

### Features:

*O-Ring Energizer that maintains seal force throughout service life*

*Single-acting design*

*Low friction*

*Easy to install*



### MATERIAL

System Seals' custom blended PTFE filled compounds 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 temperature range of the seal can be increased by selecting an FPM energizer in place of the standard NBR energizer.

Material	Code
PTFE-Bronze compound + NBR O-ring (shown in photo)	MT23
PTFE-Bronze compound + FPM O-ring	MT26
PTFE-Glass/MoS2 compound + NBR O-ring	MT83
PTFE-Glass/MoS2 compound + FPM O-ring	MT86

### OPERATING PARAMETERS

Temperature	MT23		MT83	
	°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)	-	-	-30... +60	-22... +140
polyol esters (HFD)	-	-	-	-
water	-	-	-5... +100	+40... +212
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 281 Series single-acting piston seal is a low-friction design, consisting of a PTFE filled seal and an O-ring energizer. It is designed for single-acting cylinders in challenging applications, where low friction and high wear resistance are needed.

### PRODUCT BENEFITS

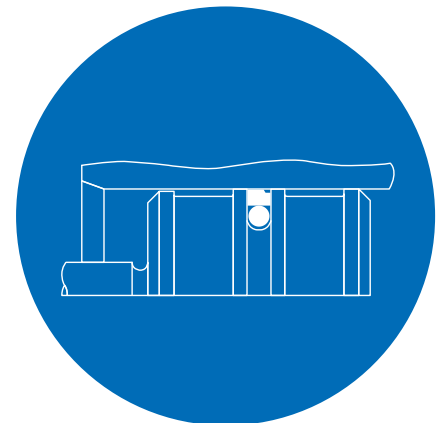
- High-temperature resistance
- Low wear
- Extrusion resistant
- Compatible with a wide range of media
- Available in diameters up to 2100 mm.

### APPLICATIONS

The 281 Series single-acting Piston Seal is ideal for high-pressure sealing applications, offering low-friction performance and single-acting operation.

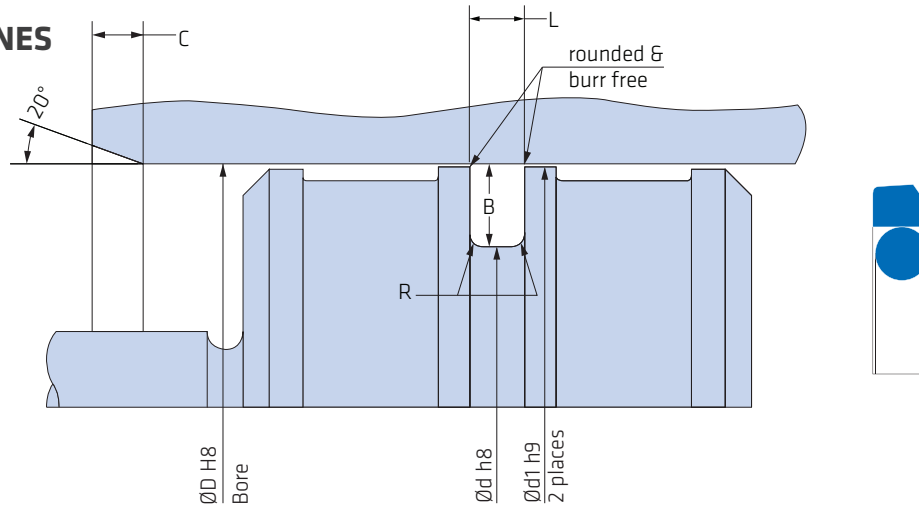
Typical applications include:

- Rolling Mills
- Injection Molding Machines
- Hydraulic Presses
- Agricultural Hydraulics
- Mobile Hydraulics



**Above:** Installation Drawing

## DESIGN GUIDELINES



## METRIC SERIES

	B	Ød	L <sup>+0.20</sup>	Ød1 <200 bar	Ød1 <400 bar	R
Series 1	2.45 mm	D - 4.90	2.20	D - 0.40	D - 0.30	0.30
Series 2	3.65 mm	D - 7.30	3.20	D - 0.50	D - 0.30	0.50
Series 3	5.35 mm	D - 10.70	4.20	D - 0.50	D - 0.40	0.80
Series 4	7.55 mm	D - 15.10	6.30	D - 0.50	D - 0.40	1.20
Series 5	10.25 mm	D - 20.50	8.10	D - 0.60	D - 0.50	2.00
Series 6	12.00 mm	D - 24.00	8.10	D - 0.60	D - 0.50	2.00
Series 7	13.65 mm	D - 27.30	9.50	D - 0.60	D - 0.50	2.00

## INCH SERIES

	B	Ød	L <sup>+0.008"</sup>	Ød1 <3,000 psi	Ød1 <6,000 psi	R
Series 1	0.096 in	D - 0.192	0.087	D - 0.016	D - 0.012	0.012
Series 2	0.144 in	D - 0.288	0.126	D - 0.020	D - 0.012	0.020
Series 3	0.211 in	D - 0.422	0.165	D - 0.020	D - 0.016	0.032
Series 4	0.297 in	D - 0.594	0.248	D - 0.020	D - 0.016	0.050
Series 5	0.403 in	D - 0.806	0.319	D - 0.024	D - 0.020	0.080
Series 6	0.472 in	D - 0.944	0.319	D - 0.024	D - 0.020	0.080
Series 7	0.537 in	D - 1.072	0.374	D - 0.024	D - 0.020	0.080

**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

## LEAD-IN CHAMFERS

ØD	C
≤40 mm	4.00
40 mm ≤ 80 mm	6.00
80 mm ≤ 133 mm	8.00
133 mm ≤ 330 mm	10.00
330 mm ≤ 670 mm	12.00
670 mm ≤ 950 mm	14.00

ØD	C
<1.500 in	0.160
1.500 in < 3.000 in	0.240
3.000 in < 5.250 in	0.310
5.250 in < 13.000 in	0.400
13.000 in < 26.000 in	0.500
26.000 in < 37.500 in	0.550