

Merkel Compact Seal Airzet PR

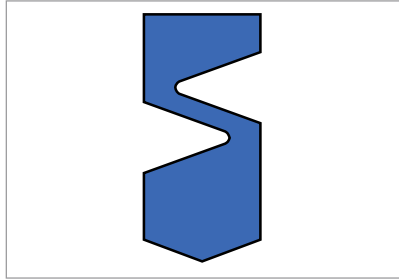


Fig. 1 Merkel Compact Seal Airzet PR

Product description

Merkel Compact Seal can be pressurised on both sides with grooves on the front side for pressure activation.

Product advantages

- The compact design permits short cylinder cover designs
- The rounded sealing profile and the flexible centre part give good tightness with low friction and maintain an effective lubricating film
- Widely proven design
- Large supply range available.
- Very good tribological properties (wear, friction and long service life).

Application

- Short cylinders
- Short solution for cylinders (short stroke) and valves for high-temperature applications (only FKM).

Material

Material	Code	Hardness
NBR rubber	80 NBR 186349	80 Shore A
Fluoro elastomer	75 FKM 230553	75 Shore A

Operating conditions

Material	NBR	FKM
Medium	Prepared, dried and de-oiled compressed air (after greasing for fitting)	
Operating pressure p	≤1,2 MPa (12 bar)	
Temperature T	-20 ... +100 °C	-5 ... +150 °C
Running speed v	≤1 m/s	

Design notes

Surfaces

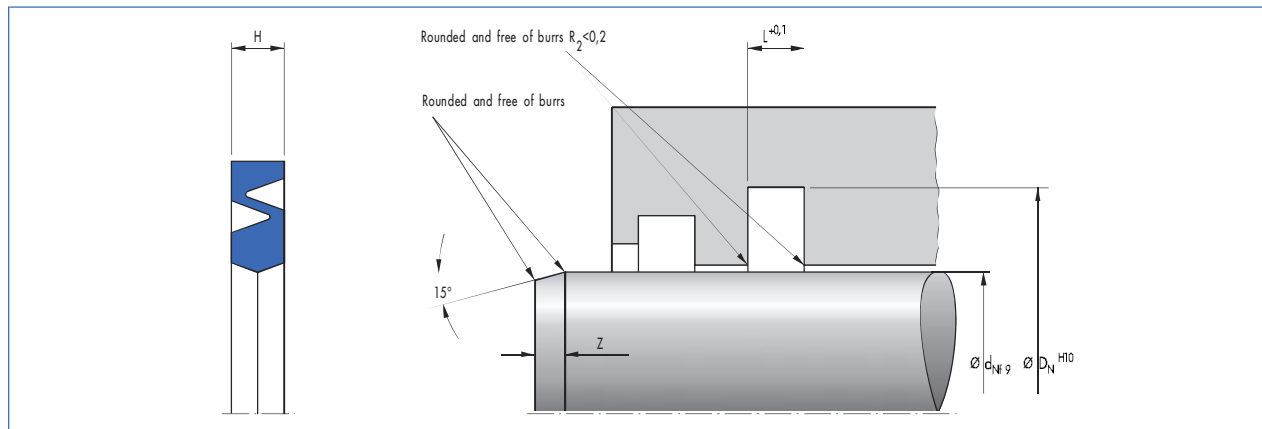
Surface roughness	R _{max}	R _p /R _z
Rod	≤4 µm tp (25% R _{max}) = 50 ... 70%	<0,5
Groove base	≤10 µm	<0,5

Fitting & installation

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

The Merkel Compact Seal Airzet PR is snapped over the de-burred housing edge into the housing groove. An axially-accessible housing is required for rod diameters less than 15 mm.

Article list



d_N	D_N	L	H	Z	Material	Article No.	
6	13	2,5	2,3	1,2	80 NBR 186349	49017399	●
6	13	2,5	2,3	1,2	75 FKM 230553	49041787	○
8	15	2,5	2,3	1,2	80 NBR 186349	49017400	●
8	15	2,5	2,3	1,2	75 FKM 230553	49042524	●
10	17	2,5	2,3	1,2	80 NBR 186349	49017401	●
10	17	2,5	2,3	1,2	75 FKM 230553	49042525	●
12	19	2,5	2,3	1,2	80 NBR 186349	49017996	●
12	19	2,5	2,3	1,2	75 FKM 230553	49041788	●
15	22	2,5	2,3	1,2	80 NBR 186349	49017905	●
15	22	2,5	2,3	1,2	75 FKM 230553	49042526	●
16	25	3	2,8	2,2	80 NBR 186349	49017904	●
16	25	3	2,8	2,2	75 FKM 230553	49041789	●
20	29	3	2,8	2,2	75 FKM 230553	49030235	●
20	29	3	2,8	2,2	80 NBR 186349	49017906	●
25	34	3	2,8	2,2	80 NBR 186349	49030179	●
25	34	3	2,8	2,2	75 FKM 230553	49042527	●
30	39	3	2,8	2,2	80 NBR 186349	49030180	●
30	39	3	2,8	2,2	75 FKM 230553	49041790	●
40	49	3	2,8	2,2	80 NBR 186349	49017968	●
40	49	3	2,8	2,2	75 FKM 230553	49042528	●
42	51	3	2,8	2,2	80 NBR 186349	49030174	●
42	51	3	2,8	2,2	75 FKM 230553	49042529	●
50	59	3	2,8	2,2	80 NBR 186349	49030181	●
50	59	3	2,8	2,2	75 FKM 230553	49042530	●

