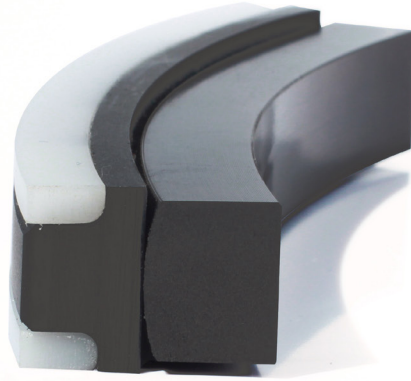


## Features:

- Robust, double-acting design
- Profiled energizer ring that maintains seal force throughout service life
- Integrated backup rings provide maximum extrusion resistance
- Easy to install
- No twisting during installation



## MATERIAL

The 288 Series is made from custom blended PTFE filled compounds that provide ultra-low friction and high-speed performance with minimal wear. The standard compounds are PTFE filled with Bronze filler, or PTFE filled with Glass-Moly. The backup rings can be made from polyamide Delrin and POM. The temperature range of the seal can be increased by selecting a FPM energizer in place of the standard NBR energizer.

Material	Code
PTFE/Bronze, NBR, POM	MT24
PTFE/Glass-Moly, NBR, POM	MT84

## OPERATING PARAMETERS

Temperature	MT24		MT84	
	°C	°F	°C	°F
hydraulic oil	-30... +100	-22...+212	-30... +100	-22...+212
water oil emulsions (HFA)	-	-	+5... +60	+40... +140
water-glycol fluids (HFC)	-	-	-	-
polyol esters (HFD)	-	-	-5...+100	+40...+212
water	-	-	-	-
speed	5 m/s (16.5 ft/sec)			
pressure	400 bar (6,000 psi)			

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

## DESCRIPTION

The 288 Series Heavy-Duty Piston Seal with Integrated Backup Ring is a low-friction design, consisting of a PTFE filled seal, a profiled energizer and two integrated backup rings. It is designed for large-diameter, double-acting cylinders in challenging applications, where high pressure and large extrusion gaps exist.

## PRODUCT BENEFITS

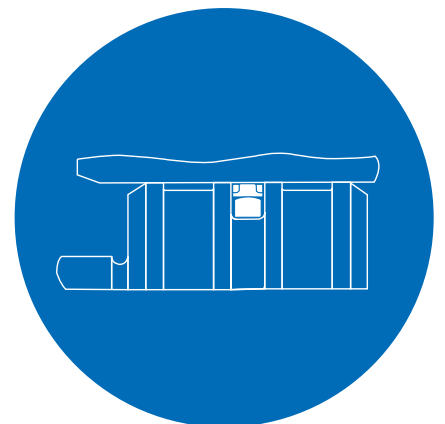
- Low friction
- Double acting applications
- High-temperature resistance
- Low wear
- Compatible with a wide range of media
- Available in diameters up to 2100 millimeters

## APPLICATIONS

The 288 Series Heavy-Duty Piston Seal with Integrated Backup Ring is ideal for high-pressure sealing applications, offering low-friction performance and double-acting operation.

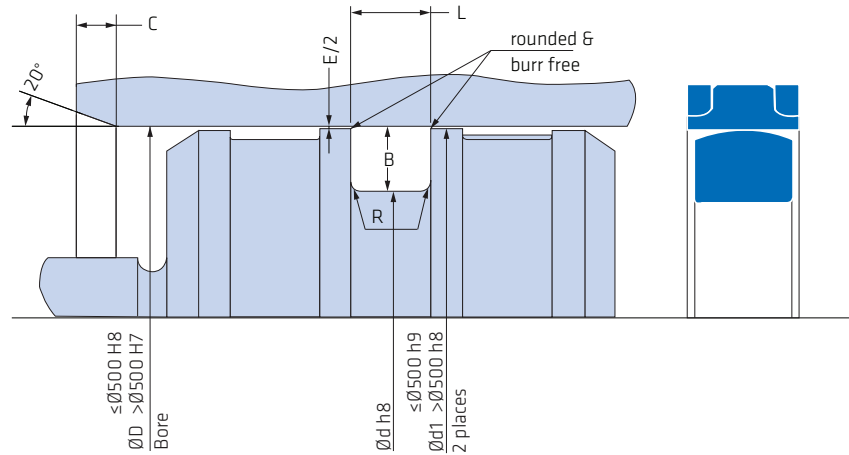
Typical applications include:

- Forging Presses
- Extrusion presses
- Stamping presses
- Rolling Mills
- Injection Molding Machines
- Hydraulic Presses



**Above:** Installation Drawing

## DESIGN GUIDELINES



### METRIC SERIES

	Bore Diameter ØD	B	Ød	Ød1	L <sup>+0.20</sup>	C	R
Series 1	<200.00 mm	10.00	D - 20.00	D - E	8.10	7.50	0.40
Series 2	<300.00 mm	12.50	D - 25.00	D - E	10.00	10.00	0.40
Series 3	<450.00 mm	15.00	D - 30.00	D - E	12.50	12.00	0.80
Series 4	<685.00 mm	17.50	D - 35.00	D - E	15.00	12.00	1.20
Series 5	<1270.00 mm	20.00	D - 40.00	D - E	17.50	12.00	1.20

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

### INCH SERIES

	Bore Diameter ØD	B	Ød	Ød1	L <sup>+0.008</sup>	C	R
Series 1	<8.000 in	0.394	D - 0.787	D - E	0.319	0.300	0.016
Series 2	<12.000 in	0.492	D - 0.984	D - E	0.394	0.390	0.016
Series 3	<18.000 in	0.591	D - 1.181	D - E	0.492	0.470	0.032
Series 4	<27.000 in	0.689	D - 1.378	D - E	0.591	0.470	0.050
Series 5	<50.000 in	0.787	D - 1.575	D - E	0.689	0.470	0.050

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