

High Performance Metallic Seals

Spring Energized



Operating Conditions

The **Candia Technology High Performance Seal** has a temperature range from cryogenic to 2000°F at pressures from 1x10⁻¹⁰ Torr to 100,000 PSI. These seals are normally not affected by corrosion, radiation or other adverse environmental conditions, provided the seal material is compatible with the medium.

Seal Design Concept

The **Candia Technology High Performance Seal** is a self and pressure activated design. When the seal is compressed to a predetermined deflection, sealing stresses are generated by the resilient jacket and spring. Additional seal energization is achieved when system pressure is introduced, increasing seal loading. Unless otherwise engineered, the system pressure is applied to the open side of the seal.

High Performance Metallic Seal Types:

- Internal Pressure
- External Pressure
- Axial Pressure

Candia Technology High Performance Seals use the compression of the mating hardware contact surfaces, and the system pressure or vacuum to provide an effective metal to metal leakproof seal. The Candia Technology utilizes high temperature alloys for both jacket and springs. The proper combination of the base materials and surface coatings make it possible to seal practically any fluid at extreme temperatures and pressures without deterioration over extended periods of time.

Candia Technology High Performance Seals provides superior performance for most internal, external and axial applications such as: • Low pressure - Ultra high vacuum • High pressure to 100,000 PSIG • Low temperature to -423°F • High temperature to +2000°F

Because of these capabilities, **Candia Technology High Performance Seals** are widely used in critical and demanding applications, including:

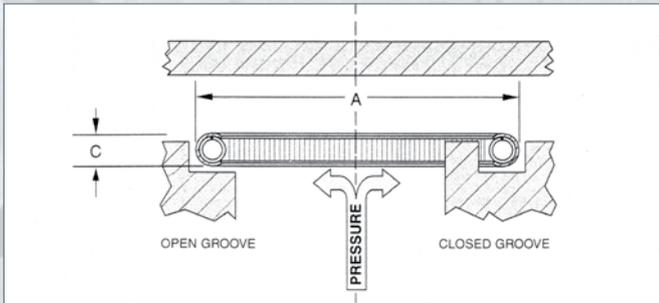
- Missile and space systems
- Jet engines, controls and instruments
- High temperature aircraft systems
- Nuclear reactor & waste containment systems
- Diesel engines
- Chemical, petro-chemical processing systems

Dynamic Applications

Candia Technology High Performance Seals are ideal metallic seals for limited reciprocating and rotating motion, involving fluids and gasses with system pressures up to 30,000 PSI, cryogenic to high temperatures. The seal design and the unique forming and fabricating process provides a metal seal that maintains contact with the dynamic sealing surfaces. The energizing spring exerts uniform pressure on the jacket and keeps pre-set load on the seals. This unique design requires moderate sliding force, which can be adjusted to prevent seal deterioration and surface damage in dry or poorly lubricated applications.

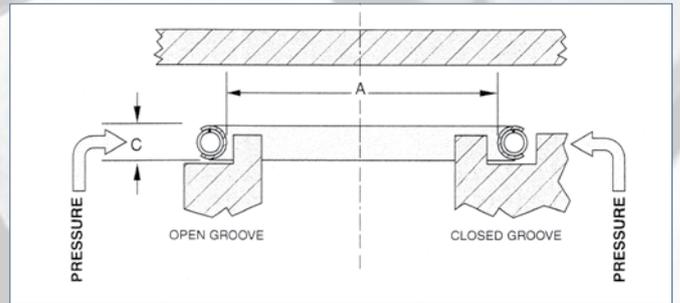
Design Considerations For Non-Circular Shapes

Candia Technology high performance seals are made in circular and non-circular configurations. The non-circular shapes in most cases require special tooling. There is also a very important relationship between the free height and the corner radii on these seals. Some of the non-circular shapes we are currently producing are as follows: • Square • Rectangular • Oval • Racetrack



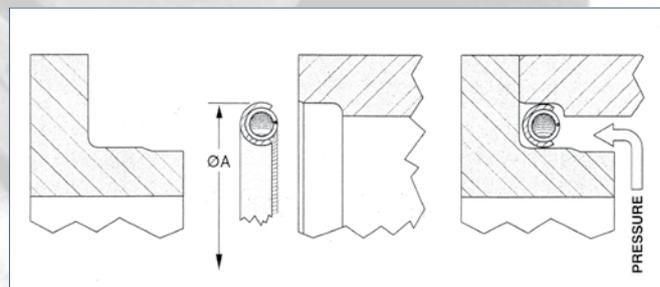
INTERNAL PRESSURE EXHIBIT A
SEAL

Free Height	C		A	
	Free Height	Tot.	Free Height	OD Range
.062	.062	+-0.002	.500	4.000
.094	.094	+-0.002	1.000	6.000
.125	.125	+-0.003	1.000	36.000
.156	.156	+-0.003	1.250	36.000
.188	.188	+-0.004	2.000	48.000
.250	.250	+-0.004	4.000	120.000
.375	.375	+-0.004	12.000	120.000
.500	.500	+-0.005	24.000	120.000



INTERNAL PRESSURE EXHIBIT B
SEAL

Free Height	C		A	
	Free Height	Tot.	Free Height	OD Range
.062	.062	+-0.002	.500	4.000
.094	.094	+-0.002	1.000	6.000
.125	.125	+-0.003	1.000	36.000
.156	.156	+-0.003	1.250	36.000
.188	.188	+-0.004	2.000	48.000
.250	.250	+-0.004	4.000	120.000
.375	.375	+-0.004	12.000	120.000
.500	.500	+-0.005	24.000	120.000



INTERNAL PRESSURE EXHIBIT C
SEAL

Free Height	C		A	
	Free Height	Tot.	Free Height	OD Range
.062	.062	+-0.002	.250	4.000
.094	.094	+-0.002	.500	3.500
.125	.125	+-0.003	1.750	10.000
.156	.156	+-0.003	2.000	10.000
.188	.188	+-0.004	3.000	12.000
.250	.250	+-0.004	5.000	12.000

For application assistance contact our sales/technical service department.



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