

Merkel U-Ring N 100, AUN 100

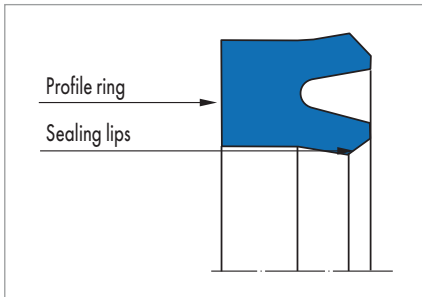


Fig. 1 Merkel U-Ring N 100, AUN 100

Product description

Merkel U-ring with symmetrical profile and set back sealing edges for rods/pistons.

Product advantages

Single-acting piston or rod seal, preferably for spare parts requirements.

Application

Special cylinders, agricultural machinery, forestry equipment, injection moulding machines, loading platforms, standard cylinders.

Material

N 100

Material	Code	Hardness
Nitrile rubber	90 NBR 109	90 Shore A

AUN 100

Material	Code	Hardness
Polyurethane	94 AU 925	94 Shore A

Operating conditions

Material	90 NBR 109	94 AU 925
	Temperature range in °C	
Hydraulic oils HL, HLP	-30 ... +100	-30 ... +110
HFA fluids	+5 ... +60	+5 ... +60
HFB fluids	+5 ... +60	+5 ... +60
HFC fluids	-30 ... +60	-30 ... +50
HFD fluids	-	-
Water	+5 ... +90	+5 ... +40
HETG (rapeseed oil)	-30 ... +80	-30 ... +60
HEES (synthetic ester)	-	-30 ... +80
HEPG (glycol)	-30 ... +60	-30 ... +40
Mineral greases	-30 ... +100	-30 ... +110
Pressure p in MPa	10 MPa	30 MPa
Running speed v in m/s	0,5	

Surface quality

Surface roughness	R _a	R _{max}
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_v >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 decisive factor for the function of the seal is the largest gap dimension occurring during operation on the non-pressurised side of the seal. → Technical Manual.

N 100 (material 90 NBR 109)

Profile	Max. permissible gap dimension		
	5 MPa	10 MPa	16 MPa
≤5,0	0,45	0,25	0,15
>5,0	0,50	0,30	0,20

AUN 100 (material 94 AU 925)

Profile	Max. permissible gap dimension			
	10 MPa	16 MPa	30 MPa	10 MPa
≤5,0	0,45	0,35	0,25	0,25
>5,0	0,50	0,40	0,30	0,30

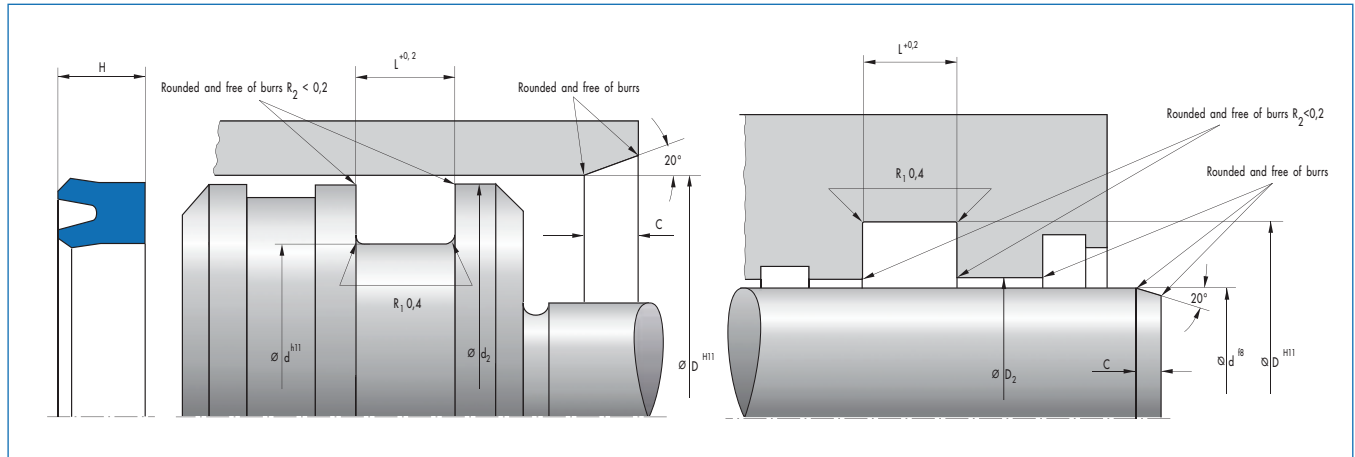
Tolerance recommendation and dimension D₂/d₂

The admissible gap width, tolerances, guide play and deflection of the guide under load are to be taken into account when designing D₂ (rod seal) or d₂ (piston seal). → Technical Manual.

