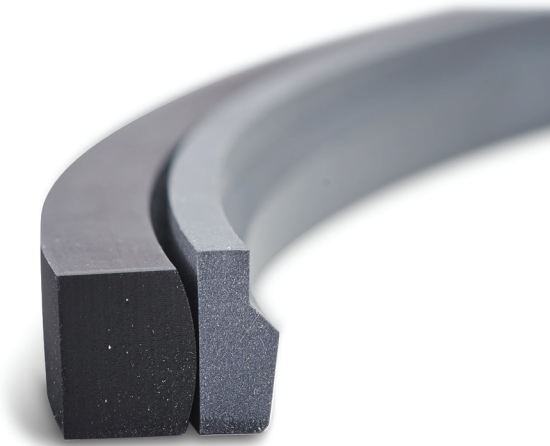


**Features:**

- Robust design*
- Profiled energizer ring that maintains seal force throughout service life*
- Optimized seal-lip position*
- Easy to install*
- No twisting during installation*



**MATERIAL**

The 190 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 temperature range of the seal can be increased by selecting a FPM energizer in place of the standard NBR energizer.

Material	Code
PTFE-Bronze compound + NBR energizer	MT23
PTFE-Bronze compound + FPM energizer	MT26
PTFE-Glass/MoS2 compound + NBR energizer (shown in photo)	MT83
PTFE-Glass/MoS2 compound + FPM energizer	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 190 Series rod seal is a heavy-duty, low-friction design, consisting of a PTFE-filled seal and a profiled energizer. It is designed for large diameter and challenging applications, where high pressure and large extrusion gaps exist. The seal is ideal for short-stroke, dithering applications.

**PRODUCT BENEFITS**

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

**APPLICATIONS**

The 190 Series Heavy-Duty rod seal is ideal for high-pressure sealing applications, offering low-friction performance and short-stroke capability.

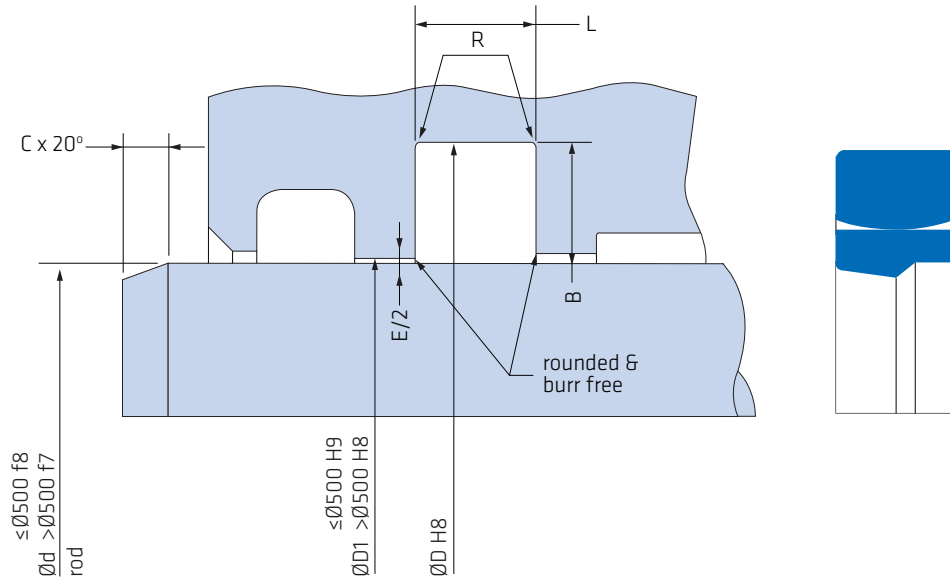
Typical applications include:

- Rolling Mills
- Injection Molding Machines
- Hydraulic Presses
- Forging Presses



**Above:** Installation Drawing

## DESIGN GUIDELINES



## METRIC SERIES

	Rod Diameter ØD	B	ØD	ØD1	L <sup>+0.20</sup>	E	C	R
Series 1	<200.00 mm	10.00	d + 20.00	d + 0.50	10.00	0.50	7.50	0.40
Series 2	<300.00 mm	12.50	d + 25.00	d + 0.60	12.50	0.60	10.00	0.40
Series 3	<450.00 mm	15.00	d + 30.00	d + 0.60	15.00	0.60	12.00	0.80
Series 4	<685.00 mm	17.50	d + 35.00	d + 0.60	17.50	0.60	12.00	1.20
Series 5	<1270.00 mm	20.00	d + 40.00	d + 0.60	20.00	0.60	12.00	1.20

## INCH SERIES

	Rod Diameter ØD	B	ØD	ØD1	L <sup>+0.008</sup>	E	C	R
Series 1	<8.000 in	0.394	d + 0.787	d + 0.020	0.394	0.020	0.300	0.016
Series 2	<12.000 in	0.492	d + 0.984	d + 0.024	0.492	0.024	0.390	0.016
Series 3	<18.000 in	0.591	d + 1.181	d + 0.024	0.591	0.024	0.470	0.032
Series 4	<27.000 in	0.689	d + 1.378	d + 0.024	0.689	0.024	0.470	0.050
Series 5	<50.000 in	0.787	d + 1.575	d + 0.024	0.787	0.024	0.470	0.050

**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