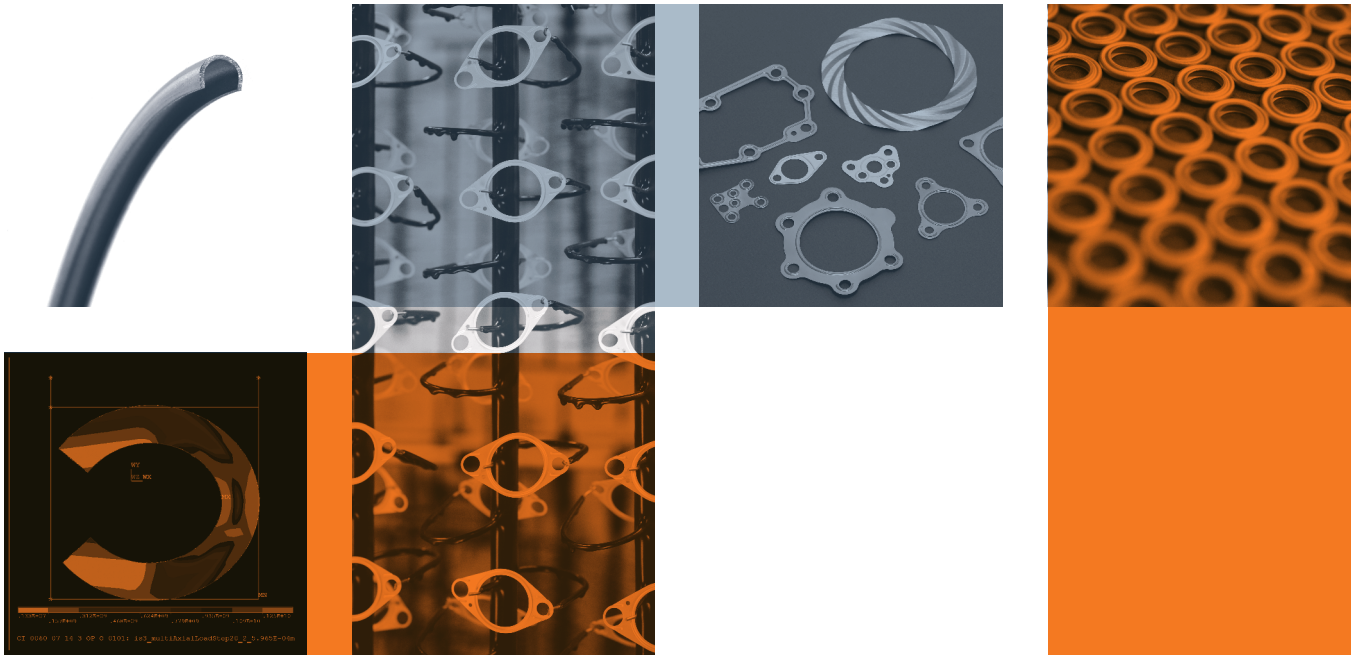
Nicholsons



Catalogue

Imperial
Issue A (09/25)

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Nicholsons

Company Overview

Nicholsons Group is a global specialist in the design and manufacture of resilient metal seals and gaskets. Our extensive range of precision metal seals offers sealing solutions for extreme temperature, pressure and compression applications.

Established in 1923, Nicholsons has design, sales and manufacturing sites in the UK and EU. We have the experience and global presence to support you with your sealing requirements.

Our seals are used in a number of sectors including:

– Aerospace
– Automotive
– Oil and Gas
– Power Generation
– Nuclear
– Medical

Our metal seals are capable of sealing a wide range of media from helium gas to heavy oil, operating in extreme environments from cryogenic to high temperatures, and vacuum to high pressures.

Our Complete Engineering Service

Nicholsons deliver a complete engineering service from design and prototype manufacture to full volume production of standard, optimised and fully bespoke seals.

Our team of Engineers have significant experience in designing the optimum seal for a wide range of customer applications and use a variety of methods during the development process of a design. Our design engineering capabilities include:

– Non-Linear Finite Element Analysis (FEA)
– Stress, fatigue and buckling analysis
– Modelling of loads, pressure effects, modification of part geometry and cavity relaxation
– Qualification testing specific to customer requirements
– Physical testing and measurement including load vs deflection, pressure testing and fatigue testing

For more specific testing requirements, we work with third party consultants, Universities and test facilities.

Our Production Engineering Departments develop and manufacture rolling, press and forming tools, as well as the specialist machines required during the manufacturing process. Production Engineers identify the most controlled and cost-effective method of manufacture for each new part and continually focus on the development and improvement of precision forming and rolling methods to ensure that manufacturing methods continue to progress.

Our in-house production capabilities include welding, rolling, forming, laser-cutting, machining, heat treatment and chemical processing. Quality is key when designing and manufacturing parts for safety critical and extreme environments. Nicholsons hold ISO, AS and TS accreditations and are Nadcap approved for various special processes.

Nicholsons Engineering and Sales teams work closely with our customers to ensure projects are managed in line with, and exceed, customer expectations. We recommend that you involve us as early as possible in your design process to ensure that the most appropriate sealing solution is specified in terms of performance, cost and lead time.

Nicholsons Metal Seals

Customer requirements are becoming more demanding in terms of increased temperatures, leakage legislation, length of product life and the need for greater efficiencies. Our metal seals are able to cope with and support these demands.

Benefits of Metal Seals:

– Available in a wide range of sections, materials, heat treatments and finishes
– Able to cope with large thermal movement of hardware
– Can be adapted to suit multiple hardware arrangements
– No issues related to explosive decompression
– Long shelf life

Our core product range includes the following seal types:

– Corruseal Gasket
– C-Seal
– Boss Seal
– Corruplus
– E-Seal
– High Temperature Duct Seal
– Sigma Seal
– Multi Bellow Seal (W-Seal/M-Seal)

The product groups fall into one of three main categories:

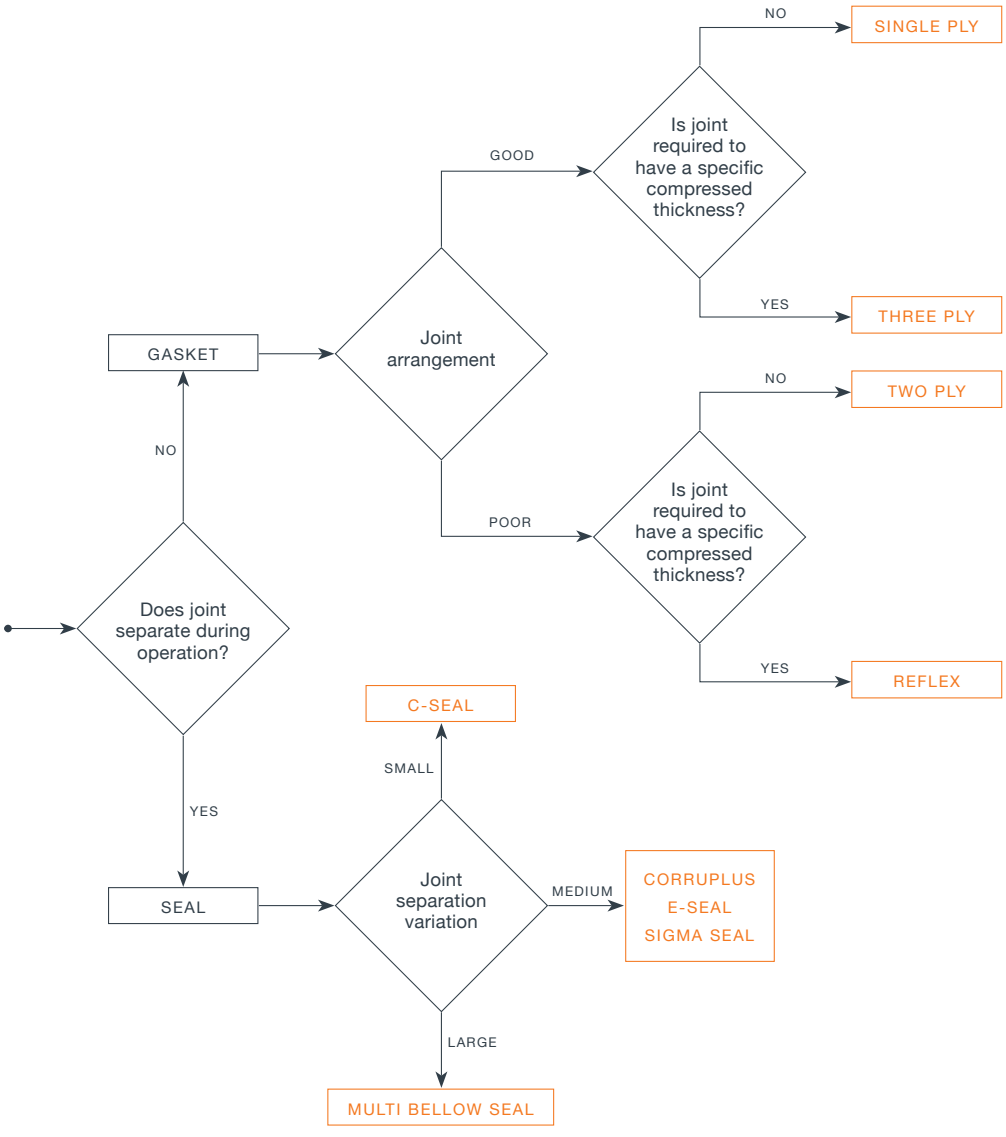
– Standard Parts: Corruseal Gasket, Boss Seal, Corruplus, High Temperature Duct Seal
– Part numbers that can be built to a variety of specifications: C-Seal, E-Seal
– Seal sections that require design input: Sigma Seal, Multi Bellow Seal

This catalogue includes Nicholsons core product groups, however, it does not cover the full range of sealing options that we have available. Each product type can be adapted to meet non-standard applications and product types not listed in this catalogue can also be specified. In these instances, contact one of our Design Engineers who will be able to assist you with your sealing requirements.

Nicholsons part numbers that have been designed for specific applications typically have either a ‘NA’, ‘NS’ or ‘S’ prefix.

Seal Types

The choice of seal type is dependent on a variety of factors. The flow chart below guides you through some of the choices. This is a basic guide and a number of other factors may influence the choice of seal including temperature, pressure, clamping load and available space.



If other factors are influencing your seal selection or you wish to discuss your application, please consult us.

Seal Material

		GASKETS			SEALS				
MATERIAL	PART NO. CODE	Corruseal	Two Ply	Reflexseal	C-Seal	Corruplus	Sigma Seal	E-Seal	Multi Bellow Seal
Aluminium	·	•	·	·	·	·	·	·	·
Cupro-nickel	·	•	•	·	·	·	·	·	·
Mild steel	·	•	•	·	·	·	·	·	·
Stainless steel	13	•	•	•	•	·	·	·	·
Inconel 600	·	•[2]	•[2]	•[2]	•	·[2]	·	·	·
Inconel 625	·	•	•	•	•	·	·	·	·
Inconel X750	12	·	·	·	•	·	•	•	•
Inconel 718	14	·	·	·	•[1]	•[1]	○[1]	•[1]	○[1]
Rene 41	·	·	·	·	•[2]	·	•[2]	•[2]	•[2]
Waspaloy	·	·	·	·	•	·	○[1]	•	○[1]
Haynes 25	·	·	·	·	•[2]	·	•[2]	•[2]	•[2]

• Available
○ Dependant on temperature requirements
[1] Preferred option
[2] Available on request
· Not available

Heat Treatment

Heat treatment is applied to create the required material properties and improve the performance of metal seals and gaskets. This can range from annealing to reduce the seating load for gasket materials, to precipitation hardening to enhance the spring and creep properties of seal materials. The heat treatment options that we recommend for each core product group are listed below.

	GASKETS			SEALS					
MATERIAL	Corruseal	Two Ply	Reflexseal	C-Seal (Face)	C-Seal (Axial)	Corruplus	Sigma Seal	E-Seal	Multi Bellow Seal
Aluminium	1	·	·	·	·	·	·	·	·
Cupro-nickel	1	1	·	·	·	·	·	·	·
Mild Steel	1	1	·	·	·	·	·	·	·
Stainless Steel	1,8	1,8	1,8	1	1	·	·	·	·
Inconel 600	1,8	1,8	1,8	1	1	·	·	·	·
Inconel 625	1,8	1,8	1,8	1	1	·	·	·	·
Inconel X750	·	·	·	1,2,3,4,9	1	·	2,3,4,9	4	2,3,4,9
Inconel 718	·	·	·	1,3,4,9	1	4	3,4,9	4	3,4,9
Rene 41	·	·	·	1,3,4	1	·	3,4	4	3,4
Waspaloy	·	·	·	1,6,7	1	·	6,7	6	6,7
Haynes 25	·	·	·	1	1	·	1	1	1

PART NO. CODE	HEAT TREATMENT
1	Work hardened
2	Short cycle precipitation
3	Long cycle precipitation
4	Solution and long cycle precipitation
5	Not used
6	Solution, stabilisation and long cycle precipitation
7	Stabilisation and long cycle precipitation
8	Annealed
9	Solution and precipitation (NACE)
·	Material not suitable for the product type

Option 4 is the only option available for catalogue E-Seals. Option 6, 7, 8 and 9 are not available for catalogue C-Seals.

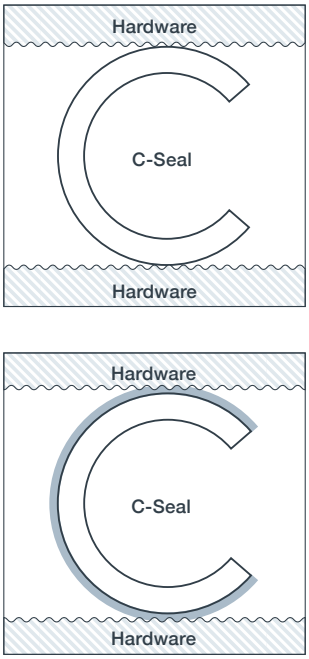
Finish

The surface properties of a metal seal can be modified by applying a plating or coating. The selection of the finish material is affected by the hardware surface finish, temperature of the application, cost restrictions and the chemical compatibility with the media and environment.

Plating improves sealing by filling in voids and surface irregularities in the hardware sealing surfaces. Coatings are also available to give high temperature protection and wear resistance.

The surface finish of the mating hardware must be considered when defining the thickness of the plating or coating. Generally, the rougher the cavity surface finish, the thicker the finish that is required for optimum sealing.

If you wish to discuss the most suitable finish material and thickness options for your application, please consult our Engineers.



Top: Unplated C-Seal
Bottom: Plated C-Seal

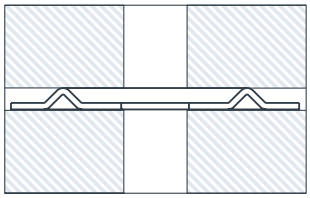
FINISH MATERIAL	PART NO. CODE	MAX. TEMPERATURE	COMMENTS
None	OP	N/A	N/A
Silver	SP	650°C/1200°F	Suitable for most applications. Anti-galling.
Nickel	NP	1200°C/2200°F	Use when temperature too high for silver. Not as soft as silver.
Copper	CP	930°C/1700°F	Specialist applications only. Good for electrical applications.
Gold	GP	930°C/1700°F	Inert. Expensive alternative to silver.
PTFE	PP	220°C/430°F	Inert. Not suitable for nuclear applications.
Indium	IP	80°C/180°F	Very soft. Low temperature only. Good for vacuum and/or cryogenic applications. Needs careful handling.
Tin	·	200°C/390°F	Very soft. Higher temperature alternative to indium. Good for vacuum and/or cryogenic applications. Needs careful handling.
Aluminium titanium nitride (AlTiN)	·	800°C/1450°F	Physical Vapour Deposition (PVD) coating. High temperature stability. Use for wear resistance.
Chromium nitride (CrN)	·	700°C/1300°F	Physical Vapour Deposition (PVD) coating. Self polishes. Work hardens. Use for wear resistance.
Tribaloy™	·	980°C/1800°F	Cobalt chromium molybdenum coating. Use for wear resistance.
Tribomet™	·	800°C/1450°F	Cobalt based coating containing chromium carbide. Use for wear resistance.

Note that these temperatures are guidance figures only.

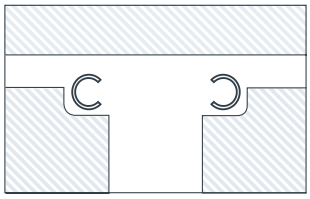
Installation Guidelines

The performance of a metal seal can be significantly affected by the hardware design, the hardware surface finish and the installation of the seal.

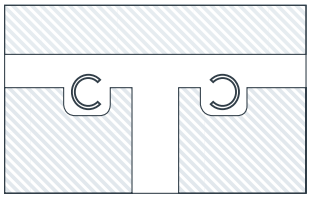
Corruseal gaskets are installed between two flat and parallel surfaces: either two flanges, or between a fitting and a flange, or under a bolt head.



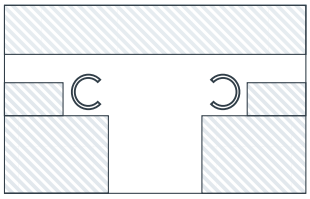
Other seals are often designed to operate in a cavity. Typical cavity arrangements are:



Counterbore



Groove



Retaining Plate

SURFACE FINISH

Surface finish of the mating hardware should ideally be as shown in the table below. The smoother the finish, the better the sealing. High temperature, high pressure and vacuum applications require smoother hardware surface finishes. A turned finish with a circular lay is preferred as it does not produce radial leak paths across the sealing line.

	GASKETS			SEALS					
FINISH (Ra)	Corruseal	Two Ply	Reflexseal	C-Seal	Corruplus	Corruplus	Sigma Seal	E-Seal	Multi Bellow Seal
Micrometres	0.8	0.8	0.8	1.6	0.8	0.4	0.8	0.8	0.8
Microinches	32	32	32	63	32	16	32	32	32
Roughness Number	N6	N6	N6	N7	N6	N5	N6	N6	N6
DIRECTION OF LAY	C	C	C	C	C	M.D	C	C	C

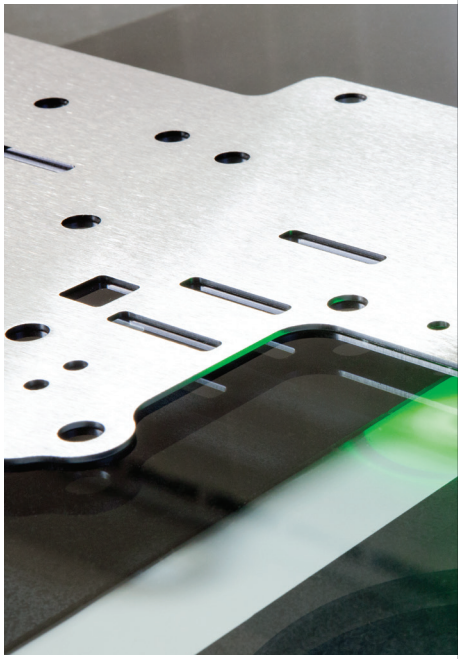
C Circular
M.D Multi-Directional

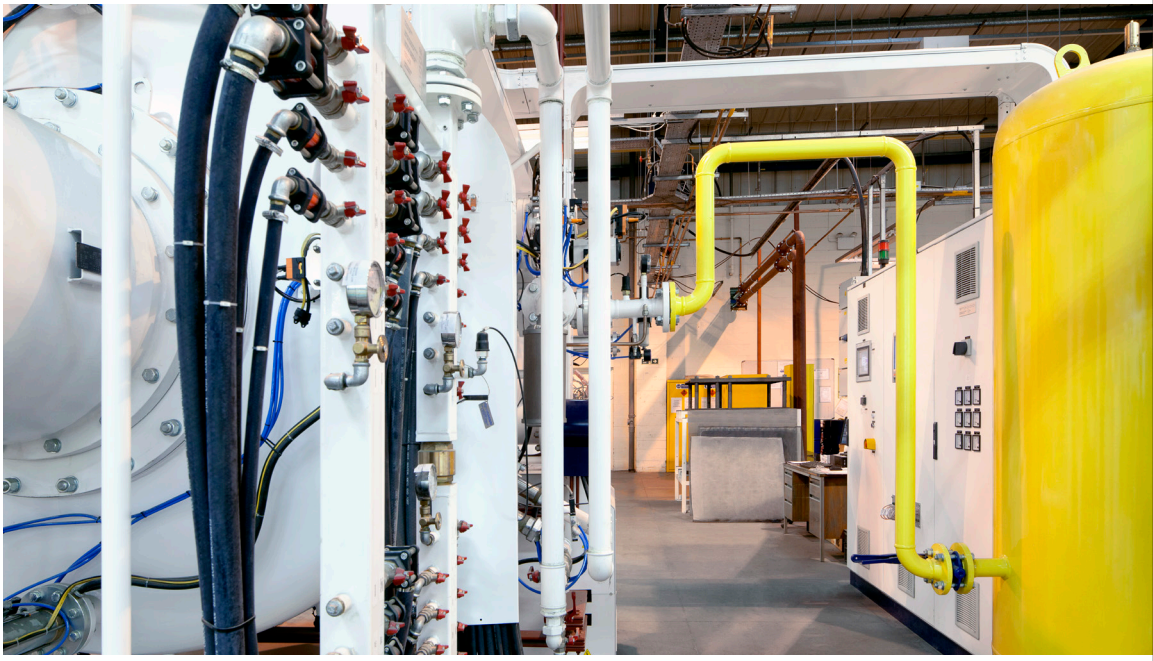
Note that finish values shown are ideal maximum values. Seals will work with values above these but sealing performance will be reduced.

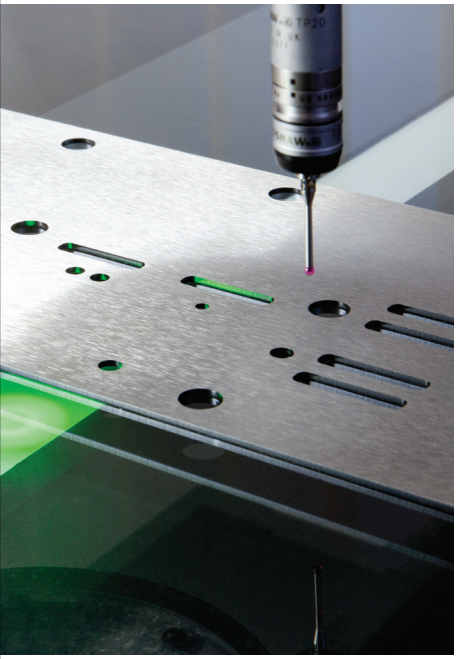
Handling Instructions

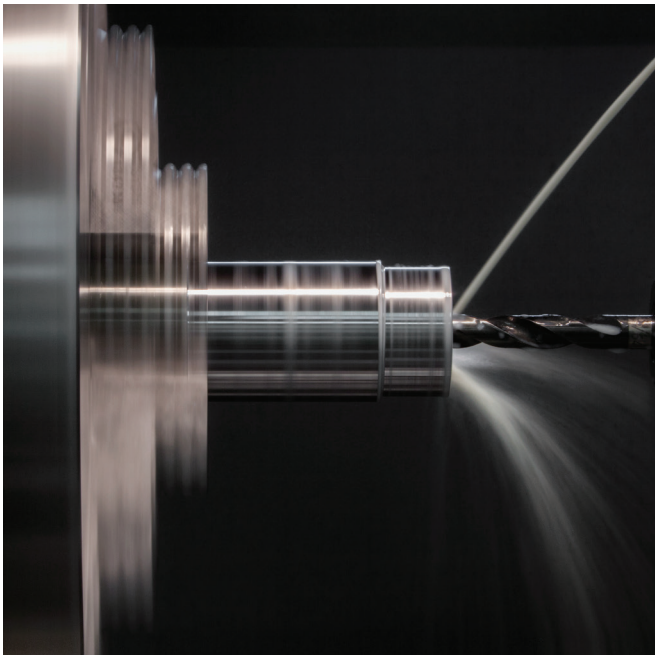
As both seal and plating can be easily damaged, we would recommend the following:

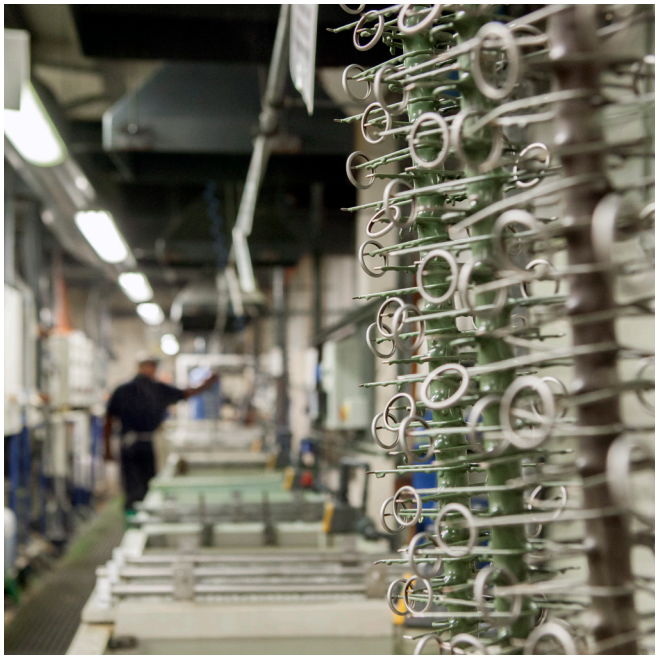
– The seals are protected during storage, i.e. not stored with other components as this will cause unnecessary contact and potential damage.
– The seal should remain in the original packaging until time of use, even on the assembly line.
– Ideally, measuring should be kept to a minimum as accidental damage can occur to the seal and more easily the plating (if applicable).
– The conditions when installing the seal should be clean, i.e. clean hands and uncontaminated hardware. The hardware should be scratch free and cleaned with acetone or equivalent prior to installing the seal.
– Place the seal carefully in the hardware, preventing scraping of the seal/plating and avoiding unnecessary sealing surface contact.
– Careful assembly of the mating hardware is required, with compression applied incrementally and uniformly (bolts tightened in a cross fashion) around the seal circumference.