Fitting & installation

Careful fitting is a prerequisite for the correct function of the seal. → Technical Manual. Note: the use of male adaptors increases the reliability. Further information is available on enquiry.

Article list

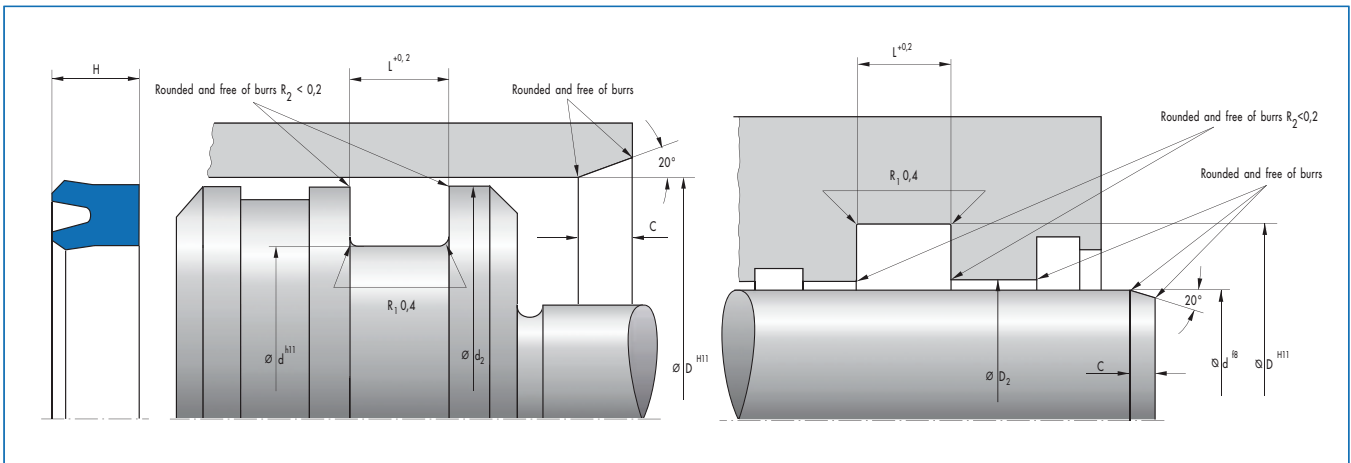


d	D	H	Profile	L	C	Code	Material	Type	Article No.	
8	16	8	4	9	3,5	N8-101	90 NBR M00109	N 100	18047	●
10	20	8	5	9	4	AUN10-106	94 AU P00925	AUN 100	14343	●
10	20	8	5	9	4	N10-103	90 NBR M00109	N 100	17744	●
10	22	8	6	9	5	AUN10-107	94 AU P00925	AUN 100	14344	●
10	22	8	6	9	5	N10-104	90 NBR M00109	N 100	17982	●
10	25	10	7,5	11	5,5	N10-105	90 NBR M00109	N 100	17912	●
12	22	8	5	9	4	AUN12-102	94 AU P00925	AUN 100	14345	●
12	24	10	6	11	5	N12-100	90 NBR M00109	N 100	17978	●
12	25	10	6,5	11	5,5	AUN12-103	94 AU P00925	AUN 100	14346	●
12	26	10	7	11	5,5	N12-101	90 NBR M00109	N 100	18056	●
14	24	8	5	9	4	AUN14-103	94 AU P00925	AUN 100	14347	●
14	28	10	7	11	5,5	N14-102	90 NBR M00109	N 100	17805	●
15	25	8	5	9	4	AUN15-103	94 AU P00925	AUN 100	11799	●
15	28	10	6,5	11	5,5	AUN15-104	94 AU P00925	AUN 100	11800	○
15	28	10	6,5	11	5,5	N15-101	90 NBR M00109	N 100	17783	●
15	30	10	7,5	11	5,5	N15-102	90 NBR M00109	N 100	11909	●
16	26	8	5	9	4	AUN16-105	94 AU P00925	AUN 100	14420	●
16	32	10	8	11	6	N16-104	90 NBR M00109	N 100	17802	●
18	28	8	5	9	4,5	AUN18-104	94 AU P00925	AUN 100	11812	●
18	30	8	6	9	5	AUN18-105	94 AU P00925	AUN 100	11813	●
18	30	10	6	11	5	N18-102	90 NBR M00109	N 100	17580	●
18	35	12	8,5	13	6	N18-103	90 NBR M00109	N 100	17807	○
20	30	8	5	9	4,5	AUN20-107	94 AU P00925	AUN 100	11829	●
20	30	10	5	11	4,5	AUN20-110	94 AU P00925	AUN 100	11830	●
20	32	8	6	9	5	AUN20-108	94 AU P00925	AUN 100	14404	●
20	35	10	7,5	11	5,5	N20-102	90 NBR M00109	N 100	16314	●
20	36	10	8	11	6	N20-105	90 NBR M00109	N 100	17857	○
20	40	12	10	13	6	N20-106	90 NBR M00109	N 100	17933	●
22	32	8	5	9	4,5	AUN22-103	94 AU P00925	AUN 100	11838	●
22	34	10	6	11	5	N22-101	90 NBR M00109	N 100	17846	●
22	35	10	6,5	11	5,5	AUN22-104	94 AU P00925	AUN 100	14349	●
22	38	10	8	11	6	N22-102	90 NBR M00109	N 100	17934	●
24	40	10	8	11	6	N24-100	90 NBR M00109	N 100	17664	●
25	35	8	5	9	4,5	AUN25-110	94 AU P00925	AUN 100	12304	●
25	38	10	6,5	11	5,5	AUN25-111	94 AU P00925	AUN 100	14351	●