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

Merkel Combination Seal NIPSL SF

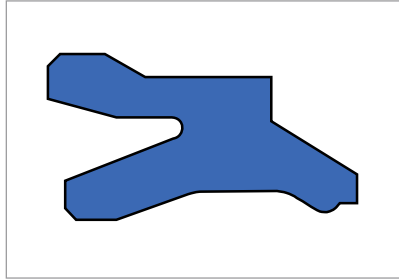


Fig. 1 Merkel Combination Seal NIPSL SF

Product description

Combination wiper seal without metal reinforcement with special pneumatic sealing edge.

Product advantages

- Combination seal with minimal space requirements, which seals inwards and wipes outwards
- The special pneumatic sealing edge gives very good tightness with low friction and maintains an effective lubricating film.
- Optimal material for high loads.

Application

Small cylinders.

Material

Material	Code	Hardness
Acrylonitrile-butadiene rubber	90 NBR 108	90 Shore A

FKM on enquiry.

Operating conditions

Medium	Prepared, dried and de-oiled compressed air (after greasing for fitting)
Operating pressure p	≤1 MPa (10 bar)
Temperature T	-20 ... +100 °C
Running speed v	≤1 m/s

Design notes

Surfaces

Surface roughness	R _{max}	R _p /R _z
Rod	≤4 μm	<0,5
	tp (25% R _{max}) = 50 ... 75%	
Groove base	≤10 μm	<0,5

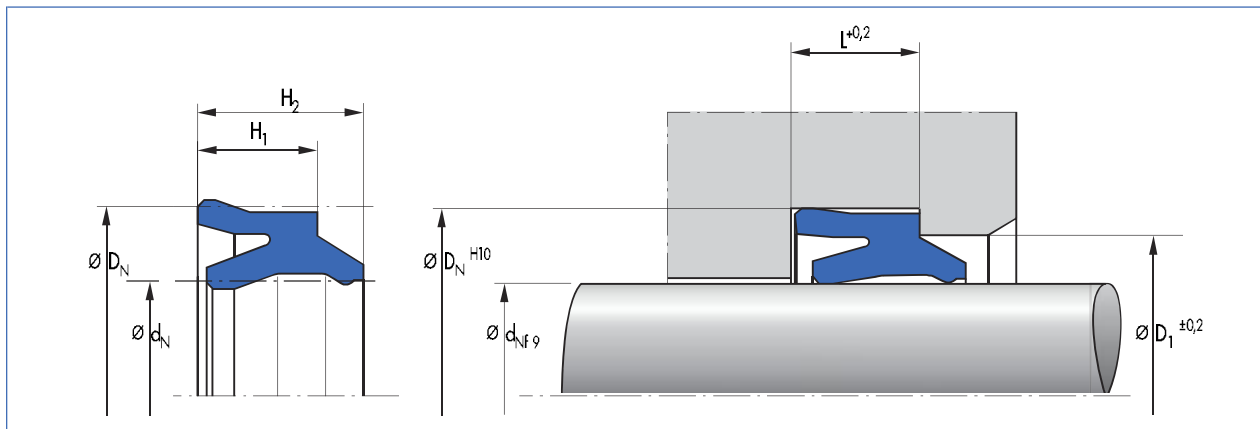
→ Technical Manual.

Fitting & installation

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

The Merkel Combination Seal NIPSL SF for small cylinders can be snapped by hand into the housing grooves provided, with the piston rod removed.

Article list



d_N	D_N	H_1	H_2	D_1	L	Material	Article No.	
4	8,2	2,6	4	6,5	3	90 NBR 108	406294	●
6	11,2	3,6	5	9	4	90 NBR 108	406296	●
8	14,2	3,6	5	12	4	90 NBR 108	406300	●
10	16,2	4	5,5	14	4,5	90 NBR 108	406301	●

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

Merkel Combination Seal NIPSL 320

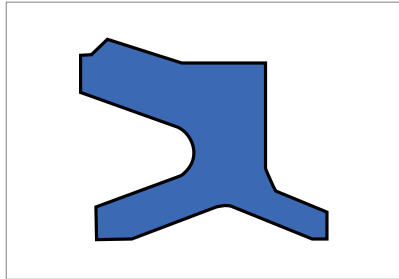


Fig. 1 Merkel Combination Seal NIPSL 320

Product description

Combination wiper seal without metal reinforcement with special pneumatic sealing edge.

