

K22 is a single acting rod seal designed to have inner lip shorter than the outer lip in order to be used for rod applications.

PRODUCT ADVANTAGES
- Superior static and dynamic sealing effect
- Wide range of dimensions
- Easy assembly into closed grooves
- Simple groove design
- Economical sealing solution

APPLICATION
Construction machinery, fork-lift trucks, injection moulding machines, agricultural machinery, loading platforms and standard cylinders.

MATERIAL		CODE
NBR	90 SHORE A	NB9001
PU	92 SHORE A	PU9201

OPERATING CONDITIONS

NBR

MEDIA	Mineral oils (DIN 51524)	HFA and HFB	HFC
TEMPERATURE	-30°C +105°C	+5°C +60°C	-30°C +60°C
PRESSURE	≤150 Bar	≤150 Bar	≤150 Bar
SPEED	≤0.5 m/sec	≤0.5 m/sec	≤0.5 m/sec

PU

MEDIA	Mineral oils (DIN 51524)	HFA and HFB	HFC
TEMPERATURE	-30°C +100°C	+5°C +50°C	-30°C +40°C
PRESSURE	≤400 Bar	≤400 Bar	≤400 Bar
SPEED	≤0.5 m/sec	≤0.5 m/sec	≤0.5 m/sec

Note: The above data are maximum values and cannot be used at the same time.

SURFACE ROUGHNESS		Ra	Rmax
Sliding Surface	Ød	≤0.4 µm	≤3.2 µm
Groove Base	ØD	≤1.6 µm	≤10 µm
Groove Flanks	B	≤3.2 µm	≤16 µm

Note: It is recommended to have 50% to 90% of the working surface material contact area value.

INSTALLATION
Easily assembled into closed grooves according to the minimum diameter values that are given in the below table. Open grooves or special assembly tools should be used for the values that are outside this table. It is very important that the assembly tools must be of soft material and have no sharp edges. Before installation the rod seal must be oiled with system oil.

MINUMUM DIAMETER VALUES FOR CLOSED TYPE OF GROOVES							
(D-d)/2 (mm)	4	5	6	7.7	10	12.5	15
d min (mm)	25	30	40	50	80	100	105

NOTES
For special applications that require high temperatures, K22 can be produced in FKM material. The permissible sealing gap values of K22 is given below.

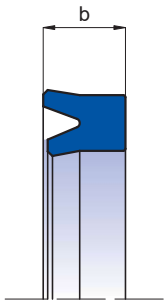
PERMISSIBLE SEALING GAP

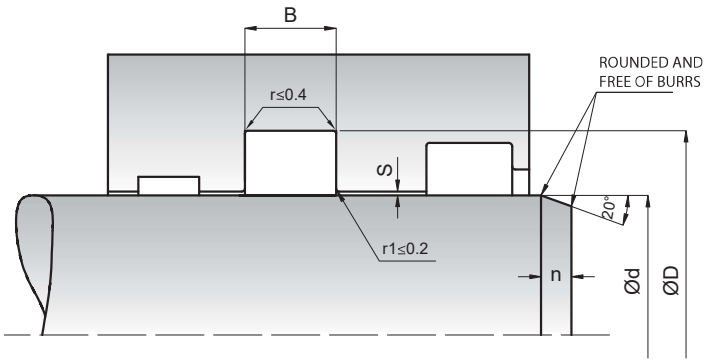
NBR	Smax (mm)		
t=(D-d)/2 (mm)	50 Bar	100 Bar	150 Bar
t≤5	0.40	0.20	0.10
t>5	0.45	0.25	0.15

PU	Smax (mm)		
t=(D-d)/2 (mm)	150 Bar	250 Bar	400 Bar
t≤5	0.30	0.20	0.15
t>5	0.35	0.25	0.20

Note: The largest sealing gap value occurring on the non-pressurized side of the seal does have a vital importance for the function of the seal and in this respect it is quite important to use the S value lower than the above indicated numbers.

