



# PROFESSIONAL PLASTICS



## SPRING ENERGIZED SEALS - SES -

expertise in manufacturing, machining and transforming of PTFE and HPP - High Performance Polymers - is expanding in designing and manufacturing high performance spring energized seals. A well trained and experienced engineering team is ready to design with you unique solutions for demanding applications. Spring energized seals ideas with future designs to last.

### Application field of Spring Energized Seals - SES-

SES - Spring Energized Seals - in a wide range of PTFE and HPP - High performance polymers - materials, that thanks to their high performances, are suitable for the following industrial and engineering applications.

- Aero hydraulics & pneumatic systems
- Coolers
- Cryogenic swivels
- Diesel engines
- Filling machines
- Flange connections
- Fuel control systems
- Gas turbine engines
- HPLC pumps
- Laboratory equipment
- Low friction pneumatics
- Medical & laboratory instrumentations
- Oil field equipment
- Pumps
- Robotics
- Rotary joints
- Semiconductor processing equipment
- Swivels
- Vacuum equipment
- Valves, cryogenic, high temperature
- Valves, gate, ball, control

## SPRING ENERGIZED SEALS - SES -



**H-Helicoil spring type**  
radial and face type seal  
from 1/16 up to 1/2 inch



**U-Spring type**  
radial and face type seal  
from 1/16 up to 1/2 inch



**V-Spring type**  
radial and face type seal  
from 1/16 up to 1/2 inch



**W-Spring type**  
face type seal only  
from 3/32 up to 1/2 inch



**Lipseals**  
sizes according to DIN 3760

## SPECIAL ON DEMAND

High performance spring energized seals - SES - are manufactured from high performance polymers. These include PTFE, PTFE Compounds, 3M™ Dyneon™ TFM™ modified PTFE and other suitable high performance polymers - HPP.

Spring energized seals are precision machined parts, both the seal diameter as well as the seal section are function critical. The U-cup shape or jacket allows the system pressure to assist in maintaining a certain seating load. The high precision metal spring, located in the jacket creates the initial seating load needed to create positive sealing.

SES are available in a wide variety of designs, each with a spring design optimized to handle the most demanding applications.

Most of these require a different approach regarding jacket material and spring characteristics. Some applications require critical low spring load, other require higher ones.

SES are designed to function from extreme low temperatures, -270°C up to very high temperatures, sometimes exceeding 300°C. Specific designs can withstand extreme HTHP combinations (high temperature - high pressure).

SES are available in radial design as well as face sealing design, both for static as well as dynamic applications. The available sizes cover all possible combinations from as small as a few mm up to +2 meter diameter. For low friction applications both seal design and spring selection are equally important.

SES are virtually inert to all chemicals except molten alkali metals, fluorine gas at high temperature and chlorine trifluoride. The available spring materials range from stainless steel like 1.4301 up to high alloys such as Elgiloy®, Hastelloy® and Inconel 718.

Whilst data and information given here are the result of our considerable experience they are only intended as a guide line. no responsibility either for the results obtained from this information or for situations in conflict with any existing patents.

**F10-XX Material Norsok M-710 ED.3 and API 6A approved available on demand.**

**Order Online:** <https://www.professionalplastics.com/PTFE-Spring-Energized-Seals>

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