

# POLYPAC® - PHD/P



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Double-acting

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Heavy Duty, High Pressure

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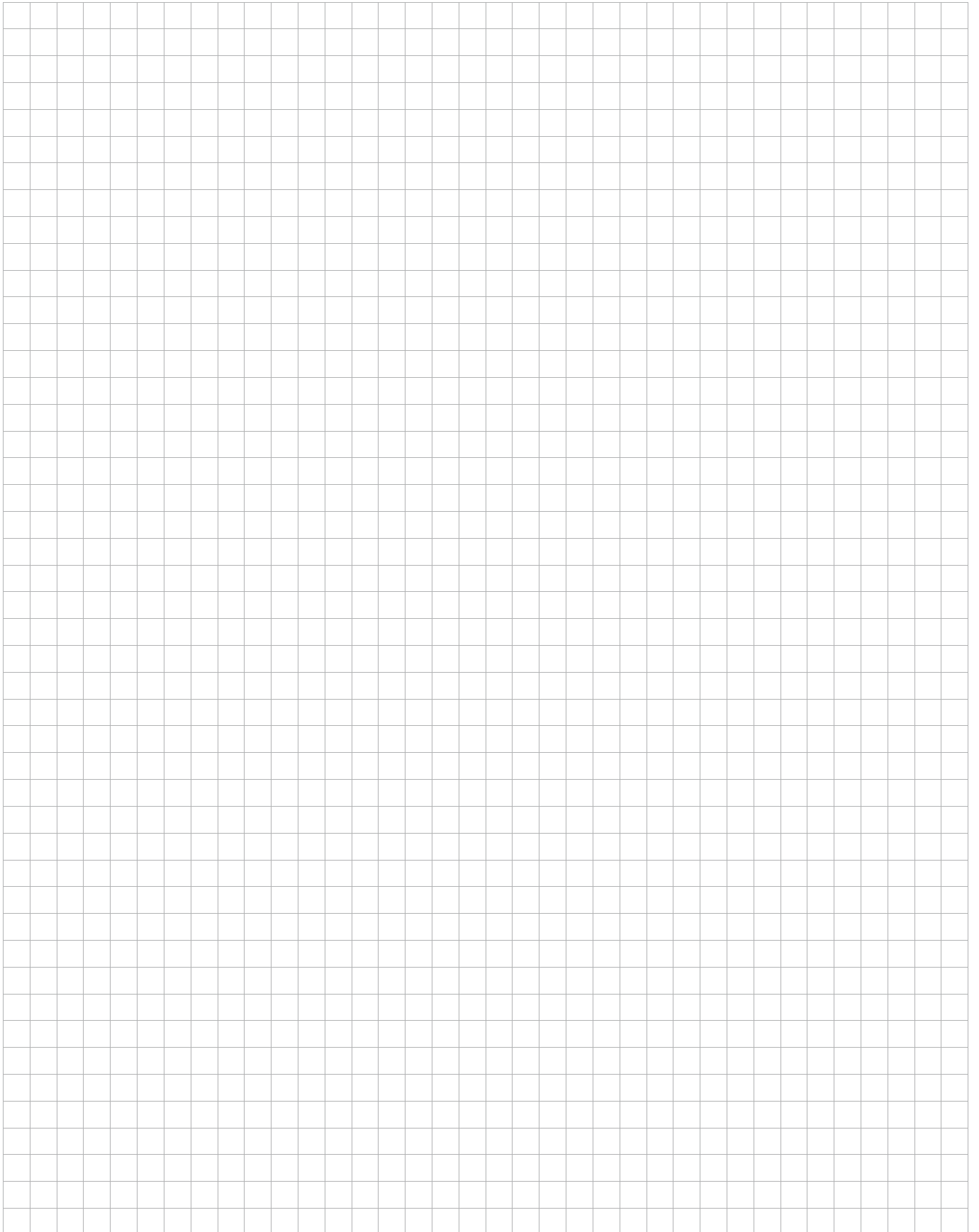
Excellent Leakage Control

**Material:**

Zurcon® , NBR Elastomer + POM

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## ■ PHD/P Seal

### ■ Description



The PHD/P Seal is a high-pressure heavy-duty piston seal with excellent leakage control and superior extrusion and wear resistance

The PHD/P seal is a combination of a Zurcon® polyurethane slipper seal energised by an elastomer profile ring and completed with two Back-up rings (POM). It is manufactured with a predefined interference fit, which together with the squeeze of the elastomer part ensures a good sealing effect even at low system pressure. At higher pressures the elastomer part is energised by the system pressure and consequently activates the slipper seal in the radial direction.

