

ECI Metal C-Ring Internal Pressure Face Seal

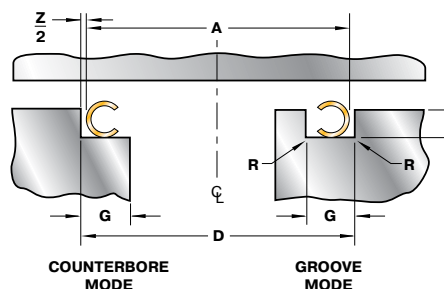
Applications:

- Excellent internally pressurized static face seal for valve assemblies, pressure vessels, jet engines, fuel injectors, separable fittings, etc.
- Moderate load permits the use of lighter flanges and fewer bolts.
- Good springback properties to accommodate thermal cycles and joint separation.
- Temperature range from cryogenics to 1450°F depending on material and application parameters. If application temperature exceeds range, contact Parker.
- Pressure range from vacuum to 55,000 psi and above.



Features:

- Wide range of 10 standard free heights from 1/32" to 1/2".
- Available in a range of diameters. See table on page 17 for details or contact us for specific availability.
- Relatively flexible for use with non-flat flanges.
- Multiple material choices for high temperature strength, good spring back, corrosion and fatigue resistance.
- Optimized one piece construction for low cost.
- Wide range of plating options (refer to page D-55) for superior sealing.
- Uses jacket strength and hydrostatic forces additively to increase sealing forces at higher pressures.
- Circular, race-track and other custom shapes available. Tri-lobed or elliptical C-rings available for snap-in/snap-out convenience.



Cavity Dimensions				
Nominal Cross Section	D	F	G	R
	O.D. Range Tolerance H10	Depth Range	Minimum Width	Maximum Radius
1/32	0.250 – 1.000	0.025 – 0.027	0.040	0.010
3/64	0.325 – 2.000	0.037 – 0.040	0.055	0.012
1/16	0.375 – 8.000	0.050 – 0.054	0.075	0.015
3/32	0.500 – 16.000	0.075 – 0.079	0.105	0.020
1/8	1.000 – 24.000	0.100 – 0.105	0.135	0.030
5/32	1.250 – 30.000	0.125 – 0.130	0.170	0.050
3/16	3.000 – 36.000	0.151 – 0.157	0.200	0.050
1/4	4.000 – 48.000	0.200 – 0.208	0.260	0.060
3/8	12.000 – 60.000	0.300 – 0.316	0.380	0.060
1/2	24.000 – 60.000	0.400 – 0.420	0.500	0.060

All dimensions are in inches. The tolerance reference table can be found on page F-85.

Part Numbering:

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

ECI - 000000 - 00 - 00 - 0 - XXX

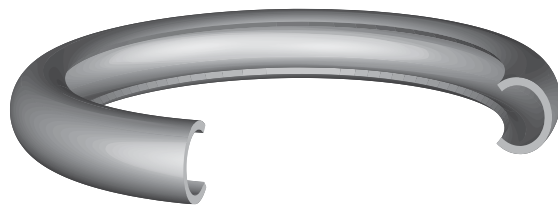
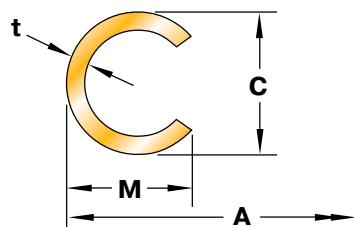
Seal I.D. prior to plating
(dimension A) to three decimal
places. (Example: A 3.000 inch
seal is specified as 003000)

Metal Seal Cross Section Code

Material (Section D)

Temper (Section D)

Plating, Coating or Finish (Section D)



Seal and Cavity Sizing:

Seal free height is based on cavity diameter and depth alone. Seal diameter (dimension A) is derived below.

$$A = D - Z - 2P_{\max}$$

(tolerance h11, see page F-85)

Where: D = Maximum cavity O.D.

Z = Diametral clearance between cavity and seal

P_{max} = Maximum plating thickness (from page D-56)

Seal Dimensions					
Nominal Cross Section	Z Diametral Clearance	M Maximum Radial Width	C Free Height	t Material Thickness	Cross Section Code
1/32	0.003	0.028	0.031 ±0.002	0.006	01
				0.007	02
3/64	0.005	0.038	0.047 ±0.002	0.006	03
				0.008	04
1/16	0.006	0.050	0.062 ±0.002	0.006	05
				0.010	06
3/32	0.008	0.075	0.094 ±0.002	0.010	07
				0.015	08
1/8	0.012	0.100	0.125 ±0.003	0.015	09
				0.020	10
5/32	0.016	0.125	0.156 ±0.003	0.016	11
				0.024	12
3/16	0.018	0.150	0.188 ±0.004	0.020	13
				0.030	14
1/4	0.020	0.200	0.250 ±0.004	0.025	15
				0.038	16
3/8	0.030	0.300	0.375 ±0.004	0.038	17
				0.050	18
1/2	0.040	0.400	0.500 ±0.005	0.050	19
				0.065	20

Performance		
Seating Load (pounds per inch circumference)	Springback (inches)	Working* Pressure Rating (psi)
160	0.0015	55000
230	0.001	55000
110	0.002	41000
230	0.002	55000
80	0.003	29000
280	0.002	55000
160	0.006	23500
400	0.005	55000
300	0.007	38000
600	0.006	55000
260	0.009	31000
600	0.007	53500
350	0.010	32500
750	0.008	55000
400	0.013	30000
1000	0.009	52500
600	0.020	30500
1500	0.015	43500
800	0.025	30000
1700	0.020	42000

All dimensions are in inches and prior to plating.

Performance data is based on Alloy 718 material with -6 treatment. Seal performance is discussed in Section F.

*If working pressures exceed these ratings consult Parker for recommendations.