Product advantages

- Combination seal with minimal space requirements, which seals inwards and wipes outwards
- The special pneumatic sealing edge gives very good tightness with low friction and maintains an effective lubricating film.
- Material with high wear resistance.

Application

Small cylinders, compact cylinders.

Material

Material	Code	Hardness
High performance polyurethane	94 AU 925	94 Shore A

Operating conditions

Medium	Prepared, dried and de-oiled compressed air (after greasing for fitting)
Operating pressure p	≤1,2 MPa (12 bar)
Temperature T	-30 °C ... +90 °C
Running speed v	≤1 m/s

Design notes

Surfaces

Surface roughness	R _{max}	R _p /R _z
Rod	≤4 μm tp (25% R _{max}) = 50 ... 75%	-
Groove base	≤10 μm	<0,5

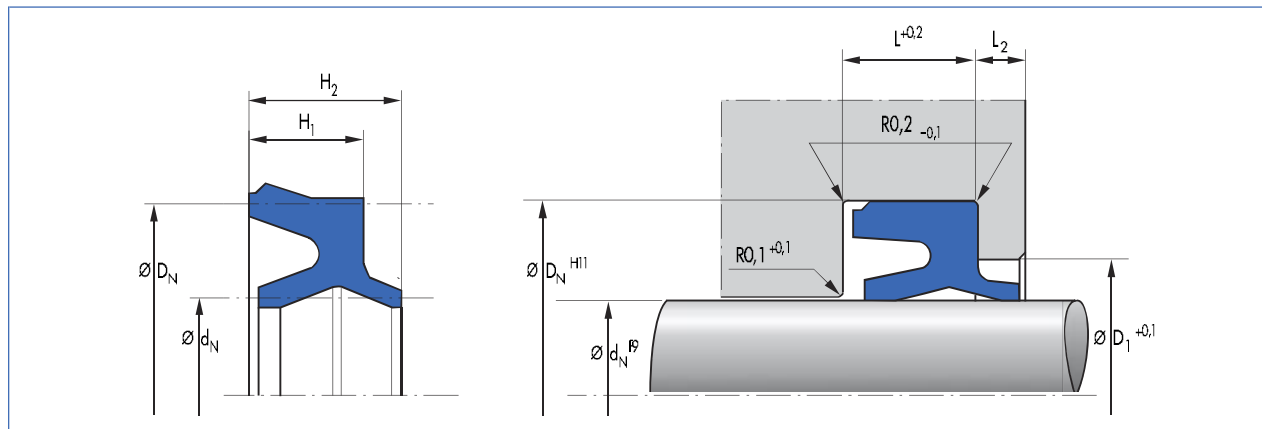
→ Technical Manual.

Fitting & installation

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

The Merkel Combination Seal NIPSL 320 for small cylinders and compact cylinders can be snapped by hand into the housing grooves provided, with the piston rod removed.

Article list



d_N	D_N	H_1	H_2	D_1	L	L_2	Material	Article No.	
10	16	3,6	4,8	12,5	4	1,5	94 AU 925	433063	●
12	18	3,6	4,8	14,5	4	1,5	94 AU 925	433064	●
16	22	3,6	4,8	18,5	4	1,5	94 AU 925	433065	●
20	26	3,6	4,8	22,5	4	1,5	94 AU 925	433068	●
25	31	3,6	4,8	27,5	4	1,5	94 AU 925	468023	●
32	40	4,5	5,8	35	5	1,5	94 AU 925	467972	●

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

Merkel Combination Seal NIPSL 310

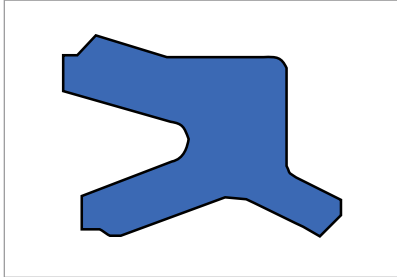


Fig. 1 Merkel Combination Seal NIPSL 310

Product description

Compact combination wiper seal without metal reinforcement with special pneumatic sealing edge.

Product advantages

- Combination seal with minimal space requirements, which seals inwards and wipes outwards
- The special pneumatic sealing edge gives very good tightness with low friction and maintains an effective lubricating film.
- Material with high wear resistance.

Application

Small cylinders, compact cylinders.

