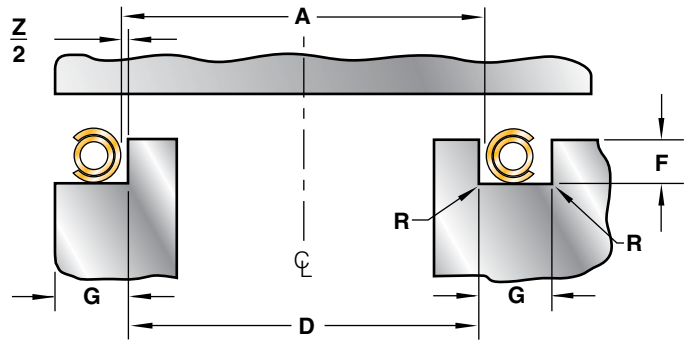
ESE Spring Energized Metal C-Ring External Pressure Face Seal

Applications:

- Similar to ECE, but higher loads for use with rougher mating surfaces.
- Externally pressurized joints. Flanges with a rougher surface finish.
- Internally pressurized joints to avoid passage of working fluid into the seal cavity (reduced working pressure rating).

Features:

- Lowest leak rate.
- Internal spring provides high pressure capabilities of up to 38,000 psi.
- All plating options available.
- Excellent footprint with good plastic flow of plating material.
- Available in any diameter from 0.650" to 120", plus hundreds of preferred sizes (see page E-90).
- Wide range of eight standard free heights from 1/16" to 1/2".
- Multiple material choices for high temperature strength, good spring-back, corrosion and fatigue resistance.
- Uses jacket forces, spring forces and hydrostatic forces additively to increase sealing forces at higher pressures when used with external pressurization.
- Circular, race-track and other custom shapes available. Tri-lobed or elliptical Spring Energized C-rings available for snap-in/snap-out convenience.



OPEN GROOVE MODE

GROOVE MODE

Cavity Dimensions				
Nominal Cross Section	D I.D. Range Tolerance h10	F Depth Range	G Minimum Width	R Maximum Radius
1/16	0.650 – 8.000	0.050 – 0.054	0.090	0.015
3/32	0.900 – 16.000	0.075 – 0.079	0.125	0.020
1/8	1.000 – 24.000	0.100 – 0.105	0.160	0.030
5/32	1.250 – 30.000	0.125 – 0.130	0.200	0.050
3/16	3.000 – 36.000	0.151 – 0.157	0.250	0.050
1/4	4.000 – 72.000	0.200 – 0.208	0.350	0.060
3/8	12.000 – 120.000	0.300 – 0.316	0.500	0.060
1/2	24.0000 – 300.000	0.400 – 0.420	0.650	0.060

All dimensions are in inches.
The tolerance reference table can be found on page E-92.

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Part Numbering:

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

ESE - 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.

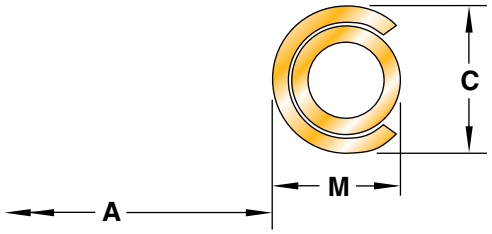
$$A = D + Z + 2P_{max}$$

(tolerance H11, see page E-92)

Where: D = Maximum cavity I.D.

Z = Diametral clearance between cavity and seal

P_{max} = Maximum plating thickness (from page D-60)



Seal Dimensions					Performance		
Nominal Cross Section	Z Diametral Clearance	M Maximum Radial Width	C Free Height	Cross Section Code	Seating Load (pounds per inch circumference)	Springback (inches)	Working Pressure Rating (psi)
1/16	0.006	0.059	0.062 +0.003 -0.002	05	500	0.003	29000
3/32	0.008	0.087	0.094 +0.004 -0.002	07	850	0.005	32500
1/8	0.012	0.114	0.125 +0.004 -0.002	09	950	0.006	38000
5/32	0.016	0.144	0.156 +0.004 -0.002	11	1300	0.008	31000
3/16	0.018	0.173	0.188 +0.005 -0.004	13	1500	0.009	32500
1/4	0.020	0.230	0.250 +0.006 -0.004	15	2000	0.011	30000
3/8	0.030	0.342	0.375 +0.008 -0.004	17	2500	0.017	30500
1/2	0.040	0.456	0.500 +0.010 -0.005	19	2900	0.022	30000

All dimensions are in inches.
Performance data is based on Alloy X-750 jacket and spring. Seal performance is discussed in Section E.
If working pressures exceed these ratings consult Parker for recommendations.