

**Features:**

- A square profile offers increased stability in the groove
- A defined sealing lip provides maximum performance
- Easy to install
- Available inch or metric sizes


**MATERIAL**

The 503 Series Heavy-Duty Face Seal features high-grade polyurethane. Standard materials are MP03 machined H-PU available up to 2100 millimeters in diameter.

Material	Code
Polyurethane H-PU	MP03
Nitrile NBR	MN01
Fluoroelastomer FPM	MF01
Hydrogenated NBR	MN03
EPDM	ME01

**OPERATING PARAMETERS**

Temperature	MP03	
	°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	-	
pressure	≤400 bar (6,000 psi)	

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

**DESCRIPTION**

The 503 Series is a great replacement for standard large-diameter O-rings. This heavy duty static seal has a defined sealing lip manufactured from high-performance polyurethane. The square body profile prevents rolling in the groove, which is common with O-rings. The robust qualities of polyurethane allow the seal to be used without a backup ring. It is a substantial upgrade to the traditional O-ring and backup ring combination, which has been prone to rolling installation problems.

**PRODUCT BENEFITS**

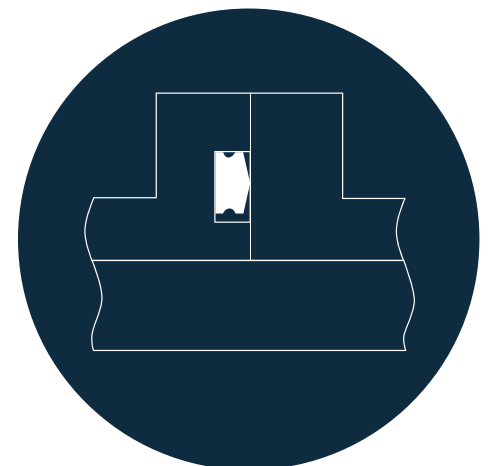
- No twisting or rolling during installation
- Direct retrofit to O-ring and backup ring designs
- Extrusion resistant
- Abrasion-resistant polyurethane
- Long life due to robust design

**APPLICATIONS**

The 503 Series is used as the primary static seal in heavy duty steel and aluminum applications in severe conditions.

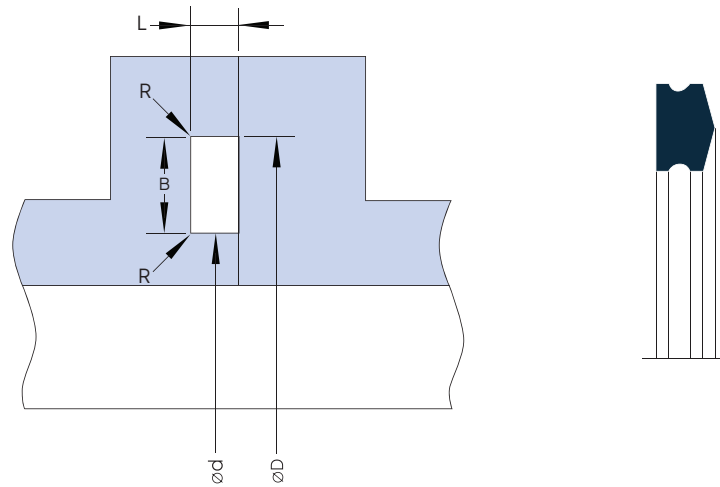
Typical applications include:

- Steel and Aluminum Processing
- Mobile Hydraulics
- Hydraulic Cylinder Rebuild
- Agricultural Hydraulics
- Construction Equipment



**Above:** Installation Drawing

## DESIGN GUIDELINES



## METRIC SERIES

	$L^{+0.05}$	$B^{+0.25}$	R
Series 000	1.30	2.60	0.30
Series 100	2.00	3.80	0.30
Series 200	2.70	5.00	0.60
Series 300	4.20	7.30	1.00
Series 400	5.70	9.70	1.00

## INCH SERIES

	$L^{+0.002}$	$B^{+0.010}$	R
Series 000	0.051	0.102	0.012
Series 100	0.079	0.150	0.012
Series 200	0.106	0.197	0.024
Series 300	0.165	0.287	0.039
Series 400	0.224	0.382	0.039

**Note:** Backup Rings can be used if required. 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
Sealing surface	$\leq 0.3 \mu\text{m}$	$\leq 3 \mu\text{m}$	24-32 RMS
Surface of groove I.D.	$\leq 1.8 \mu\text{m}$	$\leq 10 \mu\text{m}$	64 RMS
Sides of groove	$\leq 3 \mu\text{m}$	$\leq 16 \mu\text{m}$	125 RMS