The Back-up rings prevent the slipper seal from extrusion and ensure a long service life even under harsh conditions.

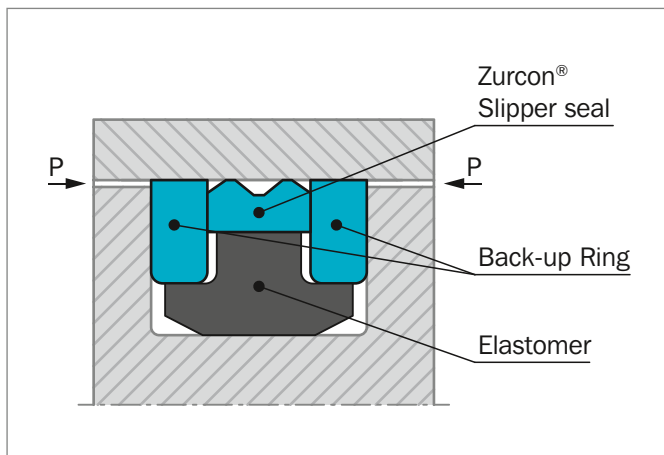


Figure 159: PHD/P Seal

### ADVANTAGES

- Simple groove design
- Excellent sealing effect
- Excellent wear resistance
- Increased clearance possible
- Long service life

### APPLICATION EXAMPLES

The PHD/P Seal is the recommended sealing element for double acting pistons of hydraulic cylinders working in very harsh conditions such as:

- Excavators
- Heavy duty cylinders

### OPERATING CONDITIONS

<b>Pressure:</b>	Up to 35 MPa
<b>Speed:</b>	Up to 0.5 m/s
<b>Temperature:</b>	-35 °C to +110 °C
<b>Media:</b>	Mineral oil-based hydraulic fluids

### IMPORTANT NOTE

The above data are maximum values and cannot be used at the same time, e.g. the maximum operating speed depends on material type, pressure, temperature and gap value. Temperature range also depends on media.

### MATERIALS

#### Standard Application

For hydraulic components in mineral oils or medium with good lubricating performance.

Slipper Seal: Zurcon® Z20 93 Shore A

Energiser: NBR 80 Shore A

Back-up rings: POM

Material code for the set: Z2053



## ■ Installation Recommendation

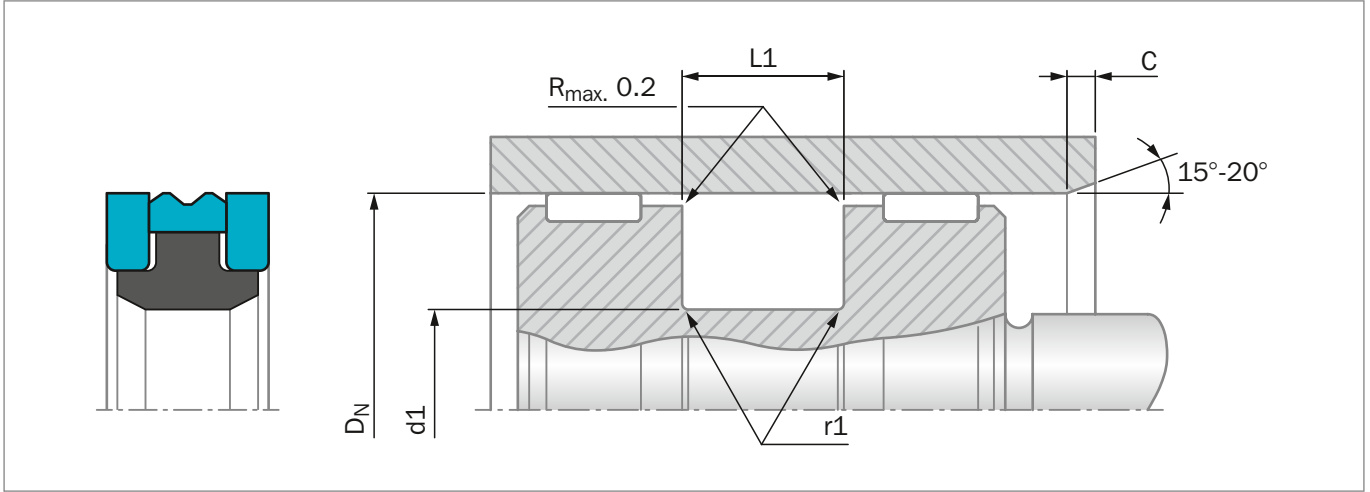


Figure 160: Installation Drawing

### ORDERING EXAMPLE

PHD/P Seal, complete.

