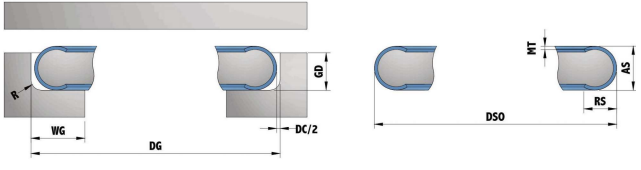
Metal C-Ring Internal Pressure

Common Metallic Material Options
• Alloy 718 • Alloy X-750 • 316 SS
Common Plating Options
• Silver • Nickel • Gold • Stannum • Copper • PTFE

Groove and Seal Design

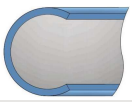


Seal: DSO = DG -DC – (Plating thickness) X 2
Groove: DG = DSO + DC + (Plating thickness) X 2

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



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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 (min)	Radius (max)	Axial Section	Tolerance On AS (cross section)	Radial Section	Material Thickness M	Material Thickness H	Diametrical clearance	N/mm Circumference M	N/mm Circumference H	Spring Back (mm) M	Spring Back (mm) 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

Metal C-Ring External Pressure

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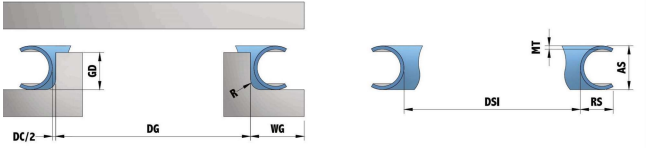
Groove and Seal Design



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CE

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