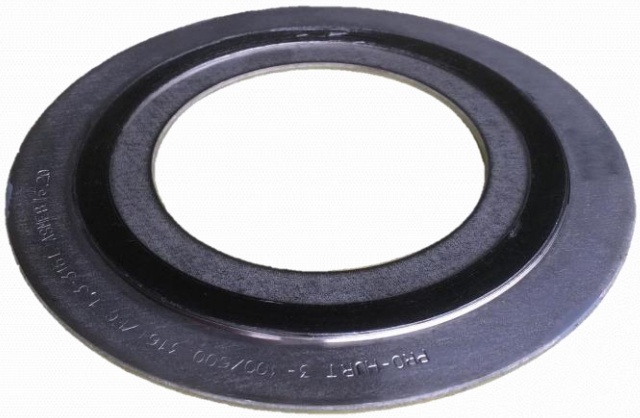
TECHNICAL DATA SHEET

PRO-SPIRAL GASKETS



High-pressure gaskets are characterized by resistance to high pressures and large temperature fluctuations. The gasket sealing element (Spiral) is made of a V-shaped metal strip in combination with a soft sealing material such as expanded graphite or PTFE. The selection of the metal strip is made depending on the media and operating temperature. Spiral seals are made with an outer and/or inner ring.

PROPERTIES:

- o easy to install (take care when transporting and installing large diameter gaskets without centring rings)
- o easy to remove, gaskets do not damage flange faces
- resistant to high pressures (up to 300N/mm^2 at + 20^{o}C)
- o resistant to vibrations and thermal shocks
- o possibility to produce gaskets according to individual customer requirements

Maximum operating temperature	OC	550
Minimum operating temperature	OC	-200
Maximum operating pressure	bar	250

Types of PRO-SPIRAL gaskets:

PRO-SPIRAL PZ

Types of PRO-SPIRAL gaskets: PRO-SPIRAL PZ Pro-SPIRAL gasket is equipped with an outer ring, so called centring, which increases resistance to blowing the seal. Standard centring ring is made of carbon steel, painted, or galvanized. The gasket is designed for flanges with flat or raised gasket face.

PRO-SPIRAL PZW

The Pro-Spiral PZW gasket has an outer (centring) ring and an inner (reinforcing) ring and has excellent compression strength. As standard, the inner ring is made of the same material as the sealing part. Recommended for use on flanges with flat and raised face above PN 63 (class 300).

PRO-SPIRAL PW

Pro-Spiral PW gasket is equipped with an inner reinforcing ring, made of the same material as the spiral part; besides its reinforcing function, it reduces the dead space of the connection, reduces erosion of flanges; type designed for installation on flanges with a spline, even at very high pressures.

ADVANTAGES OF USING THE EXTERNAL RING
o ensures optimum sealing between the bolts
o prevents the sealing element from being torn apart
o prevents overloading and excessive compression of the sealing element
o prevents radial extrusion of such soft filler as PTFE
For the above reasons, it is advisable to use spiral ring seals equipped with an external centring ring.

ADVANTAGES OF USING THE INNER RING
o prevents radial extrusion of the filling material (PTFE)
o reduces turbulence
o minimizes flow resistance and gap corrosion
o acts as a heat shield when the gasket is subjected to high temperatures.

Inner and outer rings are recommended especially on those seals that exceed a 600LBS rating, and even more so for high temperature and pressure service, optimizing the reliability of the sealing element.

MATERIAL SELECTION
The inner ring and the sealing element strip should be made of the same steel as the flanges. This prevents problems with corrosion and different thermal expansion of the materials. The outer centring ring is generally manufactured from carbon steel, which is protected against corrosion (e.g., by zinc plating, cadmium plating or paint).

Filling material	Application temperature [°C]		pH	Application	Colour
	min	max			
graphite	200	550	0-14	corrosive medium	grey
PTFE	200	250	0-14	corrosive medium	white
ceramic	200	1100	-	very high temperature	celadon
mica	200	1000	-	high temperatures	pink

Steel type	CSN spec.	DIN spec.	DIN No. of material	AISI / ASTM	B>S>	temperature	
						min	max
carbon	11 375	RSt. 37.2 CS	1.0038	238-C	40B	-40	550
stainless	17 240	X5CrNi 18	1.4301	304	304S15/16/31	-250	550
stainless	17 247	X10CrNiTi 189	1.4541	321	321S12/49/87	-250	550
stainless	17 249	X2CrNi 189	1.4306	304L	304S11	-250	550
stainless	17 251	X15CrNiSi 2012	1.4828	309	309S24	-100	1000
stainless	17 346	X5CrNiMo 1810	1.4401	316	316S31/33	-100	550
stainless	17 348	X10CrNiMoTi 1810	1.4571	316Ti	320S31	-100	550
stainless	17 349	X2CrNiMo 1810	1.4404	316L	316S11/13	-100	550

Sealing element	Tolerance [mm]	D [mm]	b max [mm]	t 2 mm	Recommended thickness after installation [mm]
standard	0,25	15 - 630	35	3	3,2 - 3,4
4,8		631 - 1600 1601 - 2000	30 20		
7,2	0,35	100 - 3200	33	5	5,3 – 5,6
6,4	0,3	100 - 1600 1601- 3200	30 25	4	4,7 – 4,9
3,5	0,25	15 - 1000	25	2	2,3 – 2,5
3,2	0,25	15 - 1000	20		
2,5	0,25	15 - 500	10	1,5	1,8 – 2,0

t1 - thickness of sealing element
t2 - thickness of external ring
D - internal diameter of sealing element
b max - width of sealing element