<b>Bore Diameter:</b>	$D_N = 80.0 \text{ mm}$
<b>TSS Part No.:</b>	PKPOP0800
<b>Material Set-Code:</b>	Z2053
<b>Polypac Ref. No.:</b>	PHD 8065P

<b>TSS Article No.</b>	<b>PKPO P 0800 - Z2053</b>
TSS Series No.	PKPO
Type (Standard)	P
Bore Diameter x 10	0800
Quality Index (Standard)	Z2053
Material Set-Code	Z2053

**Table 152: Installation Dimensions / TSS Part No.**

Bore Diameter	Groove Diameter	Groove Width	Inlet Chamfer	Radius	TSS Article No.	Polypac Ref. No.
$D_N$	$d1$	$L1$	$C$	$r1$		
H9	h9	+0.2				
50.0	36.0	9.0	5.0	0.3	PKPOP0500-Z2053	PHD 5036P-Z20
55.0	41.0	9.0	5.0	0.3	PKPOP0550-Z2053	PHD 5541P-Z20
60.0	46.0	9.0	5.0	0.3	PKPOP0600-Z2053	PHD 6046P-Z20
63.0	48.0	11.0	5.0	0.5	PKPOP0630-Z2053	PHD 6348P-Z20
65.0	50.0	11.0	5.0	0.5	PKPOP0650-Z2053	PHD 6550P-Z20
70.0	55.0	11.0	5.0	0.5	PKPOP0700-Z2053	PHD 7055P-Z20
75.0	60.0	11.0	5.0	0.5	PKPOP0750-Z2053	PHD 7560P-Z20
80.0	65.0	11.0	5.0	0.5	PKPOP0800-Z2053	PHD 8065P-Z20
85.0	70.0	11.0	5.0	0.5	PKPOP0850-Z2053	PHD 8570P-Z20
90.0	75.0	11.0	5.0	0.5	PKPOP0900-Z2053	PHD 9075P-Z20
95.0	80.0	12.5	5.0	0.5	PKPOP0950-Z2053	PHD 9580P-Z20
100.0	85.0	12.5	5.0	0.5	PKPOP1000-Z2053	PHD 10085P-Z20



Bore Diameter	Groove Diameter	Groove Width	Inlet Chamfer	Radius	TSS Article No.	Polypac Ref. No.
$D_N$	$d_1$	$L_1$	$C$	$r_1$		
H9	h9	+0.2				
105.0	90.0	12.5	5.0	0.5	<a href="#">PKPOP1050-Z2053</a>	PHD 10590P-Z20
110.0	95.0	12.5	5.0	0.5	<a href="#">PKPOP1100-Z2053</a>	PHD 11095P-Z20
115.0	100.0	12.5	5.0	0.5	<a href="#">PKPOP1150-Z2053</a>	PHD 115100P-Z20
120.0	105.0	12.5	5.0	0.5	<a href="#">PKPOP1200-Z2053</a>	PHD 120105P-Z20
125.0	102.0	16.0	6.5	0.6	<a href="#">PKPOP1250-Z2053</a>	PHD 125102P-Z20
130.0	107.0	16.0	6.5	0.6	<a href="#">PKPOP1300-Z2053</a>	PHD 130107P-Z20
135.0	112.0	16.0	6.5	0.6	<a href="#">PKPOP1350-Z2053</a>	PHD 135112P-Z20
140.0	117.0	16.0	6.5	0.6	<a href="#">PKPOP1400-Z2053</a>	PHD 140117P-Z20
145.0	122.0	16.0	6.5	0.6	<a href="#">PKPOP1450-Z2053</a>	PHD 145122P-Z20
150.0	127.0	16.0	6.5	0.6	<a href="#">PKPOP1500-Z2053</a>	PHD 150127P-Z20
155.0	132.0	16.0	6.5	0.6	<a href="#">PKPOP1550-Z2053</a>	PHD 155132P-Z20
160.0	137.0	16.0	6.5	0.6	<a href="#">PKPOP1600-Z2053</a>	PHD 160137P-Z20
165.0	142.0	16.0	6.5	0.6	<a href="#">PKPOP1650-Z2053</a>	PHD 165142P-Z20
170.0	147.0	16.0	6.5	0.6	<a href="#">PKPOP1700-Z2053</a>	PHD 170147P-Z20
180.0	157.0	16.0	6.5	0.6	<a href="#">PKPOP1800-Z2053</a>	PHD 180157P-Z20

Radial Clearance: For pressure up to 35 MPa 0.50

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