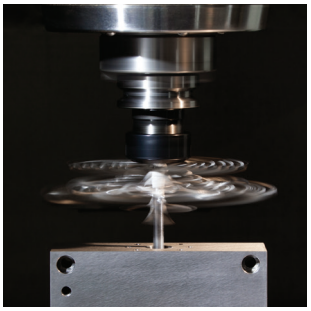


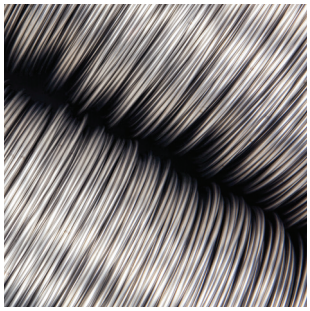












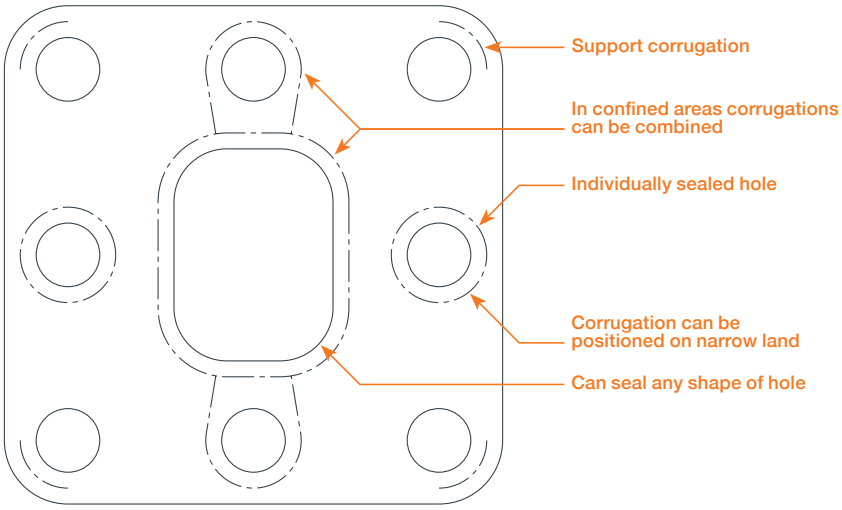
Gaskets

Product Description

Corruseal and Reflexseal are a range of single or multi ply embossed metal gaskets designed to be compressed between two parallel flanges to create a seal.

These products can be designed to suit the required customer application geometry and operating environments. Tight tolerances and complex sealing arrangements can be solved with gaskets and the Reflexseal pushes those limits further in its abilities to accommodate vibration and cavity thermal growth.

The Corruseal gasket is a metal crush type gasket which utilises a triangular corrugation form to concentrate the load available to those specific areas that require sealing. The corrugation is positioned around the aperture to be sealed. When used with thin or weak flanges, support corrugations can be placed around the bolt holes to prevent flange distortion and help the gasket to compress evenly.

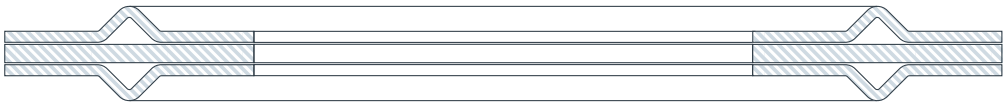


Corruseal can be offered in single ply, two ply and three ply options.

Corruseal – Single Ply
The single ply, single sealing corrugation design is the simplest and cheapest form of design. They are generally used between strong and flat flange faces, with an even and well distributed bolt load available.

Corruseal – Two Ply

Two ply Corruseal comprises two layers which are spot welded together. Offering 'open bore' sealing, this design can utilise the pressure it is sealing against to further enhance the gasket performance. If balance corrugations around bolt holes are required they are only formed in the top ply.



Corruseal – Three Ply

The three ply Corruseal design comprises a top and bottom layer which are mirror images of each other with a plain centre ply sandwiched between. The centre layer is often made from a different material to the top and bottom plys and its thickness can be varied to meet a specific gasket thickness. It is better suited than the single ply design for coping with flange distortion due to high temperatures, particularly if the bolting pattern is not ideal.

Reflexseal

The Nicholsons Reflexseal provides additional flexible sealing benefits by introducing a sealing device which incorporates established resilient metal sealing technology, similar to the Corruplus seal, into multi-layer gasket manufacture. The standard three ply Reflexseal design consists of top and bottom 'formed' plys which are situated either side of a plain centre ply which controls the amount of compression the gasket receives. The thickness of the centre can vary according to the specific application. The Reflexseal is ideal for those demanding applications involving high temperatures and pressures where the crush type gaskets have reached their limits.

Part Properties

– Able to seal high and low temperatures and pressures
– Few limitations on size, shape or flange width
– Can be designed to seal circular, irregular and multi aperture applications
– A range of standard corrugations are available
– Does not require a machined groove
– Does not stick to mating faces
– Good structural strength; will not blow out during use
– Low cost in both prototype and production runs

Gasket Specification

Nicholsons offer a range of Corruseal Gaskets which are approved standard parts for three bolt flanges. Further details for these part numbers, AGS 3870–AGS 3909, can be found on pages 23 to 24. Corruseal Sealing Washers for a range of standard bolt and thread sizes are listed on pages 25 to 26.

Bespoke Gaskets can be designed for specific applications. In this instance, Nicholsons are able to work with you to develop a design for your requirements. Please contact us for assistance.

1. MATERIAL TYPE

Gasket materials are selected according to service requirements. Stainless steel is the most suitable option for many applications, however, Aluminium is most suitable for Aluminium flanges. A larger range of Gasket material options are listed on page 12.

Typical material thickness is within the range 0.007" to 0.015".

AGS 3870–AGS 3889 are made from Cupro-Nickel 0.010" thick.
AGS 3890–AGS 3909 are made from Stainless Steel 0.010" thick.
Corruseal Sealing Washers are typically made from Stainless Steel 0.010" thick.

2. HEAT TREATMENT

The available heat treatment options for Gaskets are listed on page 13.

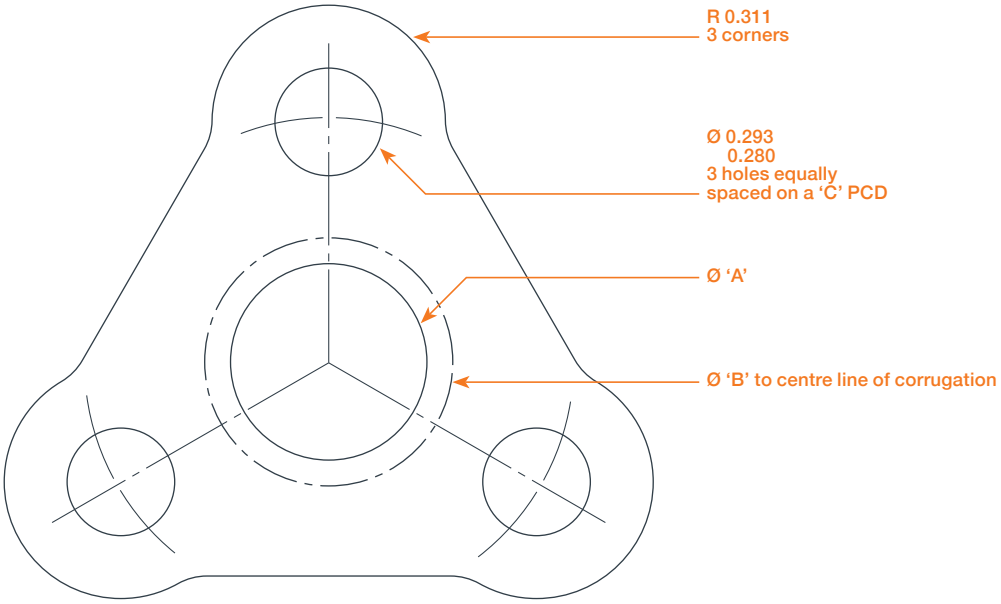
3. PLATING OR COATING

Uncoated Gaskets are suitable for use in many applications. However, there are applications where a plating or coating is applied to the gasket to improve performance. See page 14 for further details on the options available.

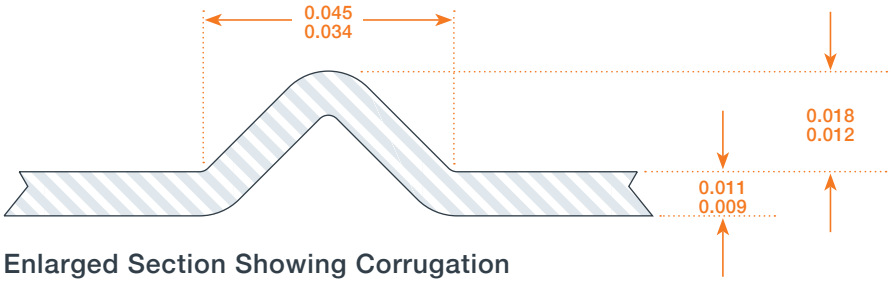
Not all plating or coating options are valid for Gaskets, please consult us if you require further information.

AGS 3870–AGS 3889 are uncoated.
AGS 3890–AGS 3909 are silver plated to a thickness of 0.0004"/0.0006".
Corruseal Sealing Washers are uncoated.

Part List – AGS 3870–3889



AGS 3870–3889

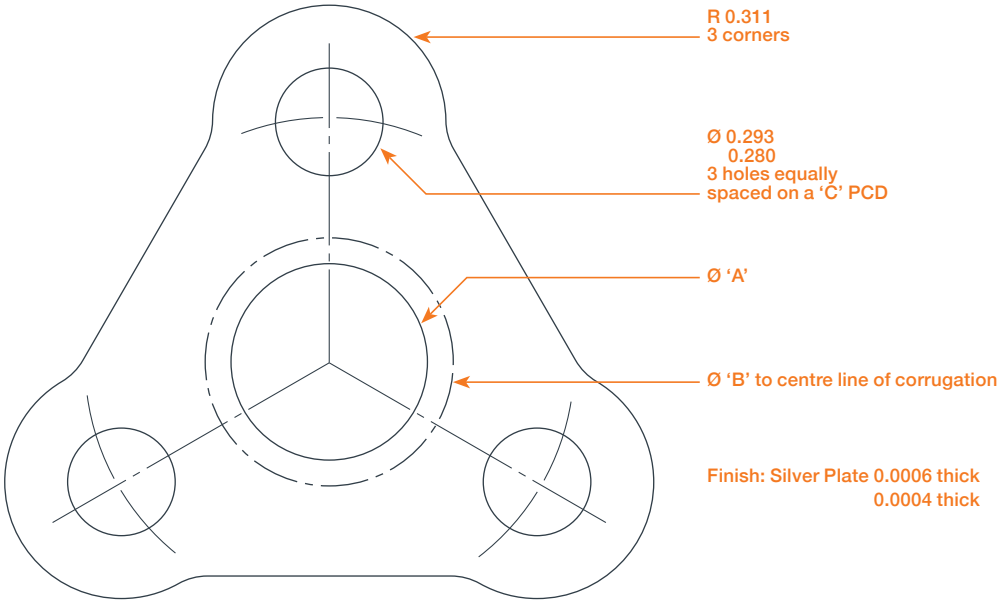


Enlarged Section Showing Corrugation

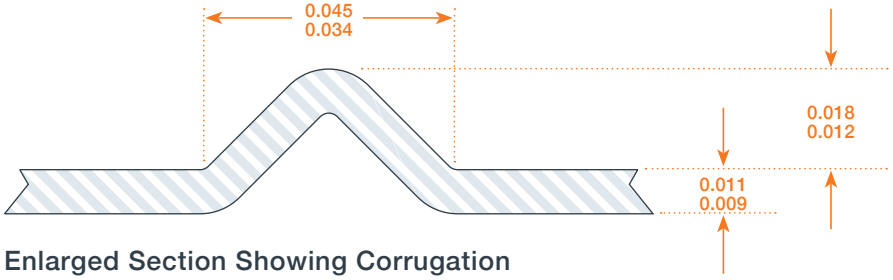
PART NUMBER	TUBE O.D	A	B	C
	NOM	+0.010 -0.003	+0.020 -0.020	.
AGS 3872	0.2500	0.248	0.386	1.004
AGS 3873	0.3125	0.307	0.445	1.063
AGS 3874	0.3750	0.386	0.524	1.142
AGS 3876	0.5000	0.524	0.661	1.280
AGS 3878	0.6250	0.681	0.819	1.437
AGS 3880	0.7500	0.760	0.898	1.575

Not all part numbers have been assigned

Part List – AGS 3890–3909



AGS 3890–3909

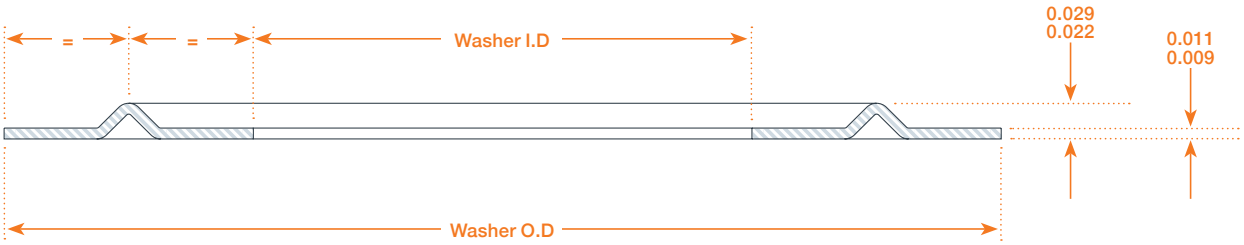


Enlarged Section Showing Corrugation

PART NUMBER	TUBE O.D	A	B	C
	NOM	+0.010 -0.003	+0.020 -0.020	.
AGS 3892	0.2500	0.248	0.386	1.004
AGS 3893	0.3125	0.307	0.445	1.063
AGS 3894	0.3750	0.386	0.524	1.142
AGS 3896	0.5000	0.524	0.661	1.280
AGS 3898	0.6250	0.681	0.819	1.437
AGS 3900	0.7500	0.760	0.898	1.575

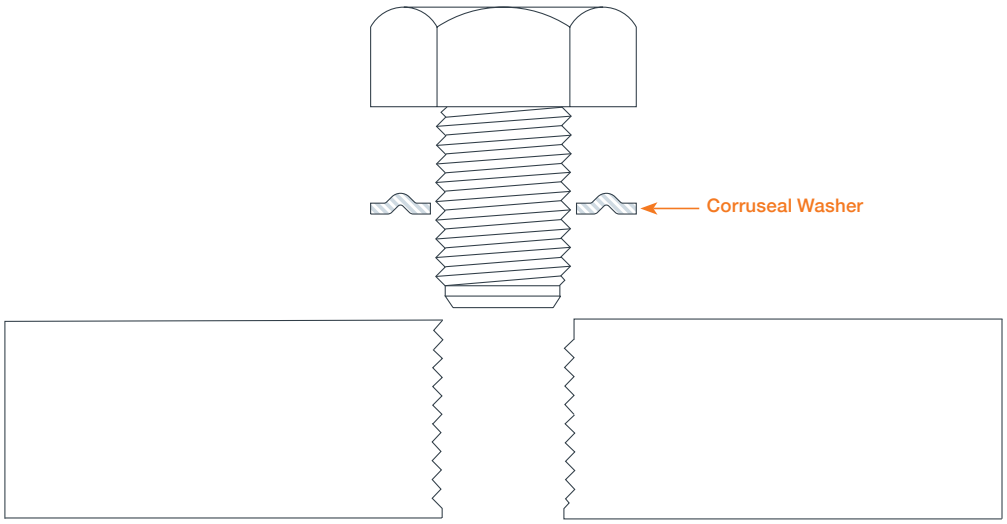
Gasket dimensions are prior to plating
Not all part numbers have been assigned

Part List – Corruseal Sealing Washers



Please contact us for non-standard materials and finishes

Corruseal Sealing Washer



PART NUMBER	THREAD SIZE	I.D		O.D
		max.	min.	±0.010
CP 535	1/8 BSP	0.389	0.386	0.562
CP 536	1/4 BSP	0.524	0.521	0.750
CP 538	3/8 BSP	0.662	0.659	0.875
CP 539	1/2 BSP	0.831	0.828	1.020
CP 540	5/8 BSP	0.908	0.905	1.125

Part List – Corruseal Sealing Washers

PART NUMBER	BOLT SIZE	I.D		O.D
		max.	min.	±0.010
CP 501	3/16 BSW	0.1935	0.1905	0.319
CP 502	1/4 BSW	0.2560	0.2530	0.438
CP 503	5/16 BSW	0.3185	0.3155	0.518
CP 504	3/8 BSW	0.3810	0.3780	0.592
CP 505	7/16 BSW	0.4435	0.4405	0.702
CP 506	1/2 BSW	0.5080	0.5030	0.812
CP 507	5/8 BSW	0.6330	0.6280	1.000
CP 508	3/4 BSW	0.7580	0.7530	1.190
CP 509	7/8 BSW	0.8830	0.8780	1.288
CP 510	1 BSW	1.0080	1.0030	1.468
CP 511	1 1/8 BSW	1.1350	1.1280	1.658
CP 512	1 1/4 BSW	1.2600	1.2530	1.845
CP 513	1 3/8 BSW	1.3850	1.3780	2.085
CP 514	1 1/2 BSW	1.5100	1.5030	2.200
CP 515	No 10/32	0.1960	0.1930	0.307
CP 516	1/4 UNF	0.2560	0.2530	0.430
CP 517	5/16 UNF	0.3185	0.3155	0.493
CP 518	3/8 UNF	0.3810	0.3780	0.554
CP 519	7/16 UNF	0.4435	0.4405	0.6170
CP 520	1/2 UNF	0.5080	0.5030	0.7420
CP 521	5/8 UNF	0.6330	0.6280	0.9290
CP 522	3/4 UNF	0.7580	0.7530	1.115
CP 523	7/8 UNF	0.8830	0.8780	1.300
CP 524	1 UNF	1.0080	1.0030	1.488
CP 525	1 1/8 UNF	1.1350	1.1280	1.756
CP 526	1 1/4 UNF	1.2600	1.2530	1.928
CP 527	1 3/8 UNF	1.3850	1.3780	2.119
CP 528	1 1/2 UNF	1.5100	1.5030	2.300
CP 530	6 BA	0.1152	0.1122	0.189
CP 531	4 BA	0.1467	0.1437	0.243
CP 532	2 BA	0.1900	0.1870	0.319
CP 533	0 BA	0.2412	0.2382	0.408

Load

The seating loads for various Gasket materials are shown below. The values shown are for 0.010" thick material. Information is for guidance only as a number of factors can have an effect on the load including:

– Corrugation length
– Tolerances
– Variations in material thickness and properties
– Heat treatment
– Coatings and platings

The load values can be significantly altered when heat treatment is applied, for example annealing stainless steel after forming can reduce the load required by approximately 25%.

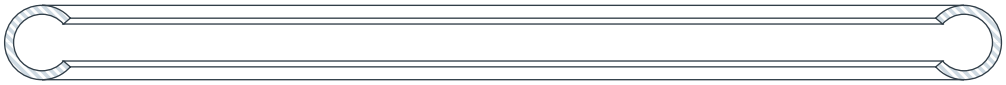
Seating Load – Gasket Materials


©
C

C-Seals

Product Description

C-Seals are designed to be compressed in a cavity of a controlled depth creating a seal. Three types of C-Seal are available to accomodate internal, external and axial pressure conditions.



CI Series – Internal Pressure

CE Series – External Pressure

CA Series – Axial Pressure

Part Properties

– Able to seal high and low temperatures and pressures
– Ideal for cryogenic and vacuum applications
– A large range of standard industry sizes are available
– Eleven standard seal sections are available
– Non-round seal shapes can be manufactured
– Commonly used in a large range of applications

C-Seal Specification

Nicholsons offer a range of standard C-Seal part numbers. The part number system enables the selection of the correct seal for each application and installation using the permutations of size, material, plating, etc. An explanation of the Nicholsons C-Seal part number system is shown below.

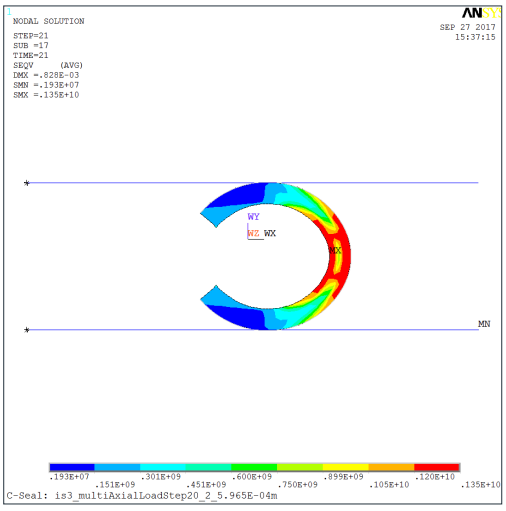
Bespoke C-Seals can be designed for specific applications where the use of a standard C-Seal would not be appropriate due to shape, diameter, material type, snap fit requirements etc. Please contact us if you require a bespoke design or need any assistance specifying a standard C-Seal part number for your application.

PART NUMBER

2. DIAMETER The seal and cavity diameters		4. MATERIAL TYPE The material type that we offer as standard		6. PLATING OR COATING The plating or coating type that we offer as standard	
XX	**0000**	**00**	**00**	**0**	**XX**	**X**
1. SEAL TYPE The type of seal and its orientation		3. SECTION AND MATERIAL THICKNESS The seal section height and the standard material thickness options available for each		5. HEAT TREATMENT The heat treatments that we offer as standard. Not all heat treatments are applicable to all materials	7. PLATING OR COATING THICKNESS The thickness of the plating or coating	

1. SEAL TYPE

The first section specifies the seal type:
CI – Internal pressure face seal
CE – External pressure face seal
CA – Axial pressure face seal



2. DIAMETER

The second section specifies the seal and cavity diameter:
For CI seals, see pages 35 to 41 for details of sizes
For CE seals, see pages 42 to 48 for details of sizes
For CA seals, see pages 50 to 51 for details of sizes

3a. SECTION AND MATERIAL THICKNESS – CI AND CE SERIES

PART NO. CODE	NOMINAL SEAL FREE HEIGHT	ACTUAL SEAL FREE HEIGHT	MATERIAL THICKNESS		CAVITY DEPTH	CAVITY CORNER RADIUS R (max.)
01 02*	1/16	0.063 0.061	0.006 0.010	Thin Wall Standard	0.051 0.049	0.020
03 04*	3/32	0.094 0.092	0.010 0.015	Thin Wall Standard	0.077 0.073	0.030
05 06 07	1/8	0.126 0.124	0.010 0.015 0.020	Thin Wall Standard Thick Wall	0.104 0.099	0.045
08 09	3/16	0.189 0.185	0.015 0.020	Thin Wall Standard	0.155 0.149	0.070
10 11	1/4	0.253 0.247	0.020 0.025	Thin Wall Standard	0.205 0.199	0.090

3b. SECTION AND MATERIAL THICKNESS – CA SERIES

PART NO. CODE	NOMINAL SEAL FREE HEIGHT	SEAL AXIAL LENGTH (max.)	MATERIAL THICKNESS		CAVITY AXIAL LENGTH (min.)	CAVITY CORNER RADIUS R (max.)
01 02*	1/16	0.058	0.006 0.010	Thin Wall Standard	0.062	0.020
03 04*	3/32	0.085	0.010 0.015	Thin Wall Standard	0.093	0.030
05 06 07	1/8	0.110	0.010 0.015 0.020	Thin Wall Standard Thick Wall	0.120	0.045
08 09	3/16	0.160	0.015 0.020	Thin Wall Standard	0.175	0.070
10 11	1/4	0.220	0.020 0.025	Thin Wall Standard	0.240	0.090

*For Seals CI 0007, CE 0007, CA 0007, and smaller, standard material thickness is:
0.006 for 1/16 free height
0.010 for 3/32 free height

4. MATERIAL TYPE

The fourth section specifies the material types that are offered.

PART NO. CODE	MATERIAL	COMMENTS
11	Nimonic 80A	Obsolete material
12	Inconel X750	Standard material for C-Seals
13	Stainless Steel	·
14	Inconel 718	Standard material for C-Seals

5. HEAT TREATMENT

The fifth section specifies the heat treatments that are available as standard. Not all heat treatments are applicable to all materials.

PART NO. CODE	HEAT TREATMENT	COMMENTS
1	Work Hardened	Standard for Axial Pressure C-Seals
2	Short Cycle Precipitation Heat Treatment	Suitable for most Face C-Seals
3	Long Cycle Precipitation Heat Treatment	Consider for very high temperature and/or very arduous applications
4	Solution and Long Cycle Precipitation Heat Treatment	Consider for very high temperature and/or very arduous applications
5	Customer Specification	·

6. PLATING OR COATING

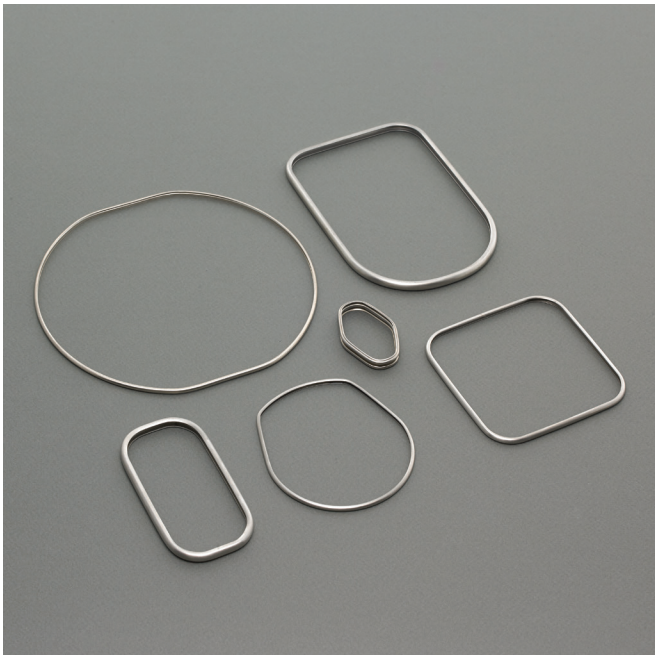
The sixth section specifies the plating or coating applied to the seal. Plating may be incomplete away from sealing surfaces.

PART NO. CODE	PLATING OR COATING	COMMENTS
OP	None	·
SP	Silver	Suitable for most applications
NP	Nickel	·
CP	Copper	·
GP	Gold	Very expensive
LP	Lead	Soft. Max. temp. 150°C/300°F
PP	PTFE	Max. temp. 220°C/430°F
IP	Indium	Very soft. Low temp only

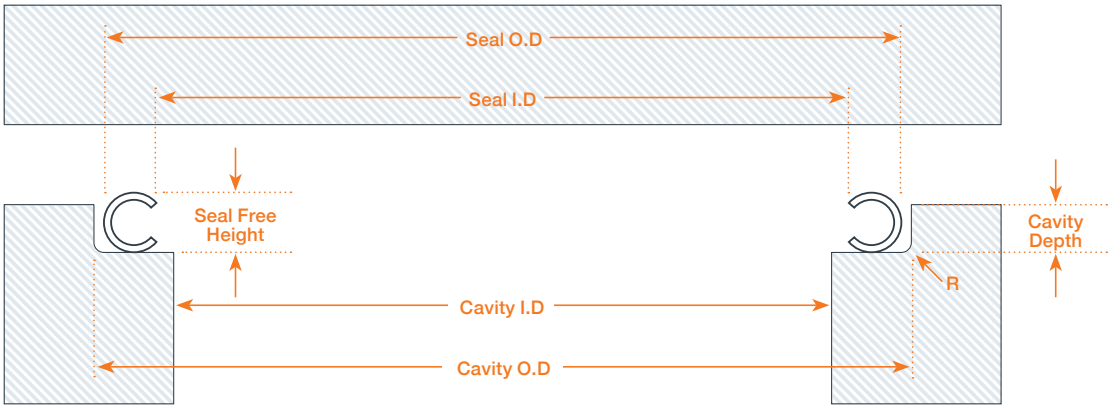
7. PLATING OR COATING THICKNESS

The seventh section specifies the plating or coating thickness.

