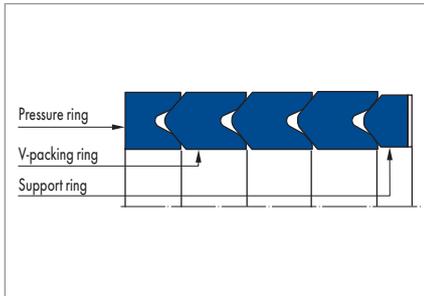


# MERKEL V-PACKINGS V 1000



Merkel V-Packungen V 1000

## PRODUCT DESCRIPTION

Merkel V-packings are used for sealing piston rods, plungers and in exceptional cases of pistons. With their robust design they are very suitable for use in highly demanding, heavy and horizontal compressors, particularly if the plungers are subject to large side forces. V-packings can even be used if piston rods or plungers cannot be correctly used because of wear. V-packing in connection with fabric pressure and back-up rings are used primarily in heavy-duty hydraulics because they can easily be tightened at any time and their robust design. V-packing rings are supplied open for nominal diameter up to an inside diameter of 400 mm. For larger diameters the rings are overdimensioned in length, and they must be precisely fitted during fitting into the compression packing. If required endless rings can also be supplied. If no information on the version, the fluid or temperature is given, B/B (see Operating parameters range table) is delivered as the standard version.

## APPLICATION

Heavy machinery manufacture, iron and steel technology, scrap shears, manipulators.

## MATERIAL

Pressure ring

Material	Code
Natural rubber	BI-NR B5A151 (B/A)
Natural rubber	BI-NR B5B210 (B/B)

## OPERATING CONDITIONS

Material	BI-NBR B6B210/BI-NBR B6B210 (B/B)
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 ... +100
HETG (rapeseed oil)	-30 ... +80
HEES (synthetic ester)	-30 ... +80
HEPG (glycol)	-30 ... +60
Mineral greases	-30 ... +100

## DESIGN NOTES

Please observe our general design notes.

Surface quality

Surface roughness	$R_a$	$R_{max}$
Contact area	0,4 $\mu\text{m}$	$\leq 4 \mu\text{m}$
Outer housing $\varnothing$	$\leq 1,8 \mu\text{m}$	$\leq 10 \mu\text{m}$
Housing end face	$\leq 3,0 \mu\text{m}$	$\leq 16 \mu\text{m}$

Determination of the housing

The dimensions of the V-packings 1000 are listed below. Sufficient dimensioning is very important for the operating safety and service life of the seal, because if the section widths are too small may result in difficulty in operation and lower service life. We recommend the profile widths listed in the table in association with the nominal diameter.

Nominal $\varnothing$ d	Profile width B
... 25	7,5
>25 ... 80	10,0
>80 ... 120	12,5
>120 ... 250	15,0
>250 ... 500	20,0
>500 ... 1000	25,0
>1000	30,0

V-packings are supplied with a plus tolerance in the height. The housings must therefore be adjustable in the axial direction. The number and height of the washers under the gland depends on the section width and therefore also the height of the set. For the recommended minimum tightening dimension  $z$  and the recommended lead-in chamfers see the table.

Profile width	7,5	10	12,5	15	20	25	30
≤500	4	8,0	10,0	12	15,0	20	30
>500	5	6,5	7,5	10	12,5	15	15

#### Fits

Diameter	Clearance fit	Housing diameter D
... 80	H9/f8	H11
>80 ... 120	H8/f8	
>120 ... 500	H8/e8	
>500 ... 630	450 µm	H10
>630 ... 800	500 µm	
>800 ... 1000	550 µm	
>1000 ... 1250	700 µm	
>1250 ... 1600	750 µm	
>1600 ... 1800	850 µm	
>1800	950 µm	

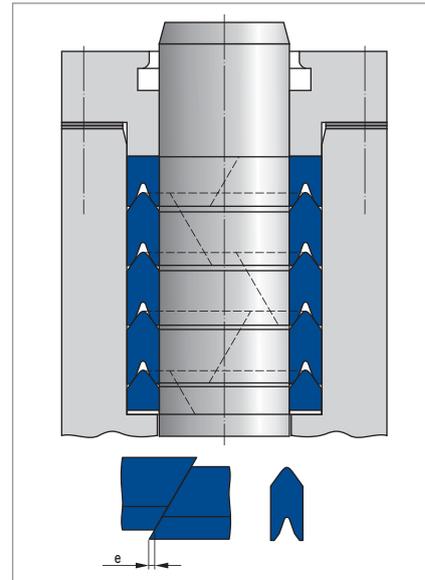
To achieve the desired sealing effect with open or cut seal sets, the circumference length must be greater than the length calculated from the nominal diameter. The specific added length enables the required pressing at the joint sections.

