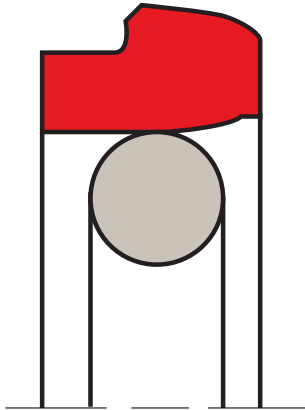


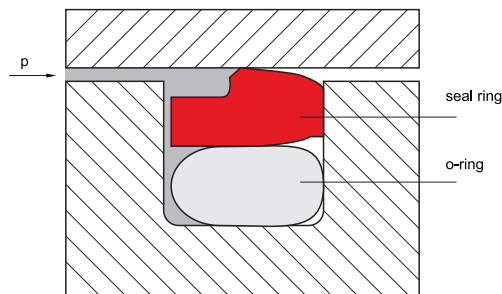
piston seal K08-SG

seal spec



description

the K08-SG is a single-acting seal element consisting of a seal ring of high-grade PTFE series or PU materials and an O-Ring as energizing element. due to its outstanding properties, however, it is equally well suited as a single-acting piston seal where high demands are made on positional accuracy and free movement.



application



category of profile

machined or molded/standard/trade product.

double acting

the K08-SG seal is designed for use as a piston seal - either single or double acting where two seals are used 'back to back'

area of application: hydraulics

the K08-SG is the recommended sealing element for single acting pistons in hydraulic components for:

- injection moulding machines
- machine tools
- presses

it is particularly recommended in floating piston accumulators as primary seal on the oil side in combination with K60 & K61.

advantages

- high static and dynamic sealing effect
- stick-slip free operation for precise control
- high abrasion resistance and high resistance to extrusion
- long service life
- simple groove design, one-piece piston possible
- wide range of application temperatures and high resistance to chemicals, depending on the choice of O-Ring material
- simple installation without seal edge deformation
- available for all diameters up to 2.700 mm
- low friction

standard material

operating parameters & material for standard application:

material		temperature	max. surface speed	max. pressure ¹
sealing element	energizer			
s-mart PTFE bronze	NBR 70 Shore A	-30°C ... + 100°C	15 m/s	700 bar (70 MPa)
	NBR 70 Shore A (low temp.)	-45°C ... + 80°C	15 m/s	700 bar (70 MPa)
	FKM 70 Shore A	-10°C ... + 200°C	15 m/s	700 bar (70 MPa)

for hydraulic components with reciprocating movement in mineral oils containing zinc or medium with good lubricating performance.

for hydraulic high compressive strength, good sliding and wear properties, good extrusion resistance, BAM tested.

mating surface material: steel tubes, steel hardened cast iron

colour: greyish to dark brown

**operating parameters & material for special application:**

material		temperature	max. surface speed	max. pressure ¹
sealing element	energizer			
PTFE + carbon fibre (high carbon fibre filled)	NBR 70 Shore A	-30°C ... + 100°C	15 m/s	700 bar (70 MPa)
	NBR 70 Shore A (low temp.)	-45°C ... + 80°C	15 m/s	700 bar (70 MPa)
	FKM 70 Shore A	-10°C ... + 200°C	15 m/s	700 bar (70 MPa)
	EPDM ² 70 Shore A	-45°C ... + 145°C	15 m/s	700 bar (70 MPa)

non-lubricating fluids or pneumatic applications require self-lubricating sealing materials.

for all lubricating and non-lubricating hydraulic fluids, hydraulic oils without zinc, water hydraulic, soft mating surfaces, good extrusion resistance. surface texture not suitable for gases.

