

## Features:

- Premium wear resistance
- Optimized lip forces for every cross section and diameter
- Integrated backup ring prevents extrusion
- Easy to install



## MATERIAL

The 139 Series rod seal features high-grade polyurethane. Standard materials are MP30 machined H-PU, available up to 2100 mm in diameter, an MN32 injection-molded TPU. To suit a variety of applications the series is also available in NBR, H-NBR, EPDM and high temperature-resistant FPM. The backup ring materials include POM, Polyamide and PEEK.

Material	Code
Polyurethane H-PU / POM (Shown in photo)	MP30
Hydrogenerated NBR, PTFE/Bz	MN32

## OPERATING PARAMETERS

Temperature	MP30	
	°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	≤1,380 bar (20,000 psi)	

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

## DESCRIPTION

The 139 Series U-Cup seal is a high-performance, U-Cup seal for use in high-clearance applications, typically in moderate to high-pressure environments. Its asymmetrical design ensures that the seal lip forces are optimized for every cross section and diameter. The integrated backup ring supports the seal and ensures maximum extrusion resistance in a larger than normal clearance application. Manufactured in a variety of materials and sizes from 6 mm to 2100 mm in diameter in standard or custom sizes.

## PRODUCT BENEFITS

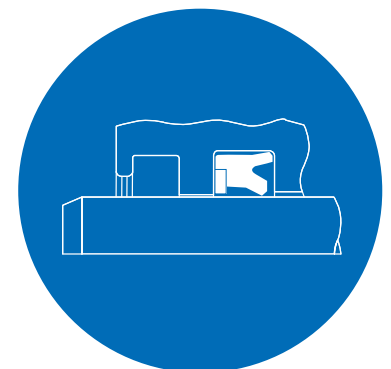
- Designed specifically for large clearance applications
- High pressure capability and wide temperature range
- Excellent fluid compatibility including water-based fluids (H-PU)
- Exceptional abrasion resistance
- Highly extrusion resistant

## APPLICATIONS

The 139 Series U-Cup seal is typically used in high-clearance applications as a primary seal and functions well in moderate to high pressures.

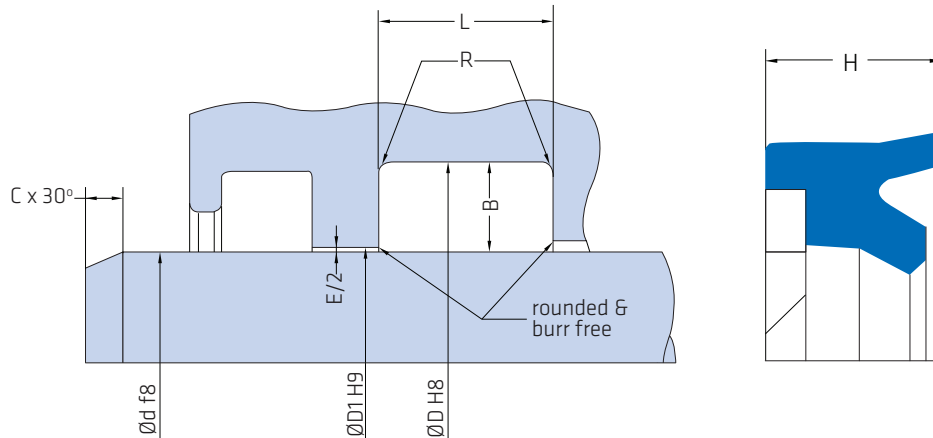
Typical applications include:

- Forging and Extrusion Presses
- Stamping Presses
- Mining
- Agriculture
- Construction Equipment
- Injection Molding Machines



**Above:** Installation Drawing

## DESIGN GUIDELINES



### METRIC SERIES

	B	L <sup>+0.20</sup>	H	ØD	ØD1	R	C
Series 1	4.00 mm	9.00	8.10	d + 8.00	d+E	.40	2.50
Series 2	5.00 mm	11.00	9.90	d + 10.00	d+E	.40	4.00
Series 3	7.50 mm	12.50	11.30	d + 15.00	d+E	.40	5.00
Series 4	10.00 mm	16.00	14.80	d + 20.00	d+E	.40	6.50
Series 5	15.00 mm	20.00	18.80	d + 30.00	d+E	.40	7.50
Series 6	20.00 mm	26.50	25.30	d + 40.00	d+E	.40	10.00

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

### INCH SERIES

	B	L <sup>+0.008</sup>	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	0.750	d + 1.000	d + E	0.016	0.295
Series 5	0.625 in	1.031	0.938	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
≤1,450 psi	0.040
≤3,625 psi	0.035
≤6,000 psi	0.030

**Note:** The extrusion gap "E" is suitable for pressure up to 400 bar (6,000 psi) and temperatures up to 80° C (176° F). 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](http://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