

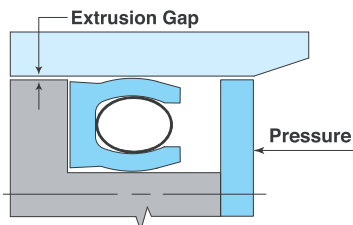
Temperature, Pressure and Extrusion Gap

HT/HP Sealing

When sealing high pressures and/or high temperatures, the size of the extrusion gap behind the seal becomes critical.

This extrusion gap is the clearance between the hardware members. Hardware designs without bearing or centering devices must consider the diametral clearance as the maximum extrusion gap. The combination of high pressures and/or high temperatures, excessive clearance can allow the seal jacket to extrude into the gap causing premature failure.

The extrusion gap should be held to the minimum, and should not exceed the values shown in the table (right). Increasing the heel thickness of the seal improves resistance to extrusion. Also, the extrusion gap can be bridged by the use of a separate back-up ring arrangement.



Generally, the back-up ring should be of a harder material than the seal material. A high filled PTFE compound, or a high modulus plastic such as A22, is recommended. See materials shown on page 14. Additional back-up ring details are shown on Page 12.

Cryogenic Sealing

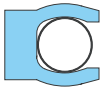
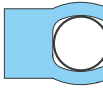
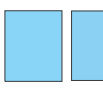
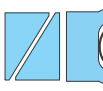
Cold temperatures below -40°C will cause PTFE and other polymer sealing materials to shrink and harden. These additional forces may compromise the spring load and frictional characteristics of the OmniSeal.

Although face seals are less affected than radial seals, we recommend consulting our Seal Technical Support team before selecting an OmniSeal for any cryogenic application.

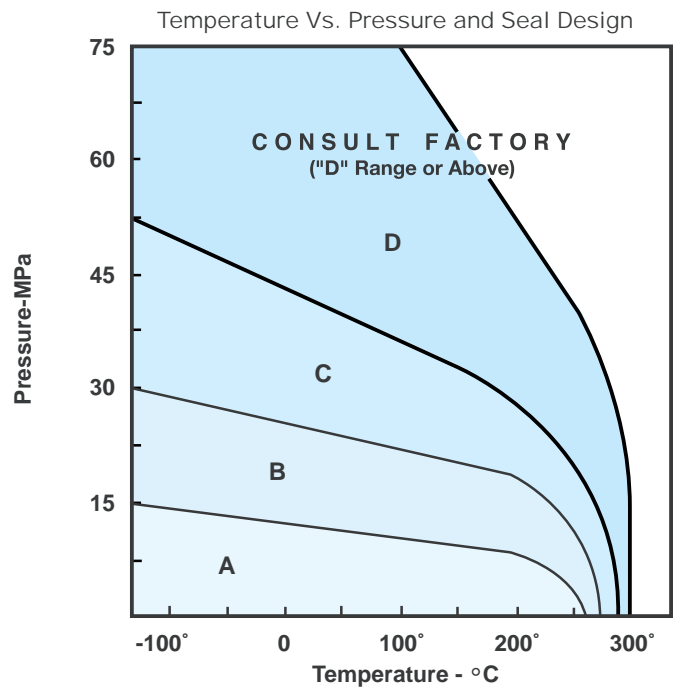
Seal Design Vs. Temperature

In general, seal jacket materials become somewhat harder at cold temperatures and tend to soften to some extent at high temperatures (see material list on Page 14 for temperature ranges). The spring energiser compensates for these conditions. If your seal design selection does not agree with the graph (right), contact our Technical Support. (see inside back cover for complete information.)

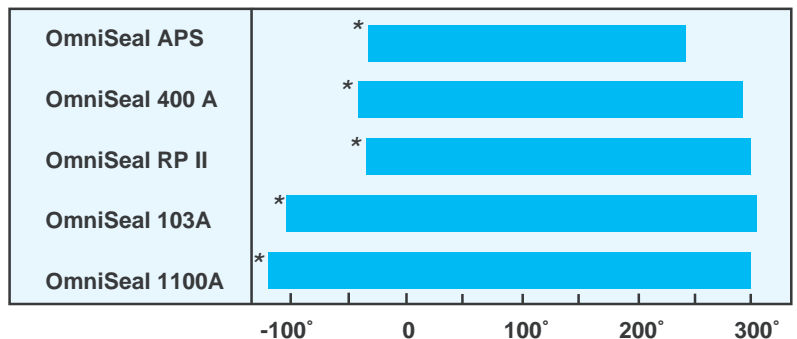
Maximum Recommended Extrusion Gap

(OmniSeal 103A Shown for Illustration Only)			A	B	C	D
	Unfilled		0,10	0,07	0,05	—
	Filled		0,15	0,10	0,07	—
	Unfilled		0,15	0,10	0,07	—
	Filled		0,20	0,15	0,10	0,07
	Filled—Back-Up		0,20	0,15	0,10	0,07
	A22—Back-Up		0,25	0,20	0,15	0,10
	Filled—Back-Up		0,25	0,20	0,15	0,10
	A22—Back-Up		0,35	0,25	0,20	0,15

Note: Consult Technical Support for extrusion gap information regarding specific applications.



Seal Design Vs. Temp. Chart.



* For temp. below -20°C consult factory