V-packings with a nominal diameter of up to 400 mm  
These packings have correct assembly dimensions. They can be installed without any further advance preparation.

V-packings with a nominal diameter of more than 400 mm  
If the packings are to be stored for very long periods and are subject to a wide variety of environmental influences, changes in the circumference length may occur. Therefore, these sizes are always supplied with extra overlength. The packings over 400 mm in nominal diameter must therefore be trimmed to the required size immediately before fitting: nominal length of circumference plus extra length "e" in accordance with the table. This table is applicable for the seals and pressure rings. The support rings are cut blunt so they have a gap of 1 to 5 mm when centred in the seal. Any plastic back-up rings included in the seal set are trimmed diagonally to fit exactly.

## FITTING & INSTALLATION

Careful fitting is a prerequisite for the correct function of the seal. On fitting every ring is individually inserted into the sealing area at multiple points – with the joint sections first. In this regard the joint sections take the "position after installation" shown in the illustration and should be positioned offset 120° from ring to ring, as shown in the illustration. Before fitting the seals must be greased. The use of neutral, compatible greases is beneficial. This grease substantially reduces the friction and makes the assembly easier. When tightening the gland all rings of the seal set are brought to the final position.

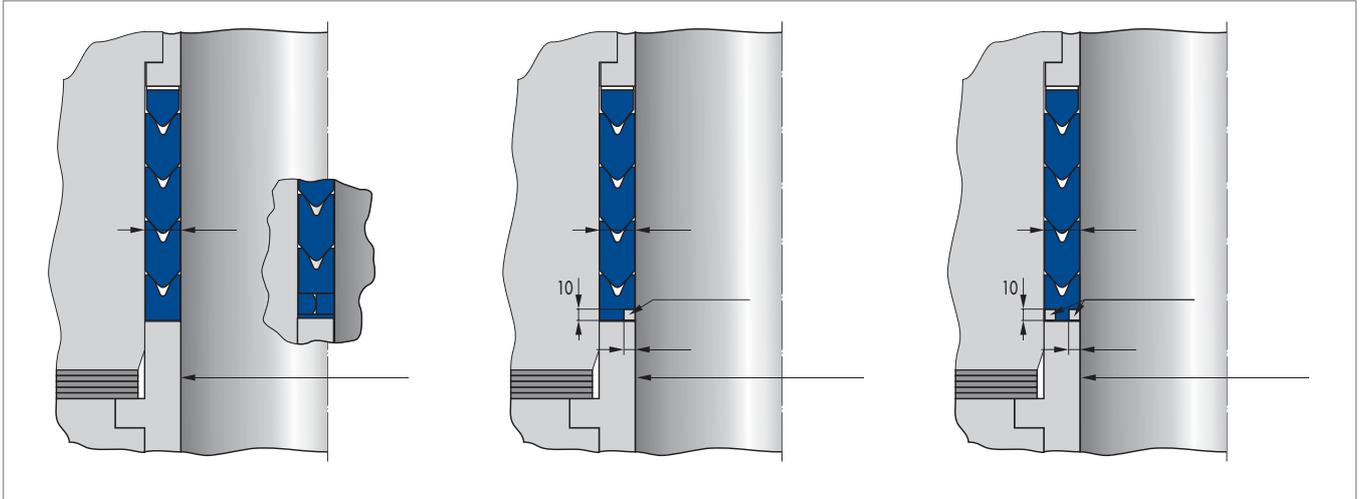


Ø d	Added length
200 ... 250	7
>250 ... 500	9
>500 ... 750	12
>750 ... 1000	15
>1000 ... 1500	20
>1500 ... 2000	25

**SPECIAL DESIGNS WITH ANTI-EXTRUSION RINGS (BACK-UP RINGS)**

For new designs

For repairs (greater play for fitting)



Open  
 B 25 Ø 400 ... 3000;  
 other dimensions on enquiry.  
 B 30 Ø 650 ... 3000;  
 other dimensions on enquiry.

Open  
 Ø 650 ... 3000;  
 over Ø 3000 on enquiry.

Open  
 B 27,5 Ø 720 ... 3000;  
 over Ø 3000 on enquiry.  
 B 30 Ø 650 ... 3000;  
 over Ø 3000 on enquiry.