Material

Material	Code	Hardness
High performance polyurethane	85 AU 20991	85 Shore A

Operating conditions

Medium	Prepared, dried and de-oiled compressed air (after greasing for fitting)
Operating pressure p	≤1 MPa (10 bar)
Temperature T	-30 ... +80 °C
Running speed v	≤1 m/s

Design notes

Surfaces

Surface roughness	R _{max}	R _p /R _z
Rod	≤4 μm tp (25% R _{max}) = 50 ... 75%	-
Groove base	≤10 μm	<0,5

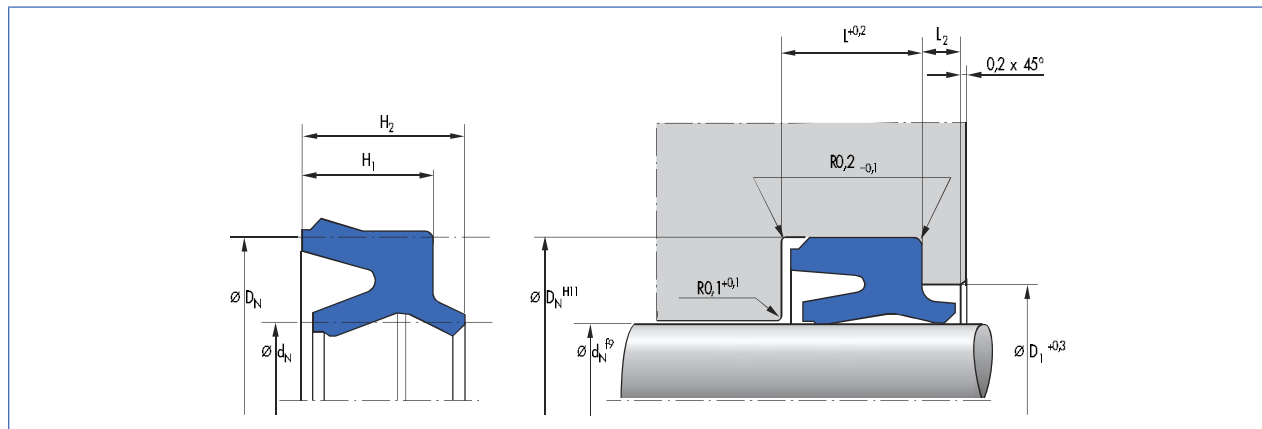
→ Technical Manual.

Fitting & installation

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

The Merkel Combination Seal NIPSL 310 for small cylinders can be snapped by hand into the housing grooves provided, with the piston rod removed.

Article list



d_N	D_N	H_1	H_2	D_1	L	L_2	Material	Article No.	
4	7	2,2	2,8	5,4	2,6	1	85 AU 20991	476708	●
6	9	2,2	2,8	7,2	2,6	1	85 AU 20991	468066	●
8	11,5	2,5	3,2	9,2	2,9	1	85 AU 20991	468065	●
10	14	2,8	3,7	11,4	3,2	1	85 AU 20991	468061	●
12	16,5	3,2	4	13,7	3,6	1,2	85 AU 20991	468060	●
16	20,5	3,2	4	17,7	3,6	1,2	85 AU 20991	468120	●
20	25	3,6	4,6	21,9	4	1,2	85 AU 20991	470526	●
25	30	3,6	4,6	26,9	4	1,2	85 AU 20991	471728	●
32	37,5	4	5	34,1	4,4	1,2	85 AU 20991	476906	●

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

Merkel Combination Seal NIPSL 300

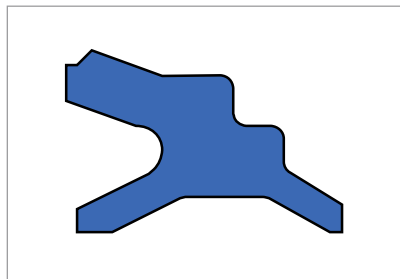


Fig. 1 Merkel Combination Seal NIPSL 300
(previous code: AUNIPSL SF)

Product description

Combination wiper seal without metal reinforcement with special pneumatic sealing edge.

Product advantages

- Combination seal with minimal space requirements, which seals inwards and wiper outwards
- The special pneumatic sealing edge gives very good tightness with low friction and maintains an effective lubricating film.
- Material with high wear resistance.

Application

Small cylinders.

Material

Material	Code	Hardness
High performance polyurethane	85 AU 20991	85 Shore A

Operating conditions

Medium	Prepared, dried and de-oiled compressed air (after greasing for fitting)
Operating pressure p	≤1 MPa (10 bar)
Temperature T	-30 ... +90 °C
Running speed v	≤1 m/s

Design notes

Surfaces

Surface roughness	R _{max}	R _p /R _z
Rod	≤4 μm tp (25% R _{max}) = 50 ... 75%	<0,5
Groove base	≤10 μm	<0,5

