



Max. Operating Conditions *	
Pressure (MPa)	≤ 60 (600 bar)
Temperature (°C)	- 30 / + 110 / + 200
Speed (m/s)	≤ 3
Media: Mineral oil and Gases *	

Recommended Surface Finish		
Surface roughness	R_a	R_t
Groove bottom	≤ 1,6 µm	≤ 16 µm
Groove flanks	≤ 1,6 µm	≤ 16 µm
Running surface	≤ 0,3 µm	≤ 3 µm

Material	
PTFE-bronze / -carbon / glass fiber	PB / PK / PG
PTFE-compound turquoise	PT
PTFE-Econol	PEK
PTFE-glass fiber + MoS ₂	PGM

Technical Description

The **KSO2** double-acting piston seal consists of a PTFE compound seal ring and X-ring seal for dynamic sealing and two preset O-rings for static sealing.

The benefits of this seal system are the high degree of sealing during medium separation and the exceptional sliding characteristics of the PTFE compound, which prevents sticking or slipping. The maximum operating pressure and sliding speed are higher than those of the KSO. The KSO2 is particularly suited to operation under heavy conditions and applications involving large diameters.

***Max. operating conditions:**

The type of application and specific operating conditions involved must be taken into account when choosing the PTFE compound and/or material quality. The temperature range and chemical stability of the product depend on the O-ring and X-ring material selected.

Assembly dimensions

Diameter \varnothing D H9		Groove bottom \varnothing d	L.dim.	O-ring	X-Ring
Standard	Type ___/1				
40 - 79,9	25 - 140	\varnothing D - 10,0	6,3	2,62	1,78
80 - 132,9	50 - 250	\varnothing D - 13,0	8,3	3,53	2,62
133 - 462,9	100 - 480	\varnothing D - 18,0	12,3	5,33	3,53
463 - 700,0	425 - 700	\varnothing D - 31,0	16,3	7,00	5,33

If the groove width (L dim.) differs from the standard series, the complementary number /1 is added to the order designation.

Subject to the diameter (D), the corresponding groove bottom diameters (d) and assembly dimensions (L dim.) are to be taken from the above table under type ---/1.

Gap dim. s (mm)

L.dim.	0 - 10 MPa	10 - 20 MPa	20 - 30 MPa	Radius R
6,3	0,30	0,20	0,15	0,6
8,3	0,40	0,30	0,15	1,0
12,3	0,40	0,30	0,20	1,3
16,3	0,50	0,40	0,30	1,8

	Piston seal Type	Dimension	Material
Ordering example:	Piston seal	\varnothing D 60 x 50,0 x 6,3	PTFE-bronze
Order designation:	KSO2 -	60 x 50,0 x 6,3	- PB

- Designation of material:**
- PB** - PTFE-bronze
 - PK** - PTFE-carbon
 - PG(M)** - PTFE-glass fiber +(MoS₂)
 - PT** - PTFE compound turquoise
 - PEK** - PTFE-Econol