PART NO. CODE	PLATING OR COATING THICKNESS	COMMENTS
A	0.0010 0.0005	Standard for Silver
B	0.0015 0.0010	.
C	0.0025 0.0015	.
D	0.0030 0.0020	.
E	Customer Specification	Customer Specification
O	None	Use with Unplated Seals



CI Series – Internal Pressure Face C-Seal



– Weld permitted

– Plating may be incomplete away from sealing surfaces

– Seal diameters are an average and can be out of round in excess of tolerances

– See the C-Seal introduction pages for details of seal free height, cavity depth and radius R

Internal C-Seal cavity

SEAL TYPE & DIAMETER	FREE HEIGHT 1/16				FREE HEIGHT 3/32				FREE HEIGHT 1/8			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D max.	O.D +0.001 -0.000	I.D min.	O.D +0.000 -0.002	I.D max.	O.D +0.001 -0.000	I.D min.	O.D +0.000 -0.002	I.D ·	O.D ·	I.D ·	O.D ·
CI 0002	0.127	0.250	0.135	0.240	·	·	·	·	·	·	·	·
CI 0532	0.158	0.281	0.166	0.271	·	·	·	·	·	·	·	·
CI 0003	0.200	0.325	0.210	0.315	0.200	0.375	0.210	0.364	·	·	·	·
CI 0732	0.231	0.356	0.241	0.346	0.231	0.406	0.241	0.395	·	·	·	·
CI 0004	0.262	0.387	0.272	0.377	0.262	0.437	0.272	0.426	·	·	·	·
CI 0932	0.293	0.418	0.303	0.408	0.293	0.468	0.303	0.457	·	·	·	·
CI 0005	0.325	0.450	0.335	0.440	0.325	0.500	0.335	0.489	·	·	·	·
CI 1132	0.356	0.481	0.366	0.471	0.356	0.531	0.366	0.520	·	·	·	·
CI 0006	0.387	0.512	0.397	0.502	0.387	0.562	0.397	0.551	·	·	·	·
CI 1332	0.418	0.543	0.428	0.533	0.418	0.593	0.428	0.582	·	·	·	·
CI 0007	0.450	0.575	0.460	0.565	0.450	0.625	0.460	0.614	·	·	·	·
CI 1532	0.481	0.606	0.491	0.596	0.481	0.656	0.491	0.645	·	·	·	·
CI 0008	0.512	0.637	0.522	0.627	0.512	0.687	0.522	0.676	·	·	·	·
CI 1732	0.543	0.688	0.553	0.658	0.543	0.718	0.553	0.707	·	·	·	·
CI 0009	0.575	0.700	0.585	0.690	0.575	0.750	0.585	0.739	·	·	·	·
CI 1932	0.606	0.731	0.616	0.721	0.606	0.781	0.616	0.770	·	·	·	·
CI 0010	0.637	0.762	0.647	0.752	0.637	0.812	0.647	0.801	·	·	·	·
CI 2132	0.668	0.793	0.678	0.783	0.668	0.843	0.678	0.832	·	·	·	·
CI 0011	0.700	0.825	0.710	0.815	0.700	0.875	0.710	0.864	·	·	·	·
CI 2332	0.731	0.856	0.741	0.846	0.731	0.906	0.741	0.895	·	·	·	·
	I.D max.	O.D +0.002 -0.000	I.D min.	O.D +0.000 -0.002	I.D max.	O.D +0.002 -0.000	I.D min.	O.D +0.000 -0.002	I.D max.	O.D +0.002 -0.000	I.D min.	O.D +0.000 -0.002
CI 0012	0.763	0.888	0.773	0.878	0.763	0.937	0.773	0.927	0.763	0.983	0.773	0.973

Seal dimensions are in inches and are prior to plating or coating

CI Series – Internal Pressure Face C-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 1/16				FREE HEIGHT 3/32				FREE HEIGHT 1/8			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D max.	O.D +0.002 -0.000	I.D min.	O.D +0.000 -0.002	I.D max.	O.D +0.002 -0.000	I.D min.	O.D +0.000 -0.002	I.D max.	O.D +0.002 -0.000	I.D min.	O.D +0.000 -0.002
CI 2532	0.794	0.919	0.804	0.909	0.794	0.968	0.804	0.958	0.794	1.014	0.804	1.004
CI 0013	0.826	0.951	0.836	0.941	0.826	1.000	0.836	0.990	0.826	1.046	0.836	1.036
CI 2732	0.857	0.982	0.867	0.972	0.857	1.031	0.867	1.021	0.857	1.077	0.867	1.067
CI 0014	0.888	1.013	0.898	1.003	0.888	1.062	0.898	1.052	0.888	1.108	0.898	1.098
CI 2932	0.919	1.044	0.929	1.034	0.919	1.093	0.929	1.083	0.919	1.139	0.929	1.129
CI 0015	0.951	1.076	0.961	1.066	0.951	1.125	0.961	1.115	0.951	1.171	0.961	1.161
CI 3132	0.982	1.107	0.992	1.097	0.982	1.156	0.992	1.146	0.982	1.202	0.992	1.192
CI 0016	1.013	1.138	1.023	1.128	1.013	1.187	1.023	1.177	1.013	1.233	1.023	1.223
CI 0017	1.076	1.201	1.086	1.191	1.076	1.250	1.086	1.240	1.076	1.296	1.086	1.286
CI 0018	1.138	1.263	1.148	1.253	1.138	1.312	1.148	1.302	1.138	1.358	1.148	1.348
CI 0019	1.201	1.326	1.211	1.316	1.201	1.375	1.211	1.365	1.201	1.421	1.211	1.411
CI 0020	1.263	1.388	1.273	1.378	1.263	1.437	1.273	1.427	1.263	1.483	1.273	1.473
CI 0021	1.326	1.451	1.336	1.441	1.326	1.500	1.336	1.490	1.326	1.546	1.336	1.536
CI 0022	1.388	1.513	1.398	1.503	1.388	1.562	1.398	1.552	1.388	1.608	1.398	1.598
CI 0023	1.451	1.576	1.461	1.566	1.451	1.625	1.461	1.615	1.451	1.671	1.461	1.661
CI 0024	1.513	1.638	1.523	1.628	1.513	1.687	1.523	1.677	1.513	1.733	1.523	1.723
CI 0025	1.576	1.701	1.586	1.691	1.576	1.750	1.586	1.740	1.576	1.796	1.586	1.786
CI 0026	1.638	1.763	1.648	1.753	1.638	1.812	1.648	1.802	1.638	1.858	1.648	1.848
CI 0027	1.701	1.826	1.711	1.816	1.701	1.875	1.711	1.865	1.701	1.921	1.711	1.911
CI 0028	1.763	1.888	1.773	1.878	1.763	1.937	1.773	1.927	1.763	1.983	1.773	1.973
CI 0029	1.826	1.951	1.836	1.941	1.826	2.000	1.836	1.990	1.826	2.046	1.836	2.036
	I.D max.	O.D +0.003 -0.000	I.D min.	O.D +0.000 -0.003	I.D max.	O.D +0.003 -0.000	I.D min.	O.D +0.000 -0.003	I.D max.	O.D +0.003 -0.000	I.D min.	O.D +0.000 -0.003
CI 0030	1.888	2.013	1.898	2.003	1.888	2.062	1.898	2.052	1.888	2.108	1.898	2.098
CI 0031	1.951	2.076	1.961	2.066	1.951	2.125	1.961	2.115	1.951	2.171	1.961	2.161
CI 0032	2.030	2.155	2.040	2.145	2.030	2.204	2.040	2.194	2.030	2.250	2.040	2.240
CI 0033	2.092	2.217	2.102	2.207	2.092	2.266	2.102	2.256	2.092	2.312	2.102	2.302
CI 0034	2.155	2.280	2.165	2.270	2.155	2.329	2.165	2.319	2.155	2.375	2.165	2.365
CI 0035	2.217	2.342	2.227	2.332	2.217	2.391	2.227	2.381	2.217	2.437	2.227	2.427
CI 0036	2.280	2.405	2.290	2.395	2.280	2.454	2.290	2.444	2.280	2.500	2.290	2.490
CI 0037	2.342	2.467	2.352	2.457	2.342	2.516	2.352	2.506	2.342	2.562	2.352	2.552
CI 0038	2.405	2.530	2.415	2.520	2.405	2.579	2.415	2.569	2.405	2.625	2.415	2.615
CI 0039	2.467	2.592	2.477	2.582	2.467	2.641	2.477	2.631	2.467	2.687	2.477	2.677
CI 0040	2.530	2.655	2.540	2.645	2.530	2.704	2.540	2.694	2.530	2.750	2.540	2.740
CI 0041	2.592	2.717	2.602	2.707	2.592	2.766	2.602	2.756	2.592	2.812	2.602	2.802
CI 0042	2.655	2.780	2.665	2.770	2.655	2.829	2.665	2.819	2.655	2.875	2.665	2.865
CI 0043	2.717	2.842	2.727	2.832	2.717	2.891	2.727	2.881	2.717	2.937	2.727	2.927
CI 0044	2.780	2.905	2.790	2.895	2.780	2.954	2.790	2.944	2.780	3.000	2.790	2.990

Seal dimensions are in inches and are prior to plating or coating

CI Series – Internal Pressure Face C-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 1/16				FREE HEIGHT 3/32				FREE HEIGHT 1/8			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D max.	O.D +0.003 -0.000	I.D min.	O.D +0.000 -0.003	I.D max.	O.D +0.003 -0.000	I.D min.	O.D +0.000 -0.003	I.D max.	O.D +0.003 -0.000	I.D min.	O.D +0.000 -0.003
CI 0045	2.842	2.967	2.852	2.957	2.842	3.016	2.852	3.006	2.842	3.062	2.852	3.052
CI 0046	2.905	3.020	2.915	3.010	2.905	3.079	2.915	3.069	2.905	3.125	2.915	3.115
CI 0047	2.967	3.082	2.977	3.072	2.967	3.141	2.977	3.131	2.967	3.187	2.977	3.177
CI 0048	3.030	3.145	3.040	3.135	3.030	3.204	3.040	3.194	3.030	3.250	3.040	3.240
	I.D max.	O.D +0.004 -0.000	I.D min.	O.D +0.000 -0.004	I.D max.	O.D +0.004 -0.000	I.D min.	O.D +0.000 -0.004	I.D max.	O.D +0.004 -0.000	I.D min.	O.D +0.000 -0.004
CI 0049	3.092	3.207	3.102	3.197	3.092	3.266	3.102	3.256	3.092	3.312	3.102	3.302
CI 0050	3.155	3.270	3.165	3.260	3.155	3.329	3.165	3.319	3.155	3.375	3.165	3.365
CI 0051	3.217	3.332	3.227	3.322	3.217	3.391	3.227	3.381	3.217	3.437	3.227	3.427
CI 0052	3.280	3.395	3.290	3.385	3.280	3.454	3.290	3.444	3.280	3.500	3.290	3.490
CI 0053	3.342	3.457	3.352	3.447	3.342	3.516	3.352	3.506	3.342	3.562	3.352	3.552
CI 0054	3.405	3.520	3.415	3.510	3.405	3.579	3.415	3.569	3.405	3.625	3.415	3.615
CI 0055	3.467	3.582	3.477	3.572	3.467	3.641	3.477	3.631	3.467	3.687	3.477	3.667
CI 0056	3.530	3.645	3.540	3.635	3.530	3.704	3.540	3.694	3.530	3.750	3.540	3.740

SEAL TYPE & DIAMETER	FREE HEIGHT 1/8				FREE HEIGHT 3/16				FREE HEIGHT 1/4			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D max.	O.D +0.004 -0.000	I.D min.	O.D +0.000 -0.004	I.D max.	O.D +0.004 -0.000	I.D min.	O.D +0.000 -0.004	I.D max.	O.D +0.004 -0.000	I.D min.	O.D +0.000 -0.004
CI 0057	3.592	3.812	3.602	3.802	3.592	3.912	3.602	3.902	·	·	·	·
CI 0058	3.655	3.875	3.665	3.865	3.655	3.975	3.665	3.965	·	·	·	·
CI 0059	3.717	3.937	3.727	3.927	3.717	4.037	3.727	4.027	·	·	·	·
CI 0060	3.780	4.000	3.790	3.990	3.780	4.100	3.790	4.090	·	·	·	·
CI 0061	3.842	4.062	3.852	4.052	3.842	4.162	3.852	4.152	·	·	·	·
CI 0062	3.905	4.125	3.915	4.115	3.905	4.225	3.915	4.215	·	·	·	·
CI 0063	3.967	4.187	3.977	4.177	3.967	4.287	3.977	4.277	·	·	·	·
CI 0064	4.055	4.275	4.065	4.265	4.055	4.375	4.065	4.365	4.055	4.475	4.065	4.465
CI 0065	4.117	4.337	4.127	4.327	4.117	4.437	4.127	4.427	4.117	4.537	4.127	4.527
CI 0066	4.180	4.400	4.190	4.390	4.180	4.500	4.190	4.490	4.180	4.600	4.190	4.590
CI 0067	4.242	4.462	4.252	4.452	4.242	4.562	4.252	4.552	4.242	4.662	4.252	4.652
CI 0068	4.305	4.525	4.315	4.515	4.305	4.625	4.315	4.615	4.305	4.725	4.315	4.715
CI 0069	4.367	4.587	4.377	4.577	4.367	4.687	4.377	4.677	4.367	4.787	4.377	4.777
CI 0070	4.430	4.650	4.440	4.640	4.430	4.750	4.440	4.740	4.430	4.850	4.440	4.840
CI 0071	4.492	4.712	4.502	4.702	4.492	4.812	4.502	4.802	4.492	4.912	4.502	4.902
CI 0072	4.555	4.775	4.565	4.765	4.555	4.875	4.565	4.865	4.555	4.975	4.565	4.965
CI 0073	4.617	4.837	4.627	4.827	4.617	4.937	4.627	4.927	4.617	5.037	4.627	5.027
CI 0074	4.680	4.900	4.690	4.890	4.680	5.000	4.690	4.990	4.680	5.100	4.690	5.090

Seal dimensions are in inches and are prior to plating or coating

CI Series – Internal Pressure Face C-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 1/8				FREE HEIGHT 3/16				FREE HEIGHT 1/4			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D max.	O.D +0.004 -0.000	I.D min.	O.D +0.000 -0.004	I.D max.	O.D +0.004 -0.000	I.D min.	O.D +0.000 -0.004	I.D max.	O.D +0.004 -0.000	I.D min.	O.D +0.000 -0.004
CI 0075	4.742	4.962	4.752	4.952	4.742	5.062	4.752	5.052	4.742	5.162	4.752	5.152
CI 0076	4.805	5.025	4.815	5.015	4.805	5.125	4.815	5.115	4.805	5.225	4.815	5.215
CI 0077	4.867	5.087	4.877	5.077	4.867	5.187	4.877	5.177	4.867	5.287	4.877	5.277
CI 0078	4.930	5.150	4.940	5.140	4.930	5.250	4.940	5.240	4.930	5.350	4.940	5.340
CI 0079	4.992	5.212	5.002	5.202	4.992	5.312	5.002	5.302	4.992	5.412	5.002	5.402
CI 0080	5.055	5.275	5.065	5.265	5.055	5.375	5.065	5.365	5.055	5.475	5.065	5.465
	I.D max.	O.D +0.006 -0.000	I.D min.	O.D +0.000 -0.006	I.D max.	O.D +0.006 -0.000	I.D min.	O.D +0.000 -0.006	I.D max.	O.D +0.006 -0.000	I.D min.	O.D +0.000 -0.006
CI 0081	5.117	5.337	5.127	5.327	5.117	5.437	5.127	5.427	5.117	5.537	5.127	5.527
CI 0082	5.180	5.400	5.190	5.390	5.180	5.500	5.190	5.490	5.180	5.600	5.190	5.590
CI 0083	5.242	5.462	5.252	5.452	5.242	5.562	5.252	5.552	5.242	5.662	5.252	5.652
CI 0084	5.305	5.525	5.315	5.515	5.305	5.625	5.315	5.615	5.305	5.725	5.315	5.715
CI 0085	5.367	5.587	5.377	5.577	5.367	5.687	5.377	5.677	5.367	5.787	5.377	5.777
CI 0086	5.430	5.650	5.440	5.640	5.430	5.750	5.440	5.740	5.430	5.850	5.440	5.840
CI 0087	5.492	5.712	5.502	5.702	5.492	5.812	5.502	5.802	5.492	5.912	5.502	5.902
CI 0088	5.555	5.775	5.565	5.765	5.555	5.875	5.565	5.865	5.555	5.975	5.565	5.965
CI 0089	5.617	5.837	5.627	5.827	5.617	5.937	5.627	5.927	5.617	6.037	5.627	6.027
CI 0090	5.680	5.900	5.690	5.890	5.680	6.000	5.690	5.990	5.680	6.100	5.690	6.090
CI 0092	5.805	6.025	5.815	6.015	5.805	6.125	5.815	6.115	5.805	6.225	5.815	6.215
CI 0094	5.930	6.150	5.940	6.140	5.930	6.250	5.940	6.240	5.930	6.350	5.940	6.340
CI 0096	6.055	6.275	6.065	6.265	6.055	6.375	6.065	6.365	6.055	6.475	6.065	6.465
CI 0098	6.180	6.400	6.190	6.390	6.180	6.500	6.190	6.490	6.180	6.600	6.190	6.590
CI 0100	6.305	6.525	6.315	6.515	6.305	6.625	6.315	6.615	6.305	6.725	6.315	6.715
CI 0102	6.430	6.650	6.440	6.640	6.430	6.750	6.440	6.740	6.430	6.850	6.440	6.840
CI 0104	6.555	6.775	6.565	6.765	6.555	6.875	6.565	6.865	6.555	6.975	6.565	6.965
CI 0106	6.680	6.900	6.690	6.890	6.680	7.000	6.690	6.990	6.680	7.100	6.690	7.090
CI 0108	6.805	7.025	6.815	7.015	6.085	7.125	6.815	7.115	6.805	7.225	6.815	7.215
CI 0110	6.930	7.150	6.940	7.140	6.930	7.250	6.940	7.240	6.930	7.350	6.940	7.340
CI 0112	7.055	7.275	7.065	7.265	7.055	7.375	7.065	7.365	7.055	7.475	7.065	7.465
	I.D max.	O.D +0.008 -0.000	I.D min.	O.D +0.000 -0.008	I.D max.	O.D +0.008 -0.000	I.D min.	O.D +0.000 -0.008	I.D max.	O.D +0.008 -0.000	I.D min.	O.D +0.000 -0.008
CI 0114	7.180	7.400	7.190	7.390	7.180	7.500	7.190	7.490	7.180	7.600	7.190	7.590
CI 0116	7.305	7.525	7.315	7.515	7.305	7.625	7.315	7.615	7.305	7.725	7.315	7.715
CI 0118	7.430	7.650	7.440	7.640	7.430	7.750	7.440	7.740	7.430	7.850	7.440	7.840
CI 0120	7.555	7.775	7.565	7.765	7.555	7.875	7.565	7.865	7.555	7.975	7.565	7.965
CI 0122	7.680	7.900	7.690	7.890	7.680	8.000	7.690	7.990	7.680	8.100	7.690	8.090
CI 0124	7.805	8.025	7.815	8.015	7.805	8.125	7.815	8.115	7.805	8.225	7.815	8.215

Seal dimensions are in inches and are prior to plating or coating

CI Series – Internal Pressure Face C-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 1/8				FREE HEIGHT 3/16				FREE HEIGHT 1/4			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D max.	O.D +0.008 -0.000	I.D min.	O.D +0.000 -0.008	I.D max.	O.D +0.008 -0.000	I.D min.	O.D +0.000 -0.008	I.D max.	O.D +0.008 -0.000	I.D min.	O.D +0.000 -0.008
CI 0126	7.930	8.150	7.940	8.140	7.930	8.250	7.940	8.240	7.930	8.350	7.940	8.340
CI 0128	8.055	8.275	8.065	8.265	8.055	8.375	8.065	8.365	8.055	8.475	8.065	8.465
CI 0130	8.180	8.400	8.190	8.390	8.180	8.500	8.190	8.490	8.180	8.600	8.190	8.590
CI 0132	8.305	8.525	8.315	8.515	8.305	8.625	8.315	8.615	8.305	8.725	8.315	8.715
CI 0134	8.430	8.650	8.440	8.640	8.430	8.750	8.440	8.740	8.430	8.850	8.440	8.840
CI 0136	8.555	8.775	8.565	8.765	8.555	8.875	8.565	8.865	8.555	8.975	8.565	8.965
CI 0138	8.680	8.900	8.690	8.890	8.680	9.000	8.690	8.990	8.680	9.100	8.690	9.090
CI 0140	8.805	9.025	8.815	9.015	8.805	9.125	8.815	9.115	8.805	9.225	8.815	9.215
CI 0142	8.930	9.150	8.940	9.140	8.930	9.250	8.940	9.240	8.930	9.350	8.940	9.340
CI 0144	9.055	9.275	9.065	9.265	9.055	9.375	9.065	9.365	9.055	9.475	9.065	9.465
CI 0146	9.180	9.400	9.190	9.390	9.180	9.500	9.190	9.490	9.180	9.600	9.190	9.590
CI 0148	9.305	9.525	9.315	9.515	9.305	9.625	9.315	9.615	9.305	9.725	9.315	9.715
CI 0150	9.430	9.650	9.440	9.640	9.430	9.750	9.440	9.740	9.430	9.850	9.440	9.840
CI 0152	9.555	9.775	9.565	9.765	9.555	9.875	9.565	9.865	9.555	9.975	9.565	9.965
CI 0154	9.680	9.900	9.690	9.890	9.680	10.000	9.690	9.990	9.680	10.100	9.690	10.090
CI 0156	9.805	10.025	9.815	10.015	9.805	10.125	9.815	10.115	9.805	10.225	9.815	10.215
CI 0158	9.930	10.150	9.940	10.140	9.930	10.250	9.940	10.240	9.930	10.350	9.940	10.340
CI 0160	10.055	10.275	10.065	10.265	10.055	10.375	10.065	10.365	10.055	10.475	10.065	10.465
	I.D max.	O.D +0.012 -0.000	I.D min.	O.D +0.000 -0.012	I.D max.	O.D +0.012 -0.000	I.D min.	O.D +0.000 -0.012	I.D max.	O.D +0.012 -0.000	I.D min.	O.D +0.000 -0.012
CI 0162	10.180	10.400	10.190	10.390	10.180	10.500	10.190	10.490	10.180	10.600	10.190	10.590
CI 0164	10.305	10.525	10.315	10.515	10.305	10.625	10.315	10.615	10.305	10.725	10.315	10.715
CI 0166	10.430	10.650	10.440	10.640	10.430	10.750	10.440	10.740	10.430	10.850	10.440	10.840
CI 0168	10.555	10.775	10.565	10.765	10.555	10.875	10.565	10.865	10.555	10.975	10.565	10.965
CI 0170	10.680	10.900	10.690	10.890	10.680	11.000	10.690	10.990	10.680	11.100	10.690	11.090
CI 0172	10.805	11.025	10.815	11.015	10.805	11.125	10.815	11.115	10.805	11.225	10.815	11.215
CI 0174	10.930	11.150	10.940	11.140	10.930	11.250	10.940	11.240	10.930	11.350	10.940	11.340
CI 0176	11.055	11.275	11.065	11.265	11.055	11.375	11.065	11.365	11.055	11.475	11.065	11.465
CI 0178	11.180	11.400	11.190	11.390	11.180	11.500	11.190	11.490	11.180	11.600	11.190	11.590
CI 0180	11.305	11.525	11.315	11.515	11.305	11.625	11.315	11.615	11.305	11.725	11.315	11.715
CI 0182	11.430	11.650	11.440	11.640	11.430	11.750	11.440	11.740	11.430	11.850	11.440	11.840
CI 0184	11.555	11.775	11.565	11.765	11.555	11.875	11.565	11.865	11.555	11.975	11.565	11.965
CI 0186	11.680	11.900	11.690	11.890	11.680	12.000	11.690	11.990	11.680	12.100	11.690	12.090
CI 0188	11.805	12.025	11.815	12.015	11.805	12.125	11.815	12.115	11.805	12.225	11.815	12.215
CI 0190	11.930	12.150	11.940	12.140	11.930	12.250	11.940	12.240	11.930	12.350	11.940	12.340
CI 0192	12.055	12.275	12.065	12.265	12.055	12.375	12.065	12.365	12.055	12.475	12.065	12.465
CI 0194	12.180	12.400	12.190	12.390	12.180	12.500	12.190	12.490	12.180	12.600	12.190	12.590
CI 0196	12.305	12.525	12.315	12.515	12.305	12.625	12.315	12.615	12.305	12.725	12.315	12.715