● Available from stock ○ On request: Tool is available, delivery at short notice

d	D	H	Profile	L	C	Code	Material	Type	Article No.	
25	40	10	7,5	11	5,5	AUN25-112	94 AU P00925	AUN 100	14391	●
25	40	10	7,5	11	5,5	N25-108	90 NBR M00109	N 100	17762	●
25	45	12	10	13	6	N25-109	90 NBR M00108	N 100	17892	●
28	40	10	6	11	5	AUN28-103	94 AU P00925	AUN 100	14352	●
28	48	12	10	13	6	N28-102	90 NBR M00109	N 100	17916	●
30	40	10	5	11	4,5	AUN30-101	94 AU P00925	AUN 100	14353	●
30	42	10	6	11	5	AUN30-108	94 AU P00925	AUN 100	14354	●
30	42	10	6	11	5	N30-106	90 NBR M00109	N 100	17782	●
30	45	10	7,5	11	5,5	AUN30-109	94 AU P00925	AUN 100	14355	●
30	45	10	7,5	11	5,5	N30-107	90 NBR M00109	N 100	17694	●
30	50	12	10	13	6	AUN30-100	94 AU P00925	AUN 100	14141	●
30	50	12	10	13	6	N30-103	90 NBR M00109	N 100	16504	●
32	45	10	6,5	11	5,5	AUN32-106	94 AU P00925	AUN 100	14356	●
32	45	10	6,5	11	5,5	N32-104	90 NBR M00109	N 100	17547	●
32	50	12	9	13	6	N32-105	90 NBR M00109	N 100	17784	●
35	45	10	5	11	4,5	AUN35-112	94 AU P00925	AUN 100	14357	●
35	48	10	6,5	11	5,5	AUN35-109	94 AU P00925	AUN 100	12262	●
35	50	10	7,5	11	5,5	AUN35-110	94 AU P00925	AUN 100	14390	●
35	50	10	7,5	11	5,5	N35-106	90 NBR M00109	N 100	17910	●
35	52	12	8,5	13	6	N35-107	90 NBR M00108	N 100	18074	●
35	55	10	10	11	6	N35-100	90 NBR M00109	N 100	16563	●
35	55	12	10	13	6	AUN35-113	94 AU P00925	AUN 100	14318	●
35	55	12	10	13	6	N35-108	90 NBR M00109	N 100	17649	●
38	55	10	8,5	11	6	AUN38-103	94 AU P00925	AUN 100	14323	●
