

# Merkel U-Ring NA 250

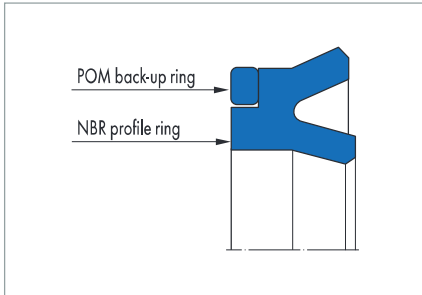


Fig. 1 Merkel U-Ring NA 250

## Product description

Merkel U-ring with asymmetrical profile of the sealing lips and back-up ring as a gap sealing component.

## Product advantages

Single-acting piston seal for medium load, preferably for spare parts requirement.

## Application

Standard cylinders, earth moving equipment, forestry equipment, excavators. We recommend more modern series for new designs.

## Material

### Sealing component

Material	Code	Hardness
Nitrile rubber NBR	80 NBR 878	80 Shore A

### Back-up ring

Material	Code
Polyacetal	POM 992020

## Operating conditions

Material	80 NBR 878/POM
	Temperature range in °C
Hydraulic oils HL, HLP	-30 ... +100
HFA fluids	+5 ... +60
HFB fluids	+5 ... +60
HFC fluids	-30 ... +60
HFD fluids	-
Water	+5 ... +90
HETG (rapeseed oil)	-30 ... +80
HEES (synthetic esters)	-
HEPG (glycol)	-30 ... +60
Mineral greases	-30 ... +100
Pressure p in MPa	25
Running speed v in m/s	0,5

## Surface quality

Surface roughness	R <sub>a</sub>	R <sub>max</sub>
Sliding surface	0,05 ... 0,3 μm	≤2,5 μm
Groove base	≤1,6 μm	≤6,3 μm
Groove flanks	≤3,0 μm	≤15,0 μm

Percentage contact area M<sub>c</sub> >50% to max. 90% at cutting depth c = Rz/2 and reference line C ref = 0%.

## Design notes

Please observe our general design notes in → Technical Manual.

### Gap dimension

The largest gap dimension occurring on the non-pressurised side of the seal in operation is of vital importance for the function of the seal. → Technical Manual.

Profile	Max. permissible gap dimension		
	7,5 MPa	10 MPa	25 MPa
≤80	0,95	0,80	0,60
>80	1,00	0,85	0,65

### Tolerance recommendation and dimension d2

The admissible gap width, tolerances, guide play and deflection of the guide under load are to be taken into account when designing d2. → Technical Manual.

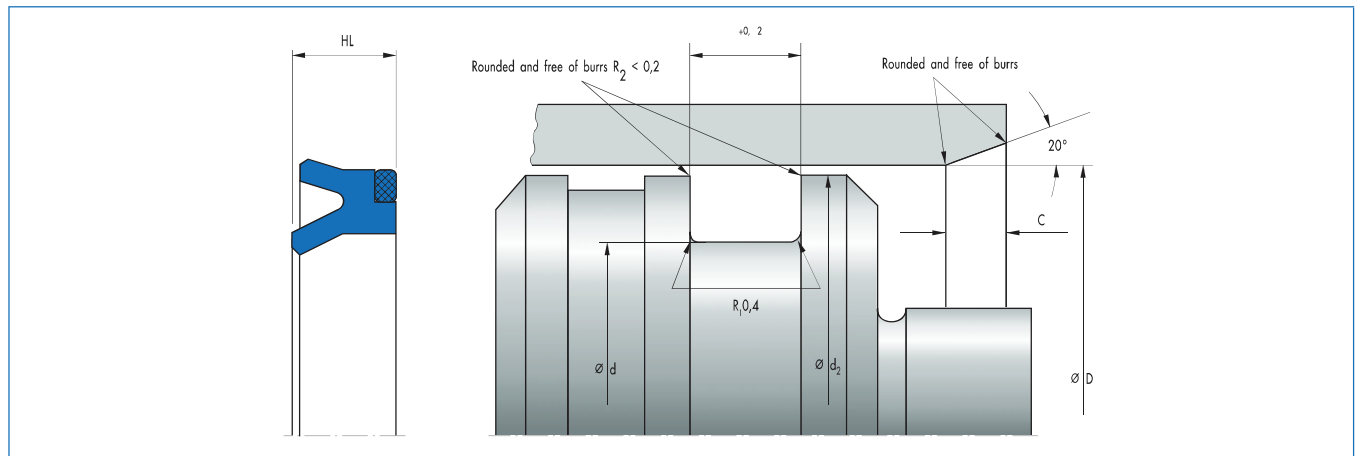
Nominal Ø D	D	d
≤180	H11	h11

## Fitting & installation

Careful fitting is a prerequisite for the correct function of the seal.

→ Technical Manual.

