

# **SPRING ENERGIZED SEALS**



Version:202107

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## 1. Descriptions:

BOSS Sealing Spring energized seals are designed to handle a wide range of applications where traditional elastomers fail. Spring energized seals excel in applications with high-speeds, wide temperature ranges and those with corrosive media.

### Typical Applications:

- Primary and Secondary Flight Controls
- Fuel Control Systems
- Medical and Laboratory Instrumentations
- Semiconductor Processing Equipment
- Pumps, Valves and Compressors
- Oilfield Equipment
- Automotive and Motorsport

### Features and Benefits

Size: from 2 mm to 1800 mm

Temperature: -196° C to +340° C

Pressure: 60 MPa ; More than 60MPa, back-up rings needed.

Low and controlled friction

Broad chemical resistance



## 2. Materials:








Material	Properties	Disadvantage
PTFE	Acid-resistant, alkali-resistant, resistant to various organic solvents, high temperature resistance, low friction coefficient. Working temperature -190 °C to 260°C White color	Poor creep resistance, poor wear resistance, large product expansion coefficient
PTFE+CU	Improve mechanical properties, high wear resistance, thermal conductivity, pressure resistance, extrusion resistance, creep resistance, dimensional stability. Working temperature -190 °C to 260°C Brown,Green,Blue,Golden color	not suitable for acidic media.
PTFE+Glass fiber	Good chemical properties, excellent wear-resistant materials, good creep resistance, low dielectric constant, suitable for medium-load hydraulic seals Working temperature -190 °C to 260°C Gray color	not suitable for alkaline media.
PTFE+Graphite	Improve the self-lubricating properties and thermal conductivity of PTFE. Suitable for high-level sports,steam medium Working temperature -190 °C to 260°C Black color	not suitable for oxidizing medium
PTFE+Carbon fiber	high wear resistance,Suitable for steam medium,reciprocating and rotating motion, poor lubricating media and dry friction conditions Working temperature -190 °C to 260°C Black color	not suitable for oxidizing medium
PTFE+MOS2	Properties same as PTFE+CU.	












PCTFE	<p>Superior rigidity and corrosion resistance, normal temperature mechanical properties due to PTFE, high compressive strength and low cold flow.</p> <p>It is an ideal sealing material under low temperature and high pressure conditions.</p> <p>Working temperature -270 °C to 200°C White color</p>	<p>Mechanical properties are greatly affected by temperature</p>
UHMWPE	<p>Low friction coefficient; Impact resistant, chemical resistant, better wear resistance and creep resistance than PTFE. Recommended for applications where high sliding performance is required or poor lubricity is required and wear resistance is high. Also commonly used for ultra-low temperature sealing.</p> <p>Working temperature -200 °C to 90°C White, Yellow color</p>	<p>Insufficient tensile and compressive strength, poor high temperature resistance, low hardness and low thermal conductivity</p>
PEEK	<p>High temperature resistance, self-lubricating, wear resistant.</p> <p>Add glass fiber or carbon fiber fiber can resist up to 316 °C</p>	<p>brittle</p>
PTFE+EKONOL	<p>Excellent wear resistance and high temperature resistance. has good friction resistance under water,</p> <p>Working temperature -190 °C to 260°C</p>	
PTFE+PI	<p>Excellent wear resistance and high temperature resistance.</p> <p>Working temperature -190 °C to 260°C Taupe color</p>	

### 3. SE Seal Profiles:

Based on different applications, spring energized seals include rod seal, piston seal, rotary seal, face seal, special seal, etc.

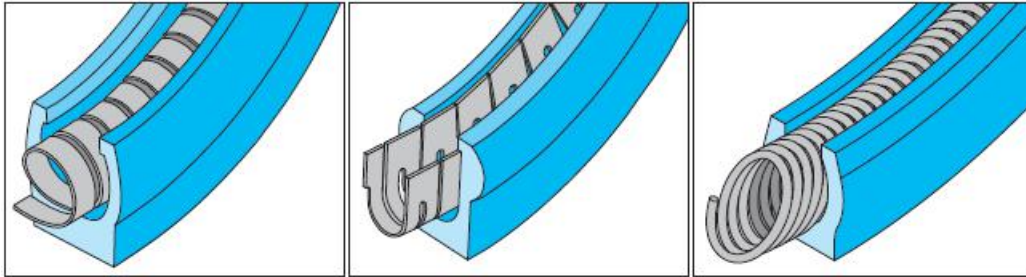
Type	Seal Profile	Sectional Shape	Material	Working Temperature °C	Pressure ≤MPa	Speed ≤ m/s
Spring Energized Seals	ROD SEAL	<a href="#">RVA</a> 	PTFE+Filer+ Spring	-60 ~ +300	60	15
		<a href="#">ROA</a> 	PTFE+Filer+ Spring	-60 ~ +300	60	15
		<a href="#">ROB</a> 	PTFE+Filer+ Spring	-60 ~ +300	60	15
	Piston Seal	<a href="#">PVA</a> 	PTFE+Filer+ Spring	-60 ~ +300	60	15
		<a href="#">POA</a> 	PTFE+Filer+ Spring	-60 ~ +300	60	15
		<a href="#">POB</a> 	PTFE+Filer+ Spring	-60 ~ +300	60	15
Face Seal	<a href="#">FO-VA</a> 	PTFE+Filer+ Spring	-60 ~ +300	60	15	

Spring Energized Seals	Rotary Seal	<a href="#">FO-OA</a>		PTFE+Filer+ Spring	-60 ~ +300	60	15	
		<a href="#">FO-OB</a>		PTFE+Filer+ Spring	-60 ~ +300	60	15	
		<a href="#">FI-VA</a>		PTFE+Filer+ Spring	-60 ~ +300	60	15	
		<a href="#">FI-OA</a>		PTFE+Filer+ Spring	-60 ~ +300	60	15	
		<a href="#">FI-OB</a>		PTFE+Filer+ Spring	-60 ~ +300	60	15	
	Rotary Seal	<a href="#">RO-VA</a>		PTFE+Filer+ Spring	-60 ~ +300	60	2	
		<a href="#">RO-OA</a>		PTFE+Filer+ Spring	-60 ~ +300	60	2	
		<a href="#">RO-OB</a>		PTFE+Filer+ Spring	-60 ~ +300	60	2	
	Special Types							
								

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### Spring types for SE Seals:

- 103A:O-Spring energizer(Tension Spring Energizer)
- 400A:V-Spring energizer(Meander Spring Energizer)
- APS:Coil spring energizer



### Spring Energizer Standard Materials:

- 304 Stainless steel ▪316 Stainless steel
- 301 Stainless steel ▪Elgiloy



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## 4. Enquiry

For seal inquiry or further details,,please contact our sales consultant:

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Spring energized seal expert for Petrochemical industry,LNG CNG equipment,Dispensing valve,Filling machine,Semiconductor, Compressor,Aerospace industry...