38	58	12	10	13	6	N38-102	90 NBR M00109	N 100	17789	●
40	50	10	5	11	4,5	AUN40-112	94 AU P00925	AUN 100	14398	●
40	55	9,5	7,5	10,5	5,5	N40-115	90 NBR M00109	N 100	18063	●
40	55	10	7,5	11	5,5	AUN40-113	94 AU P00925	AUN 100	14358	●
40	56	10	8	11	6	N40-111	90 NBR M00109	N 100	17662	●
40	60	12	10	13	6	N40-110	90 NBR M00109	N 100	17698	●
40	60	13	10	14	6	AUN40-105	94 AU P00925	AUN 100	14169	●
42	62	12	10	13	6	N42-101	90 NBR M00109	N 100	17935	●
45	55	10	5	11	4,5	AUN45-105	94 AU P00925	AUN 100	14359	●
45	58	10	6,5	11	5,5	N45-103	90 NBR M00109	N 100	17858	●
45	60	10	7,5	11	5,5	AUN45-104	94 AU P00925	AUN 100	14360	●
45	60	10	7,5	11	5,5	N45-109	90 NBR M00109	N 100	35153	●
45	65	12	10	13	6	AUN45-112	94 AU P00925	AUN 100	35601	●
45	65	12	10	13	6	N45-102	90 NBR M00109	N 100	16693	●
48	68	12	10	13	6	N48-100	90 NBR M00109	N 100	17625	○
50	60	10	5	11	4,5	AUN50-106	94 AU P00925	AUN 100	14361	●
50	65	10	7,5	11	5,5	AUN50-107	94 AU P00925	AUN 100	14362	●
50	65	12	7,5	13	5,5	N50-210	90 NBR M00109	N 100	18000	●
50	70	12	10	13	6	AUN50-108	94 AU P00925	AUN 100	14267	●
50	70	12	10	13	6	N50-104	90 NBR M00109	N 100	17650	●
50	75	15	12,5	16	6,5	N50-105	90 NBR M00109	N 100	17827	○
52	62	12	5	13	4,5	AUN52-102	94 AU P00925	AUN 100	12296	●
52	72	12	10	13	6	N52-101	90 NBR M00109	N 100	17755	●
55	70	12	7,5	13	5,5	AUN55-105	94 AU P00925	AUN 100	14363	●
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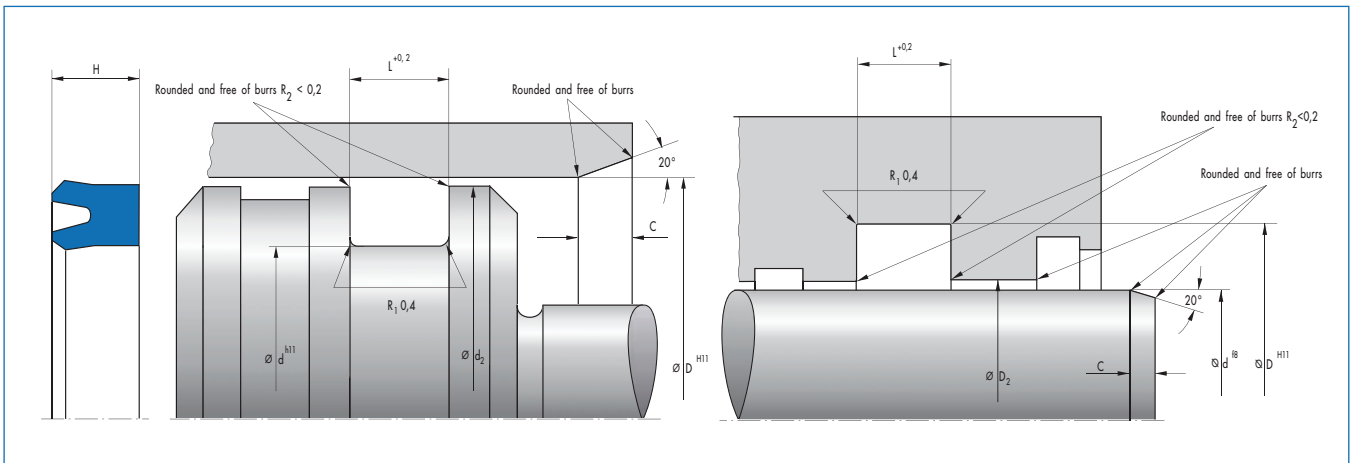


