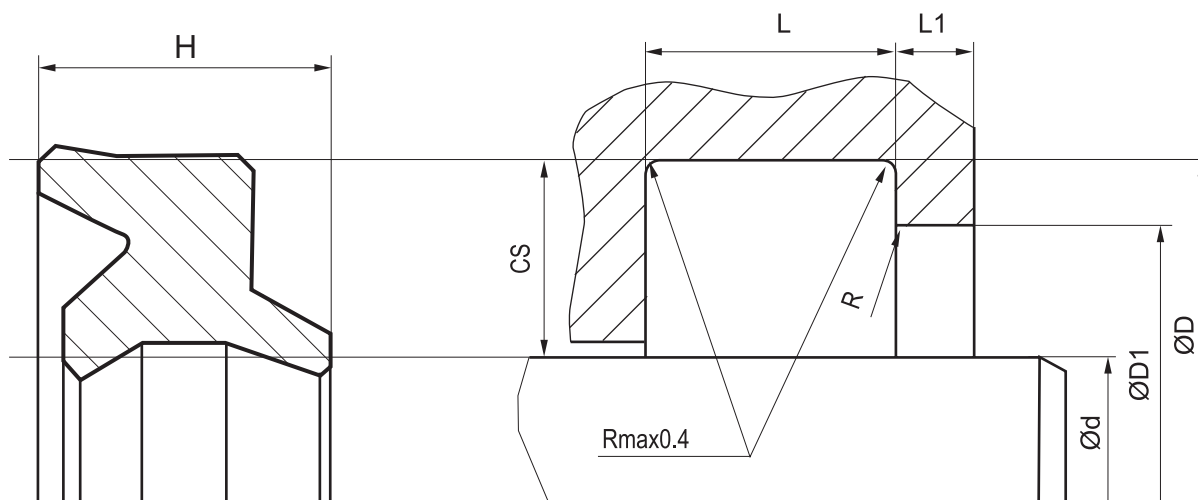
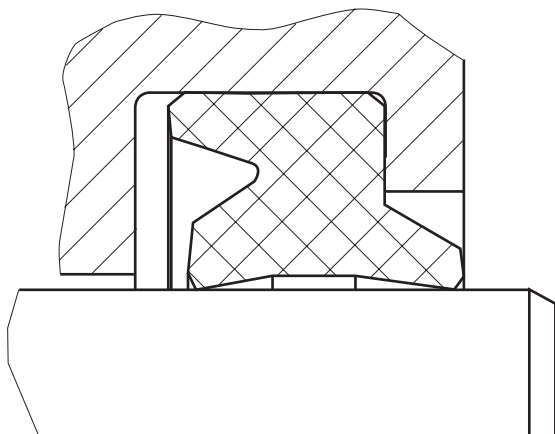
length and angle are to be designed to suit the rod seal used.

**mode of installation**

the prerequisites for perfect functioning are careful fitting and an accurately dimensioned mounting space. in general, wipers snap easily into their housing when distorted into a kidney shape (over 20mm diameter).

**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...*

**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.*