Seal dimensions are in inches and are prior to plating or coating

CI Series – Internal Pressure Face C-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 1/8				FREE HEIGHT 3/16				FREE HEIGHT 1/4			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D max.	O.D +0.012 -0.000	I.D min.	O.D +0.000 -0.012	I.D max.	O.D +0.012 -0.000	I.D min.	O.D +0.000 -0.012	I.D max.	O.D +0.012 -0.000	I.D min.	O.D +0.000 -0.012
CI 0198	12.430	12.650	12.440	12.640	12.430	12.750	12.440	12.740	12.430	12.850	12.440	12.840
CI 0200	12.555	12.775	12.565	12.765	12.555	12.875	12.565	12.865	12.555	12.975	12.565	12.965
CI 0202	12.680	12.900	12.690	12.890	12.680	13.000	12.690	12.990	12.680	13.100	12.690	13.090
CI 0204	12.805	13.025	12.815	13.015	12.805	13.125	12.815	13.115	12.805	13.225	12.815	13.215
CI 0206	12.930	13.150	12.940	13.140	12.930	13.250	12.940	13.240	12.930	13.350	12.940	13.340
CI 0208	13.055	13.275	13.065	13.265	13.055	13.375	13.065	13.365	13.055	13.475	13.065	13.465
CI 0210	13.180	13.400	13.190	13.390	13.180	13.500	13.190	13.490	13.180	13.600	13.190	13.590
CI 0212	13.305	13.525	13.315	13.515	13.305	13.625	13.315	13.615	13.305	13.725	13.315	13.715
CI 0214	13.430	13.650	13.440	13.640	13.430	13.750	13.440	13.740	13.430	13.850	13.440	13.840
CI 0216	13.555	13.775	13.565	13.765	13.555	13.875	13.565	13.865	13.555	13.975	13.565	13.965
CI 0218	13.680	13.900	13.690	13.890	13.680	14.000	13.690	13.990	13.680	14.100	13.690	14.090
CI 0220	13.805	14.025	13.815	14.015	13.805	14.125	13.815	14.115	13.805	14.225	13.815	14.215
CI 0222	13.930	14.150	13.940	14.140	13.930	14.250	13.940	14.240	13.930	14.350	13.940	14.340
CI 0224	14.055	14.275	14.065	14.265	14.055	14.375	14.065	14.365	14.055	14.475	14.065	14.465
CI 0226	14.180	14.400	14.190	14.390	14.180	14.500	14.190	14.490	14.180	14.600	14.190	14.590
CI 0228	14.305	14.525	14.315	14.515	14.305	14.625	14.315	14.615	14.305	14.725	14.315	14.715
CI 0230	14.430	14.650	14.440	14.640	14.430	14.750	14.440	14.740	14.430	14.850	14.440	14.840
CI 0232	14.555	14.775	14.565	14.765	14.555	14.875	14.565	14.865	14.555	14.975	14.565	14.965
CI 0234	14.680	14.900	14.690	14.890	14.680	15.000	14.690	14.990	14.680	15.100	14.690	15.090
CI 0236	14.805	15.025	14.815	15.015	14.805	15.125	14.815	15.115	14.805	15.225	14.815	15.215
CI 0238	14.930	15.150	14.940	15.140	14.930	15.250	14.940	15.240	14.930	15.350	14.940	15.340
CI 0240	15.055	15.275	15.065	15.265	15.055	15.375	15.065	15.365	15.055	15.475	15.065	15.465
	I.D max.	O.D +0.015 -0.000	I.D min.	O.D +0.000 -0.015	I.D max.	O.D +0.015 -0.000	I.D min.	O.D +0.000 -0.015	I.D max.	O.D +0.015 -0.000	I.D min.	O.D +0.000 -0.015
CI 0242	15.180	15.400	15.190	15.390	15.180	15.500	15.190	15.490	15.180	15.600	15.190	15.590
CI 0244	15.305	15.525	15.315	15.515	15.305	15.625	15.315	15.615	15.305	15.725	15.315	15.715
CI 0246	15.430	15.650	15.440	15.640	15.430	15.750	15.440	15.740	15.430	15.850	15.440	15.840
CI 0248	15.555	15.775	15.565	15.765	15.555	15.875	15.565	15.865	15.555	15.975	15.565	15.965
CI 0250	15.680	15.900	15.690	15.890	15.680	16.000	15.690	15.990	15.680	16.100	15.690	16.090
CI 0252	15.805	16.025	15.815	16.015	15.805	16.125	15.815	16.115	15.805	16.225	15.815	16.215
CI 0254	15.930	16.150	15.940	16.140	15.930	16.250	15.940	16.240	15.930	16.350	15.940	16.340
CI 0256	16.055	16.275	16.065	16.265	16.055	16.375	16.065	16.365	16.055	16.475	16.065	16.465
CI 0258	16.180	16.400	16.190	16.390	16.180	16.500	16.190	16.490	16.180	16.600	16.190	16.590
CI 0260	16.305	16.525	16.315	16.515	16.305	16.625	16.315	16.615	16.305	16.725	16.315	16.715
CI 0262	16.430	16.650	16.440	16.640	16.430	16.750	16.440	16.740	16.430	16.850	16.440	16.840
CI 0264	16.555	16.775	16.565	16.765	16.555	16.875	16.565	16.865	16.555	16.975	16.565	16.965
CI 0266	16.680	16.900	16.690	16.890	16.680	17.000	16.690	16.990	16.680	17.100	16.690	17.090
CI 0268	16.805	17.025	16.815	17.015	16.805	17.125	16.815	17.115	16.805	17.225	16.815	17.215

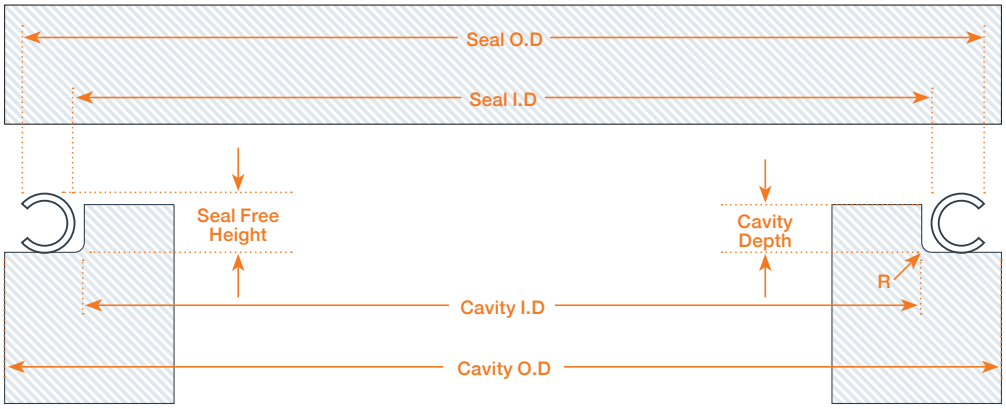
Seal dimensions are in inches and are prior to plating or coating

CI Series – Internal Pressure Face C-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 1/8				FREE HEIGHT 3/16				FREE HEIGHT 1/4			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D max.	O.D +0.015 -0.000	I.D min.	O.D +0.000 -0.015	I.D max.	O.D +0.015 -0.000	I.D min.	O.D +0.000 -0.015	I.D max.	O.D +0.015 -0.000	I.D min.	O.D +0.000 -0.015
CI 0270	16.930	17.150	16.940	17.140	16.930	17.250	16.940	17.240	16.930	17.350	16.940	17.340
CI 0272	17.055	17.275	17.065	17.265	17.055	17.375	17.065	17.365	17.055	17.475	17.065	17.465
CI 0274	17.180	17.400	17.190	17.390	17.180	17.500	17.190	17.490	17.180	17.600	17.190	17.590
CI 0276	17.305	17.525	17.315	17.515	17.305	17.625	17.315	17.615	17.305	17.725	17.315	17.715
CI 0278	17.430	17.650	17.440	17.640	17.430	17.750	17.440	17.740	17.430	17.850	17.440	17.840
CI 0280	17.555	17.775	17.565	17.765	17.555	17.875	17.565	17.865	17.555	17.975	17.565	17.965
CI 0282	17.680	17.900	17.690	17.890	17.680	18.000	17.690	17.990	17.680	18.100	17.690	18.090
CI 0284	17.805	18.025	17.815	18.015	17.805	18.125	17.815	18.115	17.805	18.225	17.815	18.215
CI 0286	17.930	18.150	17.940	18.140	17.930	18.250	17.940	18.240	17.930	18.350	17.940	18.340
CI 0288	18.055	18.275	18.065	18.265	18.055	18.375	18.065	18.365	18.055	18.475	18.065	18.465
CI 0290	18.180	18.400	18.190	18.390	18.180	18.500	18.190	18.490	18.180	18.600	18.190	18.590
CI 0292	18.305	18.525	18.315	18.515	18.305	18.625	18.315	18.615	18.305	18.725	18.315	18.715
CI 0294	18.430	18.650	18.440	18.640	18.430	18.750	18.440	18.740	18.430	18.850	18.440	18.840
CI 0296	18.555	18.775	18.565	18.765	18.555	18.875	18.565	18.865	18.555	18.975	18.565	18.965
CI 0298	18.680	18.900	18.690	18.890	18.680	19.000	18.690	18.990	18.680	19.100	18.690	19.090
CI 0300	18.805	19.025	18.815	19.015	18.805	19.125	18.815	19.115	18.805	19.225	18.815	19.215
CI 0302	18.930	19.150	18.940	19.140	18.930	19.250	18.940	19.240	18.930	19.350	18.940	19.340
CI 0304	19.055	19.275	19.065	19.265	19.055	19.375	19.065	19.365	19.055	19.475	19.065	19.465
CI 0306	19.180	19.400	19.190	19.390	19.180	19.500	19.190	19.490	19.180	19.600	19.190	19.590
CI 0308	19.305	19.525	19.315	19.515	19.305	19.625	19.315	19.615	19.305	19.725	19.315	19.715
CI 0310	19.430	19.650	19.440	19.640	19.430	19.750	19.440	19.740	19.430	19.850	19.440	19.840
CI 0312	19.555	19.775	19.565	19.765	19.555	19.875	19.565	19.865	19.555	19.975	19.565	19.965
CI 0314	19.680	19.900	19.690	19.890	19.680	20.000	19.690	19.990	19.680	20.100	19.690	20.090
CI 0316	19.805	20.025	19.815	20.015	19.805	20.125	19.815	20.115	19.805	20.225	19.815	20.215
CI 0318	19.930	20.150	19.940	20.140	19.930	20.250	19.940	20.240	19.930	20.350	19.940	20.340

Seal dimensions are in inches and are prior to plating or coating

CE Series – External Pressure Face C-Seal



– Weld permitted

– Plating may be incomplete away from sealing surfaces

– Seal diameters are an average and can be out of round in excess of tolerances

– See the C-Seal introduction pages for details of seal free height, cavity depth and radius R

External C-Seal Cavity

SEAL TYPE & DIAMETER	FREE HEIGHT 1/16				FREE HEIGHT 3/32				FREE HEIGHT 1/8			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D +0.000 -0.001	O.D min.	I.D +0.002 -0.000	O.D max.	I.D +0.000 -0.001	O.D min.	I.D +0.002 -0.000	O.D max.	I.D ·	O.D ·	I.D ·	O.D ·
CE 0002	0.116	0.244	0.128	0.233	·	·	·	·	·	·	·	·
CE 0532	0.147	0.275	0.159	0.264	·	·	·	·	·	·	·	·
CE 0003	0.179	0.307	0.191	0.296	0.179	0.366	0.191	0.351	·	·	·	·
CE 0732	0.209	0.338	0.221	0.327	0.209	0.397	0.221	0.381	·	·	·	·
CE 0004	0.240	0.369	0.252	0.358	0.240	0.428	0.252	0.412	·	·	·	·
CE 0932	0.271	0.400	0.283	0.389	0.271	0.459	0.283	0.443	·	·	·	·
CE 0005	0.303	0.432	0.315	0.421	0.303	0.491	0.315	0.475	·	·	·	·
CE 1132	0.334	0.463	0.346	0.452	0.334	0.522	0.346	0.506	·	·	·	·
CE 0006	0.365	0.494	0.377	0.483	0.365	0.553	0.377	0.537	·	·	·	·
CE 1332	0.396	0.525	0.408	0.514	0.396	0.584	0.408	0.568	·	·	·	·
CE 0007	0.428	0.557	0.440	0.546	0.428	0.616	0.440	0.600	·	·	·	·
CE 1532	0.459	0.588	0.471	0.577	0.459	0.647	0.471	0.631	·	·	·	·
CE 0008	0.490	0.619	0.502	0.608	0.490	0.678	0.502	0.662	·	·	·	·
CE 1732	0.521	0.650	0.533	0.639	0.521	0.709	0.533	0.693	·	·	·	·
CE 0009	0.553	0.682	0.565	0.671	0.533	0.741	0.565	0.725	·	·	·	·
CE 1932	0.584	0.713	0.596	0.702	0.584	0.772	0.596	0.756	·	·	·	·
CE 0010	0.615	0.744	0.627	0.733	0.615	0.803	0.627	0.787	·	·	·	·
CE 2132	0.646	0.775	0.658	0.764	0.646	0.834	0.658	0.818	·	·	·	·
CE 0011	0.677	0.807	0.689	0.796	0.677	0.866	0.689	0.849	·	·	·	·
CE 2332	0.709	0.838	0.721	0.827	0.709	0.897	0.721	0.881	·	·	·	·
	I.D +0.000 -0.002	O.D min.	I.D +0.002 -0.000	O.D max.	I.D +0.000 -0.002	O.D min.	I.D +0.002 -0.000	O.D max.	I.D +0.000 -0.002	O.D min.	I.D +0.002 -0.000	O.D max.
CE 0012	0.740	0.869	0.752	0.858	0.740	0.928	0.752	0.912	0.740	0.987	0.752	0.953

Seal dimensions are in inches and are prior to plating or coating

CE Series – External Pressure Face C-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 1/16				FREE HEIGHT 3/32				FREE HEIGHT 1/8			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D +0.000 -0.002	O.D min.	I.D +0.002 -0.000	O.D max.	I.D +0.000 -0.002	O.D min.	I.D +0.002 -0.000	O.D max.	I.D +0.000 -0.002	O.D min.	I.D +0.002 -0.000	O.D max.
CE 2532	0.771	0.900	0.783	0.889	0.771	0.959	0.783	0.943	0.771	1.018	0.783	0.984
CE 0013	0.803	0.932	0.815	0.921	0.803	0.991	0.815	0.975	0.803	1.050	0.815	1.016
CE 2732	0.834	0.963	0.846	0.952	0.834	1.022	0.846	1.006	0.834	1.081	0.846	1.047
CE 0014	0.865	0.994	0.877	0.983	0.865	1.053	0.877	1.037	0.865	1.112	0.877	1.078
CE 2932	0.896	1.025	0.908	1.014	0.896	1.084	0.908	1.068	0.896	1.143	0.908	1.104
CE 0015	0.928	1.057	0.940	1.046	0.928	1.116	0.940	1.100	0.928	1.175	0.940	1.141
CE 3132	0.959	1.088	0.971	1.077	0.959	1.147	0.971	1.131	0.959	1.206	0.971	1.172
CE 0016	0.990	1.119	1.002	1.108	0.990	1.178	1.002	1.162	0.990	1.237	1.002	1.203
CE 0017	1.053	1.182	1.065	1.171	1.053	1.241	1.065	1.225	1.053	1.300	1.065	1.266
CE 0018	1.115	1.244	1.127	1.233	1.115	1.303	1.127	1.287	1.115	1.362	1.127	1.328
CE 0019	1.179	1.307	1.191	1.296	1.179	1.366	1.191	1.351	1.179	1.426	1.191	1.392
CE 0020	1.240	1.369	1.252	1.358	1.240	1.428	1.252	1.412	1.240	1.487	1.252	1.453
CE 0021	1.303	1.432	1.315	1.421	1.303	1.491	1.315	1.475	1.303	1.550	1.315	1.516
CE 0022	1.365	1.494	1.377	1.483	1.365	1.553	1.377	1.537	1.365	1.612	1.377	1.578
CE 0023	1.428	1.557	1.440	1.546	1.428	1.616	1.440	1.600	1.428	1.675	1.440	1.641
CE 0024	1.490	1.619	1.502	1.608	1.490	1.678	1.502	1.662	1.490	1.737	1.502	1.703
CE 0025	1.553	1.682	1.565	1.671	1.553	1.741	1.565	1.725	1.553	1.800	1.565	1.766
CE 0026	1.615	1.744	1.627	1.733	1.615	1.803	1.627	1.787	1.615	1.862	1.627	1.828
CE 0027	1.678	1.807	1.690	1.796	1.678	1.866	1.690	1.850	1.678	1.925	1.690	1.891
CE 0028	1.740	1.869	1.752	1.858	1.740	1.928	1.752	1.912	1.740	1.987	1.752	1.953
CE 0029	1.803	1.932	1.815	1.921	1.803	1.991	1.815	1.975	1.803	2.050	1.815	2.016
	I.D +0.000 -0.003	O.D min.	I.D +0.003 -0.000	O.D max.	I.D +0.000 -0.003	O.D min.	I.D +0.003 -0.000	O.D max.	I.D +0.000 -0.003	O.D min.	I.D +0.003 -0.000	O.D max.
CE 0030	1.865	1.994	1.877	1.983	1.865	2.053	1.877	2.037	1.865	2.112	1.877	2.078
CE 0031	1.928	2.057	1.940	2.046	1.928	2.116	1.940	2.100	1.928	2.175	1.940	2.141
CE 0032	1.991	2.119	2.003	2.108	1.991	2.178	2.003	2.163	1.991	2.237	2.003	2.203
CE 0033	2.050	2.182	2.066	2.171	2.050	2.241	2.066	2.226	2.050	2.300	2.066	2.266
CE 0034	2.112	2.244	2.128	2.233	2.112	2.303	2.128	2.288	2.112	2.362	2.128	2.328
CE 0035	2.175	2.307	2.191	2.296	2.175	2.366	2.191	2.351	2.175	2.425	2.191	2.391
CE 0036	2.237	2.369	2.253	2.358	2.237	2.428	2.253	2.413	2.237	2.487	2.253	2.453
CE 0037	2.299	2.432	2.315	2.421	2.299	2.491	2.315	2.476	2.299	2.550	2.315	2.515
CE 0038	2.362	2.494	2.378	2.483	2.362	2.553	2.378	2.538	2.362	2.612	2.378	2.578
CE 0039	2.425	2.557	2.441	2.546	2.425	2.616	2.441	2.601	2.425	2.675	2.441	2.641
CE 0040	2.487	2.619	2.503	2.608	2.487	2.678	2.503	2.663	2.487	2.737	2.503	2.703
CE 0041	2.550	2.682	2.566	2.671	2.550	2.741	2.566	2.726	2.550	2.800	2.566	2.766
CE 0042	2.612	2.744	2.628	2.733	2.612	2.803	2.628	2.788	2.612	2.862	2.628	2.828
CE 0043	2.675	2.807	2.691	2.796	2.675	2.866	2.691	2.851	2.675	2.925	2.691	2.891
CE 0044	2.737	2.869	2.753	2.858	2.737	2.928	2.753	2.913	2.737	2.987	2.753	2.953

Seal dimensions are in inches and are prior to plating or coating

CE Series – External Pressure Face C-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 1/16				FREE HEIGHT 3/32				FREE HEIGHT 1/8			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D +0.000 -0.003	O.D min.	I.D +0.003 -0.000	O.D max.	I.D +0.000 -0.003	O.D min.	I.D +0.003 -0.000	O.D max.	I.D +0.000 -0.003	O.D min.	I.D +0.003 -0.000	O.D max.
CE 0045	2.800	2.932	2.816	2.921	2.800	2.991	2.816	2.976	2.800	3.050	2.816	3.016
CE 0046	2.862	2.994	2.878	2.983	2.862	3.053	2.878	3.038	2.862	3.112	2.878	3.078
CE 0047	2.925	3.057	2.941	3.046	2.925	3.116	2.941	3.101	2.925	3.175	2.941	3.141
CE 0048	2.987	3.119	3.003	3.108	2.987	3.178	3.003	3.163	2.987	3.237	3.003	3.203
	I.D +0.000 -0.004	O.D min.	I.D +0.004 -0.000	O.D max.	I.D +0.000 -0.004	O.D min.	I.D +0.004 -0.000	O.D max.	I.D +0.000 -0.004	O.D min.	I.D +0.004 -0.000	O.D max.
CE 0049	3.050	3.182	3.066	3.171	3.050	3.241	3.066	3.226	3.050	3.300	3.066	3.266
CE 0050	3.112	3.244	3.128	3.233	3.112	3.303	3.128	3.288	3.112	3.362	3.128	3.328
CE 0051	3.175	3.307	3.191	3.296	3.175	3.366	3.191	3.351	3.175	3.425	3.191	3.391
CE 0052	3.237	3.369	3.253	3.358	3.237	3.428	3.253	3.413	3.237	3.487	3.253	3.453
CE 0053	3.300	3.432	3.316	3.421	3.300	3.491	3.316	3.476	3.300	3.550	3.316	3.516
CE 0054	3.362	3.494	3.378	3.483	3.362	3.553	3.378	3.538	3.362	3.612	3.378	3.578
CE 0055	3.425	3.557	3.441	3.546	3.425	3.616	3.441	3.601	3.425	3.675	3.441	3.641
CE 0056	3.487	3.619	3.503	3.608	3.487	3.678	3.503	3.663	3.487	3.737	3.503	3.703

SEAL TYPE & DIAMETER	FREE HEIGHT 1/8				FREE HEIGHT 3/16				FREE HEIGHT 1/4			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D +0.000 -0.004	O.D min.	I.D +0.004 -0.000	O.D max.	I.D +0.000 -0.004	O.D min.	I.D +0.004 -0.000	O.D max.	I.D +0.000 -0.004	O.D min.	I.D +0.004 -0.000	O.D max.
CE 0057	3.550	3.800	3.566	3.766	3.550	3.919	3.566	3.867	·	·	·	·
CE 0058	3.612	3.862	3.628	3.828	3.612	3.981	3.628	3.929	·	·	·	·
CE 0059	3.675	3.925	3.691	3.891	3.675	4.044	3.691	3.992	·	·	·	·
CE 0060	3.737	3.987	3.753	3.953	3.737	4.106	3.753	4.054	·	·	·	·
CE 0061	3.800	4.050	3.816	4.016	3.800	4.169	3.816	4.117	·	·	·	·
CE 0062	3.862	4.112	3.878	4.078	3.862	4.231	3.878	4.179	·	·	·	·
CE 0063	3.925	4.175	3.941	4.141	3.925	4.294	3.941	4.242	·	·	·	·
CE 0064	3.987	4.237	4.003	4.203	3.987	4.356	4.003	4.304	3.987	4.475	4.003	4.405
CE 0065	4.046	4.300	4.066	4.266	4.046	4.419	4.066	4.367	4.046	4.538	4.066	4.468
CE 0066	4.108	4.362	4.128	4.328	4.108	4.481	4.128	4.429	4.108	4.600	4.128	4.530
CE 0067	4.171	4.425	4.191	4.391	4.171	4.544	4.191	4.492	4.171	4.663	4.191	4.593
CE 0068	4.233	4.487	4.253	4.453	4.233	4.606	4.253	4.554	4.233	4.725	4.253	4.655
CE 0069	4.296	4.550	4.316	4.516	4.296	4.669	4.316	4.617	4.296	4.788	4.316	4.718
CE 0070	4.358	4.612	4.378	4.578	4.358	4.731	4.378	4.679	4.358	4.850	4.378	4.780
CE 0071	4.421	4.675	4.441	4.641	4.421	4.794	4.441	4.742	4.421	4.913	4.441	4.843
CE 0072	4.483	4.737	4.503	4.703	4.483	4.856	4.503	4.804	4.483	4.975	4.503	4.905
CE 0073	4.546	4.800	4.566	4.766	4.546	4.919	4.566	4.867	4.546	5.038	4.566	4.968
CE 0074	4.608	4.862	4.628	4.828	4.608	4.981	4.628	4.929	4.608	5.100	4.628	5.030

Seal dimensions are in inches and are prior to plating or coating

CE Series – External Pressure Face C-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 1/8				FREE HEIGHT 3/16				FREE HEIGHT 1/4			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D +0.000 -0.004	O.D min.	I.D +0.004 -0.000	O.D max.	I.D +0.000 -0.004	O.D min.	I.D +0.004 -0.000	O.D max.	I.D +0.000 -0.004	O.D min.	I.D +0.004 -0.000	O.D max.
CE 0075	4.671	4.925	4.691	4.891	4.671	5.044	4.691	4.992	4.671	5.163	4.691	5.093
CE 0076	4.733	4.987	4.753	4.953	4.733	5.106	4.753	5.054	4.733	5.225	4.753	5.155
CE 0077	4.796	5.050	4.816	5.016	4.796	5.169	4.816	5.117	4.796	5.288	4.816	5.218
CE 0078	4.858	5.112	4.878	5.078	4.858	5.231	4.878	5.179	4.858	5.350	4.878	5.280
CE 0079	4.921	5.175	4.941	5.141	4.921	5.294	4.941	5.242	4.921	5.413	4.941	5.343
CE 0080	4.983	5.237	5.003	5.203	4.983	5.356	5.003	5.304	4.983	5.475	5.003	5.405
	I.D +0.000 -0.006	O.D min.	I.D +0.006 -0.000	O.D max.	I.D +0.000 -0.006	O.D min.	I.D +0.006 -0.000	O.D max.	I.D +0.000 -0.006	O.D min.	I.D +0.006 -0.000	O.D max.
CE 0081	5.046	5.300	5.066	5.266	5.046	5.419	5.066	5.367	5.046	5.538	5.066	5.468
CE 0082	5.108	5.362	5.128	5.328	5.108	5.481	5.128	5.429	5.108	5.600	5.128	5.530
CE 0083	5.171	5.425	5.191	5.391	5.171	5.544	5.191	5.492	5.171	5.663	5.191	5.593
CE 0084	5.233	5.487	5.253	5.453	5.233	5.606	5.253	5.554	5.233	5.725	5.253	5.655
CE 0085	5.296	5.550	5.316	5.516	5.296	5.669	5.316	5.617	5.296	5.788	5.316	5.718
CE 0086	5.358	5.612	5.378	5.578	5.358	5.731	5.378	5.679	5.358	5.850	5.378	5.780
CE 0087	5.421	5.675	5.441	5.641	5.421	5.794	5.441	5.742	5.421	5.913	5.441	5.843
CE 0088	5.483	5.737	5.503	5.703	5.483	5.856	5.503	5.804	5.483	5.975	5.503	5.905
CE 0089	5.546	5.800	5.566	5.766	5.546	5.919	5.566	5.867	5.546	6.038	5.566	5.968
CE 0090	5.608	5.862	5.628	5.828	5.608	5.981	5.628	5.929	5.608	6.100	5.628	6.030
CE 0092	5.733	5.987	5.753	5.953	5.733	6.106	5.753	6.054	5.733	6.225	5.753	6.155
CE 0094	5.858	6.112	5.878	6.078	5.858	6.231	5.878	6.179	5.858	6.350	5.878	6.280
CE 0096	5.983	6.237	6.003	6.203	5.983	6.356	6.003	6.304	5.983	6.475	6.003	6.405
CE 0098	6.108	6.362	6.128	6.328	6.108	6.481	6.128	6.429	6.108	6.600	6.128	6.530
CE 0100	6.233	6.487	6.253	6.453	6.233	6.606	6.253	6.554	6.233	6.725	6.253	6.655
CE 0102	6.358	6.612	6.378	6.578	6.358	6.731	6.378	6.679	6.358	6.850	6.378	6.780
CE 0104	6.483	6.737	6.503	6.703	6.483	6.856	6.503	6.804	6.483	6.975	6.503	6.905
CE 0106	6.608	6.862	6.628	6.828	6.608	6.981	6.628	6.929	6.608	7.100	6.628	7.030
CE 0108	6.733	6.987	6.753	6.953	6.733	7.106	6.753	7.054	6.733	7.225	6.753	7.155
CE 0110	6.858	7.112	6.878	7.078	6.858	7.231	6.878	7.179	6.858	7.350	6.878	7.280
CE 0112	6.983	7.237	7.003	7.203	6.983	7.356	7.003	7.304	6.983	7.475	7.003	7.405
	I.D +0.000 -0.008	O.D min.	I.D +0.008 -0.000	O.D max.	I.D +0.000 -0.008	O.D min.	I.D +0.008 -0.000	O.D max.	I.D +0.000 -0.008	O.D min.	I.D +0.008 -0.000	O.D max.
CE 0114	7.108	7.362	7.128	7.328	7.108	7.481	7.128	7.429	7.108	7.600	7.128	7.530
CE 0016	7.233	7.487	7.253	7.453	7.233	7.606	7.253	7.554	7.233	7.725	7.253	7.655
CE 0118	7.358	7.612	7.378	7.578	7.358	7.731	7.378	7.679	7.358	7.850	7.378	7.780
CE 0120	7.483	7.737	7.503	7.703	7.483	7.856	7.503	7.804	7.483	7.975	7.503	7.905
CE 0122	7.608	7.862	7.628	7.828	7.608	7.981	7.628	7.929	7.608	8.100	7.628	8.030
CE 0124	7.733	7.987	7.753	7.953	7.733	8.106	7.753	8.054	7.733	8.225	7.753	8.155