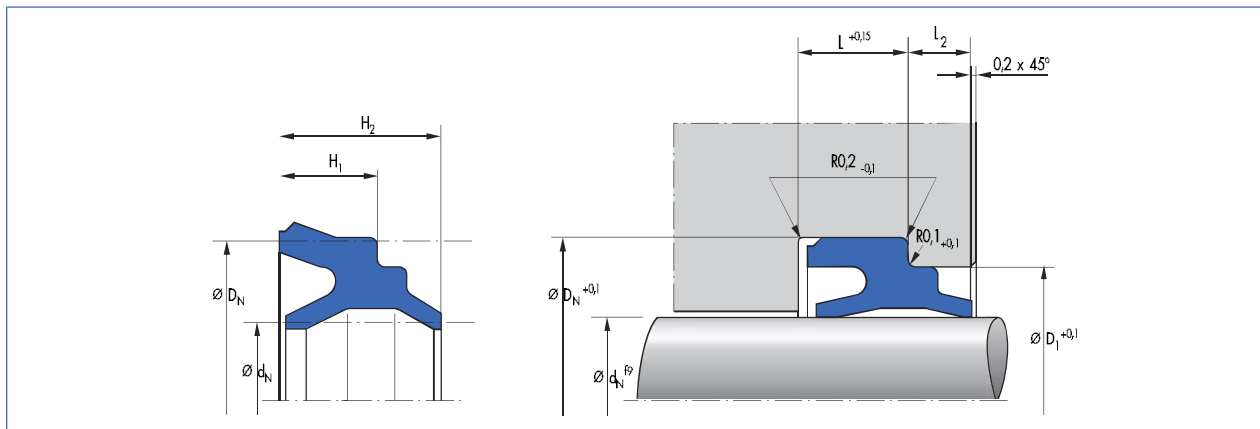
→ Technical Manual.

Fitting & installation

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

The Merkel Combination Seal NIPSL 300 for small cylinders can be snapped by hand into the housing grooves provided, with the piston rod removed.

Article list



d_N	D_N	H_1	H_2	D_1	L	L_2	Material	Article No.	
4	8,2	2,5	4,2	6,7	3	0,8	90 AU 924	418315	●
6	11,2	3,2	5,2	9,1	3,6	1	90 AU 924	418316	●
8	14,2	3,2	5,2	12,1	3,6	1	90 AU 924	416230	●
10	16,2	3,8	6,2	14,1	4,2	1,2	90 AU 924	418317	●
12	18,1	3,8	6,2	15,5	4,2	1,2	90 AU 924	434919	●
16	23	3,8	6,2	18,8	4,2	1,2	90 AU 924	434920	●

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

Merkel Combination Seal NIPSL 210

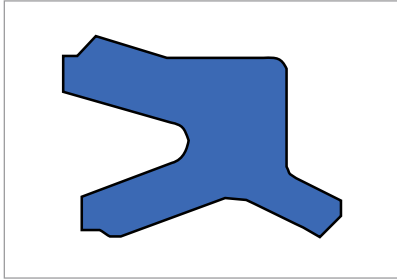


Fig. 1 Merkel Combination Seal NIPSL 210

Product description

Compact combination wiper seal without metal reinforcement with special pneumatic sealing edge.

Product advantages

- Combination seal with minimal space requirements, which seals inwards and wipes outwards
- The special pneumatic sealing edge gives very good tightness with low friction and maintains an effective lubricating film.
- Suitable for high-temperature applications.

Application

Small cylinders, compact cylinders.

Material

Material	Code	Hardness
FKM rubber	75 FKM 181327	75 Shore A

Operating conditions

Medium	Prepared, dried and de-oiled compressed air (after greasing for fitting)
Operating pressure p	≤1 MPa (10 bar)
Temperature T	-5 ... +150 °C
Running speed v	≤1 m/s

Design notes

Surfaces

Surface roughness	R _{max}	R _p /R _z
Rod	≤4 μm tp (25% R _{max}) = 50 ... 75%	-
Groove base	≤10 μm	<0,5

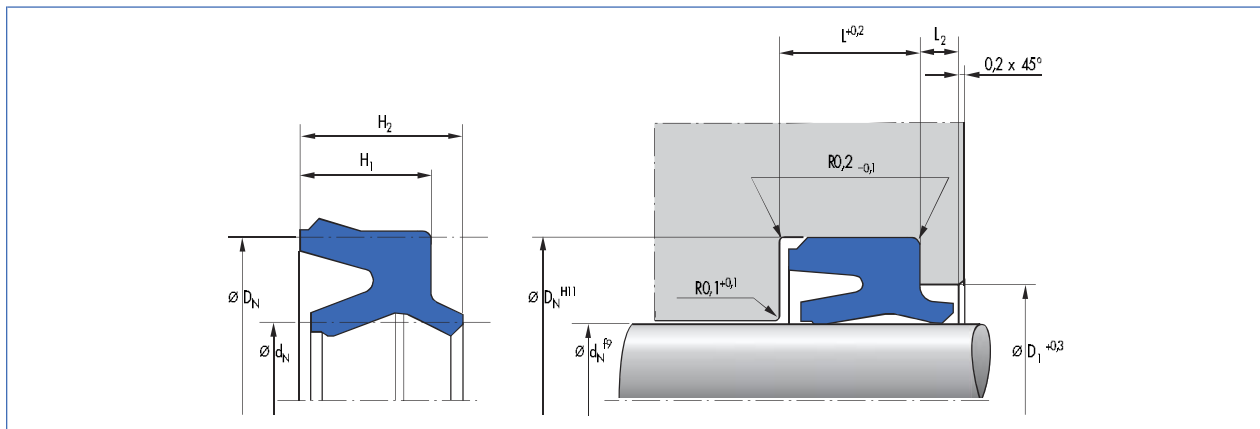
→ Technical Manual.

