

Features:

Symmetrical design for optimal sealing performance

Internal O-Ring works more efficiently at varying pressures

Double-lip design increases efficiency and performance

Highly extrusion resistant in large gap conditions

Easy to install

Backup ring



MATERIAL

The 163 series rod seal features high-grade polyurethane. Standard materials are MP03 H-PU, NBR O-ring and polyacetal backup ring. To suit a variety of applications, the series is also available in NBR, H-NBR, EPDM and high temperature-resistant FPM.

Material	Code
Polyurethane (H-PU) / NBR / POM	MP62
Polyurethane (H-PU) / NBR / Polyamide	MP63

OPERATING PARAMETERS

Temperature	°C	°F
hydraulic oil	-20...+115	-5...+240
water oil emulsions (HFA)	+5...+55	+40...+130
water-glycol fluids (HFC)	-20...+55	-5...+130
polyol esters (HFD)	-	-
water	+5...+55	+40...+130
speed	0.5 m/s (1.6 ft/sec)	
pressure	≤690 bar (10,000psi)	

Note: for other materials or fluids please contact our engineering department.

DESCRIPTION

The 163 series is a heavy duty polyurethane seal with multiple features that include a double-lipped U-Cup design, an internal O-Ring energizer and a reinforced backup ring on the heel. This seal is ideal for applications where high pressure spikes are likely to be encountered. This seal also features additional sealing contact points in the groove.

PRODUCT BENEFITS

- High pressure capability and wide temperature range
- Excellent fluid compatibility including water-based fluids (H-PU)
- Exceptional abrasion resistance

APPLICATIONS

The 163 series rod seal is typically used in heavy-duty applications, where pressure spikes and large extrusion gaps exist.

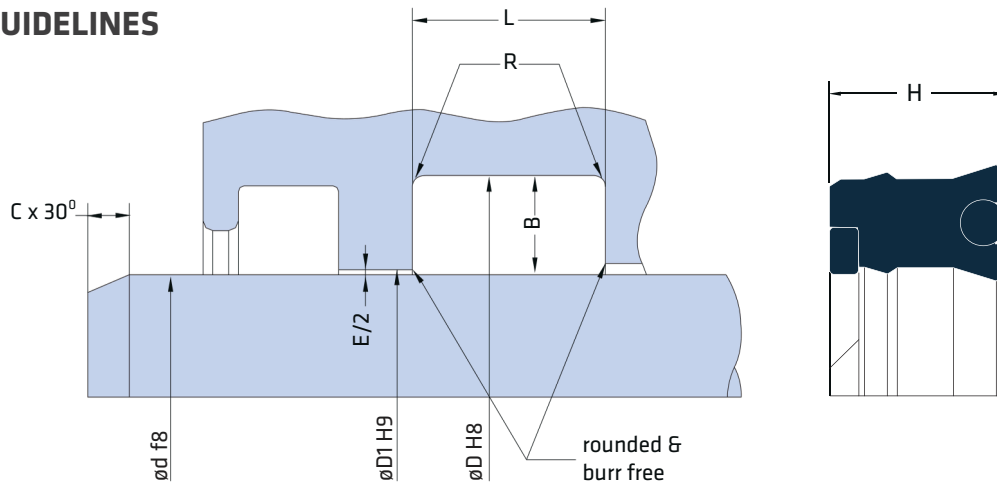
Typical applications include:

- Mining
- Mobile Hydraulics
- Hydraulic Cylinder Rebuild
- Agricultural Hydraulics
- Construction Equipment



Above: Installation Drawing

DESIGN GUIDELINES



METRIC SERIES

	B	L ^{+0.2}	H	ØD	ØD1	R	C
Series 1	6.00 mm	9.60	8.80	d + 12.00	d + E	0.40	5.0
Series 2	7.50 mm	12.50	11.40	d + 15.00	d + E	0.40	5.0
Series 3	10.00 mm	16.00	14.60	d + 20.00	d + E	0.40	7.50
Series 4	12.50 mm	20.00	18.20	d + 25.00	d + E	0.40	7.50
Series 5	15.00 mm	22.00	20.00	d + 30.00	d + E	0.40	7.50
Series 6	20.00 mm	32.00	30.00	d + 40.00	d + E	0.40	10.0

Pressure	E
≤100 bar	1.00
≤250 bar	0.85
≤400 bar	0.70

Extrusion Gaps

INCH SERIES

	B	L ^{+0.008}	H	ØD	ØD1	R	C
Series 1	0.250 in	0.413	0.375	d + 0.500	d + E	0.016	0.195
Series 2	0.375 in	0.619	0.563	d + 0.750	d + E	0.016	0.195
Series 3	0.500 in	0.825	0.750	d + 1.000	d + E	0.016	0.250
Series 4	0.563 in	0.928	0.844	d + 1.125	d + E	0.016	0.295
Series 5	0.625 in	1.031	0.0938	d + 1.250	d + E	0.016	0.295
Series 6	0.750 in	1.238	1.125	d + 1.500	d + E	0.016	0.400
Series 7	1.000 in	1.650	1.500	d + 2.000	d + E	0.016	0.500

Pressure	E
≤1450 psi	0.040
≤3625 psi	0.035
≤6000 psi	0.030

Extrusion Gaps

Note: for higher pressures or temperatures, please consult our engineering department for guidance. For a complete list of available sizes please refer to the System Seals online product catalogue at www.systemseals.com.

SURFACE FINISH

Surface roughness	Ra	Rt	RMS
Sliding surface	≤0.3 µm	≤3 µm	8 RMS
Surface of groove I.D.	≤1.8 µm	≤10 µm	64 RMS
Sides of groove	≤3 µm	≤16 µm	125 RMS