Seal dimensions are in inches and are prior to plating or coating

CE Series – External Pressure Face C-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 1/8				FREE HEIGHT 3/16				FREE HEIGHT 1/4			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D +0.000 -0.008	O.D min.	I.D +0.008 -0.000	O.D max.	I.D +0.000 -0.008	O.D min.	I.D +0.008 -0.000	O.D max.	I.D +0.000 -0.008	O.D min.	I.D +0.008 -0.000	O.D max.
CE 0126	7.858	8.112	7.878	8.078	7.858	8.231	7.878	8.179	7.858	8.350	7.878	8.280
CE 0128	7.983	8.237	8.003	8.203	7.983	8.356	8.003	8.304	7.983	8.475	8.003	8.405
CE 0130	8.108	8.362	8.128	8.328	8.108	8.481	8.128	8.429	8.108	8.600	8.128	8.530
CE 0132	8.233	8.487	8.253	8.453	8.233	8.606	8.253	8.554	8.233	8.725	8.253	8.655
CE 0134	8.358	8.612	8.378	8.578	8.358	8.731	8.378	8.679	8.358	8.850	8.378	8.780
CE 0136	8.483	8.737	8.503	8.703	8.483	8.856	8.503	8.804	8.483	8.975	8.503	8.905
CE 0138	8.608	8.862	8.628	8.828	8.608	8.981	8.628	8.929	8.608	9.100	8.628	9.030
CE 0140	8.733	8.987	8.753	8.953	8.733	9.106	8.753	9.054	8.733	9.225	8.753	9.155
CE 0142	8.858	9.112	8.878	9.078	8.858	9.231	8.878	9.179	8.858	9.350	8.878	9.280
CE 0144	8.983	9.237	9.003	9.203	8.983	9.356	9.003	9.304	8.983	9.475	9.003	9.405
CE 0146	9.108	9.362	9.128	9.328	9.108	9.481	9.128	9.429	9.108	9.600	9.128	9.530
CE 0148	9.233	9.487	9.253	9.453	9.233	9.606	9.253	9.554	9.233	9.725	9.253	9.655
CE 0150	9.358	9.612	9.378	9.578	9.358	9.731	9.378	9.679	9.358	9.850	9.378	9.780
CE 0152	9.483	9.737	9.503	9.703	9.483	9.856	9.503	9.804	9.483	9.975	9.503	9.905
CE 0154	9.608	9.862	9.628	9.828	9.608	9.981	9.628	9.929	9.608	10.100	9.628	10.030
CE 0156	9.733	9.987	9.753	9.953	9.733	10.106	9.753	10.054	9.733	10.225	9.753	10.155
CE 0158	9.858	10.112	9.878	10.078	9.858	10.231	9.878	10.179	9.858	10.350	9.878	10.280
CE 0160	9.983	10.237	10.003	10.203	9.983	10.356	10.003	10.304	9.983	10.475	10.003	10.405
	I.D +0.000 -0.012	O.D min.	I.D +0.012 -0.000	O.D max.	I.D +0.000 -0.012	O.D min.	I.D +0.012 -0.000	O.D max.	I.D +0.000 -0.012	O.D min.	I.D +0.012 -0.000	O.D max.
CE 0162	10.108	10.362	10.128	10.328	10.108	10.481	10.128	10.429	10.108	10.600	10.128	10.530
CE 0164	10.233	10.487	10.253	10.453	10.233	10.606	10.253	10.554	10.233	10.725	10.253	10.655
CE 0166	10.358	10.612	10.378	10.578	10.358	10.731	10.378	10.679	10.358	10.850	10.378	10.780
CE 0168	10.483	10.737	10.503	10.703	10.483	10.856	10.503	10.804	10.483	10.975	10.503	10.905
CE 0170	10.608	10.862	10.628	10.828	10.608	10.981	10.628	10.929	10.608	11.100	10.628	11.030
CE 0172	10.733	10.987	10.753	10.953	10.733	11.106	10.753	11.054	10.733	11.225	10.753	11.155
CE 0174	10.858	11.112	10.878	11.078	10.858	11.231	10.878	11.179	10.858	11.350	10.878	11.280
CE 0176	10.983	11.237	11.003	11.203	10.983	11.356	11.003	11.304	10.983	11.475	11.003	11.405
CE 0178	11.108	11.362	11.128	11.328	11.108	11.481	11.128	11.429	11.108	11.600	11.128	11.530
CE 0180	11.233	11.487	11.253	11.453	11.233	11.606	11.253	11.554	11.233	11.725	11.253	11.655
CE 0182	11.358	11.612	11.378	11.578	11.358	11.731	11.378	11.679	11.358	11.850	11.378	11.780
CE 0184	11.483	11.737	11.503	11.703	11.483	11.856	11.503	11.804	11.483	11.975	11.503	11.905
CE 0186	11.608	11.862	11.628	11.828	11.608	11.981	11.628	11.929	11.608	12.100	11.628	12.030
CE 0188	11.733	11.987	11.753	11.953	11.733	12.106	11.753	12.054	11.733	12.225	11.753	12.155
CE 0190	11.858	12.112	11.878	12.078	11.858	12.231	11.878	12.179	11.858	12.350	11.878	12.280
CE 0192	11.983	11.237	12.003	12.203	11.983	12.356	12.003	12.304	11.983	12.475	12.003	12.405
CE 0194	12.108	12.362	12.128	12.328	12.108	12.481	12.128	12.429	12.108	12.600	12.128	12.530
CE 0196	12.233	12.487	12.253	12.453	12.233	12.606	12.253	12.554	12.233	12.725	12.253	12.655

Seal dimensions are in inches and are prior to plating or coating

CE Series – External Pressure Face C-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 1/8				FREE HEIGHT 3/16				FREE HEIGHT 1/4			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D +0.000 -0.012	O.D min.	I.D +0.012 -0.000	O.D max.	I.D +0.000 -0.012	O.D min.	I.D +0.012 -0.000	O.D max.	I.D +0.000 -0.012	O.D min.	I.D +0.012 -0.000	O.D max.
CE 0198	12.358	12.612	12.378	12.578	12.358	12.731	12.378	12.679	12.358	12.850	12.378	12.780
CE 0200	12.483	12.737	12.503	12.703	12.483	12.856	12.503	12.804	12.483	12.975	12.503	12.905
CE 0202	12.608	12.862	12.628	12.828	12.608	12.981	12.628	12.929	12.608	13.100	12.628	13.030
CE 0204	12.733	12.987	12.753	12.953	12.733	13.106	12.753	13.054	12.733	13.225	12.753	13.155
CE 0206	12.858	13.112	12.878	13.078	12.858	13.231	12.878	13.179	12.858	13.350	12.878	13.280
CE 0208	12.983	13.237	13.003	13.203	12.983	13.356	13.003	13.304	12.983	13.475	13.003	13.405
CE 0210	13.108	13.362	13.128	13.328	13.108	13.481	13.128	13.429	13.108	13.600	13.128	13.530
CE 0212	13.233	13.487	13.253	13.453	13.233	13.606	13.253	13.554	13.233	13.725	13.253	13.655
CE 0214	13.358	13.612	13.378	13.578	13.358	13.731	13.378	13.679	13.358	13.850	13.378	13.780
CE 0216	13.483	13.737	13.503	13.703	13.483	13.856	13.503	13.804	13.483	13.975	13.503	13.905
CE 0218	13.608	13.862	13.628	13.828	13.608	13.981	13.628	13.929	13.608	14.100	13.628	14.030
CE 0220	13.733	13.987	13.753	13.953	13.733	14.106	13.753	14.054	13.733	14.225	13.753	14.155
CE 0222	13.858	14.112	13.878	14.078	13.858	14.231	13.878	14.179	13.858	14.350	13.878	14.280
CE 0224	13.983	14.237	14.003	14.203	13.983	14.356	14.003	14.304	13.983	14.475	14.003	14.405
CE 0226	14.108	14.362	14.128	14.328	14.108	14.481	14.128	14.429	14.108	14.600	14.128	14.530
CE 0228	14.233	14.487	14.253	14.453	14.233	14.606	14.253	14.554	14.233	14.725	14.253	14.655
CE 0230	14.358	14.612	14.378	14.578	14.358	14.731	14.378	14.679	14.358	14.850	14.378	14.780
CE 0232	14.483	14.737	14.503	14.703	14.483	14.856	14.503	14.804	14.483	14.975	14.503	14.905
CE 0234	14.608	14.862	14.628	14.828	14.608	14.981	14.628	14.929	14.608	15.100	14.628	15.030
CE 0236	14.733	14.987	14.753	14.953	14.733	15.106	14.753	15.054	14.733	15.225	14.753	15.155
CE 0238	14.858	15.112	14.878	15.078	14.858	15.231	14.878	15.179	14.858	15.350	14.878	15.280
CE 0240	14.983	15.237	15.003	15.203	14.983	15.356	15.003	15.304	14.983	15.475	15.003	15.405
	I.D +0.000 -0.015	O.D min.	I.D +0.015 -0.000	O.D max.	I.D +0.000 -0.015	O.D min.	I.D +0.015 -0.000	O.D max.	I.D +0.000 -0.015	O.D min.	I.D +0.015 -0.000	O.D max.
CE 0242	15.108	15.362	15.128	15.328	15.108	15.481	15.128	15.429	15.108	15.600	15.128	15.530
CE 0244	15.233	15.487	15.253	15.453	15.233	15.606	15.253	15.554	15.233	15.725	15.253	15.655
CE 0246	15.358	15.612	15.378	15.578	15.358	15.731	15.378	15.679	15.358	15.850	15.378	15.780
CE 0248	15.483	15.737	15.503	15.703	15.483	15.856	15.503	15.804	15.483	15.975	15.503	15.905
CE 0250	15.608	15.862	15.628	15.828	15.608	15.981	15.628	15.929	15.608	16.100	15.628	16.030
CE 0252	15.733	15.987	15.753	15.953	15.733	16.106	15.753	16.054	15.733	16.225	15.753	16.155
CE 0254	15.858	16.112	15.878	16.078	15.858	16.231	15.878	16.179	15.858	16.350	15.878	16.280
CE 0256	15.983	16.237	16.003	16.203	15.983	16.356	16.003	16.304	15.983	16.475	16.003	16.405
CE 0258	16.108	16.362	16.128	16.328	16.108	16.481	16.128	16.429	16.108	16.600	16.128	16.530
CE 0260	16.233	16.487	16.253	16.453	16.233	16.606	16.253	16.554	16.233	16.725	16.253	16.655
CE 0262	16.358	16.612	16.378	16.578	16.358	16.731	16.378	16.679	16.358	16.850	16.378	16.780
CE 0264	16.483	16.737	16.503	16.703	16.483	16.856	16.503	16.804	16.483	16.975	16.503	16.905
CE 0266	16.608	16.862	16.628	16.828	16.608	16.981	16.628	16.929	16.608	17.100	16.628	17.030
CE 0268	16.733	16.987	16.753	16.953	16.733	17.106	16.753	17.054	16.733	17.225	16.753	17.155

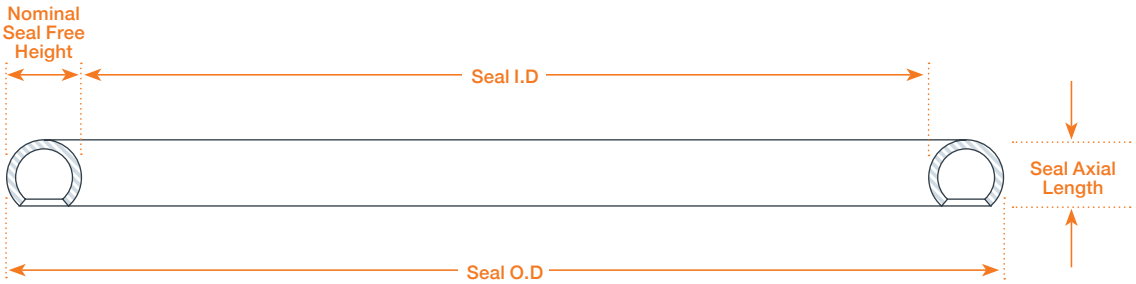
Seal dimensions are in inches and are prior to plating or coating

CE Series – External Pressure Face C-Seal

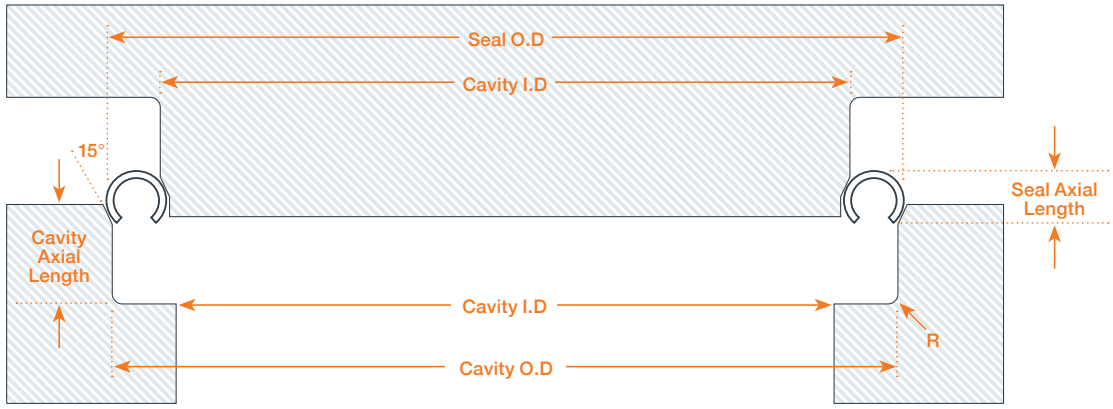
SEAL TYPE & DIAMETER	FREE HEIGHT 1/8				FREE HEIGHT 3/16				FREE HEIGHT 1/4			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D +0.000 -0.015	O.D min.	I.D +0.015 -0.000	O.D max.	I.D +0.000 -0.015	O.D min.	I.D +0.015 -0.000	O.D max.	I.D +0.000 -0.015	O.D min.	I.D +0.015 -0.000	O.D max.
CE 0270	16.858	17.112	16.878	17.078	16.858	17.231	16.878	17.179	16.858	17.350	16.878	17.280
CE 0272	16.983	17.237	17.003	17.203	16.983	17.356	17.003	17.304	16.983	17.475	17.003	17.405
CE 0274	17.108	17.362	17.128	17.328	17.108	17.481	17.128	17.429	17.108	17.600	17.128	17.530
CE 0276	17.233	17.487	17.253	17.453	17.233	17.606	17.253	17.554	17.233	17.725	17.253	17.655
CE 0278	17.358	17.612	17.378	17.578	17.358	17.731	17.378	17.679	17.358	17.850	17.378	17.780
CE 0280	17.483	17.737	17.503	17.703	17.483	17.856	17.503	17.804	17.483	17.975	17.503	17.905
CE 0282	17.608	17.862	17.628	17.828	17.608	17.981	17.628	17.929	17.608	18.100	17.628	18.030
CE 0284	17.733	17.987	17.753	17.953	17.733	18.106	17.753	18.054	17.733	18.225	17.753	18.155
CE 0286	17.858	18.112	17.878	18.078	17.858	18.231	17.878	18.179	17.858	18.350	17.878	18.280
CE 0288	17.983	18.237	18.003	18.203	17.983	18.356	18.003	18.304	17.983	18.475	18.003	18.405
CE 0290	18.108	18.362	18.128	18.328	18.108	18.481	18.128	18.429	18.108	18.600	18.128	18.530
CE 0292	18.233	18.487	18.253	18.453	18.233	18.606	18.253	18.554	18.233	18.725	18.253	18.655
CE 0294	18.358	18.612	18.378	18.578	18.358	18.731	18.378	18.679	18.358	18.850	18.378	18.780
CE 0296	18.483	18.737	18.503	18.703	18.483	18.856	18.503	18.804	18.483	18.975	18.503	18.905
CE 0298	18.608	18.862	18.628	18.828	18.608	18.981	18.628	19.929	18.608	19.100	18.628	19.030
CE 0300	18.733	18.987	18.753	18.953	18.733	19.106	18.753	19.054	18.733	19.225	18.753	19.155
CE 0302	18.858	19.112	18.878	19.078	18.858	19.231	18.878	19.179	18.858	19.350	18.878	19.280
CE 0304	18.983	19.237	19.003	19.203	18.983	19.356	19.003	19.304	18.983	19.475	19.003	19.405
CE 0306	19.108	19.362	19.128	19.328	19.108	19.481	19.128	19.429	19.108	19.600	19.128	19.530
CE 0308	19.233	19.487	19.253	19.453	19.233	19.606	19.253	19.554	19.233	19.725	19.253	19.655
CE 0310	19.358	19.612	19.378	19.578	19.358	19.731	19.378	19.679	19.358	19.850	19.378	19.780
CE 0312	19.483	19.737	19.503	19.703	19.483	19.856	19.503	19.804	19.483	19.975	19.503	19.905
CE 0314	19.608	19.862	19.628	19.828	19.608	19.981	19.628	19.929	19.608	20.100	19.628	20.030
CE 0316	19.733	19.987	19.753	19.953	19.733	20.106	19.753	20.054	19.733	20.225	19.753	20.155
CE 0318	19.858	20.112	19.878	20.078	19.858	20.231	19.878	20.179	19.858	20.350	19.878	20.280

Seal dimensions are in inches and are prior to plating or coating

CA Series – Axial C-Seal



Axial C-Seal



Axial C-Seal Cavity

– Weld permitted

– Plating may be incomplete away from sealing surfaces

– Seal diameters are an average and can be out of round in excess of tolerances

– See the C-Seal introduction pages for details of seal free height, cavity depth and radius R

CA Series – Axial C-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 1/16				FREE HEIGHT 3/32				FREE HEIGHT 1/8			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D +0.000 -0.001	O.D +0.001 -0.000	I.D +0.001 -0.001	O.D +0.001 -0.001	I.D +0.000 -0.001	O.D +0.001 -0.000	I.D +0.001 -0.001	O.D +0.001 -0.001	I.D +0.000 -0.001	O.D +0.001 -0.000	I.D +0.001 -0.001	O.D +0.001 -0.001
CA 0002	0.125	0.248	0.122	0.251	0.125	0.310	0.122	0.313	·	·	·	·
CA 0003	0.187	0.310	0.184	0.313	0.187	0.373	0.184	0.376	·	·	·	·
CA 0004	0.250	0.373	0.247	0.376	0.250	0.435	0.247	0.438	·	·	·	·
CA 0005	0.312	0.435	0.309	0.438	0.312	0.498	0.309	0.501	·	·	·	·
CA 0006	0.375	0.498	0.372	0.501	0.375	0.560	0.372	0.563	0.375	0.623	0.372	0.626
CA 0007	0.437	0.560	0.434	0.563	0.437	0.623	0.434	0.626	0.437	0.685	0.434	0.688
CA 0008	0.500	0.623	0.497	0.626	0.500	0.685	0.497	0.688	0.500	0.748	0.497	0.751
CA 0009	0.562	0.685	0.559	0.688	0.562	0.748	0.559	0.751	0.562	0.810	0.559	0.813
CA 0010	0.625	0.748	0.622	0.751	0.625	0.810	0.622	0.813	0.625	0.873	0.622	0.876
CA 0011	0.687	0.810	0.684	0.813	0.687	0.873	0.684	0.876	0.687	0.935	0.684	0.938
CA 0012	0.750	0.873	0.747	0.876	0.750	0.935	0.747	0.938	0.750	0.998	0.747	1.001
CA 0013	0.812	0.935	0.809	0.938	0.812	0.998	0.809	1.001	0.812	1.060	0.809	1.063
CA 0014	0.875	0.998	0.872	1.001	0.875	1.060	0.872	1.063	0.875	1.123	0.872	1.126
CA 0015	0.937	1.060	0.934	1.063	0.937	1.123	0.934	1.126	0.937	1.185	0.934	1.188
CA 0016	1.000	1.123	0.997	1.126	1.000	1.185	0.997	1.188	1.000	1.248	0.997	1.251
CA 0018	1.125	1.248	1.122	1.251	1.125	1.310	1.122	1.313	1.125	1.373	1.122	1.376
CA 0020	1.250	1.373	1.247	1.376	1.250	1.435	1.247	1.438	1.250	1.498	1.247	1.501
CA 0022	1.375	1.498	1.372	1.501	1.375	1.560	1.372	1.563	1.375	1.623	1.372	1.626
CA 0024	·	·	·	·	1.500	1.685	1.497	1.688	1.500	1.748	1.497	1.751
CA 0026	·	·	·	·	1.625	1.810	1.622	1.813	1.625	1.873	1.622	1.876
CA 0028	·	·	·	·	1.750	1.935	1.747	1.938	1.750	1.998	1.747	2.001
CA 0030	·	·	·	·	1.875	2.060	1.872	2.063	1.875	2.123	1.872	2.126
CA 0032	·	·	·	·	2.000	2.185	1.997	2.188	2.000	2.248	1.997	2.251
CA 0034	·	·	·	·	2.125	2.310	2.122	2.313	2.125	2.373	2.122	2.376
CA 0036	·	·	·	·	2.250	2.435	2.247	2.438	2.250	2.498	2.247	2.501
CA 0038	·	·	·	·	2.375	2.560	2.372	2.563	2.375	2.623	2.372	2.626
CA 0040	·	·	·	·	2.500	2.685	2.497	2.688	2.500	2.748	2.497	2.751
CA 0042	·	·	·	·	2.625	2.810	2.622	2.813	2.625	2.873	2.622	2.876
CA 0044	·	·	·	·	2.750	2.935	2.747	2.938	2.750	2.998	2.747	3.001
CA 0046	·	·	·	·	2.875	3.060	2.872	3.063	2.875	3.123	2.872	3.126

Seal dimensions are in inches and are prior to plating or coating

CA Series – Axial C-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 1/8				FREE HEIGHT 3/16				FREE HEIGHT 1/4			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D +0.000 -0.002	O.D +0.002 -0.000	I.D +0.002 -0.002	O.D +0.002 -0.002	I.D +0.000 -0.002	O.D +0.002 -0.000	I.D +0.002 -0.002	O.D +0.002 -0.002	I.D +0.000 -0.002	O.D +0.002 -0.000	I.D +0.002 -0.002	O.D +0.002 -0.002
CA 0048	3.000	3.244	2.995	3.249	3.000	3.369	2.995	3.374	·	·	·	·
CA 0050	3.125	3.369	3.120	3.374	3.125	3.494	3.120	3.499	·	·	·	·
CA 0052	3.250	3.494	3.245	3.499	3.250	3.619	3.245	3.624	·	·	·	·
CA 0054	3.375	3.619	3.370	3.624	3.375	3.744	3.370	3.749	·	·	·	·
CA 0056	3.500	3.744	3.495	3.749	3.500	3.869	3.495	3.874	·	·	·	·
CA 0058	3.625	3.869	3.620	3.874	3.625	3.994	3.620	3.999	·	·	·	·
CA 0060	3.750	3.994	3.745	3.999	3.750	4.119	3.745	4.124	·	·	·	·
CA 0062	3.875	4.119	3.870	4.124	3.875	4.244	3.870	4.249	3.875	4.369	3.870	4.374
CA 0064	4.000	4.244	3.995	4.249	4.000	4.369	3.995	4.374	4.000	4.494	3.995	4.499
CA 0066	4.125	4.369	4.120	4.374	4.125	4.494	4.120	4.499	4.125	4.619	4.120	4.624
CA 0068	4.250	4.494	4.245	4.499	4.250	4.619	4.245	4.624	4.250	4.744	4.245	4.749
CA 0070	4.375	4.619	4.370	4.624	4.375	4.744	4.370	4.749	4.375	4.869	4.370	4.874
CA 0072	4.500	4.744	4.495	4.749	4.500	4.869	4.495	4.874	4.500	4.994	4.495	4.999
CA 0074	4.625	4.869	4.620	4.874	4.625	4.994	4.620	4.999	4.625	5.119	4.620	5.124
CA 0076	4.750	4.994	4.745	4.999	4.750	5.119	4.745	5.124	4.750	5.244	4.745	5.249
CA 0078	4.875	5.119	4.870	5.124	4.875	5.244	4.870	5.249	5.875	5.369	4.870	5.374
CA 0080	5.000	5.244	4.995	5.249	5.000	5.369	4.995	5.374	5.000	5.494	4.995	5.499
CA 0082	5.125	5.369	5.120	5.374	5.125	5.494	5.120	5.499	5.125	5.619	5.120	5.624
CA 0084	5.250	5.494	5.245	5.499	5.250	5.619	5.245	5.624	5.250	5.744	5.245	5.749
CA 0086	5.375	5.619	5.370	5.624	5.375	5.744	5.370	5.749	5.375	5.869	5.370	5.874
CA 0088	5.500	5.744	5.495	5.749	5.500	5.869	5.495	5.874	5.500	5.994	5.495	5.999

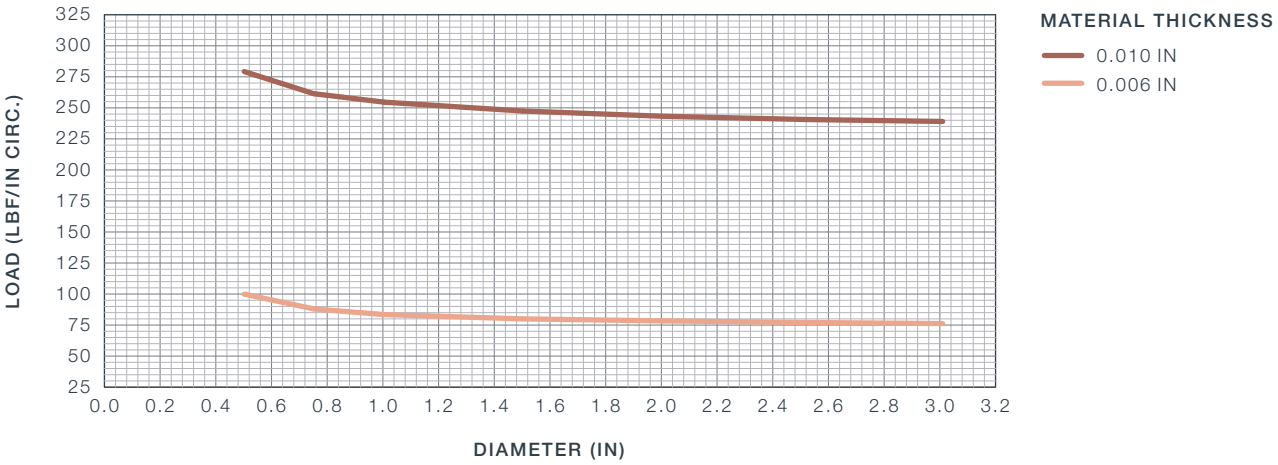
Seal dimensions are in inches and are prior to plating or coating

Load

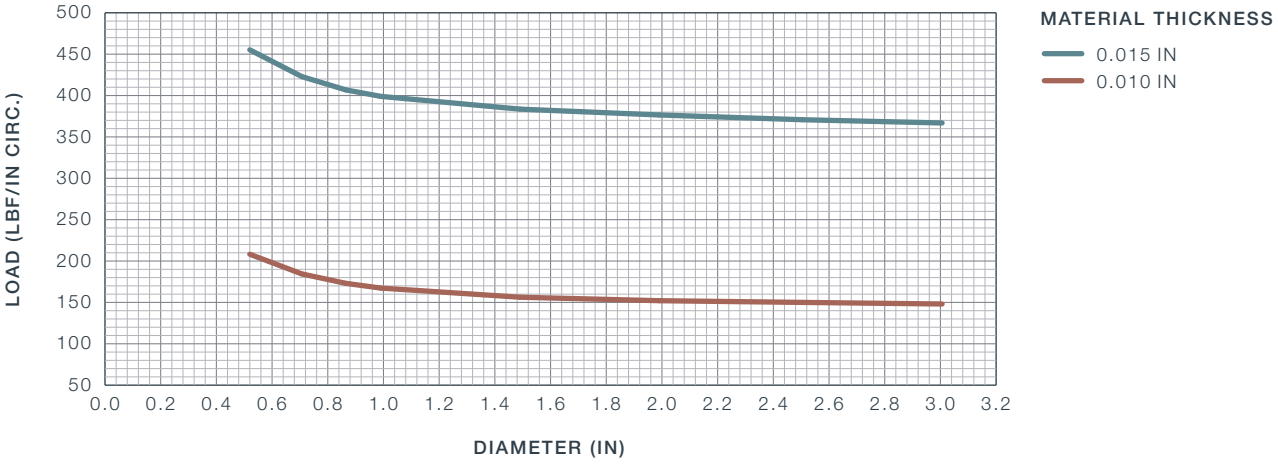
The seating loads for each seal section are shown below. The values shown are for long cycle precipitation heat treated Inconel 718 seals. These values are for guidance only as a number of factors can have a significant effect on the load including:

– Seal diameter
– Seal free height
– Cavity depth
– Tolerances
– Variations in material thickness and properties
– Heat treatment
– Coatings and platings

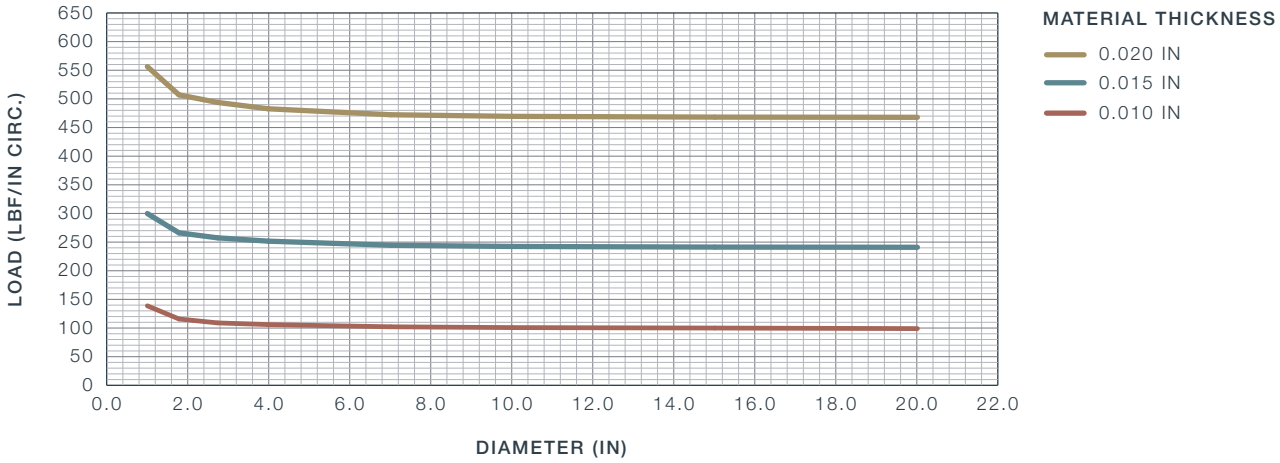
As a guideline, for work hardened Inconel 718, the values are reduced by approximately 50%. For long cycle precipitation heat treated Inconel X750, the values are reduced by approximately 25%.