mating surface material: steel, cast iron, stainless steel, aluminium, bronze

colour: grey

operating parameters & material for special application:

material		temperature	max. surface speed	max. pressure ¹
sealing element	energizer			
s-mart PU (cast polyurethane)	NBR 70 Shore A	-30°C ... + 100°C	15 m/s	800 bar (80 MPa)
	NBR 70 Shore A (low temp.)	-45°C ... + 80°C	15 m/s	800 bar (80 MPa)

rough mating surface finish and improved leakage control

for lubricating hydraulic fluids, high abrasion resistance, high extrusion resistance, limited chemical resistance.

mating surface material: steel, steel, hardened, cast iron, ceramic coating, stainless steel

colour: yellow to light-brown

non-standard material**operating parameters & material**

material		temperature	max. surface speed	max. pressure ¹
sealing element	energizer			
PTFE + high bronze (high bronze filled)	NBR 70 Shore A	-30°C ... + 100°C	15 m/s	800 bar (80 MPa)
	NBR 70 Shore A (low temp.)	-45°C ... + 80°C	15 m/s	800 bar (80 MPa)
	FKM 70 Shore A	-10°C ... + 200°C	15 m/s	800 bar (80 MPa)

very high compressive strength, very good extrusion resistance

mating surface material: steel tubes, steel hardened cast iron

colour: light to dark brown

material		temperature	max. surface speed	max. pressure ¹
sealing element	energizer			
PTFE + carbon-fibre (carbon fibre filled)	NBR 70 Shore A	-30°C ... + 100°C	15 m/s	300 bar (30 MPa)
	NBR 70 Shore A (low temp.)	-45°C ... + 80°C	15 m/s	300 bar (30 MPa)
	FKM 70 Shore A	-10°C ... + 200°C	15 m/s	300 bar (30 MPa)
	EPDM ² 70 Shore A	-45°C ... + 145°C	15 m/s	300 bar (30 MPa)

for all lubricating and non-lubricating hydraulic fluids, water hydraulic, soft mating surfaces. surface texture not suitable for gases

mating surface material: steel tubes, cast iron, stainless steel, aluminium, bronze, alloys

colour: grey

material		temperature	max. surface speed	max. pressure ¹
sealing element	energizer			
s-mart PTFE glass	NBR 70 Shore A	-30°C ... + 100°C	15 m/s	400 bar (40 MPa)
	NBR 70 Shore A (low temp.)	-45°C ... + 80°C	15 m/s	400 bar (40 MPa)
	FKM 70 Shore A	-10°C ... + 200°C	15 m/s	400 bar (40 MPa)

for all lubricating and non-lubricating hydraulic fluids, good chemical resistance, good dielectric properties.

mating surface material: steel tubes, steel hardened cast iron

colour: grey to blue



material		temperature	max. surface speed	max. pressure ¹
sealing element	energizer			
PTFE + carbon-graphite (carbon, graphite filled)	NBR 70 Shore A	-30°C ... + 100°C	15 m/s	400 bar (40 MPa)
	NBR 70 Shore A (low temp.)	-45°C ... + 80°C	15 m/s	400 bar (40 MPa)
	FKM 70 Shore A	-10°C ... + 200°C	15 m/s	400 bar (40 MPa)
	EPDM ² 70 Shore A	-45°C ... + 145°C	15 m/s	400 bar (40 MPa)

for oil hydraulic and pneumatic, for all lubricating and non-lubricating fluids, high extrusion resistance, good chemical resistance, BAM tested.
mating surface material: steel, stainless steel
colour: black

material		temperature	max. surface speed	max. pressure ¹
sealing element	energizer			
polyethylen	NBR 70 Shore A	-30°C ... + 80°C	15 m/s	400 bar (40 MPa)
	NBR 70 Shore A (low temp.)	-45°C ... + 80°C	15 m/s	400 bar (40 MPa)

for lubricating and non-lubricating hydraulic fluids, high abrasion resistance, very good chemical resistance, limited temp. resistance. ultra high molecular weight polyethylen.
mating surface material: steel, stainless steel, aluminium, bronze, ceramic coating,
colour: white to off-white

important note:

the above data are maximum values and cannot be used at the same time. e.g. the maximum operating speed depends on material type, pressure, temperature and gap value. temperature range also dependent on medium"

¹ pressure ratings are dependent on the size of the extrusion gap.