Fitting & installation

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

The Merkel Combination Seal NIPSL 210 for small cylinders can be snapped by hand into the housing grooves provided, with the piston rod removed.

Article list



d_N	D_N	H_1	H_2	D_1	L	L_2	Material	Article No.	
4	7	2,2	2,8	5,4	2,6	1	75 FKM 181327	476707	●
6	9	2,2	2,8	7,2	2,6	1	75 FKM 181327	49022141	●
8	11,5	2,5	3,2	9,2	2,9	1	75 FKM 181327	473868	●
10	14	2,8	3,7	11,4	3,2	1	75 FKM 181327	473869	●
12	16,5	3,2	4	13,7	3,6	1,2	75 FKM 181327	471228	●
16	20,5	3,2	4	17,7	3,6	1,2	75 FKM 181327	471885	●
20	25	3,6	4,6	21,9	4	1,2	75 FKM 181327	471375	●
25	30	3,6	4,6	26,9	4	1,2	75 FKM 181327	471734	●
32	37,5	4	5	34,1	4,4	1,2	75 FKM 181327	475939	●

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

Merkel Combination Seal NIPSL 200

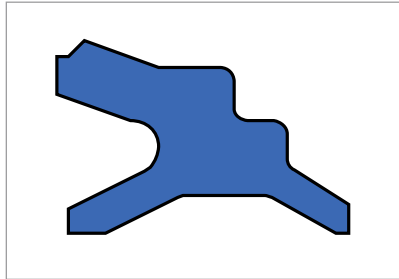


Fig. 1 Merkel Combination Seal NIPSL 200

Product description

Combination wiper seal without metal reinforcement with special pneumatic sealing edge.

Product advantages

- Combination seal with minimal space requirements, which seals inwards and wipes outwards
- The special pneumatic sealing edge gives very good tightness with low friction and maintains an effective lubricating film.

Application

Small cylinders.

Material

Material	Code	Hardness
NBR rubber	80 NBR 4005	80 Shore A

Operating conditions

Medium	Prepared, dried and de-oiled compressed air (after greasing for fitting)
Operating pressure p	≤1 MPa (10 bar)
Temperature T	-20 ... +100 °C
Running speed v	≤1 m/s

Design notes

Surfaces

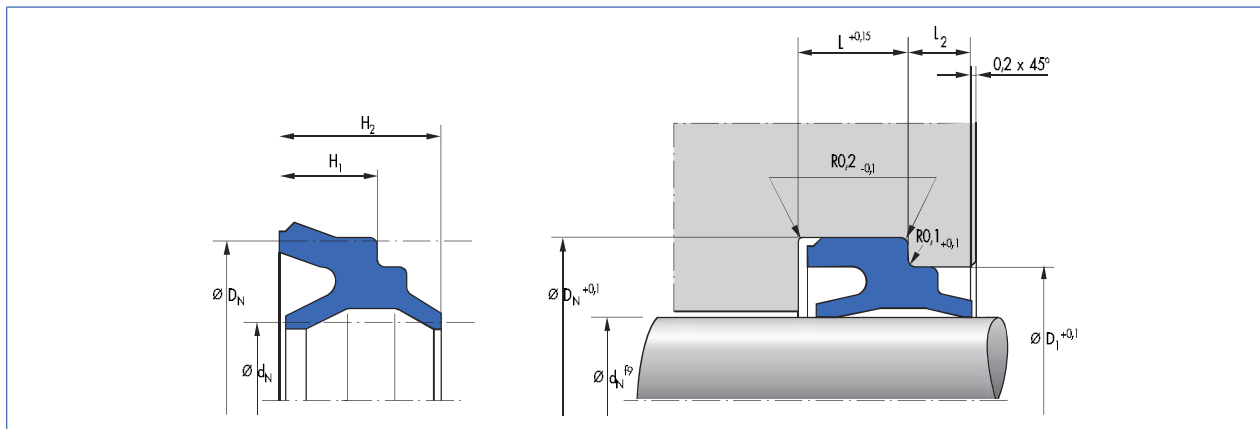
Surface roughness	R _{max}	R _p /R _z
Rod	≤4 μm tp (25% R _{max}) = 50 ... 75%	<0,5
Groove base	≤10 μm	<0,5

→ Technical Manual.

Fitting & installation

Careful fitting is a prerequisite for the correct function of the seal. → Technical Manual. The Merkel Combination Seal NIPSL 200 for small cylinders can be snapped by hand into the housing grooves provided, with the piston rod removed.