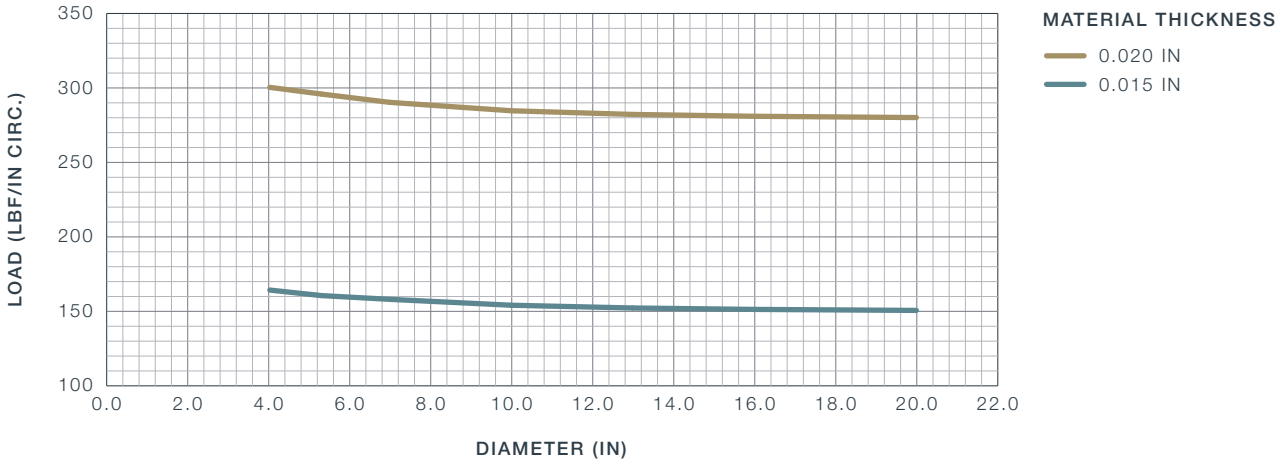
1/16 Section Seating Load



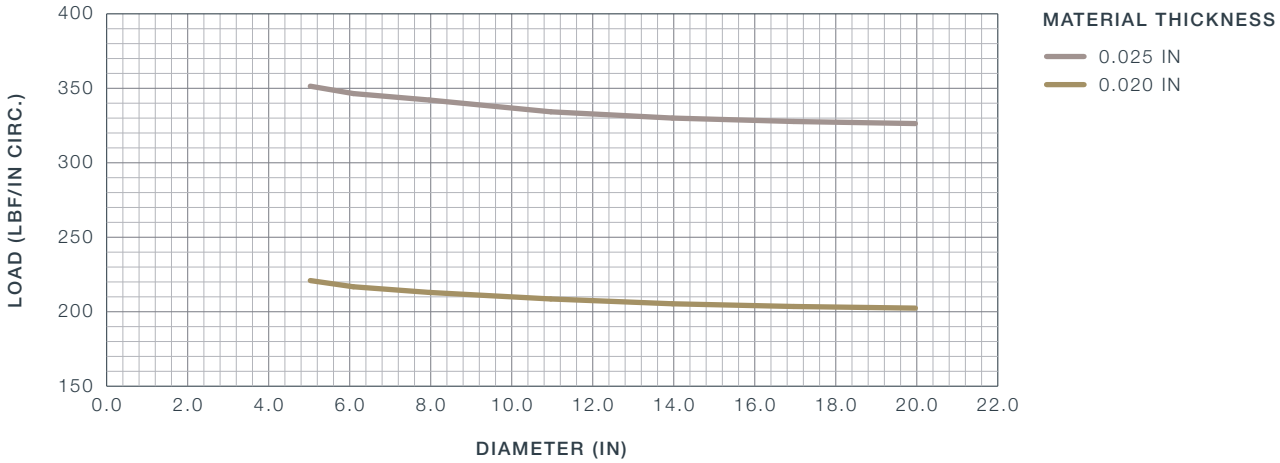
3/32 Section Seating Load



1/8 Section Seating Load



3/16 Section Seating Load

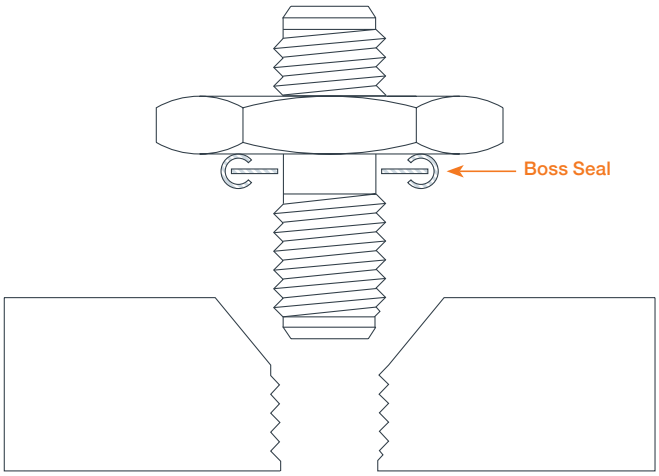


1/4 Section Seating Load

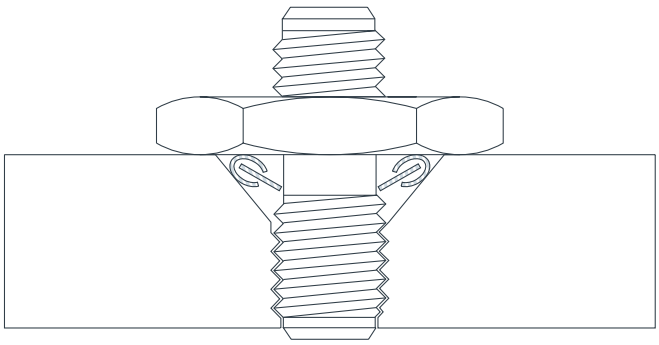
Boss Seals

Product Description

Boss Seals are a specialist range of C-Seals with an internal location washer designed for use with AND 10050 and MS 33649 type bosses.



Boss Seal – Before Installation



Boss Seals – After Installation

Part Properties

– Available in a range of standard industry sizes
– Fits in either direction at installation
– Internal washer enables part to be screwed on to the fitting and centres the seal in the boss
– Part remains with fitting on disassembly

Boss Seal Specification

Nicholsons offer a range of industry standard Boss Seal sizes. Available sizes are listed on page 57.

MATERIAL TYPE

The standard material for a Boss Seal is Inconel X750

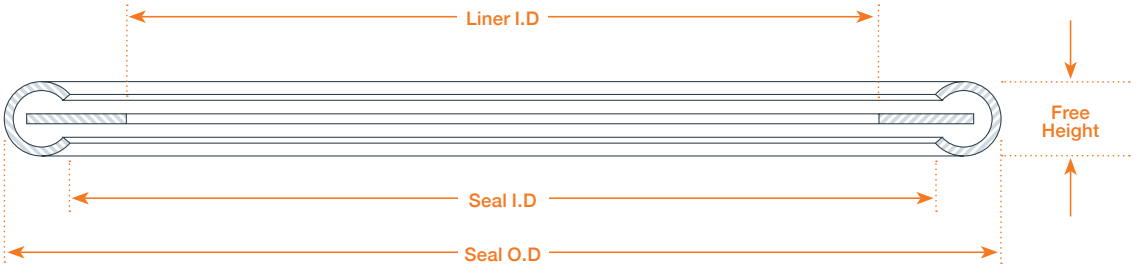
HEAT TREATMENT

The standard treatment is work hardened.

PLATING OR COATING

The standard Boss Seal is silver plated to a thickness of 0.0005"/0.0010". Other plating types are available on request. Please contact our Engineers for further information.

Part List – Boss Seal



Boss Seal

– Weld permitted

– Plating may be incomplete away from sealing surfaces

– Seal diameters are an average and can be out of round in excess of tolerances

BOSS NUMBER	PART NUMBER	SEAL O.D	SEAL I.D	FREE HEIGHT	LINER I.D	MT'L THK
		+0.000 -0.005	min.	+0.002 -0.002	.	+0.001 -0.001
2	1616 0002	0.381	0.302	0.046	0.278	0.006
3	1616 0003	0.444	0.365	0.046	0.341	0.006
4	1616 0004	0.506	0.427	0.046	0.397	0.006
5	1616 0005	0.569	0.490	0.046	0.459	0.006
6	1616 0006	0.631	0.552	0.046	0.517	0.006
7	1616 0007	0.694	0.615	0.046	0.579	0.006
8	1616 0008	0.819	0.740	0.046	0.699	0.006
9	1616 0009	0.882	0.803	0.046	0.761	0.006
10	1616 0010	0.944	0.865	0.046	0.817	0.006
11	1616 0011	1.100	1.021	0.046	0.932	0.006
12	1616 0012	1.156	1.051	0.062	0.995	0.010
14	1616 0014	1.281	1.176	0.062	1.120	0.010
16	1616 0016	1.406	1.301	0.062	1.245	0.010
18	1616 0018	1.593	1.488	0.062	1.432	0.010
20	1616 0020	1.718	1.613	0.062	1.557	0.010
24	1616 0024	1.968	1.863	0.062	1.807	0.010
28	1616 0028	2.343	2.238	0.062	2.182	0.010
32	1616 0032	2.594	2.489	0.062	2.432	0.010

Seal dimensions are in inches and are prior to plating or coating

Corruplus

Product Description

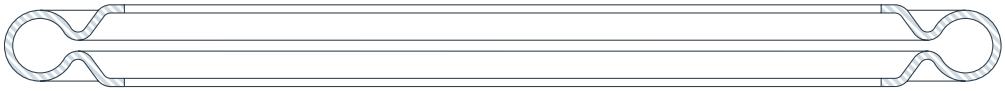
Corruplus Mk1 seals are a range of flexible metal seals designed to be compressed in a cavity of a controlled depth creating a seal.

The Corruplus Mk1 range of part numbers AS42700–AS42799 are approved as an SBAC industry standard part.

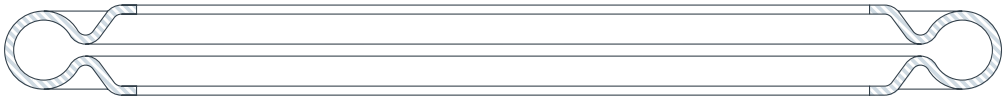
Although normally used in a groove or counterbore, it is possible to use Corruplus with a retaining/nip control ring. The low clamp load characteristic of the seal makes it ideally suited for use in 'V' Band type couplings.

Three standard seal sections are available:

Small Section Corruplus Mk1 Seals



Large Section Corruplus Mk1 Seals



Corruplus Mk1 Seals for 'V' Band Couplings

Part Properties

– Able to seal high and low temperatures and pressures
– Flexible, low load seal with good recovery
– A large range of standard sizes
– Three standard seal sections available
– All seals are individually pressure tested
– Can be re-used. A Corruplus Test Rig is required
– Fire proof operation

Corruplus Specification

Nicholsons offer a range of Corruplus Mk1 seals in the three standard sections. Further information for small and large section ‘AS’ and ‘CPL’ Corruplus Mk1 seals can be found on pages 62 to 67. We also offer a series of CPL/V seals for ‘V’ Band Couplings (page 68) designed to suit a particular flange configuration.

Bespoke Corruplus can be designed for specific applications. In this instance, please contact us for assistance.

MATERIAL TYPE

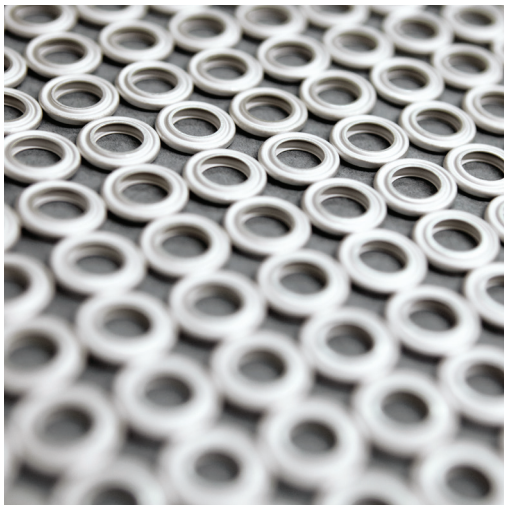
The standard material for Corruplus is Inconel 718.
Small section Corruplus are made from 0.012" material thickness.
Large section Corruplus are made from 0.015" material thickness.
For ‘V’ Band Coupling sections, 0.015" thick material is used.

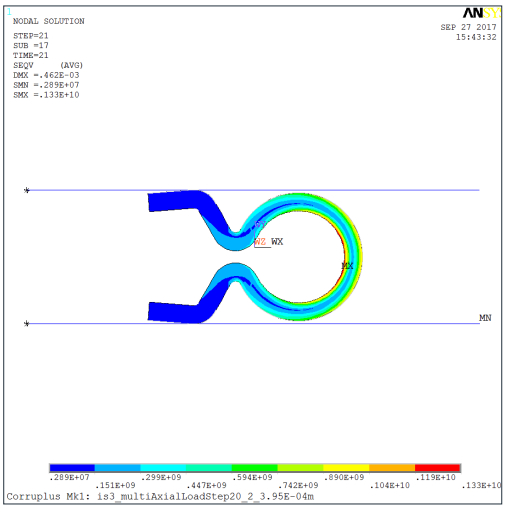
HEAT TREATMENT

The standard treatment is Solution and Long Cycle Precipitation.

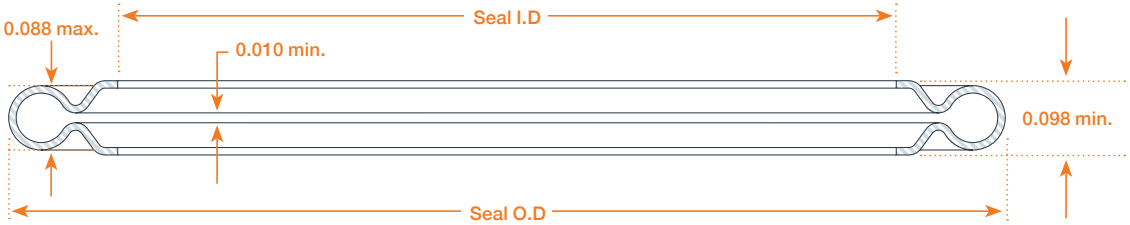
PLATING OR COATING

Corruplus are silver plated to a thickness of 0.002" min. The seal is given a high temperature bake to soften the silver plating.
Nickel plating is an available option. Please contact us for further information.

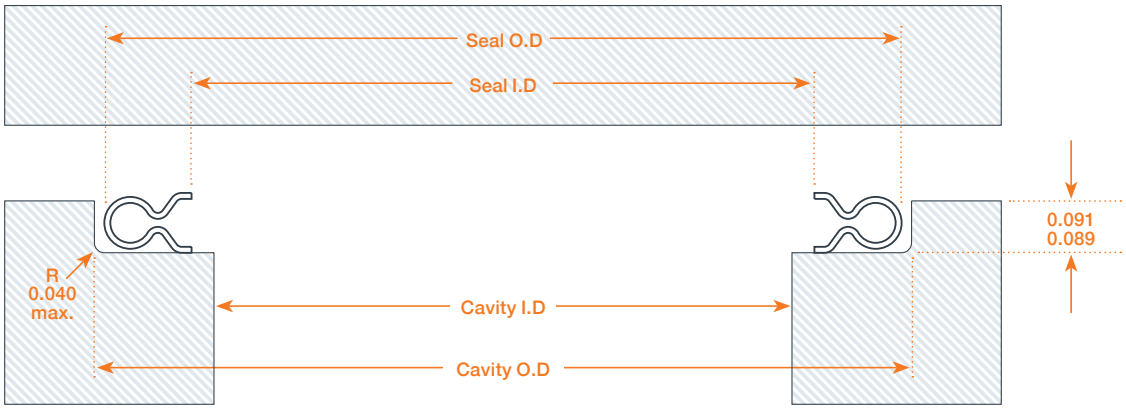




Small Section Corruplus Mk1 Seals



Corruplus Mk1 Small Section



Small Section Corruplus Mk1 Cavity

PART NUMBER	CAVITY		SEAL	
	I.D max.	O.D +0.005 -0.000	I.D +0.010 -0.000	O.D +0.000 -0.010
CPL 107	0.118	0.407	0.145	0.405
CPL 108	0.149	0.438	0.176	0.436
CPL 109	0.211	0.500	0.238	0.498
AS42701	0.249	0.537	0.276	0.535
CPL 110	0.272	0.563	0.300	0.560
AS42702	0.288	0.577	0.315	0.575
AS42703	0.328	0.616	0.354	0.614
CPL 111	0.336	0.625	0.363	0.623
AS42704	0.367	0.656	0.394	0.654
CPL 112	0.397	0.688	0.425	0.685
AS42705	0.406	0.695	0.433	0.693
AS42706	0.446	0.734	0.472	0.732
CPL 113	0.461	0.750	0.488	0.748
AS42707	0.485	0.774	0.512	0.772
AS42708	0.524	0.813	0.551	0.811
AS42709	0.564	0.852	0.591	0.850

Seal dimensions are in inches and apply after plating

Small Section Corruplus Mk1 Seals

PART NUMBER	CAVITY		SEAL	
	I.D max.	O.D +0.005 -0.000	I.D +0.010 -0.000	O.D +0.000 -0.010
CPL 115	0.586	0.875	0.613	0.873
AS42710	0.603	0.892	0.630	0.890
AS42711	0.643	0.931	0.669	0.929
CPL 116	0.647	0.938	0.675	0.935
AS42712	0.682	0.970	0.709	0.969
CPL 117	0.711	1.000	0.738	0.998
AS42713	0.721	1.010	0.748	1.008
AS42714	0.761	1.049	0.787	1.047
CPL 118	0.772	1.063	0.800	1.060
AS42715	0.800	1.089	0.827	1.087
CPL 119	0.836	1.125	0.863	1.123
AS42716	0.839	1.128	0.866	1.126
AS42717	0.879	1.167	0.906	1.165
CPL 120	0.899	1.188	0.926	1.186
AS42718	0.918	1.207	0.945	1.205
AS42719	0.957	1.246	0.984	1.244
CPL 121	0.961	1.250	0.988	1.248
AS42720	0.997	1.285	1.024	1.283
CPL 122	1.022	1.313	1.050	1.310
AS42721	1.036	1.325	1.063	1.323
AS42722	1.076	1.364	1.102	1.362
CPL 123	1.086	1.375	1.113	1.373
AS42723	1.115	1.404	1.142	1.402
CPL 124	1.149	1.438	1.176	1.436
AS42724	1.154	1.443	1.181	1.441
AS42725	1.194	1.482	1.220	1.480
CPL 125	1.211	1.500	1.238	1.498
AS42726	1.233	1.522	1.260	1.520
AS42727	1.272	1.561	1.299	1.559
AS42728	1.312	1.600	1.339	1.598
CPL 127	1.336	1.625	1.363	1.623
AS42729	1.351	1.640	1.378	1.638
AS42730	1.391	1.679	1.417	1.677
CPL 128	1.398	1.688	1.425	1.686
AS42731	1.430	1.719	1.457	1.717
CPL 129	1.461	1.750	1.488	1.748
AS42732	1.469	1.758	1.496	1.756
AS42733	1.509	1.797	1.535	1.795
CPL 130	1.522	1.813	1.550	1.810
AS42734	1.548	1.837	1.575	1.835
AS42735	1.587	1.876	1.614	1.874

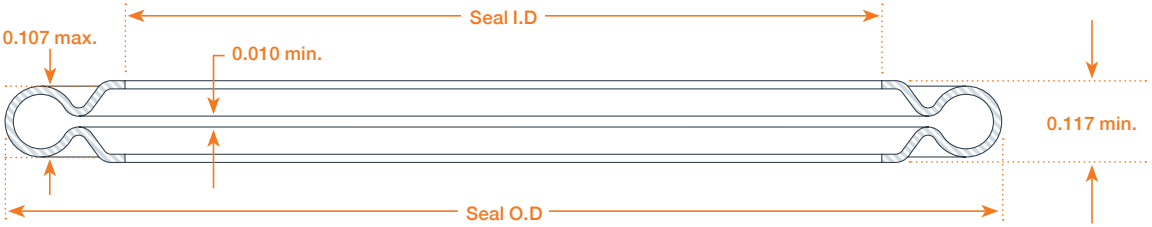
Seal dimensions are in inches and apply after plating

Small Section Corruplus Mk1 Seals

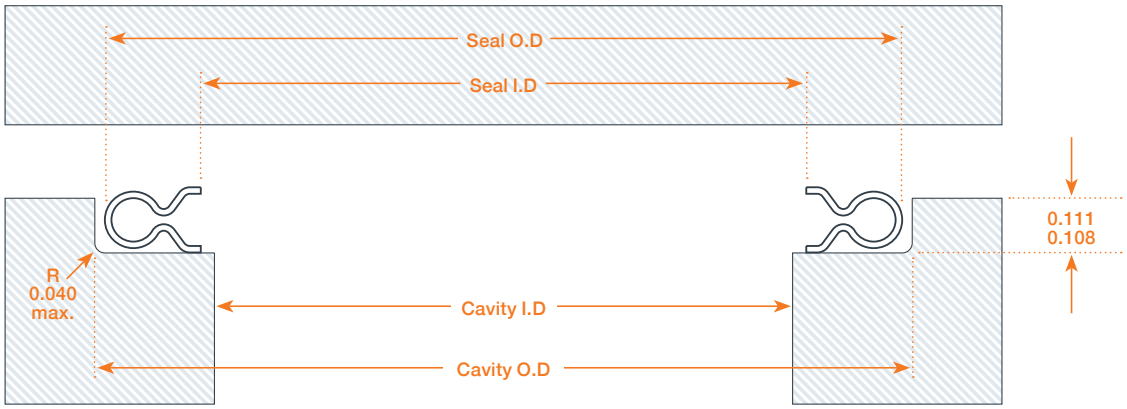
PART NUMBER	CAVITY		SEAL	
	I.D max.	O.D +0.005 -0.000	I.D +0.010 -0.000	O.D +0.000 -0.010
AS42736	1.627	1.915	1.654	1.913
CPL 132	1.647	1.938	1.675	1.935
AS42737	1.666	1.955	1.693	1.953
AS42738	1.706	1.994	1.732	1.992
CPL 134	1.711	2.000	1.738	1.998
AS42739	1.745	2.033	1.772	2.031
CPL 135	1.772	2.063	1.800	2.060
AS42740	1.784	2.073	1.811	2.071
AS42741	1.824	2.112	1.850	2.110
CPL 136	1.835	2.126	1.863	2.123
AS42742	1.863	2.152	1.890	2.150
CPL 137	1.899	2.188	1.926	2.186
AS42743	1.902	2.191	1.929	2.189
AS42744	1.942	2.230	1.969	2.228
CPL 138	1.962	2.251	1.989	2.249
AS42745	1.981	2.270	2.008	2.268
AS42746	2.020	2.309	2.047	2.307
AS42747	2.060	2.348	2.087	2.346
AS42748	2.099	2.388	2.126	2.386

Seal dimensions are in inches and apply after plating

Large Section Corruplus Mk1 Seals



Corruplus Mk1 Large Section



Large Section Corruplus Mk1 Cavity

PART NUMBER	CAVITY		SEAL	
	I.D max.	O.D +0.010 -0.000	I.D +0.010 -0.000	O.D +0.000 -0.010
CPL 227	1.998	2.382	2.030	2.380
CPL 228	2.123	2.507	2.155	2.505
AS42749	2.132	2.520	2.165	2.516
CPL 229	2.248	2.632	2.280	2.630
AS42750	2.329	2.717	2.362	2.713
CPL 230	2.373	2.757	2.405	2.755
CPL 231	2.498	2.882	2.530	2.880
AS42751	2.526	2.913	2.559	2.909
CPL 232	2.623	3.007	2.655	3.005
AS42752	2.722	3.110	2.756	3.106
CPL 233	2.748	3.132	2.780	3.130
CPL 234	2.873	3.257	2.905	3.255
AS42753	2.919	3.307	2.953	3.303
CPL 235	2.998	3.382	3.030	3.380
AS42754	3.116	3.504	3.150	3.500

