K48

Heavy Duty Piston Seal



K48 is a four-piece double-acting piston seal designed for heavy-duty hydraulic applications. It consists of a TPE profile sealing ring, an elastomeric nitrile rubber energizer to provide the necessary preload, and two thermoplastic backup rings for enhanced extrusion resistance. This configuration ensures reliable sealing performance under high and variable pressures, while maintaining long service life and operational stability.

Advantages

- Good sealing effect
- High extrusion resistance
- High abrasion resistance
- Long service life
- High performance in water based media

Application

- Mining industry
- Heavy duty cylinders

Operating Conditions

MOTION:	Linear		
PRESSURE (bar):	700 bar (max)		
SPEED (m/s):	0.3 m/s (max)		
TEMPERATURE (°C):	-30/+100 °C	+5/+60 °C	-30/+60 °C
MEDIA TYPE:	Mineral Oils	HFA/ HFB	HFC

NOTE: The above values (speed, pressure, temperature) are maximum values, all cannot be used at the same time.

Material Information

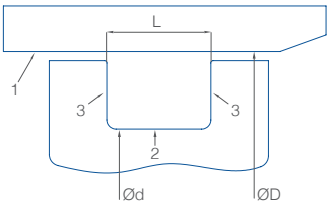
Sealing Ring	Energizer Ring	Back-up Ring	Remarks
Thermoplastic elastomer-TP5501	Elastomer-NB8001	Thermoplastic PM9901	Standard produced material code

NOTE: The above values (speed, pressure, temperature) are maximum values, all cannot be used at the same time.

Installation Information

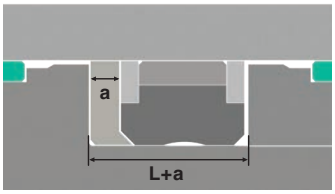
Using piston installation tools is recommended It is critical to avoid any deformation at the outer surface of TPE ring. It is very important that the assembly tools must be of soft material and have no sharp edges. Before installation the sealing element must be oiled with system oil. In case of conical installation tool is not in use, tube chamfers should be according to catalogue values. (See Installation instructions - Page 51-57)

Surface Roughness



	1 (rod)	2 (groove base)	3 (groove flanks)
Ra	0.1-0.4 µm	0.2-1.6 µm	0.2-3.2 µm
Rmax	< 3.2 µm	< 6.3 µm	< 15 µm
Rmr	When C = 0.25xRz on the dynamic work surface and reference line C_{ref} = 5% , the working surface contact area should be approximately between 50% and 70%.		

Sample Design

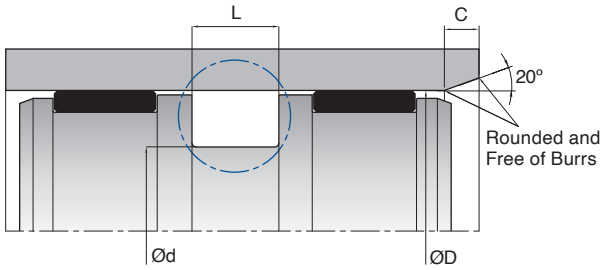


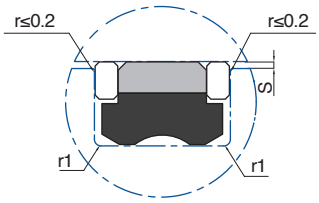
In use with a specially formed back-up ring, it provides a pressure resistance up to 1500 bar in static condition. Split piston head should be manufactured.

NOTE: "a" dimension should be added to the "L" dimension.

ØD	a
≤ 200	4 mm
> 200	5 mm

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Max. Permissible Sealing Gap Value "S_{max}" (mm) for K48			
160 bar	**250 bar**	**400 bar**	**700 bar**
1.00	0.80	0.40	0.25

The S_{max} value given here should be calculated from the extrusion gap formula on page 64. It is recommended to select the extrusion gap value below S_{max} values.

KASTAŞ NO	D (H10)	d (h9)	L (+0.2/-0)	r1	C	KASTAŞ CODE
K48 063-050	63	50	14.5	0.2	8	10020993
K48 075-055	75	55	23	0.4	10	10020994
K48 080-066	80	66	17	0.2	8	10020995
K48 090-075	90	75	13.5	0.2	8	10020997
K48 090-076	90	76	16	0.2	8	10020998
K48 100-082	100	82	22.5	0.4	8	10020999
K48 100-085	100	85	13.5	0.2	8	10021000
K48 110-095	110	95	16	0.2	8	10021001
K48 110-095/1	110	95	12.5	0.2	8	10021002
K48 120-105	120	105	16	0.2	8	10021003
K48 125-110	125	110	15.8	0.2	8	10021004
K48 130-105	130	105	30	0.8	13	10021005
K48 130-113	130	113	12.5	0.4	8	10021006
K48 135-118	135	118	20.5	0.4	8	10021007
K48 135-120	135	120	16	0.2	8	10021008
K48 140-123	140	123	16	0.4	8	10021009
K48 140-125	140	125	16	0.2	8	10021011
K48 150-133	150	133	20	0.4	8	10021012
K48 160-143	160	143	20	0.4	8	10021013
K48 160-145	160	145	16	0.2	8	10021014
K48 165-145	165	145	20	0.4	10	10021015
K48 170-145	170	145	20	0.8	13	10021016
K48 170-150	170	150	16	0.2	10	10021017
K48 170-150/1	170	150	20	0.4	10	10021018
K48 180-160	180	160	16	0.2	10	10021019
K48 180-163	180	163	20	0.4	8	10021020
K48 185-165	185	165	20	0.4	10	10021022
K48 186-166	186	166	16	0.2	10	10021024
K48 190-170	190	170	16	0.4	10	10021025
K48 200-175	200	175	28	0.8	13	10021026
K48 200-180/1	200	180	16	0.4	10	10021028
K48 200-180	200	180	20	0.4	10	10021027
K48 200-183	200	183	20	0.4	8	10021029
K48 220-195	220	195	25	0.8	13	10021031
K48 220-200	220	200	20.5	0.4	10	10021032
K48 230-205	230	205	25	0.8	13	10021034
K48 230-210	230	210	20	0.4	10	10021035
K48 240-215	240	215	25	0.8	13	10021037
K48 250-225	250	225	25	0.8	13	10021039
K48 260-235	260	235	25	0.8	13	10021040
K48 290-265	290	265	25	0.8	13	10021042
K48 290-265/1	290	265	27	0.8	13	10021043
K48 300-275/1	300	275	25	0.8	13	10021045
K48 300-275	300	275	33	0.8	13	10021044
K48 320-290	320	290	30	1	15	10021046
K48 360-330	360	330	31.5	1	15	10021047
K48 370-340	370	340	30	1	15	10021048