Article list



d_N	D_N	H_1	H_2	D_1	L	L_2	Material	Article No.	
4	8,2	2,5	4,2	6,7	3	0,8	80 NBR 4005	472544	●
6	11,2	3,2	5,2	9,1	3,6	1	80 NBR 4005	472545	●
8	14,2	3,2	5,2	12,1	3,6	1	80 NBR 4005	472546	●
10	16,2	3,8	6,2	14,1	4,2	1,2	80 NBR 4005	472547	●
12	18,2	3,8	6,2	15,5	4,2	1,2	80 NBR 4005	472548	●
16	23	3,8	6,2	18,8	4,2	1,2	80 NBR 4005	472549	●

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

Merkel Combination Seal NIPSL

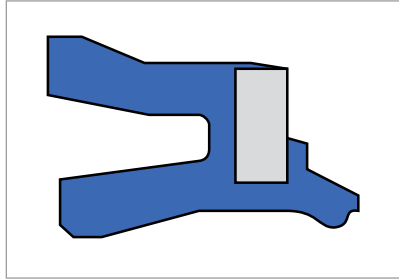


Fig. 1 Merkel Combination Seal NIPSL

Product description

Combination wiper seal with metal reinforcement and special pneumatic sealing edge.

Product advantages

- Combination seal with minimal space requirements, which seals inwards and wipes outwards.
- The component can be replaced from the outside (without dismantling the equipment)
- Broad supply range.

Application

Rod seal for pneumatic cylinders.

Material

Material	Code	Hardness	Base plate
Acrylonitrile-butadiene rubber	72 NBR 708	72 Shore A	mild steel according to DIN 1624

FKM on enquiry.

Operating conditions

Medium	Prepared, dried and de-oiled compressed air (after greasing for fitting)
Operating pressure p	≤1,2 MPa (12 bar)
Temperature T	-20 ... +100 °C
Running speed v	≤1 m/s

Design notes

Surfaces

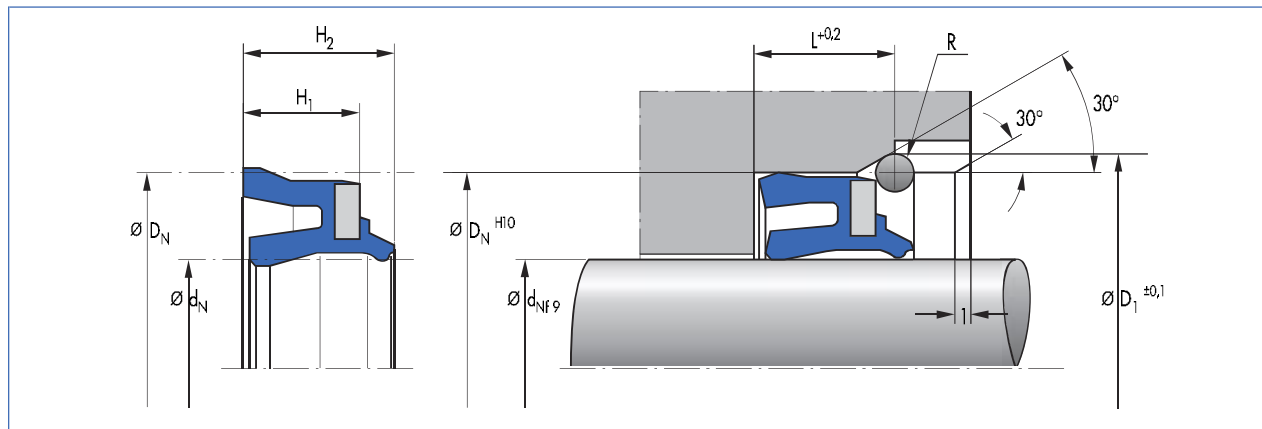
Surface roughness	R _{max}	R _p /R _z
Rod	≤4 μm tp (25% R _{max}) = 50 ... 75%	<0,5
Groove base	≤10 μm	<0,5

→ Technical Manual.

Fitting & installation

Careful fitting is a prerequisite for the correct function of the seal. → Technical Manual. The Merkel Combination Seal NIPSL is pressed into the housing from outside. The back is supported by a circlip (DIN 7993). To remove the seal, it is advisable to provide an axial cut-out in the ring groove that allows the circlip to be easily removed.

Article list



d_N	D_N	H_1	H_2	D_1	L	R	Material	Article No.	
8	16	7	9,5	18	8,5	1,1	72 NBR 708	419272	●
10	20	7	9,5	22	8,5	1,1	72 NBR 708	419273	●
12	20	6	8,5	22	7,5	1,1	72 NBR 708	419274	●
12	22	7	9,5	24	8,5	1,1	72 NBR 708	104779	●
14	24	7	9,5	26	8,5	1,1	72 NBR 708	419275	●
16	26	7	9,5	28	8,5	1,1	72 NBR 708	104780	●
18	26	6	8,5	28	7,5	1,1	72 NBR 708	390006	●
18	28	7	9,5	30	8,5	1,1	72 NBR 708	121453	●
20	30	7	9,5	32	8,5	1,1	72 NBR 708	104781	●
22	32	7	9,5	34,5	8,8	1,4	72 NBR 708	404837	●
25	35	7	9,5	37,5	8,8	1,4	72 NBR 708	104782	●
30	40	7	9,5	42,5	8,8	1,4	72 NBR 708	361502	●
32	42	7	9,5	44,5	8,8	1,4	72 NBR 708	419276	●
40	50	7	9,5	52,5	8,8	1,4	72 NBR 708	419277	●
50	60	6,5	9	62,5	8,3	1,4	72 NBR 708	433162	●