K22 ROD SEAL

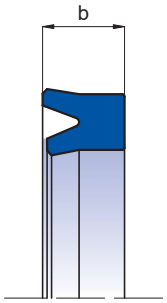


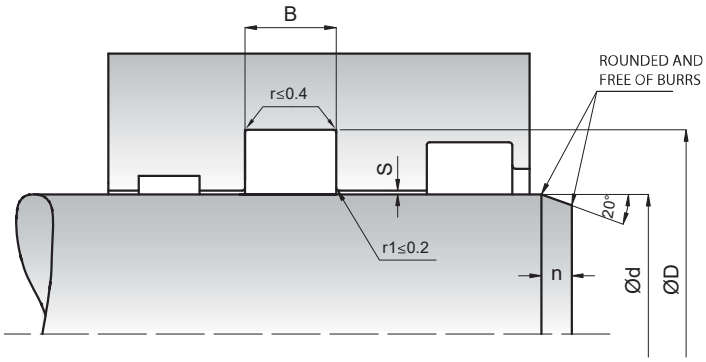


KASTAŞ NO	NBR	PU	d (f8)	D (H11)	b	B (-0/+0.2)	n
K22-002/1	NBR		2	4.5	1.7	2.2	2
K22-002/2	NBR		2	5.5	2.6	3.1	2
K22-002	NBR		2.5	5	1.7	2.2	2
K22-003/2	NBR		3	6	2.5	3	2
K22-003/1	NBR		3	6.5	3	3.5	2
K22-003	NBR		3	7	3	3.5	2
K22-003/3	NBR		3.17	8.76	3.96	4.46	3
K22-004/1	NBR		4	8	3	3.5	2
K22-004/3	NBR		4	9	3.5	4	2.5
K22-004/5	NBR		4	10	4.2	4.7	3
K22-004/2	NBR		4	12	4.5	5	4
K22-004/4	NBR		4.76	11.11	3.96	4.46	3
K22-005	NBR		5	12	4.5	5	3.5
K22-006/1	NBR	PU	6	10	3	3.5	2
K22-006/3	NBR	PU	6	12	4	4.5	3
K22-006/4		PU	6	13	5	6	3.5
K22-006	NBR		6	13	5.5	6.5	3.5
K22-006/5	NBR	PU	6	14	5.8	6.8	4
K22-006/2	NBR		6.35	12.76	3.96	4.46	3
K22-008	NBR	PU	8	14	4	4.5	3
K22-008/2	NBR		8	14	4.5	5	3
K22-008/4	NBR		8	16	5.5	6.5	4
K22-008/1	NBR		8	16	6	7	4
K22-009/1	NBR		9	15	9	10	3
K22-009/2	NBR		9.52	16.5	3.96	4.46	3.5
K22-010/7	NBR	PU	10	13.6	2.3	2.8	2
K22-010/4	NBR		10	14	2	2.5	2
K22-010/2	NBR	PU	10	14	4	4.5	2
K22-010/1	NBR	PU	10	16	4.5	5	3
K22-010/3	NBR		10	16	6	7	3
K22-010	NBR	PU	10	18	5.5	6.5	4
K22-010/6	NBR	PU	10	20	4.5	5	4.5
K22-010/5	NBR		10	20	6.5	7.5	4.5
K22-011	NBR	PU	11.11	19.05	3.96	4.46	4
K22-012/6	NBR	PU	12	16	3	3.5	2
K22-012/2	NBR	PU	12	17	3.7	4.2	2.5
K22-012/4	NBR		12	18	4.5	5	3
K22-012/1	NBR	PU	12	20	5.5	6.5	4
K22-012/3	NBR	PU	12	22	5	6	4.5
K22-012/5	NBR	PU	12	22	7.5	8.5	4.5
K22-012	NBR	PU	12	22	8	9	4.5
K22-013/2	NBR	PU	13	21.43	4.76	5.26	4
K22-013/1	NBR	PU	13	23	8	9	4.5
K22-014	NBR	PU	14	22	5.5	6.5	4
K22-014/1	NBR	PU	14.28	20.63	4.76	5.26	3
K22-015	NBR	PU	15	23	6	7	4
K22-015/1	NBR	PU	15.87	22.22	4.76	5.26	3
K22-016	NBR	PU	16	20.5	5	6	2.5
K22-016/6	NBR		16	22	4	4.5	3