Seal dimensions are in inches and apply after plating

Large Section Corruplus Mk1 Seals

PART NUMBER	CAVITY		SEAL	
	I.D max.	O.D +0.010 -0.000	I.D +0.010 -0.000	O.D +0.000 -0.010
CPL 236	3.123	3.507	3.155	3.505
CPL 237	3.248	3.632	3.280	3.630
AS42755	3.313	3.701	3.346	3.697
CPL 238	3.373	3.757	3.405	3.755
CPL 239	3.498	3.882	3.530	3.880
AS42756	3.510	3.898	3.543	3.894
CPL 240	3.623	4.007	3.655	4.005
AS42757	3.707	4.094	3.740	4.091
CPL 241	3.748	4.132	3.780	4.130
CPL 242	3.873	4.257	3.905	4.255
AS42758	3.904	4.291	3.937	4.287
CPL 243	3.998	4.382	4.030	4.380
AS42759	4.100	4.488	4.134	4.484
CPL 244	4.123	4.507	4.155	4.505
CPL 245	4.248	4.632	4.280	4.630
AS42760	4.297	4.685	4.331	4.681
CPL 246	4.373	4.757	4.405	4.755
AS42761	4.494	4.882	4.528	4.878
CPL 248	4.623	5.007	4.655	5.005
AS42762	4.691	5.079	4.724	5.075
CPL 249	4.748	5.132	4.780	5.130
CPL 250	4.873	5.257	4.905	5.255
AS42763	4.888	5.276	4.921	5.272
CPL 251	4.998	5.382	5.030	5.380
AS42764	5.085	5.472	5.118	5.468
CPL 252	5.123	5.507	5.155	5.505
CPL 253	5.248	5.632	5.280	5.630
AS42765	5.281	5.669	5.315	5.665
CPL 254	5.373	5.757	5.405	5.755
AS42766	5.478	5.866	5.512	5.862
CPL 255	5.498	5.882	5.530	5.880
CPL 256	5.623	6.007	5.655	6.005
AS42767	5.675	6.063	5.709	6.059
CPL 257	5.748	6.132	5.780	6.130
AS42768	5.872	6.260	5.906	6.256
AS42769	6.069	6.457	6.102	6.453
AS42770	6.266	6.654	6.299	6.650
AS42771	6.463	6.850	6.496	6.846
AS42772	6.659	7.047	6.693	7.043
AS42773	6.856	7.244	6.890	7.240

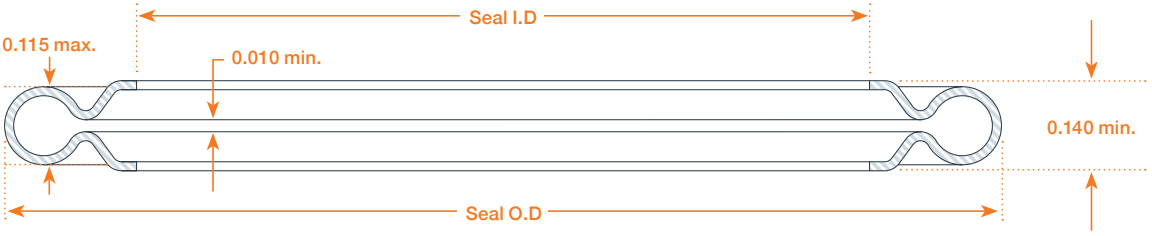
Seal dimensions are in inches and apply after plating

Large Section Corruplus Mk1 Seals

PART NUMBER	CAVITY		SEAL	
	I.D max.	O.D +0.010 -0.000	I.D +0.010 -0.000	O.D +0.000 -0.010
AS42774	7.053	7.441	7.087	7.437
AS42775	7.250	7.638	7.283	7.634
AS42776	7.447	7.835	7.480	7.831
AS42777	7.644	8.031	7.677	8.028
AS42778	7.841	8.228	7.874	8.224
AS42779	8.234	8.622	8.268	8.618
AS42780	8.628	9.016	8.661	9.012
AS42781	9.022	9.409	9.055	9.406
AS42782	9.415	9.803	9.449	9.799
AS42783	9.809	10.197	9.843	10.193
AS42784	10.203	10.591	10.236	10.587
AS42785	10.596	10.984	10.630	10.98
AS42786	10.990	11.378	11.024	11.374
AS42787	11.384	11.772	11.417	11.768
AS42788	11.778	12.165	11.811	12.161

Seal dimensions are in inches and apply after plating

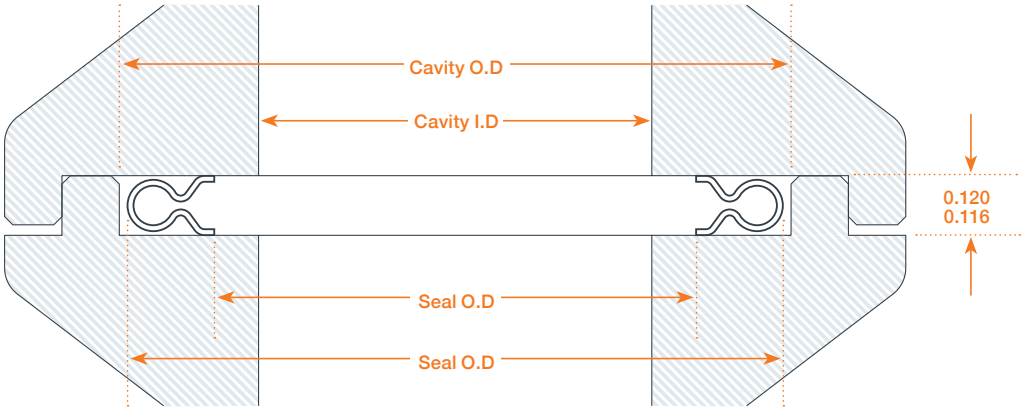
Corruplus Mk1 Seals For ‘V’ Band Couplings



Corruplus Mk1 for ‘V’ Band Couplings

This series of CPL/V seals are designed to suit one particular flange configuration as used in the Aircraft Industry

All other Corruplus Mk1 Seals can be used in suitable ‘V’ flanges



Corruplus Mk1 Cavity for ‘V’ Band Couplings

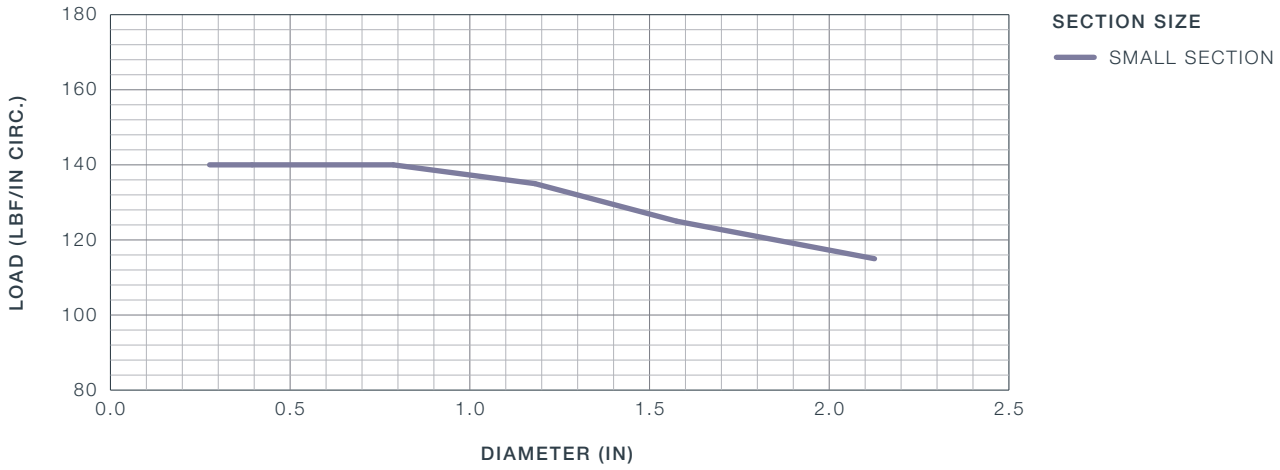
PART NUMBER	CAVITY		SEAL	
	I.D max.	O.D +0.005 -0.000	I.D +0.010 -0.000	O.D +0.000 -0.010
CPL/V 100	0.962	1.364	0.988	1.363
CPL/V 125	1.212	1.614	1.238	1.613
CPL/V 150	1.462	1.864	1.488	1.863
CPL/V 175	1.712	2.114	1.738	2.113
CPL/V 200	1.962	2.364	1.988	2.363
CPL/V 225	2.213	2.615	2.239	2.614
CPL/V 250	2.463	2.865	2.489	2.864
CPL/V 275	2.713	3.115	2.739	3.114
CPL/V 300	2.963	3.365	2.989	3.364
CPL/V 325	3.213	3.615	3.239	3.614
CPL/V 350	3.464	3.866	3.49	3.865
CPL/V 400	3.964	4.366	3.99	4.365
CPL/V 450	4.464	4.866	4.49	4.865
CPL/V 500	4.966	5.368	4.992	5.367
CPL/V 550	5.466	5.868	5.492	5.867
CPL/V 600	5.966	6.368	5.992	6.367

Seal dimensions are in inches and apply after plating

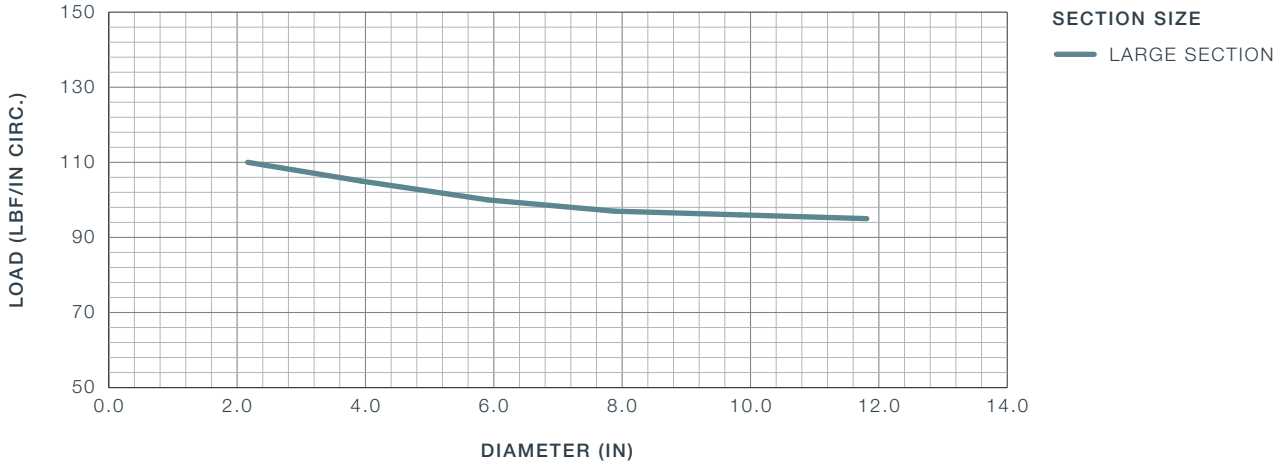
Load

The seating loads for small and large Corruplus sections are shown below. The values shown are for solution and long cycle precipitation heat treated Inconel 718 seals. This information is for guidance only as a number of factors can have a significant effect on the load including:

– Seal diameter
– Seal free height
– Cavity depth
– Tolerances
– Variations in material thicknesses and properties



Small Section Seating Load

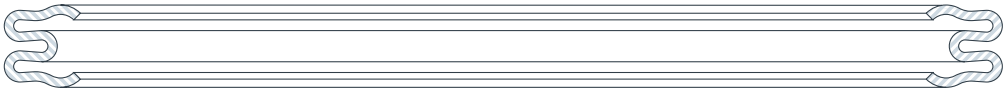


Large Section Seating Load

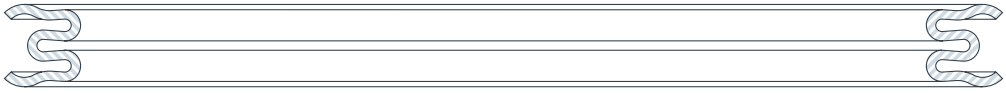
E-Seals

Product Description

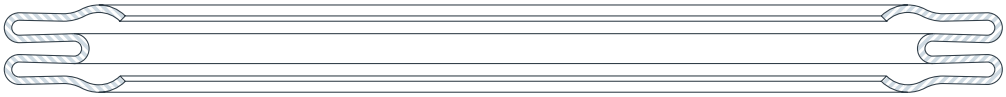
E-Seals are designed to be compressed in a cavity of a controlled depth creating a seal. Short leg and long leg options are available to accommodate both internal and external pressure conditions.



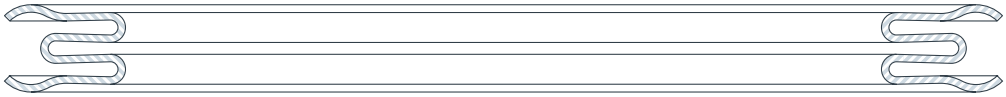
EIS Series – Internal Pressure Short Leg



EES Series – External Pressure Short Leg



EIL Series – Internal Pressure Long Leg



EEL Series – External Pressure Long Leg

Part Properties

– Able to seal high and low temperatures and pressures
– A flexible low load seal with good recovery
– A large range of standard industry sizes are available
– A range of standard seal sections are available
– Non-round seal shapes can be manufactured

E-Seal Specification

Nicholsons offer a range of standard E-Seal part numbers. The part number system enables the selection of the correct seal for each application and installation using the permutations of size, material, plating etc. An explanation of the Nicholsons E-Seal part number system is shown below.

We also offer a specialist range of E-Seals which are designed for use in standard aerospace flange and duct systems. Please consult the High Temperature Duct Seals section on page 98 for further details.

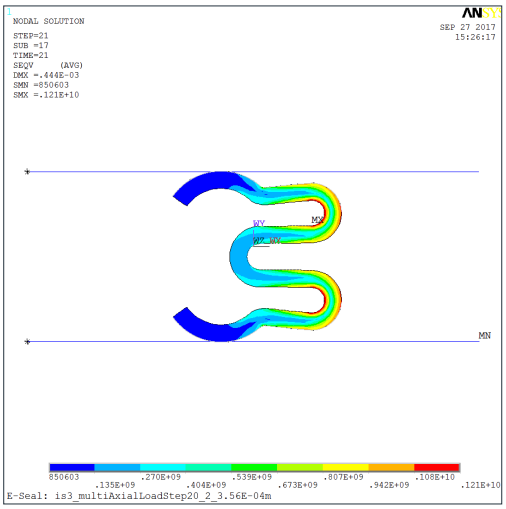
Bespoke E-Seals can be designed for specific applications where the use of a standard E-Seal would not be appropriate due to shape, diameter, material type etc. Please contact us if you require a bespoke design or need any assistance specifying a standard E-Seal part number for your application.

PART NUMBER

2. DIAMETER The seal and cavity diameters		4. MATERIAL TYPE The material type that we offer as standard	6. PLATING OR COATING The plating or coating type that we offer as standard		
XXX	0000	00	00	0	XX	X
1. SEAL TYPE The type of seal and its orientation		3. SECTION AND MATERIAL THICKNESS The seal section height and the standard material thickness options available for each		5. HEAT TREATMENT The heat treatments that we offer as standard. Not all heat treatments are applicable to all materials		7. PLATING OR COATING THICKNESS The thickness of the plating or coating

1. SEAL TYPE

The first section specifies the seal type.
EIS – Internal pressure short leg seal.
EES – External pressure short leg seal.
EIL – Internal pressure long leg seal.
EEL – External pressure long leg seal.



2. DIAMETER

The second section specifies the seal and cavity diameter.
For EIS seals, see pages 76 to 79 for details of sizes.
For EES seals, see pages 80 to 83 for details of sizes.
For EIL seals, see pages 84 to 87 for details of sizes.
For EEL seals, see pages 88 to 92 for details of sizes.

3. SECTION AND MATERIAL THICKNESS

PART NO. CODE	SEAL TYPE	NOMINAL SEAL FREE HEIGHT	ACTUAL SEAL FREE HEIGHT	MATERIAL THICKNESS	CAVITY DEPTH	CAVITY CORNER RADIUS R (max.)
03	Short leg	3/32	0.104 0.100	0.010	0.088 0.086	0.020
06	Short leg	1/8	0.135 0.129	0.015	0.120 0.116	0.030
08	Short leg	3/16	0.223 0.213	0.015	0.183 0.179	0.030
13	Long leg	3/32	0.113 0.103	0.010	0.088 0.086	0.020
16	Long leg	1/8	0.145 0.135	0.012	0.120 0.116	0.030

4. MATERIAL TYPE

The fourth section specifies the material types that are offered.

PART NO. CODE	MATERIAL	COMMENTS
12	Inconel X750	·
14	Inconel 718	Standard material for E-Seals

5. HEAT TREATMENT

The fifth section specifies the heat treatments that are available as standard.
All E-Seals have a solution and long cycle precipitation heat treatment as standard.

PART NO. CODE	HEAT TREATMENT	COMMENTS
4	Solution and Long Cycle Precipitation Heat Treatment	·

6. PLATING OR COATING

The sixth section specifies the plating or coating applied to the seal. Plating may be incomplete away from sealing surfaces.

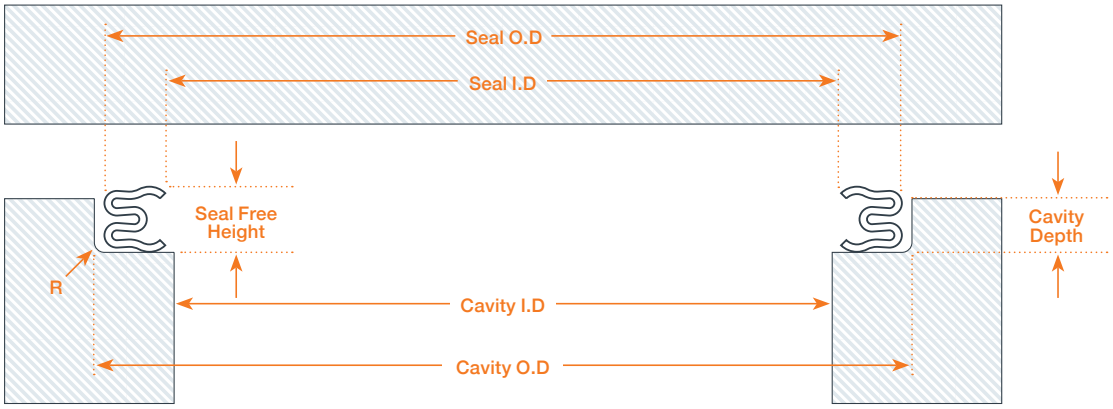
PART NO. CODE	PLATING OR COATING	COMMENTS
OP	None	.
SP	Silver	Suitable for most applications
NP	Nickel	.
CP	Copper	.
GP	Gold	Very expensive
LP	Lead	Soft. Max. temp. 150°C/300°F
PP	PTFE	Max. temp. 220°C/430°F
IP	Indium	Very soft. Low temp only

7. PLATING OR COATING THICKNESS

The seventh section specifies the plating or coating thickness.

PART NO. CODE	PLATING OR COATING THICKNESS	COMMENTS
A	0.0010 0.0005	Standard for Silver
B	0.0015 0.0010	.
C	0.0025 0.0015	.
D	0.0030 0.0020	.
E	Customer Specification	Customer Specification
O	None	Use with Unplated Seals

EIS Series – Internal Pressure Short Leg E-Seal



- Weld permitted
- Plating may be incomplete away from sealing surfaces
- Seal diameters are an average and can be out of round in excess of tolerances
- See the E-Seal introduction pages for details of seal free height, cavity depth and radius R

Internal E-Seal Cavity

SEAL TYPE & DIAMETER	FREE HEIGHT 3/32				FREE HEIGHT 1/8				FREE HEIGHT 3/16			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D max.	O.D +0.003 -0.000	I.D min.	O.D +0.000 -0.003	I.D max.	O.D +0.003 -0.000	I.D min.	O.D +0.000 -0.003	I.D max.	O.D +0.003 -0.000	I.D min.	O.D +0.000 -0.003
EIS 0030	1.875	2.062	1.878	2.059	1.875	2.125	1.878	2.122	·	·	·	·
EIS 0031	1.937	2.125	1.940	2.122	1.937	2.187	1.940	2.184	·	·	·	·
EIS 0032	2.000	2.187	2.003	2.184	2.000	2.250	2.003	2.247	·	·	·	·
EIS 0033	2.062	2.250	2.065	2.247	2.062	2.312	2.065	2.309	·	·	·	·
EIS 0034	2.125	2.312	2.128	2.309	2.125	2.375	2.128	2.372	·	·	·	·
EIS 0035	2.187	2.375	2.190	2.372	2.187	2.437	2.190	2.434	·	·	·	·
EIS 0036	2.250	2.437	2.253	2.434	2.250	2.500	2.253	2.497	·	·	·	·
EIS 0037	2.312	2.500	2.315	2.497	2.312	2.562	2.315	2.559	·	·	·	·
EIS 0038	2.375	2.562	2.378	2.559	2.375	2.625	2.378	2.622	·	·	·	·
EIS 0039	2.437	2.625	2.440	2.622	2.437	2.687	2.440	2.684	·	·	·	·
EIS 0040	2.500	2.687	2.503	2.684	2.500	2.750	2.503	2.747	·	·	·	·
EIS 0041	2.562	2.750	2.565	2.747	2.562	2.812	2.565	2.809	·	·	·	·
EIS 0042	2.625	2.812	2.628	2.809	2.625	2.875	2.628	2.872	·	·	·	·
EIS 0043	2.687	2.875	2.690	2.872	2.687	2.937	2.690	2.934	·	·	·	·
EIS 0044	2.750	2.937	2.753	2.934	2.750	3.000	2.753	2.997	·	·	·	·
EIS 0045	2.812	3.000	2.815	2.997	2.812	3.062	2.815	3.059	·	·	·	·
EIS 0046	2.875	3.062	2.878	3.059	2.875	3.125	2.878	3.122	·	·	·	·
EIS 0047	2.937	3.125	2.940	3.122	2.937	3.187	2.940	3.184	·	·	·	·
EIS 0048	3.000	3.187	3.003	3.184	3.000	3.250	3.003	3.247	3.000	3.375	3.003	3.372
EIS 0049	3.062	3.250	3.065	3.247	3.062	3.312	3.065	3.309	3.062	3.437	3.065	3.434
	I.D max.	O.D +0.004 -0.000	I.D min.	O.D +0.000 -0.004	I.D max.	O.D +0.004 -0.000	I.D min.	O.D +0.000 -0.004	I.D max.	O.D +0.004 -0.000	I.D min.	O.D +0.000 -0.004
EIS 0050	3.125	3.312	3.128	3.309	3.125	3.375	3.128	3.372	3.125	3.500	3.128	3.497

Seal dimensions are in inches and are prior to plating or coating

EIS Series – Internal Pressure Short Leg E-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 3/32				FREE HEIGHT 1/8				FREE HEIGHT 3/16			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D max.	O.D +0.004 -0.000	I.D min.	O.D +0.000 -0.004	I.D max.	O.D +0.004 -0.000	I.D min.	O.D +0.000 -0.004	I.D max.	O.D +0.004 -0.000	I.D min.	O.D +0.000 -0.004
EIS 0051	3.187	3.375	3.190	3.372	3.187	3.437	3.190	3.434	3.187	3.562	3.190	3.559
EIS 0052	3.250	3.437	3.253	3.434	3.250	3.500	3.253	3.497	3.250	3.625	3.253	3.622
EIS 0053	3.312	3.500	3.315	3.497	3.312	3.562	3.315	3.559	3.312	3.687	3.315	3.684
EIS 0054	3.375	3.562	3.378	3.559	3.375	3.625	3.378	3.622	3.375	3.750	3.378	3.747
EIS 0055	3.437	3.625	3.440	3.622	3.437	3.687	3.440	3.684	3.437	3.812	3.440	3.809
EIS 0056	3.500	3.687	3.503	3.684	3.500	3.750	3.503	3.747	3.500	3.875	3.503	3.872
EIS 0057	3.562	3.750	3.565	3.747	3.562	3.812	3.565	3.809	3.562	3.937	3.565	3.934
EIS 0058	3.625	3.812	3.628	3.809	3.625	3.875	3.628	3.872	3.625	4.000	3.628	3.997
EIS 0059	3.687	3.875	3.690	3.872	3.687	3.937	3.690	3.934	3.687	4.062	3.690	4.059
EIS 0060	3.750	3.937	3.753	3.934	3.750	4.000	3.753	3.997	3.750	4.125	3.753	4.122
EIS 0061	3.812	4.000	3.815	3.997	3.812	4.062	3.815	4.059	3.812	4.187	3.815	4.184
EIS 0062	3.875	4.062	3.878	4.059	3.875	4.125	3.878	4.122	3.875	4.250	3.878	4.247
EIS 0063	3.937	4.125	3.940	4.122	3.937	4.187	3.940	4.184	3.937	4.312	3.940	4.309
EIS 0064	4.000	4.187	4.003	4.184	4.000	4.250	4.003	4.247	4.000	4.375	4.003	4.372
EIS 0065	4.062	4.250	4.065	4.247	4.062	4.312	4.065	4.309	4.062	4.437	4.065	4.434
EIS 0066	4.125	4.312	4.128	4.309	4.125	4.375	4.128	4.372	4.125	4.500	4.128	4.497
EIS 0067	4.187	4.375	4.190	4.372	4.187	4.437	4.190	4.434	4.187	4.562	4.190	4.559
EIS 0068	4.250	4.437	4.253	4.434	4.250	4.500	4.253	4.497	4.250	4.625	4.253	4.622
EIS 0069	4.312	4.500	4.315	4.497	4.312	4.562	4.315	4.559	4.312	4.687	4.315	4.684
EIS 0070	4.375	4.562	4.378	4.559	4.375	4.625	4.378	4.622	4.375	4.750	4.378	4.747
EIS 0071	4.437	4.625	4.440	4.622	4.437	4.687	4.440	4.684	4.437	4.812	4.440	4.809
EIS 0072	4.500	4.687	4.503	4.684	4.500	4.750	4.503	4.747	4.500	4.875	4.503	4.872
EIS 0073	4.562	4.750	4.565	4.747	4.562	4.812	4.565	4.809	4.562	4.937	4.565	4.934
EIS 0074	4.625	4.812	4.628	4.809	4.625	4.875	4.628	4.872	4.625	5.000	4.628	4.997
EIS 0075	4.687	4.875	4.690	4.872	4.687	4.937	4.690	4.934	4.687	5.062	4.690	5.059
EIS 0076	4.750	4.937	4.753	4.934	4.750	5.000	4.753	4.997	4.750	5.125	4.753	5.122
EIS 0077	4.812	5.000	4.815	4.997	4.812	5.062	4.815	5.059	4.812	5.187	4.815	5.184
EIS 0078	4.875	5.062	4.878	5.059	4.875	5.125	4.878	5.122	4.875	5.250	4.878	5.247
EIS 0079	4.937	5.125	4.940	5.122	4.937	5.187	4.940	5.184	4.937	5.312	4.940	5.309
EIS 0080	5.000	5.187	5.003	5.184	5.000	5.250	5.003	5.247	5.000	5.375	5.003	5.372
EIS 0081	5.062	5.250	5.065	5.247	5.062	5.312	5.065	5.309	5.062	5.347	5.065	5.434
	I.D max.	O.D +0.006 -0.000	I.D min.	O.D +0.000 -0.006	I.D max.	O.D +0.006 -0.000	I.D min.	O.D +0.000 -0.006	I.D max.	O.D +0.006 -0.000	I.D min.	O.D +0.000 -0.006
EIS 0082	5.125	5.312	5.128	5.309	5.125	5.375	5.128	5.372	5.125	5.500	5.128	5.497
EIS 0083	5.187	5.375	5.190	5.372	5.187	5.437	5.190	5.434	5.187	5.562	5.190	5.559
EIS 0084	5.250	5.437	5.253	5.434	5.250	5.500	5.253	5.497	5.250	5.625	5.253	5.622
EIS 0085	5.312	5.500	5.315	5.497	5.312	5.562	5.315	5.559	5.312	5.687	5.315	5.684
EIS 0086	5.375	5.562	5.378	5.559	5.375	5.625	5.378	5.622	5.375	5.750	5.378	5.747