d	D	H	Profile	L	C	Code	Material	Type	Article No.	
55	80	15	12,5	16	6,5	N55-104	90 NBR M00109	N 100	17936	○
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60	75	12	7,5	13	5,5	AUN60-103	94 AU P00925	AUN 100	14365	●
60	80	12	10	13	6	AUN60-107	94 AU P00925	AUN 100	34397	●
60	80	12	10	13	6	N60-101	90 NBR M00109	N 100	16850	●
60	85	15	12,5	16	6,5	N60-102	90 NBR M00109	N 100	17937	○
63	83	15	10	16	6	AUN63-100	94 AU P00925	AUN 100	13532	○
63	83	15	10	16	6	N63-101	90 NBR M00109	N 100	938	●
65	75	12	5	13	4,5	AUN65-108	94 AU P00925	AUN 100	14407	●
65	80	12	7,5	13	5,5	AUN65-105	94 AU P00925	AUN 100	14366	●
65	85	12	10	13	6	AUN65-106	94 AU P00925	AUN 100	14297	●
65	85	12	10	13	6	N65-103	90 NBR M00109	N 100	17667	●
70	80	12	5	13	4,5	AUN70-107	94 AU P00925	AUN 100	14431	●
70	85	12	7,5	13	5,5	AUN70-105	94 AU P00925	AUN 100	14367	●
70	90	12	10	13	6	AUN70-106	94 AU P00925	AUN 100	14322	●
70	90	12	10	13	6	N70-103	90 NBR M00109	N 100	17863	●
70	95	15	12,5	16	6,5	N70-104	90 NBR M00108	N 100	17938	○
75	85	12	5	13	4,5	AUN75-109	94 AU P00925	AUN 100	12185	●
75	90	12	7,5	13	5,5	AUN75-107	94 AU P00925	AUN 100	14368	●
75	95	12	10	13	6	AUN75-102	94 AU P00925	AUN 100	14478	●
75	95	12	10	13	6	N75-106	90 NBR M00109	N 100	18067	●
75	100	15	12,5	16	6,5	N75-105	90 NBR M00109	N 100	16943	○
80	90	10	5	11	4,5	AUN80-102	94 AU P00925	AUN 100	12197	●
80	95	12	7,5	13	5,5	AUN80-108	94 AU P00925	AUN 100	14369	●
80	100	12	10	13	6	AUN80-109	94 AU P00925	AUN 100	14271	●
80	100	12	10	13	6	N80-101	90 NBR M00109	N 100	16974	●
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85	100	12	7,5	13	5,5	AUN85-104	94 AU P00925	AUN 100	12109	●
85	105	12	10	13	6	AUN85-105	94 AU P00925	AUN 100	14341	●
85	105	15	10	16	6	N85-103	90 NBR M00109	N 100	18019	●
85	110	15	12,5	16	6,5	N85-101	90 NBR M00109	N 100	16997	○
90	105	12	7,5	13	5,5	AUN90-106	94 AU P00925	AUN 100	14370	●
90	110	12	10	13	6	AUN90-107	94 AU P00925	AUN 100	14371	●
90	110	15	10	16	6	N90-104	90 NBR M00109	N 100	17856	●
90	115	15	12,5	16	6,5	N90-102	90 NBR M00109	N 100	17011	●
90	120	18	15	19	7,5	N90-105	90 NBR M00109	N 100	17940	○