² attention: not suitable for mineral oils!

gap dimension

bore diameter - D (H9)			d (h9)	L + 0,2	R	max. permissible gap dimension - s ¹			O-Ring cross section
standard application	light application	heavy duty application				10 MPa	20 MPa	40 MPa	
8 ~ 16,9	17 ~ 26,9	~	D - 4,9	2,2	0,4	0,30	0,20	0,15	1,78
17 ~ 26,9	27 ~ 59,9	~	D - 7,3	3,2	0,6	0,40	0,25	0,15	2,62
27 ~ 59,9	60 ~ 199,9	17 ~ 26,9	D - 10,7	4,2	1,0	0,50	0,30	0,20	3,53
60 ~ 199,9	200 ~ 255,9	27 ~ 59,9	D - 15,1	6,3	1,3	0,70	0,40	0,24	5,33
200 ~ 255,9	256 ~ 669,9	60 ~ 199,9	D - 20,5	8,1	1,8	0,80	0,60	0,35	6,99
256 ~ 669,9	670 ~ 999,9	200 ~ 255,9	D - 24,0	8,1	1,8	0,90	0,70	0,40	7,00
670 ~ 999,9	≥ 1000	256 ~ 669,9	D - 27,3	9,5	2,5	1,00	0,80	0,50	8,40
≥ 1000 ²		670 ~ 999,9	D - 38,0	13,8	3,0	1,20	0,90	0,60	12,00

important note:

the above data are maximum values and cannot be used at the same time. e.g. the maximum operating speed depends on material type, pressure, temperature and gap value. temperature range also dependent on medium"

¹ pressure ratings are dependent on the size of the extrusion gap.

² energiser has a special shape.

surface quality

surface roughness	Material	Rtmax [µm]	Rz DIN [µm]	Ra [µm]
mating surface	PTFE +	0.63 - 2.50	0.40 - 1.60	0.05 - 0.20
	PU & Rubber	1.00 - 4.00	0.63 - 2.50	0.10 - 0.40
groove surface		< 16	< 10.0	< 1.6

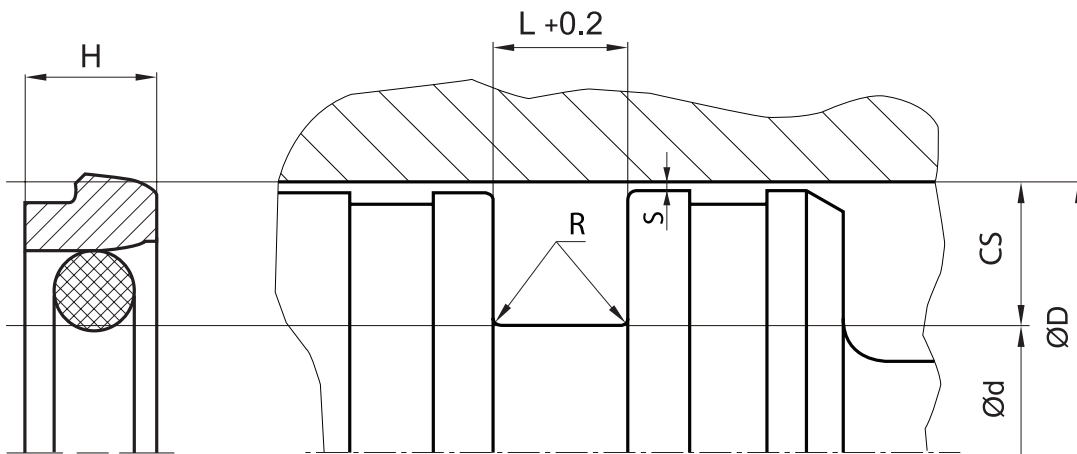
tolerance recommendation

seal housing tolerances	
Ød	h9
ØD	H9



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...



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.