

ECA Metal C-Ring Axial Seal

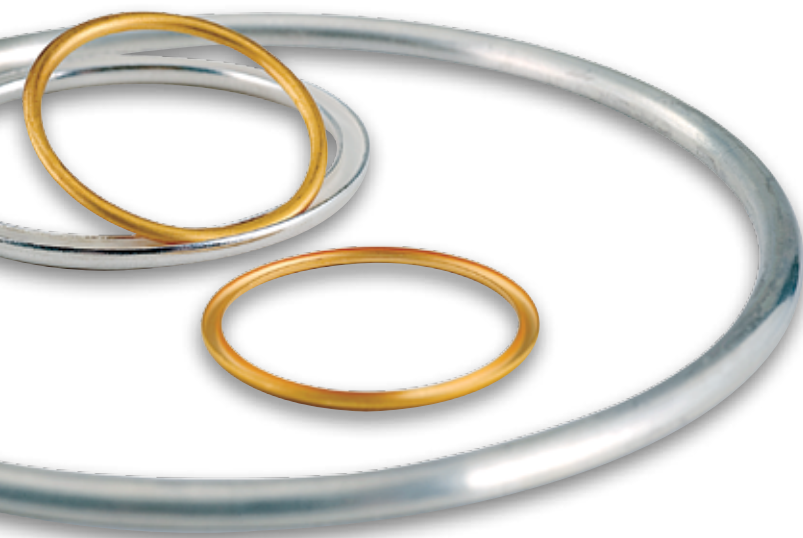
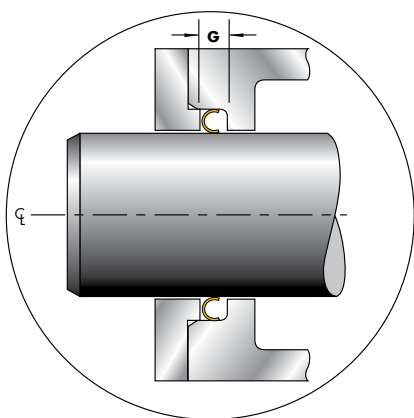
Applications:

- Static and low cycle dynamic axial sealing.
- Fire-safe quarter turn valve stem sealing: up to 30,000 operating cycles.
- 'Plug-in' connector sealing.
- High temperature sealing of mechanical seal to shaft interface.

Features:

- Close tolerance seal for light installation loads.
- Plating partially transfers to stem for low wear characteristics on quarter turn applications.

INSTALLED VIEW

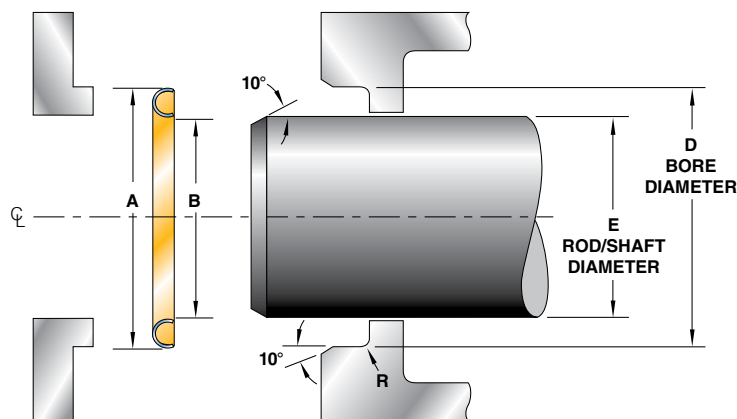


Cavity Requirements:

- Requires careful control of diametral tolerances and concentricity.

Bore Diameter D	Concentricity ⊙
≤ 3.250	0.0005
> 3.250	0.001

- Static mating surfaces should be 8 – 16 μ inch Ra, 60 Rc.
- Dynamic mating surfaces should be 4 – 8 μ inch Ra, 60 Rc.



Cavity Dimensions

Nominal Cross Section	D		E		G	R
	Bore Diameter		Rod/Shaft Diameter		Min. Width	Max. Radius
	Range	tol.	tol.			
1/16	0.500–1.500	+0.001 -0.000	D _{min} –0.123	+0.000 -0.001	0.051	0.015
	1.501–1.750	+0.001 -0.000	D _{min} –0.121	+0.000 -0.001	0.051	0.015
3/32	1.188–1.500	+0.001 -0.000	D _{min} –0.185	+0.000 -0.001	0.078	0.020
	1.501–3.250	+0.001 -0.000	D _{min} –0.183	+0.000 -0.001	0.078	0.020
1/8	2.000–3.250	+0.001 -0.000	D _{min} –0.246	+0.000 -0.001	0.104	0.030
	3.251–6.000	+0.002 -0.000	D _{min} –0.242	+0.000 -0.002	0.104	0.030
	6.001–8.000	+0.002 -0.000	D _{min} –0.238	+0.000 -0.002	0.104	0.030
5/32	3.250–6.000	+0.002 -0.000	D _{min} –0.304	+0.000 -0.002	0.129	0.050
	6.001–10.000	+0.002 -0.000	D _{min} –0.300	+0.000 -0.002	0.129	0.050
3/16	4.000–6.000	+0.002 -0.000	D _{min} –0.367	+0.000 -0.002	0.156	0.050
	6.001–12.000	+0.002 -0.000	D _{min} –0.363	+0.000 -0.002	0.156	0.050
1/4	6.000–12.000	+0.002 -0.000	D _{min} –0.488	+0.000 -0.002	0.208	0.060

All dimensions are in inches.