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K22 ROD SEAL





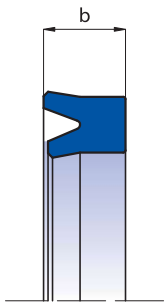
KASTAŞ NO	NBR	PU	d (f8)	D (H11)	b	B (-0/+0.2)	n
K22-016/1	NBR		16	22	4.5	5	3
K22-016/10	NBR	PU	16	22	5	6	3
K22-016/5	NBR	PU	16	23	5.5	6.5	3.5
K22-016/9	NBR	PU	16	24	5	6	4
K22-016/3	NBR	PU	16	24	5.5	6.5	4
K22-016/4	NBR	PU	16	24	6.5	7.5	4
K22-016/8	NBR	PU	16	26	5	6	4.5
K22-016/2	NBR	PU	16	26	7	8	4.5
K22-016/7	NBR		16	26	7.5	8.5	4.5
K22-017/1	NBR		17.46	23.81	4.76	5.26	3
K22-018/4	NBR		18	22	3	3.5	2
K22-018	NBR	PU	18	24	5	6	3
K22-018/5	NBR		18	25	4.5	5	3.5
K22-018/1	NBR	PU	18	25	5	6	3.5
K22-018/2	NBR	PU	18	25	5.5	6.5	3.5
K22-018/3	NBR	PU	18	28	7	8	4.5
K22-019	NBR	PU	19.05	25.4	4.76	5.26	3
K22-020/6	NBR	PU	20	26	3.5	4	3
K22-020/4	NBR	PU	20	28	5.5	6.5	4
K22-020/12	NBR	PU	20	28.57	4.76	5.26	4
K22-020	NBR	PU	20	30	6	7	4.5
K22-020/8	NBR	PU	20	30	7	8	4.5
K22-020/9	NBR	PU	20	30	7.5	8.5	4.5
K22-020/7	NBR	PU	20	30	8	9	4.5
K22-020/2	NBR	PU	20	30	10	11	4.5
K22-020/10	NBR	PU	20	32	6	7	5
K22-020/11	NBR		20	32	7	8	5
K22-020/3	NBR	PU	20	32	7.5	8.5	5
K22-022/6	NBR	PU	22	29	5	6	3.5
K22-022/3	NBR	PU	22	30	5.5	6.5	4
K22-022/2	NBR	PU	22	30	7	8	4
K22-022/1	NBR	PU	22	30	8	9	4
K22-022	NBR	PU	22	32	6	7	4.5
K22-022/7	NBR	PU	22.22	31.75	4.76	5.26	4.5
K22-022/4	NBR	PU	22.22	31.75	6.35	7.35	4.5
K22-023	NBR	PU	23	31	5.5	6.5	4
K22-023/1	NBR	PU	23.81	36.51	6.35	7.35	5
K22-025/7	NBR	PU	25	32	6	7	3.5
K22-025/10	NBR	PU	25	33	5.5	6.5	4
K22-025/4	NBR	PU	25	33	10	11	4
K22-025	NBR	PU	25	35	6	7	4.5
K22-025/3	NBR		25	35	7	8	4.5
K22-025/9	NBR	PU	25	35	7.5	8.5	4.5
K22-025/1	NBR	PU	25	35	8	9	4.5
K22-025/8	NBR	PU	25	35	10	11	4.5
K22-025/5	NBR	PU	25	37	6	7	5
K22-025/6	NBR	PU	25	40	10	11	5.5
K22-028/10	NBR	PU	28	35	7	8	3.5
K22-028/7	NBR		28	36	5	6	4

