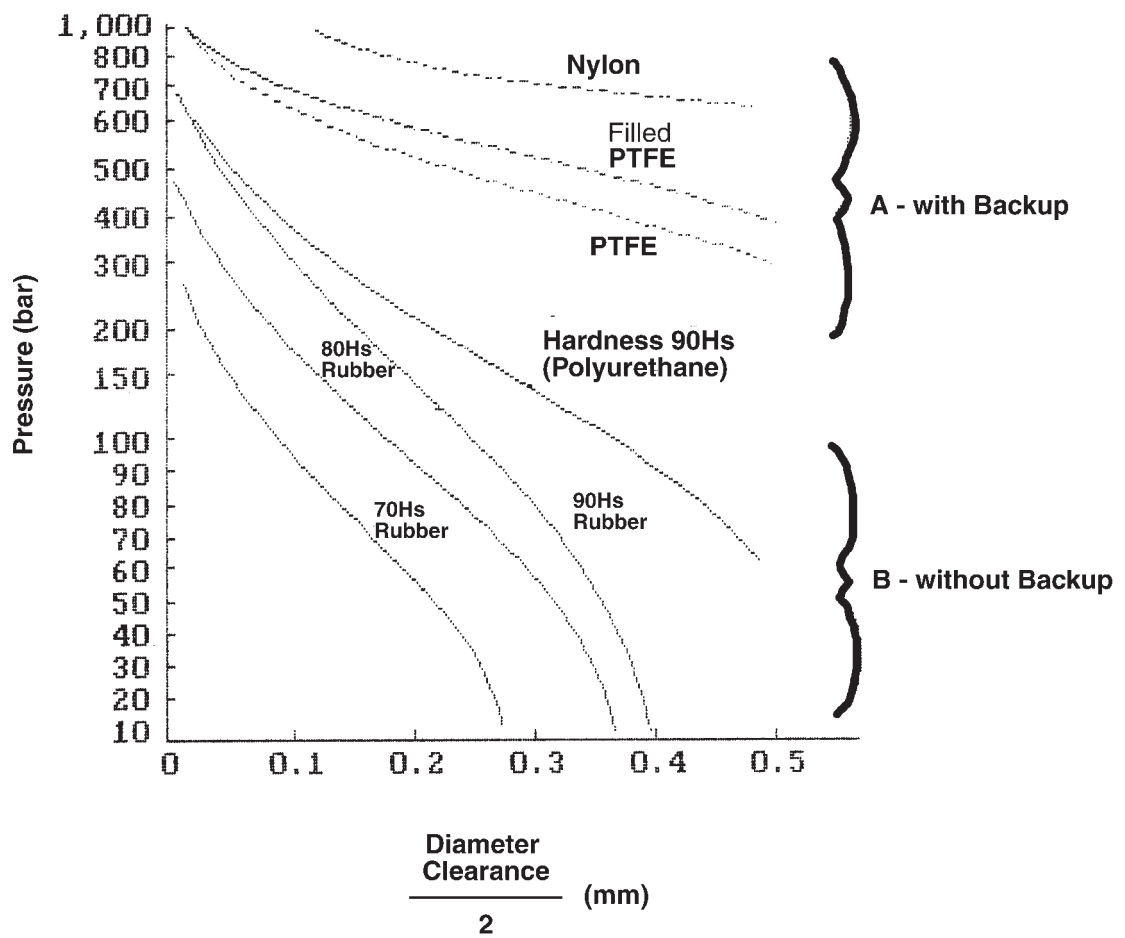
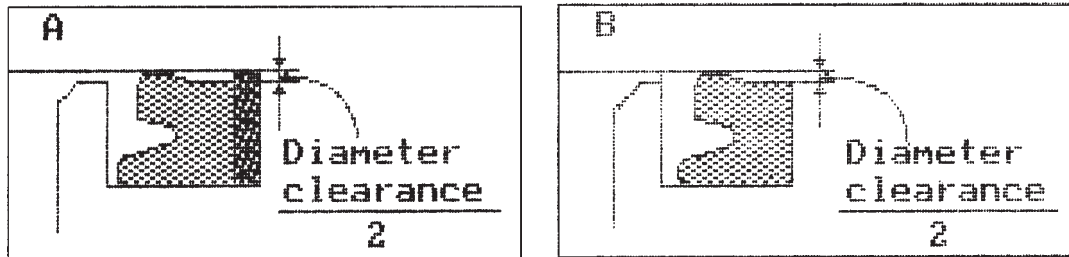
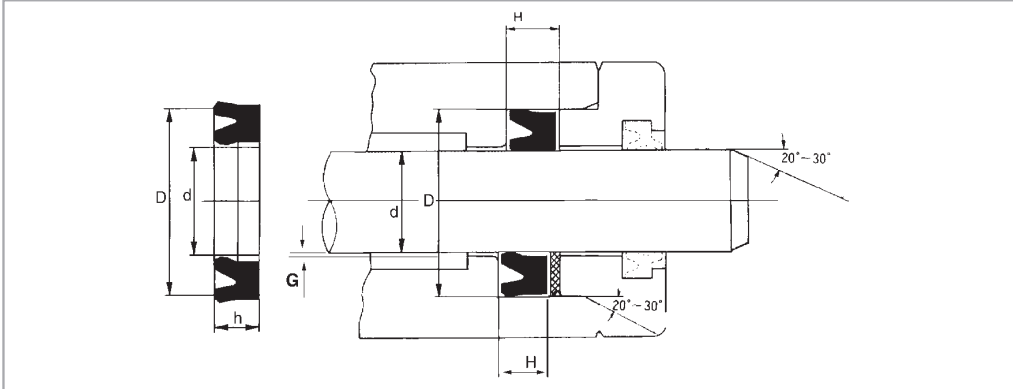


