

Metal C-Ring External Pressure

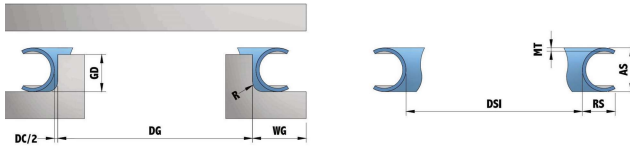
Common Metallic Material Options

• Alloy 718 • Alloy X-750 • 316 SS

Common Plating Options

• Silver • Nickel • Gold • Stannum • Copper • PTFE

Groove and Seal Design



Seal: $DSI = DG + DC + (\text{Plating thickness} \times 2)$
Groove: $DG = DSI - DC - (\text{Plating thickness} \times 2)$

Groove Finish Recommendation

Groove finish is a critical factor for metal seal. Depend on different medium, Sonkit recommend the following groove surface roughness

Medium	For metal seal with plating	For meta seal without plating
Viscous media	Ra = 1.6 – 2.5	Ra = 0.8 – 1.6
Liquid media	Ra = 0.4 – 0.8	Unrecommended
Vacuum/ gases	Ra = 0.2 -0.6	Unrecommended



CE

Note: O.R. = On Request, Performance data is based on Alloy 718, without plating

Groove Dimension				Seal Dimension						Performance					
DG	GD	WG	R	AS		RS		MT		DC		Load		SB	
Groove Diameter Range	Groove Depth Range	Width Groove (mm)	Radius (max)	Axial Section	Tolerance On AS (cross section)	Radial Section		Material Thickness		Diametrical clearance		Nmm Circumference		Spring Back (mm)	
						M	H	M	H	M	H	M	H	M	H
6 - 25	0.64-0.69	1.02	0.25	0.79	±0.05	0.71	0.13	0.18	0.08	30	65	0.04	0.03		
8-50	0.94 -1.02	1.40	0.30	1.19	±0.05	0.96	0.13	0.20	0.13	20	50	0.05	0.04		
10-200	1.27-1.37	1.91	0.38	1.57	±0.05	1.26	0.15	0.25	0.15	20	60	0.08	0.06		
13-200	1.60-1.68	2.30	0.45	2.00	±0.05	1.60	0.25	O.R.	0.20	45	O.R.	0.06	O.R.		
13-200	1.76-1.85	2.50	0.47	2.20	±0.05	1.76	0.25	O.R.	0.22	45	O.R.	0.08	O.R.		
13-400	1.91-2.01	2.67	0.51	2.39	±0.05	1.91	0.25	0.38	0.24	45	95	0.10	0.08		
20-400	2.23-2.34	3.10	0.55	2.79	±0.05	2.25	0.38	O.R.	0.28	70	O.R.	0.12	O.R.		
30-600	2.54-2.67	3.43	0.76	3.18	±0.08	2.54	0.38	0.51	0.32	55	105	0.15	0.13		
45-600	2.88-3.02	3.90	0.90	3.60	±0.08	2.88	0.41	O.R.	0.36	50	O.R.	0.12	O.R.		
45-750	3.18-3.30	4.32	1.27	3.96	±0.08	3.17	0.41	0.61	0.39	45	115	0.20	0.17		
75-800	3.52-3.69	4.70	1.27	4.40	±0.08	3.52	0.41	O.R.	0.44	40	O.R.	0.21	O.R.		
75-900	3.84-3.99	5.08	1.27	4.78	±0.10	3.82	0.51	0.76	0.47	60	145	0.22	0.18		
75-900	4.00-4.20	5.30	1.27	5.00	±0.10	4.01	0.51	O.R.	0.50	55	O.R.	0.23	O.R.		
75-900	4.16-4.37	5.50	1.27	5.20	±0.10	4.16	0.51	O.R.	0.52	55	O.R.	0.23	O.R.		
75-1000	4.48-4.70	5.90	1.27	5.60	±0.10	4.50	0.51	O.R.	0.56	50	O.R.	0.22	O.R.		
100-1200	5.08-5.28	6.60	1.52	6.35	±0.10	5.08	0.64	0.97	0.64	65	175	0.30	0.27		
100-1500	6.32-6.58	8.22	1.52	7.90	±0.10	6.32	0.97	O.R.	0.79	130	O.R.	0.30	O.R.		
300-2000	7.62-8.03	9.65	1.52	9.53	±0.10	7.62	0.97	1.27	0.96	100	185	0.40	0.32		
600-3000	10.16-10.67	12.70	1.52	12.70	±0.13	10.16	1.27	1.65	1.27	125	230	0.55	0.48		

Typical Applications

- Aerospace • Oil & gas • Injection systems
- Valves • Cryocoolers • Exhaust
- Lasers • Vacuum applications • Hot mold
- Power generation (GT, ST-casing, heat exchangers, Nuclear waste)



In house lab



In house HT



Test Report