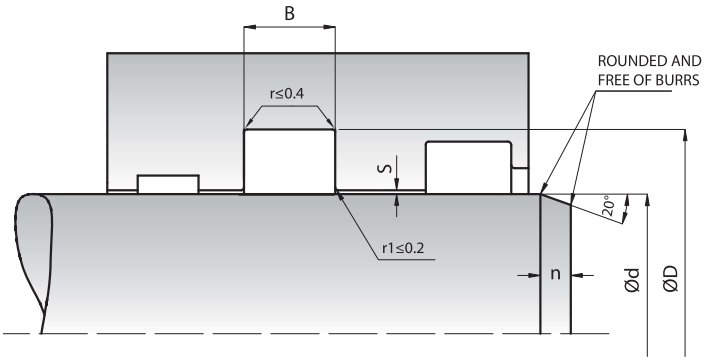
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KASTAŞ NO	NBR	PU	d (f8)	D (H11)	b	B (-0/+0.2)	n
K22-028/4	NBR	PU	28	36	5.5	6.5	4
K22-028/9		PU	28	36	5.7	6.7	4
K22-028/11		PU	28	36	8	9	4
K22-028	NBR	PU	28	38	6	7	4.5
K22-028/6	NBR	PU	28	38	7	8	4.5
K22-028/8	NBR	PU	28	38	8	9	4.5
K22-028/2	NBR	PU	28	38	10	11	4.5
K22-030/5	NBR	PU	30	38	5.5	6.5	4
K22-030/6		PU	30	38	5.7	6.7	4
K22-030/4	NBR	PU	30	38	6	7	4
K22-030/3	NBR	PU	30	38	6.3	7.3	4
K22-030/8	NBR	PU	30	38	8	9	4
K22-030/1	NBR	PU	30	40	6	7	4.5
K22-030/2	NBR	PU	30	40	7	8	4.5
K22-030	NBR	PU	30	40	8	9	4.5
K22-030/7	NBR	PU	30	42	8.5	9.5	5
K22-030/9	NBR	PU	30.16	38.1	6.35	7.35	4
K22-031	NBR	PU	31.75	44.45	6.35	7.35	5
K22-032	NBR	PU	32	42	7	8	4.5
K22-032/1	NBR	PU	32	48	8	9	6
K22-033		PU	33	40	5.5	6.5	3.5
K22-033/1	NBR	PU	33.33	40.64	4.76	5.26	3.5
K22-034	NBR	PU	34	44	7	8	4.5
K22-034/1	NBR	PU	34.92	50.8	7.93	8.93	6
K22-035/6	NBR	PU	35	43	6	7	4
K22-035/7	NBR	PU	35	43	8	9	4
K22-035/4	NBR	PU	35	45	6	7	4.5
K22-035/1	NBR	PU	35	45	7	8	4.5
K22-035	NBR	PU	35	45	8	9	4.5
K22-035/5	NBR	PU	35	45	10	11	4.5
K22-035/3	NBR	PU	35	50	8	9	5.5
K22-036	NBR	PU	36	46	8	9	4.5
K22-036/2	NBR	PU	36	46	10	11	4.5
K22-038	NBR	PU	38.1	50.8	9.52	10.52	5
K22-040/7	NBR	PU	40	48	5.4	6.4	4
K22-040/9	NBR	PU	40	48	5.8	6.8	4
K22-040/6	NBR	PU	40	48	8	9	4
K22-040/2	NBR	PU	40	50	7	8	4.5
K22-040/3	NBR	PU	40	50	8	9	4.5
K22-040	NBR	PU	40	50	10	11	4.5
K22-040/4	NBR		40	55	10	11	5.5
K22-041	NBR	PU	41.27	50.8	5.56	6.56	4.5
K22-042	NBR	PU	42	52	7	8	4.5
K22-042/1	NBR	PU	42.86	53.97	9.52	10.52	5
K22-044	NBR	PU	44.45	57.15	7.93	8.93	5
K22-045/3	NBR	PU	45	55	7	8	4.5
K22-045	NBR	PU	45	55	10	11	4.5
K22-045/4	NBR	PU	45	60	7	8	5.5
K22-045/2	NBR	PU	45	61	12	13	6
K22-045/5	NBR	PU	45	65	10	11	6
K22-050/5	NBR	PU	50	60	6	7	4.5
K22-050/4	NBR	PU	50	60	7	8	4.5
K22-050	NBR	PU	50	60	10	11	4.5
K22-050/2	NBR	PU	50	60.33	9.52	10.52	4.5
K22-050/7		PU	50	62	8	9	5
K22-050/6	NBR		50	62	10	11	5
K22-050/3		PU	50	65	10	11	5.5
K22-052	NBR	PU	52	62	10	11	4.5
K22-052/1	NBR	PU	52	69	9	10	6
K22-054	NBR		54	64	7	8	4.5
K22-055/2		PU	55	64	7.3	8.3	4
K22-055/3	NBR	PU	55	65	7.3	8.3	4.5
K22-055	NBR	PU	55	65	10	11	4.5
K22-055/1	NBR		55	70	10	11	5.5
K22-056/2	NBR	PU	56	66	10	11	4.5