● Available from stock ○ On request: Tool is available, delivery at short notice

d	D	H	Profile	L	C	Code	Material	Type	Article No.	
95	110	12	7,5	13	5,5	AUN95-104	94 AU P00925	AUN 100	14372	●
95	115	12	10	13	6	AUN95-105	94 AU P00925	AUN 100	14425	●
95	115	15	10	16	6	N95-102	90 NBR M00108	N 100	17909	●
95	120	15	12,5	16	6,5	N95-103	90 NBR M00109	N 100	17832	○
100	115	12	7,5	13	5,5	AUN100-107	94 AU P00925	AUN 100	14373	●
100	120	12	10	13	6	AUN100-108	94 AU P00925	AUN 100	14286	●
100	120	15	10	16	6	N100-104	90 NBR M00109	N 100	17697	●
100	125	15	12,5	16	6,5	N100-105	90 NBR M00109	N 100	17716	●
100	130	18	15	19	7,5	N100-106	90 NBR M00109	N 100	17825	○
105	125	15	10	16	6	AUN105-102	94 AU P00925	AUN 100	14374	●
105	130	18	12,5	19	6,5	N105-100	90 NBR M00109	N 100	17941	○
110	125	15	7,5	16	5,5	AUN110-105	94 AU P00925	AUN 100	12144	●
110	130	15	10	16	6	AUN110-104	94 AU P00925	AUN 100	14298	●
110	135	18	12,5	19	6,5	N110-102	90 NBR M00108	N 100	17719	●
110	140	18	15	19	7,5	N110-103	90 NBR M00108	N 100	17942	○
115	135	15	10	16	6	AUN115-107	94 AU P00925	AUN 100	14375	●
115	140	18	12,5	19	6,5	N115-105	90 NBR M00108	N 100	17769	●
120	140	15	10	16	6	AUN120-102	94 AU P00925	AUN 100	14311	●
120	145	18	12,5	19	6,5	N120-100	90 NBR M00109	N 100	17779	○
120	150	18	15	19	7,5	N120-101	90 NBR M00109	N 100	17943	●
125	140	15	7,5	16	5,5	AUN125-105	94 AU P00925	AUN 100	12205	●
125	145	15	10	16	6	AUN125-104	94 AU P00925	AUN 100	14386	●
125	150	18	12,5	19	6,5	N125-102	90 NBR M00109	N 100	17944	●
130	150	15	10	16	6	AUN130-106	94 AU P00925	AUN 100	14293	●
130	155	18	12,5	19	6,5	N130-104	90 NBR M00109	N 100	17945	○
130	160	18	15	19	7,5	N130-105	90 NBR M00109	N 100	17853	●
135	155	15	10	16	6	AUN135-105	94 AU P00925	AUN 100	14376	●
135	160	18	12,5	19	6,5	N135-103	90 NBR M00109	N 100	17877	●
135	165	18	15	19	7,5	N135-104	90 NBR M00108	N 100	17946	○
140	160	15	10	16	6	AUN140-103	94 AU P00925	AUN 100	14321	●
140	165	18	12,5	19	6,5	N140-101	90 NBR M00108	N 100	17855	○
140	170	18	15	19	7,5	N140-102	90 NBR M00109	N 100	17947	●
145	165	15	10	16	6	AUN145-102	94 AU P00925	AUN 100	14340	○
145	175	18	15	19	7,5	N145-101	90 NBR M00108	N 100	17949	○
150	170	15	10	16	6	AUN150-101	94 AU P00925	AUN 100	14330	●
150	180	18	15	19	7,5	N150-100	90 NBR M00108	N 100	17760	●
160	180	15	10	16	6	AUN160-104	94 AU P00925	AUN 100	14320	●
160	180	15	10	16	6	N160-105	90 NBR M00109	N 100	15937	●
160	190	22	15	23	7,5	N160-103	90 NBR M00108	N 100	17675	○
170	200	22	15	23	7,5	N170-100	90 NBR M00109	N 100	17721	●
180	200	15	10	16	6	AUN180-101	94 AU P00925	AUN 100	103817	●
180	210	22	15	23	7,5	N180-100	90 NBR M00108	N 100	17708	○
190	210	15	10	16	6	AUN190-102	94 AU P00925	AUN 100	103821	●
190	220	22	15	23	7,5	N190-101	90 NBR M00108	N 100	17736	○
200	230	22	15	23	7,5	N200-102	90 NBR M00109	N 100	17813	○
225	250	18	12,5	19	6,5	N225-101	90 NBR M00108	N 100	17976	○
230	260	22	15	23	7,5	N230-102	90 NBR M00108	N 100	17677	○
270	300	22	15	23	7,5	N270-103	90 NBR M00108	N 100	18078	○
300	330	22	15	23	7,5	N300-102	90 NBR M00108	N 100	17434	○
300	340	20	20	21	11	N300-100	90 NBR M00109	N 100	17216	○

● Available from stock ○ On request: Tool is available, delivery at short notice



d	D	H	Profile	L	C	Code	Material	Type	Article No.	
320	350	16	15	17	7,5	AUN320-100	94 AU P00925	AUN 100	103853	○
320	350	22	15	23	7,5	N320-102	90 NBR M00108	N 100	17734	○
360	390	22	15	23	7,5	AUN360-100	94 AU P00925	AUN 100	103854	○
400	430	25	15	26	7,5	N400-101	90 NBR M00109	N 100	1484	○

● Available from stock ○ On request: Tool is available, delivery at short notice