

Metal V-Ring External Pressure

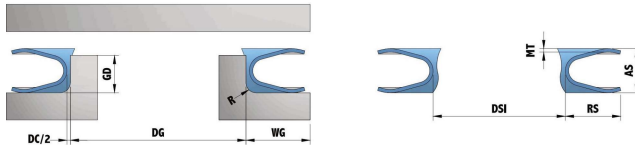
Common Metallic Material Options

- Alloy 718

Common Plating Options

- Silver

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



Note: Load and spring back figures are based on Alloy 718 in the heat-treated condition. Actual performance should be accordingly considered due to various working conditions. Tolerances on groove depth, plating, diametrical clearance, and differences in material batches can create differences of up to 100% for the cross section less than 3mm, down to 50% for the bigger cross section.

Groove Dimension				Seal Dimension						Performance	
DG	GD	WG	R	AS		RS	MT		DC	Load	SB
Groove Diameter Range (mm)	Groove Depth Range (mm)	Width Groove	Radius (max)	Axial Section	Tolerance On AS (cross section)	Radial Section	Material No	Thickness	Diametrical clearance	N/mm Circumference	Spring Back (mm)
30-400	1.91-2.01	3.10	0.50	2.39	±0.05	2.63	M	0.25	0.14	22	0.28
45-600	2.54-2.67	4.10	0.75	3.18	±0.08	3.50	M	0.38	0.19	30	0.27
65-750	3.18-3.30	5.10	1.20	3.96	±0.08	4.36	M	0.41	0.24	22	0.37
70-900	3.84-3.99	6.20	1.20	4.78	±0.10	5.26	M	0.51	0.29	22	0.56
80-1000	4.48-4.70	7.30	1.20	5.60	±0.10	6.16	M	0.51	0.34	20	0.60
120-1800	5.08-5.28	8.30	1.50	6.35	±0.10	6.99	M	0.64	0.38	30	0.60
300-3000	7.62-8.03	12.40	1.50	9.53	±0.10	10.49	M	0.97	0.57	45	0.90
600-7600	10.16-10.67	16.50	1.50	12.70	±0.13	13.98	M	1.27	0.76	57	1.20

Typical Applications

- Gas & steam turbines
- Valves
- Swivels
- Turbochargers



In house Lab



In house HT



Test Report