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K22 ROD SEAL





KASTAŞ NO	NBR	PU	d (f8)	D (H11)	b	B (-0/+0.2)	n
K22-056	NBR	PU	56	68	8.5	9.5	5
K22-060/3	NBR	PU	60	70	8.5	9.5	4.5
K22-060	NBR	PU	60	70	10	11	4.5
K22-060/5	NBR	PU	60	70	12	13	4.5
K22-060/4	NBR	PU	60	72	8.5	9.5	5
K22-060/1	NBR	PU	60	74	8	9	5.5
K22-060/2	NBR	PU	60	75	12	13	5.5
K22-063	NBR	PU	63	73	6.5	7.5	4.5
K22-063/3		PU	63	73	12	13	4.5
K22-063/2	NBR	PU	63	75	8.5	9.5	5
K22-063/4		PU	63	78	10	11	5.5
K22-063/1		PU	63.5	76.2	9.52	10.52	6
K22-065	NBR	PU	65	75	10	11	4.5
K22-068	NBR		68	80	8.5	9.5	5
K22-069/1		PU	69.85	85	13	14	5.5
K22-070	NBR	PU	70	80	12	13	4.5
K22-070/4	NBR		70	82	8.5	9.5	5
K22-070/1	NBR	PU	70	85	10	11	5.5
K22-070/5		PU	70	90	13.5	14.5	6
K22-075	NBR	PU	75	85	12	13	4.5
K22-075/1		PU	75	95	12	13	6
K22-080	NBR	PU	80	90	12	13	4.5
K22-080/3	NBR		80	92	7.5	8.5	5
K22-080/2	NBR		80	92	8.5	9.5	5
K22-080/1	NBR		80	92	9.5	10.5	5
K22-082		PU	82.5	95.25	9.52	10.52	6
K22-085/1	NBR	PU	85	95	7	8	4.5
K22-085	NBR	PU	85	95	12	13	4.5
K22-090	NBR	PU	90	100	12	13	4.5
K22-090/1	NBR		90	102	8.5	9.5	5
K22-090/2		PU	90	110	11.5	12.5	6
K22-095	NBR	PU	95	105	12	13	4.5
K22-095/1		PU	95	110	12	13	5.5
K22-100	NBR		100	110	14	15	4.5
K22-100/3	NBR		100	115	10	11	5.5
K22-100/2		PU	100	115	12	13	5.5
K22-100/4		PU	100	120	13.5	14.5	6
K22-105	NBR	PU	105	120	12	13	5.5
K22-106		PU	106	120	10	11	5.5
K22-110	NBR		110	130	14	15	6
K22-115	NBR	PU	115	125	12	13	4.5
K22-120	NBR	PU	120	135	9.5	10.5	5.5
K22-120/2		PU	120	140	14.6	15.6	6
K22-125		PU	125	135	13.5	14.5	4.5
K22-125/1		PU	125	145	12	13	6
K22-125/2	NBR		125	145	14	15	6
K22-130		PU	130	140	13.5	14.5	4.5
K22-132		PU	132	142	6	7	4.5
K22-135	NBR	PU	135	145	12	13	4.5

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KASTAŞ NO	NBR	PU	d (f8)	D (H11)	b	B (-0/+0.2)	n
K22-140/1	NBR		140	160	14	15	6
K22-150		PU	150	160	13.5	14.5	4.5
K22-150/1		PU	150	170	15	16	6
K22-155	NBR	PU	155	165	12	13	4.5
K22-160	NBR	PU	160	170	12	13	4.5
K22-160/2		PU	160	180	15	16	6
K22-160/3	NBR		160	184	15	16	7
K22-170		PU	170	180	14.5	15.5	4.5
K22-170/1		PU	170	190	15	16	6
K22-180/3		PU	180	190	11	12	4.5
K22-180/2		PU	180	195	12.5	13.5	5.5
K22-180/1		PU	180	200	12	13	6
K22-185	NBR	PU	185	195	12	13	4.5
K22-185/1	NBR		185	215	20	21	8
K22-200/2		PU	200	220	15	16	6
K22-200/1		PU	200	225	15	16	7
K22-200	NBR		200	235	21	22	9
K22-210	NBR	PU	210	240	28	29	8
K22-212		PU	212	224	10	11	5
K22-215	NBR	PU	215	225	12	13	4.5
K22-220		PU	220	240	15	16	6
K22-220/1	NBR		220	250	20	21	8
K22-220/2		PU	220	250	22.7	23.7	8
K22-240	NBR	PU	240	250	12	13	4.5
K22-240/1	NBR	PU	240	260	15	16	6
K22-240/2		PU	240	270	18	19	8
K22-245	NBR		245	290	25	26	10
K22-250		PU	250	270	15	16	6
K22-252		PU	252	273	10	11	7
K22-280		PU	280	300	15	16	6

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