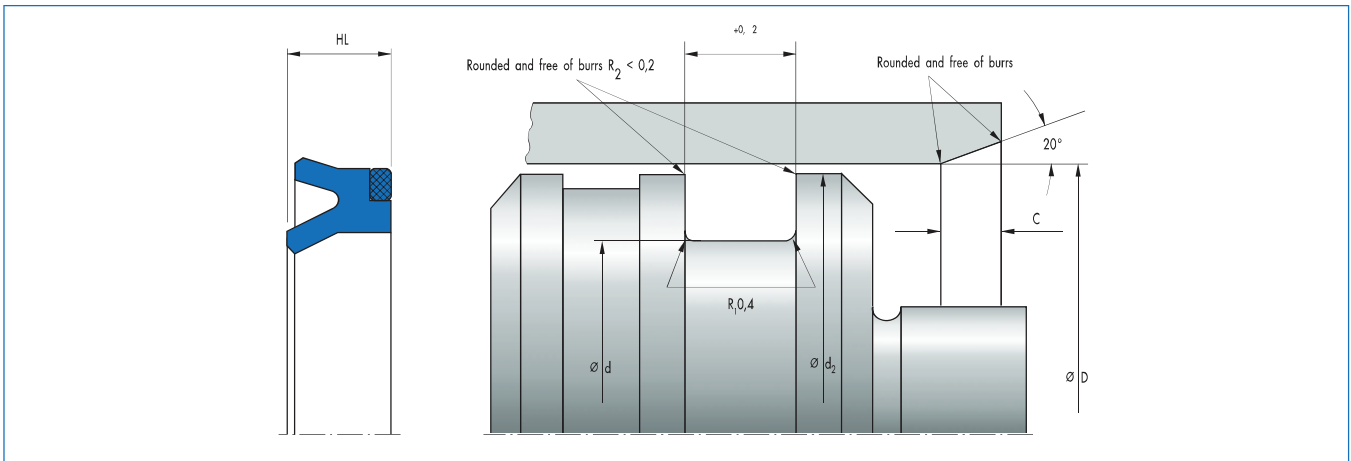
Article list



D	d	H	L	Profile	C	Fitting	Housing	Material	Article No.	
32	20	10	11	6	5			80 NBR M00878	4429	D
35	22	10	11	6,5	5,5			80 NBR M00878	18426	D
38	25	10	11	6,5	5,5			80 NBR M00878	18429	D
40	25	10	11	7,5	5,5			80 NBR M00878	18432	B
42	22	10	11	10	6			80 NBR M00878	32166	B
42	30	10	11	6	5			80 NBR M00878	18434	D
45	30	10	11	7,5	5,5			80 NBR M00878	18436	D
50	30	12	13	10	6			80 NBR M00878	18443	D
50	35	10	11	7,5	5,5	W		80 NBR M00878	18442	B
55	40	10	11	7,5	5,5	W		80 NBR M00878	18446	B
60	40	12	13	10	6			80 NBR M00878	18450	D
60	45	10	11	7,5	5,5	W		80 NBR M00878	18449	B
63	45	12	13	9	6			80 NBR M00878	18451	B
65	45	12	13	10	6			80 NBR M00878	18453	D
65	50	10	11	7,5	5,5	W		80 NBR M00878	18452	B
70	50	12	13	10	6			80 NBR M00878	18457	D
70	55	12	13	7,5	5,5	W		80 NBR M00878	18456	B
75	60	12	13	7,5	5,5	W		80 NBR M00878	18460	D
80	60	12	13	10	6		ISO	80 NBR M00878	18466	B
80	65	12	13	7,5	5,5	W	ISO	80 NBR M00878	18465	B
82	65	12	13	8,5	6			80 NBR M00878	18467	D
85	70	12	13	7,5	5,5	W		80 NBR M00878	18469	B
90	70	12	13	10	6			80 NBR M00878	18476	D
90	75	12	13	7,5	5,5	W		80 NBR M00878	18475	B
95	75	12	13	10	6	W		80 NBR M00878	18478	D
100	80	15	16	10	6	W	ISO	80 NBR M00878	18479	B
100	85	12	13	7,5	5,5	W		80 NBR M00878	18480	B
105	85	15	16	10	6	W		80 NBR M00878	18484	B
105	90	12	13	7,5	5,5	W		80 NBR M00878	18481	B
110	85	15	16	12,5	6,5			80 NBR M00878	17614	D
110	90	15	16	10	6	W		80 NBR M00878	18486	D
110	95	12	13	7,5	5,5	W		80 NBR M00878	18485	B
115	90	15	16	12,5	6,5			80 NBR M00878	18491	D
120	95	15	16	12,5	6,5			80 NBR M00878	18496	D
120	100	15	16	10	6	W		80 NBR M00878	18494	D

B Available from stock D On request: Tool is available, delivery at short notice

Fitting: H = by hand; W = with fitting tool; blank = axially accessible housing



D	d	H	L	Profile	C	Fitting	Housing	Material	Article No.	
125	100	15	16	12,5	6,5		ISO	80 NBR M00878	18501	D
125	105	15	16	10	6	W	ISO	80 NBR M00878	18498	B
130	110	15	16	10	6	W		80 NBR M00878	18504	D
140	115	15	16	12,5	6,5	W		80 NBR M00878	17613	B
140	125	15	16	7,5	5,5	W		80 NBR M00878	2920	D
160	135	18	19	12,5	6,5	W	ISO	80 NBR M00878	21094	D
180	160	15	16	10	6	W		80 NBR M00878	29462	D

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