Part Numbering:

Refer to Section A, page A-9 for part numbering convention.
The seal size is specified in the part number as follows:

ECA - 000000 - 00 - 00 - 0 - XXN

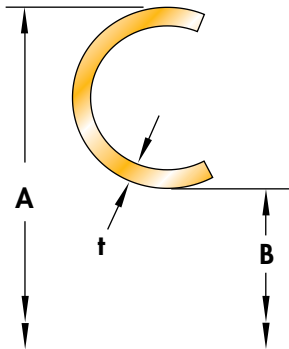
Seal O.D. prior to plating
(dimension A) to three decimal
places (Example: A 3.000 inch
seal is specified as 003000)

Metal Seal Cross Section Code

Material (Section D)

Temper (Section D)

Standard plating thickness for ECA
seal is 0.001 to 0.002 (thickness code N)

**Seal and Cavity Sizing:**

From Bore Diameter (dim. D) derive the Rod/Shaft Diameter
(dim. E) and Seal O.D. (dim. A) using the tables below.



Section C
Metal Seal Size Selection

Seal Dimensions					Pressure Rating
Nominal Cross Section	A	B	t	Cross Section Code	Working Pressure Rating (psi)
	Seal O.D.	Seal I.D.	Material Thickness		
	tol.	tol.			
1/16	D _{min} +0.003 ±0.001	A – 0.129 ±0.001	0.006	05	57,000
	D _{min} +0.004 ±0.001	A – 0.129 ±0.001			
3/32	D _{min} +0.003 ±0.001	A – 0.191 ±0.001	0.010	07	23,500
	D _{min} +0.003 ±0.001	A – 0.191 ±0.001			
1/8	D _{min} +0.004 ±0.001	A – 0.254 ±0.001	0.015	09	38,000
	D _{min} +0.006 ±0.002	A – 0.254 ±0.002			
	D _{min} +0.008 ±0.002	A – 0.254 ±0.002			
5/32	D _{min} +0.006 ±0.002	A – 0.316 ±0.002	0.016	11	31,000
	D _{min} +0.008 ±0.002	A – 0.316 ±0.002			
3/16	D _{min} +0.006 ±0.002	A – 0.379 ±0.002	0.020	13	32,500
	D _{min} +0.008 ±0.002	A – 0.379 ±0.002			
1/4	D _{min} +0.008 ±0.002	A – 0.504 ±0.002	0.025	15	30,000

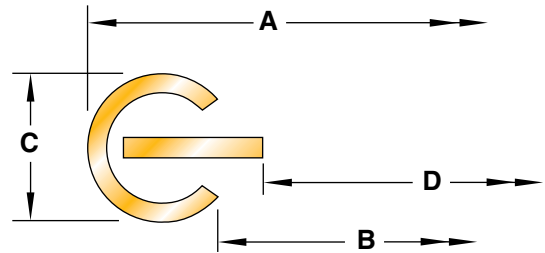
All dimensions are in inches and prior to plating.

Part Number/Ordering:

Simply refer to the table below to determine the appropriate boss seal part number for the specific MS Dash Number.

The standard boss seal is made from Alloy X-750, work hardened, and silver plated to a thickness of 0.0005 to 0.001 inch.

Other materials are available. Please contact your local representative for assistance.



		Seal Dimensions				
MS Dash Number	Boss Seal Part Number	A O.D. (tol. +0.000, - 0.005)	B Seal I.D. (min.)	C Free Height (tol. $\pm$ 0.002)	Material Thickness	D Washer I.D. Ref
- 02	66690-02-07-1-SPA	0.381	0.302	0.047	0.006	0.278
- 03	66690-03-07-1-SPA	0.444	0.365	0.047	0.006	0.341
- 04	66690-04-07-1-SPA	0.506	0.427	0.047	0.006	0.397
- 05	66690-05-07-1-SPA	0.569	0.490	0.047	0.006	0.459
- 06	66690-06-07-1-SPA	0.631	0.552	0.047	0.006	0.517
- 07	66690-07-07-1-SPA	0.694	0.615	0.047	0.006	0.579
- 08	66690-08-07-1-SPA	0.819	0.740	0.047	0.006	0.699
- 09	66690-09-07-1-SPA	0.882	0.803	0.047	0.006	0.761
- 10	66690-10-07-1-SPA	0.944	0.865	0.047	0.006	0.817
- 11	66690-11-07-1-SPA	1.100	1.021	0.047	0.006	0.932
- 12	66690-12-07-1-SPA	1.156	1.051	0.062	0.010	0.995
- 14	66690-14-07-1-SPA	1.281	1.176	0.062	0.010	1.120
- 16	66690-16-07-1-SPA	1.406	1.301	0.062	0.010	1.245
- 18	66690-18-07-1-SPA	1.593	1.488	0.062	0.010	1.432
- 20	66690-20-07-1-SPA	1.718	1.613	0.062	0.010	1.557
- 24	66690-24-07-1-SPA	1.968	1.863	0.062	0.010	1.807
- 28	66690-28-07-1-SPA	2.343	2.238	0.062	0.010	2.182
- 32	66690-32-07-1-SPA	2.594	2.489	0.062	0.010	2.432

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