Extrusion limit curve for U seals with and without back-up rings



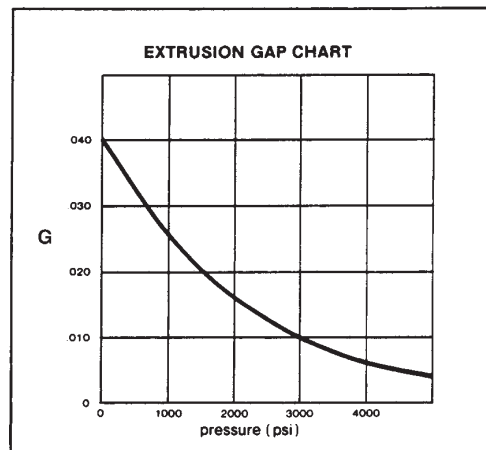
## Extrusion limit curve for U seals with and without back-up rings



**U Seal  
Urethane  
Imperial**

Please refer to the U-CUP ROD and PISTON APPLICATION CHARTS for recommended cylinder diameter tolerance, rod diameter tolerance, and the corresponding groove diameter tolerances for cylinders and rods up to 20.000" diameters.

The EXTRUSION GAP CHART provides recommendations for the maximum acceptable extrusion gap at various pressure ranges. Eccentricity, ovality, bearing clearance, and normal wear of the mating parts must be considered when calculating the extrusion gap and in no instance should the gap exceed 10% of the seal radial cross section. This chart is intended as a guide and each application should be thoroughly tested.



**Energised  
Version**

### U-CUP PISTON APPLICATION

Diameter Range	Cylinder Diameter Tolerance	Groove Diameter Tolerance
.000 to 0.750	+ .002 - .000	+ .000 - .002
.750 to 1.500	+ .002 - .000	+ .000 - .002
1.500 to 3.000	+ .003 - .000	+ .000 - .003
3.000 to 4.500	+ .003 - .000	+ .000 - .004
4.500 to 7.000	+ .004 - .000	+ .000 - .005
7.000 to 10.000	+ .005 - .000	+ .000 - .006
10.000 to 15.000	+ .005 - .000	+ .000 - .007
15.000 to 20.000	+ .006 - .000	+ .000 - .008

### U-CUP ROD APPLICATION

Diameter Range	Rod Diameter Tolerance	Groove Diameter Tolerance
.000 to 1.500	+ .000 - .002	+ .002 - .000
1.500 to 3.000	+ .000 - .002	+ .003 - .000
3.000 to 4.500	+ .000 - .003	+ .003 - .000
4.500 to 7.000	+ .000 - .003	+ .004 - .000
7.000 to 10.000	+ .000 - .003	+ .004 - .000
10.000 to 15.000	+ .000 - .003	+ .004 - .000
15.000 to 20.000	+ .000 - .003	+ .005 - .000