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

Merkel Combination Seal AU NIPSL

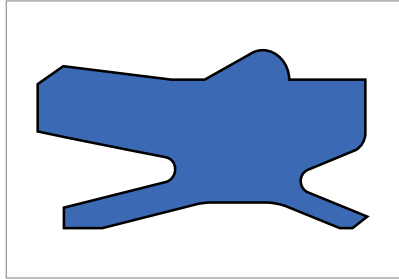


Fig. 1 Merkel Combination Seal AU NIPSL

Product description

Merkel combination wiper seal without metal reinforcement with special pneumatic sealing edge.

Product advantages

- Combination seal with minimal space requirements, which seals inwards and wipes outwards
- The component needs no additional element (circlip) for axial fixing within the housing
- Long service life
- Robust design.

Application

Rod seal e.g. for ISO cylinders.

Material

Material	Code	Hardness
High performance polyurethane	94 AU 925	94 Shore A

Operating conditions

Medium	Prepared, dried and de-oiled compressed air (after greasing for fitting)
Operating pressure p	≤1,2 MPa (12 bar)
Temperature T	-30 ... +90 °C
Running speed v	≤1 m/s

Design notes

Surfaces

Surface roughness	R _{max}	R _p /R _z
Rod	≤4 μm	<0,5
	tp (25% R _{max}) = 50 ... 75%	
Groove base	≤10 μm	<0,5

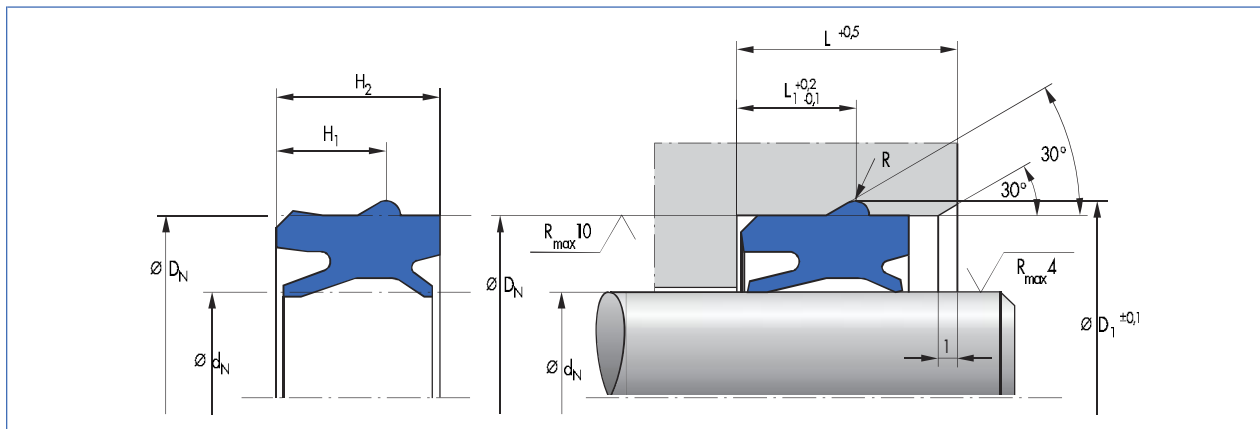
→ Technical Manual.

Fitting & installation

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

The Merkel Combination Seal AU NIPSL is pressed into the housing from outside. The bead on the outside diameter snaps into the circlip groove and fixes the seal in the housing.

Article list



d_N	D_N	H_1	H_2	D_1	L	L_1	R	Material	Article No.	
12	20	7	10,4	22,2	13	7,7	1,1	94 AU 925	431469	●
12	22	7	10,4	24,2	13	7,7	1,1	94 AU 925	407284	●
14	24	7	10,4	26,2	13	7,7	1,1	94 AU 925	431468	●
16	26	7	10,4	28,2	13	7,7	1,1	94 AU 925	407285	●
18	26	7	10,4	28,2	13	7,7	1,1	94 AU 925	431467	●
18	28	7	10,4	30,2	13	7,7	1,1	94 AU 925	431465	●
20	30	7	10,4	32,2	13	7,7	1,1	94 AU 925	407287	●
22	32	7,3	10,4	34,8	13	8	1,4	94 AU 925	431464	●
25	35	7,3	10,4	37,8	13	8	1,4	94 AU 925	407288	●
30	40	7,3	10,4	42,8	13	8	1,4	94 AU 925	431462	●
32	42	7,3	10,4	44,8	13	8	1,4	94 AU 925	407290	●
40	50	7,3	10,4	52,8	13	8	1,4	94 AU 925	398274	●
50	60	7,7	10,4	63,6	13	8,6	1,8	94 AU 925	398275	●

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