Type designation	∅ D	∅ d	L	O - Ring	X - Ring
KSO2 - 040 - PB	40	30	6,3	29,82 x 2,62	34,65 x 1,78
KSO2 - 042 - PB	42	32	6,3	31,42 x 2,62	37,82 x 1,78
KSO2 - 045 - PB	45	35	6,3	34,59 x 2,62	37,82 x 1,78
KSO2 - 048 - PB	48	38	6,3	37,77 x 2,62	41,00 x 1,78
KSO2 - 050 - PB	50	40	6,3	39,34 x 2,62	44,17 x 1,78
KSO2 - 052 - PB	52	42	6,3	40,94 x 2,62	47,35 x 1,78
KSO2 - 055 - PB	55	45	6,3	44,12 x 2,62	50,52 x 1,78
KSO2 - 060 - PB	60	50	6,3	48,90 x 2,62	53,70 x 1,78
KSO2 - 063 - PB	63	53	6,3	52,07 x 2,62	56,87 x 1,78
KSO2 - 065 - PB	65	55	6,3	53,64 x 2,62	60,05 x 1,78
KSO2 - 070 - PB	70	60	6,3	58,42 x 2,62	63,22 x 1,78
KSO2 - 075 - PB	75	65	6,3	63,17 x 2,62	69,57 x 1,78
KSO2 - 080 - PB	80	67	8,3	66,27 x 3,53	71,12 x 2,62
KSO2 - 085 - PB	85	72	8,3	69,44 x 3,53	75,87 x 2,62
KSO2 - 090 - PB	90	77	8,3	75,79 x 3,53	82,22 x 2,62
KSO2 - 095 - PB	95	82	8,3	78,97 x 3,53	82,22 x 2,62
KSO2 - 100 - PB	100	87	8,3	85,32 x 3,53	88,57 x 2,62
KSO2 - 105 - PB	105	92	8,3	91,67 x 3,53	94,92 x 2,62
KSO2 - 110 - PB	110	97	8,3	94,84 x 3,53	101,27 x 2,62
KSO2 - 115 - PB	115	102	8,3	101,19 x 3,53	107,62 x 2,62
KSO2 - 120 - PB	120	107	8,3	104,37 x 3,53	107,62 x 2,62
KSO2 - 125 - PB	125	112	8,3	110,72 x 3,53	113,97 x 2,62
KSO2 - 130 - PB	130	117	8,3	113,89 x 3,53	120,32 x 2,62
KSO2 - 135 - PB	135	117	12,3	113,67 x 5,33	123,42 x 3,53
KSO2 - 140 - PB	140	122	12,3	120,02 x 5,33	126,60 x 3,53
KSO2 - 150 - PB	150	132	12,3	129,54 x 5,33	136,12 x 3,53
KSO2 - 160 - PB	160	142	12,3	139,07 x 5,33	145,65 x 3,53
KSO2 - 170 - PB	170	152	12,3	148,49 x 5,33	158,35 x 3,53
KSO2 - 180 - PB	180	162	12,3	158,12 x 5,33	164,70 x 3,53
KSO2 - 190 - PB	190	172	12,3	170,82 x 5,33	177,40 x 3,53
KSO2 - 200 - PB	200	182	12,3	177,17 x 5,33	183,75 x 3,53
KSO2 - 210 - PB	210	192	12,3	189,87 x 5,33	196,45 x 3,53
KSO2 - 220 - PB	220	202	12,3	196,22 x 5,33	202,80 x 3,53
KSO2 - 230 - PB	230	212	12,3	208,92 x 5,33	215,50 x 3,53
KSO2 - 240 - PB	240	222	12,3	221,62 x 5,33	221,85 x 3,53
KSO2 - 250 - PB	250	232	12,3	227,97 x 5,33	234,54 x 3,53
KSO2 - 280 - PB	280	262	12,3	253,37 x 5,33	266,29 x 3,53
KSO2 - 300 - PB	300	282	12,3	278,77 x 5,33	278,99 x 3,53

Type designation	∅ D	∅ d	L	O - Ring	X - Ring
KSO2 - 320 - PB	320	302	12,3	291,47 x 5,33	304,39 x 3,53
KSO2 - 350 - PB	350	332	12,3	329,57 x 5,33	329,79 x 3,53
KSO2 - 400 - PB	400	382	12,3	380,37 x 5,33	380,59 x 3,53
KSO2 - 420 - PB	420	402	12,3	405,26 x 5,33	380,59 x 3,53
KSO2 - 450 - PB	450	432	16,3	430,66 x 5,33	430,66 x 3,53
KSO2 - 480 - PB	480	449	16,3	443,36 x 7,00	456,06 x 5,33
KSO2 - 500 - PB	500	469	16,3	468,76 x 7,00	456,06 x 5,33
KSO2 - 600 - PB	600	569	16,3	557,66 x 7,00	557,58 x 5,33
KSO2 - 700 - PB	700	669	16,3	658,88 x 7,00	658,88 x 5,33

Further dimension and in-between sizes upon request.

All intermediate sizes up to 700 mm in diameter are available upon request with short delivery times.