Seal dimensions are in inches and are prior to plating or coating

EIS Series – Internal Pressure Short Leg E-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 3/32				FREE HEIGHT 1/8				FREE HEIGHT 3/16			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D max.	O.D +0.006 -0.000	I.D min.	O.D +0.000 -0.006	I.D max.	O.D +0.006 -0.000	I.D min.	O.D +0.000 -0.006	I.D max.	O.D +0.006 -0.000	I.D min.	O.D +0.000 -0.006
EIS 0087	5.437	5.625	5.440	5.622	5.437	5.687	5.440	5.684	5.437	5.812	5.440	5.809
EIS 0088	5.500	5.687	5.503	5.684	5.500	5.750	5.503	5.747	5.500	5.875	5.503	5.872
EIS 0089	5.562	5.750	5.565	5.747	5.562	5.812	5.565	5.809	5.562	5.937	5.565	5.934
EIS 0090	5.625	5.812	5.628	5.809	5.625	5.875	5.628	5.872	5.625	6.000	5.628	5.997
EIS 0092	5.750	5.937	5.753	5.934	5.750	6.000	5.753	5.997	5.750	6.125	5.753	6.122
EIS 0094	5.875	6.062	5.878	6.059	5.875	6.125	5.878	6.122	5.875	6.250	5.878	6.247
EIS 0096	6.000	6.187	6.003	6.184	6.000	6.250	6.003	6.247	6.000	6.375	6.003	6.372
EIS 0098	·	·	·	·	6.125	6.375	6.128	6.372	6.125	6.500	6.128	6.497
EIS 0100	·	·	·	·	6.250	6.500	6.253	6.497	6.250	6.625	6.253	6.622
EIS 0102	·	·	·	·	6.375	6.625	6.378	6.622	6.375	6.750	6.378	6.747
EIS 0104	·	·	·	·	6.500	6.750	6.503	6.747	6.500	6.875	6.503	6.872
EIS 0106	·	·	·	·	6.625	6.875	6.628	6.872	6.625	7.000	6.628	6.997
EIS 0108	·	·	·	·	6.750	7.000	6.753	6.997	6.750	7.125	6.753	7.122
EIS 0110	·	·	·	·	6.875	7.125	6.878	7.122	6.875	7.250	6.878	7.247
EIS 0112	·	·	·	·	7.000	7.250	7.003	7.247	7.000	7.375	7.003	7.372
	I.D max.	O.D +0.008 -0.000	I.D min.	O.D +0.000 -0.008	I.D max.	O.D +0.008 -0.000	I.D min.	O.D +0.000 -0.008	I.D max.	O.D +0.008 -0.000	I.D min.	O.D +0.000 -0.008
EIS 0114	·	·	·	·	7.125	7.375	7.128	7.372	7.125	7.500	7.128	7.497
EIS 0116	·	·	·	·	7.250	7.500	7.253	7.497	7.250	7.625	7.253	7.622
EIS 0118	·	·	·	·	7.375	7.625	7.378	7.622	7.375	7.750	7.378	7.747
EIS 0120	·	·	·	·	7.500	7.750	7.503	7.747	7.500	7.875	7.503	7.872
EIS 0122	·	·	·	·	7.625	7.875	7.628	7.872	7.625	8.000	7.628	7.997
EIS 0124	·	·	·	·	7.750	8.000	7.753	7.997	7.750	8.125	7.753	8.122
EIS 0126	·	·	·	·	7.875	8.125	7.878	8.122	7.875	8.250	7.878	8.247
EIS 0128	·	·	·	·	8.000	8.250	8.003	8.247	8.000	8.375	8.003	8.372
EIS 0130	·	·	·	·	·	·	·	·	8.125	8.500	8.128	8.497
EIS 0132	·	·	·	·	·	·	·	·	8.250	8.625	8.253	8.622
EIS 0134	·	·	·	·	·	·	·	·	8.375	8.750	8.378	8.747
EIS 0136	·	·	·	·	·	·	·	·	8.500	8.875	8.503	8.872
EIS 0138	·	·	·	·	·	·	·	·	8.625	9.000	8.628	8.997
EIS 0140	·	·	·	·	·	·	·	·	8.750	9.125	8.753	9.122
EIS 0142	·	·	·	·	·	·	·	·	8.875	9.250	8.878	9.247
EIS 0144	·	·	·	·	·	·	·	·	9.000	9.375	9.003	9.372
EIS 0146	·	·	·	·	·	·	·	·	9.125	9.500	9.128	9.497
EIS 0148	·	·	·	·	·	·	·	·	9.250	9.625	9.253	9.622
EIS 0150	·	·	·	·	·	·	·	·	9.375	9.750	9.378	9.747
EIS 0152	·	·	·	·	·	·	·	·	9.500	9.875	9.503	9.872
EIS 0154	·	·	·	·	·	·	·	·	9.625	10.000	9.628	9.997

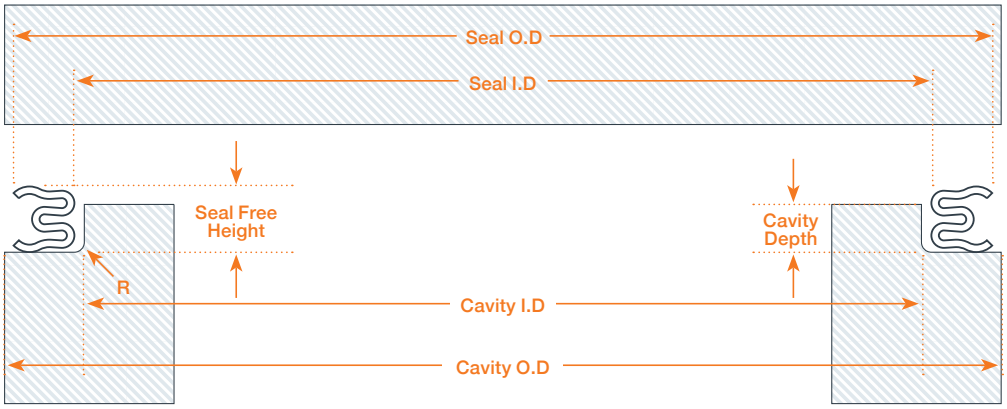
Seal dimensions are in inches and are prior to plating or coating

EIS Series – Internal Pressure Short Leg E-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 3/32				FREE HEIGHT 1/8				FREE HEIGHT 3/16			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D max.	O.D +0.008 -0.000	I.D min.	O.D +0.000 -0.008	I.D max.	O.D +0.008 -0.000	I.D min.	O.D +0.000 -0.008	I.D max.	O.D +0.008 -0.000	I.D min.	O.D +0.000 -0.008
EIS 0156	·	·	·	·	·	·	·	·	9.750	10.125	9.753	10.122
EIS 0158	·	·	·	·	·	·	·	·	9.875	10.250	9.878	10.247
EIS 0160	·	·	·	·	·	·	·	·	10.000	10.375	10.003	10.372
	I.D max.	O.D +0.012 -0.000	I.D min.	O.D +0.000 -0.012	I.D max.	O.D +0.012 -0.000	I.D min.	O.D +0.000 -0.012	I.D max.	O.D +0.012 -0.000	I.D min.	O.D +0.000 -0.012
EIS 0162	·	·	·	·	·	·	·	·	10.125	10.500	10.128	10.497
EIS 0164	·	·	·	·	·	·	·	·	10.250	10.625	10.253	10.622
EIS 0166	·	·	·	·	·	·	·	·	10.375	10.750	10.378	10.747
EIS 0168	·	·	·	·	·	·	·	·	10.500	10.875	10.503	10.872
EIS 0170	·	·	·	·	·	·	·	·	10.625	11.000	10.628	10.997
EIS 0172	·	·	·	·	·	·	·	·	10.750	11.125	10.753	11.122
EIS 0174	·	·	·	·	·	·	·	·	10.875	11.250	10.878	11.247
EIS 0176	·	·	·	·	·	·	·	·	11.000	11.375	11.003	11.372
EIS 0178	·	·	·	·	·	·	·	·	11.125	11.500	11.128	11.497
EIS 0180	·	·	·	·	·	·	·	·	11.250	11.625	11.253	11.622
EIS 0182	·	·	·	·	·	·	·	·	11.375	11.750	11.378	11.747
EIS 0184	·	·	·	·	·	·	·	·	11.500	11.875	11.503	11.872
EIS 0186	·	·	·	·	·	·	·	·	11.625	12.000	11.628	11.997
EIS 0188	·	·	·	·	·	·	·	·	11.750	12.125	11.753	12.122
EIS 0190	·	·	·	·	·	·	·	·	11.875	12.250	11.878	12.247
EIS 0192	·	·	·	·	·	·	·	·	12.000	12.375	12.003	12.372
EIS 0194	·	·	·	·	·	·	·	·	12.125	12.500	12.128	12.497
EIS 0196	·	·	·	·	·	·	·	·	12.250	12.625	12.253	12.622
EIS 0198	·	·	·	·	·	·	·	·	12.375	12.750	12.378	12.747

Seal dimensions are in inches and are prior to plating or coating

EES Series – External Pressure Short Leg E-Seal



– Weld permitted

– Plating may be incomplete away from sealing surfaces

– Seal diameters are an average and can be out of round in excess of tolerances

– See the E-Seal introduction pages for details of seal free height, cavity depth and radius R

External E-Seal Cavity

SEAL TYPE & DIAMETER	FREE HEIGHT 3/32				FREE HEIGHT 1/8				FREE HEIGHT 3/16			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D +0.000 -0.003	O.D min.	I.D +0.003 -0.000	O.D max.	I.D +0.000 -0.003	O.D min.	I.D +0.003 -0.000	O.D max.	I.D +0.000 -0.003	O.D min.	I.D +0.003 -0.000	O.D max.
EES 0030	1.875	2.062	1.878	2.059	1.875	2.125	1.878	2.122	·	·	·	·
EES 0031	1.937	2.125	1.940	2.122	1.937	2.187	1.940	2.184	·	·	·	·
EES 0032	2.000	2.187	2.003	2.184	2.000	2.250	2.003	2.247	·	·	·	·
EES 0033	2.062	2.250	2.065	2.247	2.062	2.312	2.065	2.309	·	·	·	·
EES 0034	2.125	2.312	2.128	2.309	2.125	2.375	2.128	2.372	·	·	·	·
EES 0035	2.187	2.375	2.190	2.372	2.187	2.437	2.190	2.434	·	·	·	·
EES 0036	2.250	2.437	2.253	2.434	2.250	2.500	2.253	2.497	·	·	·	·
EES 0037	2.312	2.500	2.315	2.497	2.312	2.562	2.315	2.559	·	·	·	·
EES 0038	2.375	2.562	2.378	2.559	2.375	2.625	2.378	2.622	·	·	·	·
EES 0039	2.437	2.625	2.440	2.622	2.437	2.687	2.440	2.684	·	·	·	·
EES 0040	2.500	2.687	2.503	2.684	2.500	2.750	2.503	2.747	·	·	·	·
EES 0041	2.562	2.750	2.565	2.747	2.562	2.812	2.565	2.809	·	·	·	·
EES 0042	2.625	2.812	2.628	2.809	2.625	2.875	2.628	2.872	·	·	·	·
EES 0043	2.687	2.875	2.690	2.872	2.687	2.937	2.690	2.934	·	·	·	·
EES 0044	2.750	2.937	2.753	2.934	2.750	3.000	2.753	2.997	·	·	·	·
EES 0045	2.812	3.000	2.815	2.997	2.812	3.062	2.815	3.059	·	·	·	·
EES 0046	2.875	3.062	2.878	3.059	2.875	3.125	2.878	3.122	·	·	·	·
EES 0047	2.937	3.125	2.940	3.122	2.937	3.187	2.940	3.184	·	·	·	·
EES 0048	3.000	3.187	3.003	3.184	3.000	3.250	3.003	3.247	3.000	3.375	3.003	3.372
	I.D +0.000 -0.004	O.D min.	I.D +0.004 -0.000	O.D max.	I.D +0.000 -0.004	O.D min.	I.D +0.004 -0.000	O.D max.	I.D +0.000 -0.004	O.D min.	I.D +0.004 -0.000	O.D max.
EES 0049	3.062	3.250	3.065	3.247	3.062	3.312	3.065	3.309	3.062	3.437	3.065	3.434

Seal dimensions are in inches and are prior to plating or coating

EES Series – External Pressure Short Leg E-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 3/32				FREE HEIGHT 1/8				FREE HEIGHT 3/16			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D +0.000 -0.004	O.D min.	I.D +0.004 -0.000	O.D max.	I.D +0.000 -0.004	O.D min.	I.D +0.004 -0.000	O.D max.	I.D +0.000 -0.004	O.D min.	I.D +0.004 -0.000	O.D max.
EES 0050	3.125	3.312	3.128	3.309	3.125	3.375	3.128	3.372	3.125	3.500	3.128	3.497
EES 0051	3.187	3.375	3.190	3.372	3.187	3.437	3.190	3.434	3.187	3.562	3.190	3.559
EES 0052	3.250	3.437	3.253	3.434	3.250	3.500	3.253	3.497	3.250	3.625	3.253	3.622
EES 0053	3.312	3.500	3.315	3.497	3.312	3.562	3.315	3.559	3.312	3.687	3.315	3.684
EES 0054	3.375	3.562	3.378	3.559	3.375	3.625	3.378	3.622	3.375	3.750	3.378	3.747
EES 0055	3.437	3.625	3.440	3.622	3.437	3.687	3.440	3.684	3.437	3.812	3.440	3.809
EES 0056	3.500	3.687	3.503	3.684	3.500	3.750	3.503	3.747	3.500	3.875	3.503	3.872
EES 0057	3.562	3.750	3.565	3.747	3.562	3.812	3.565	3.809	3.562	3.937	3.565	3.934
EES 0058	3.625	3.812	3.628	3.809	3.625	3.875	3.628	3.872	3.625	4.000	3.628	3.997
EES 0059	3.687	3.875	3.690	3.872	3.687	3.937	3.690	3.934	3.687	4.062	3.690	4.059
EES 0060	3.750	3.937	3.753	3.934	3.750	4.000	3.753	3.997	3.750	4.125	3.753	4.122
EES 0061	3.812	4.000	3.815	3.997	3.812	4.062	3.815	4.059	3.812	4.187	3.815	4.184
EES 0062	3.875	4.062	3.878	4.059	3.875	4.125	3.878	4.122	3.875	4.250	3.878	4.247
EES 0063	3.937	4.125	3.940	4.122	3.937	4.187	3.940	4.184	3.937	4.312	3.940	4.309
EES 0064	4.000	4.187	4.003	4.184	4.000	4.250	4.003	4.247	4.000	4.375	4.003	4.372
EES 0065	4.062	4.250	4.065	4.247	4.062	4.312	4.065	4.309	4.062	4.437	4.065	4.434
EES 0066	4.125	4.312	4.128	4.309	4.125	4.375	4.128	4.372	4.125	4.500	4.128	4.497
EES 0067	4.187	4.375	4.190	4.372	4.187	4.437	4.190	4.434	4.187	4.562	4.190	4.559
EES 0068	4.250	4.437	4.253	4.434	4.250	4.500	4.253	4.497	4.250	4.625	4.253	4.622
EES 0069	4.312	4.500	4.315	4.497	4.312	4.562	4.315	4.559	4.312	4.687	4.315	4.684
EES 0070	4.375	4.562	4.378	4.559	4.375	4.625	4.378	4.622	4.375	4.750	4.378	4.747
EES 0071	4.437	4.625	4.440	4.622	4.437	4.687	4.440	4.684	4.437	4.812	4.440	4.809
EES 0072	4.500	4.687	4.503	4.684	4.500	4.750	4.503	4.747	4.500	4.875	4.503	4.872
EES 0073	4.562	4.750	4.565	4.747	4.562	4.812	4.565	4.809	4.562	4.937	4.565	4.934
EES 0074	4.625	4.812	4.628	4.809	4.625	4.875	4.628	4.872	4.625	5.000	4.628	4.997
EES 0075	4.687	4.875	4.690	4.872	4.687	4.937	4.690	4.934	4.687	5.062	4.690	5.059
EES 0076	4.750	4.937	4.753	4.934	4.750	5.000	4.753	4.997	4.750	5.125	4.753	5.122
EES 0077	4.812	5.000	4.815	4.997	4.812	5.062	4.815	5.059	4.812	5.187	4.815	5.184
EES 0078	4.875	5.062	4.878	5.059	4.875	5.125	4.878	5.122	4.875	5.250	4.878	5.247
EES 0079	4.937	5.125	4.940	5.122	4.937	5.187	4.940	5.184	4.937	5.312	4.940	5.309
EES 0080	5.000	5.187	5.003	5.184	5.000	5.250	5.003	5.247	5.000	5.375	5.003	5.372
	I.D +0.000 -0.006	O.D min.	I.D +0.006 -0.000	O.D max.	I.D +0.000 -0.006	O.D min.	I.D +0.006 -0.000	O.D max.	I.D +0.000 -0.006	O.D min.	I.D +0.006 -0.000	O.D max.
EES 0081	5.062	5.250	5.065	5.247	5.062	5.312	5.065	5.309	5.062	5.437	5.065	5.434
EES 0082	5.125	5.312	5.128	5.309	5.125	5.375	5.128	5.372	5.125	5.500	5.128	5.497
EES 0083	5.187	5.375	5.190	5.372	5.187	5.437	5.190	5.434	5.187	5.562	5.190	5.559
EES 0084	5.250	5.437	5.253	5.434	5.250	5.500	5.253	5.497	5.250	5.625	5.253	5.622
EES 0085	5.312	5.500	5.315	5.497	5.312	5.562	5.315	5.559	5.312	5.687	5.315	5.684

Seal dimensions are in inches and are prior to plating or coating

EES Series – External Pressure Short Leg E-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 3/32				FREE HEIGHT 1/8				FREE HEIGHT 3/16			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D +0.000 -0.006	O.D min.	I.D +0.006 -0.000	O.D max.	I.D +0.000 -0.006	O.D min.	I.D +0.006 -0.000	O.D max.	I.D +0.000 -0.006	O.D min.	I.D +0.006 -0.000	O.D max.
EES 0086	5.375	5.562	5.378	5.559	5.375	5.625	5.378	5.622	5.375	5.750	5.378	5.747
EES 0087	5.437	5.625	5.440	5.622	5.437	5.687	5.440	5.684	5.437	5.812	5.440	5.809
EES 0088	5.500	5.687	5.503	5.684	5.500	5.750	5.503	5.747	5.500	5.875	5.503	5.872
EES 0089	5.562	5.750	5.565	5.747	5.562	5.812	5.565	5.809	5.562	5.937	5.565	5.934
EES 0090	5.625	5.812	5.628	5.809	5.625	5.875	5.628	5.872	5.625	6.000	5.628	5.997
EES 0092	5.750	5.937	5.753	5.934	5.750	6.000	5.753	5.997	5.750	6.125	5.753	6.122
EES 0094	5.875	6.062	5.878	6.059	5.875	6.125	5.878	6.122	5.875	6.250	5.878	6.247
EES 0096	6.000	6.187	6.003	6.184	6.000	6.250	6.003	6.247	6.000	6.375	6.003	6.372
EES 0098	·	·	·	·	6.125	6.375	6.128	6.372	6.125	6.500	6.128	6.497
EES 0100	·	·	·	·	6.250	6.500	6.253	6.497	6.250	6.625	6.253	6.622
EES 0102	·	·	·	·	6.375	6.625	6.378	6.622	6.375	6.750	6.378	6.747
EES 0104	·	·	·	·	6.500	6.750	6.503	6.747	6.500	6.875	6.503	6.872
EES 0106	·	·	·	·	6.625	6.875	6.628	6.872	6.625	7.000	6.628	6.997
EES 0108	·	·	·	·	6.750	7.000	6.753	6.997	6.750	7.125	6.753	7.122
EES 0110	·	·	·	·	6.875	7.125	6.878	7.122	6.875	7.250	6.878	7.247
EES 0112	·	·	·	·	7.000	7.250	7.003	7.247	7.000	7.375	7.003	7.372
	I.D +0.000 -0.008	O.D min.	I.D +0.008 -0.000	O.D max.	I.D +0.000 -0.008	O.D min.	I.D +0.008 -0.000	O.D max.	I.D +0.000 -0.008	O.D min.	I.D +0.008 -0.000	O.D max.
EES 0114	·	·	·	·	7.125	7.375	7.128	7.372	7.125	7.500	7.128	7.497
EES 0116	·	·	·	·	7.250	7.500	7.253	7.497	7.250	7.625	7.253	7.622
EES 0118	·	·	·	·	7.375	7.625	7.378	7.622	7.375	7.750	7.378	7.747
EES 0120	·	·	·	·	7.500	7.750	7.503	7.747	7.500	7.875	7.503	7.872
EES 0122	·	·	·	·	7.625	7.875	7.628	7.872	7.625	8.000	7.628	7.997
EES 0124	·	·	·	·	7.750	8.000	7.753	7.997	7.750	8.125	7.753	8.122
EES 0126	·	·	·	·	7.875	8.125	7.878	8.122	7.875	8.250	7.878	8.247
EES 0128	·	·	·	·	8.000	8.250	8.003	8.247	8.000	8.375	8.003	8.372
EES 0130	·	·	·	·	·	·	·	·	8.125	8.500	8.128	8.497
EES 0132	·	·	·	·	·	·	·	·	8.250	8.625	8.253	8.622
EES 0134	·	·	·	·	·	·	·	·	8.375	8.750	8.378	8.747
EES 0136	·	·	·	·	·	·	·	·	8.500	8.875	8.503	8.872
EES 0138	·	·	·	·	·	·	·	·	8.625	9.000	8.628	8.997
EES 0140	·	·	·	·	·	·	·	·	8.750	9.125	8.753	9.122
EES 0142	·	·	·	·	·	·	·	·	8.875	9.250	8.878	9.247
EES 0144	·	·	·	·	·	·	·	·	9.000	9.375	9.003	9.372
EES 0146	·	·	·	·	·	·	·	·	9.125	9.500	9.128	9.497
EES 0148	·	·	·	·	·	·	·	·	9.250	9.625	9.253	9.622
EES 0150	·	·	·	·	·	·	·	·	9.375	9.750	9.378	9.747
EES 0152	·	·	·	·	·	·	·	·	9.500	9.875	9.503	9.872

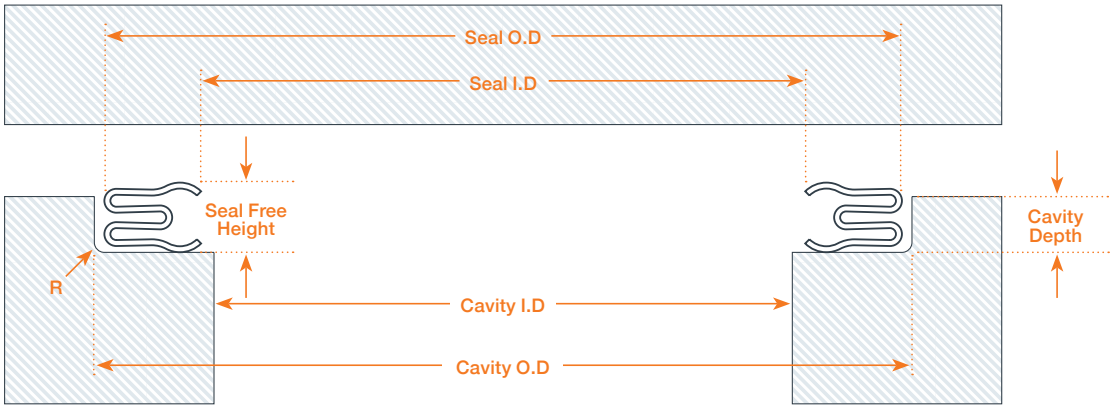
Seal dimensions are in inches and are prior to plating or coating

EES Series – External Pressure Short Leg E-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 3/32				FREE HEIGHT 1/8				FREE HEIGHT 3/16			
	CAVITY		SEAL		CAVITY		SEAL		CAVITY		SEAL	
	I.D +0.000 -0.008	O.D min.	I.D +0.008 -0.000	O.D max.	I.D +0.000 -0.008	O.D min.	I.D +0.008 -0.000	O.D max.	I.D +0.000 -0.008	O.D min.	I.D +0.008 -0.000	O.D max.
EES 0154	·	·	·	·	·	·	·	·	9.625	10.000	9.628	9.997
EES 0156	·	·	·	·	·	·	·	·	9.750	10.125	9.753	10.122
EES 0158	·	·	·	·	·	·	·	·	9.875	10.250	9.878	10.247
EES 0160	·	·	·	·	·	·	·	·	10.000	10.375	10.003	10.372
	I.D +0.000 -0.012	O.D min.	I.D +0.012 -0.000	O.D max.	I.D +0.000 -0.012	O.D min.	I.D +0.012 -0.000	O.D max.	I.D +0.000 -0.012	O.D min.	I.D +0.012 -0.000	O.D max.
EES 0162	·	·	·	·	·	·	·	·	10.125	10.500	10.128	10.497
EES 0164	·	·	·	·	·	·	·	·	10.250	10.625	10.253	10.622
EES 0166	·	·	·	·	·	·	·	·	10.375	10.750	10.378	10.747
EES 0168	·	·	·	·	·	·	·	·	10.500	10.875	10.503	10.872
EES 0170	·	·	·	·	·	·	·	·	10.625	11.000	10.628	10.997
EES 0172	·	·	·	·	·	·	·	·	10.750	11.125	10.753	11.122
EES 0174	·	·	·	·	·	·	·	·	10.875	11.250	10.878	11.247
EES 0176	·	·	·	·	·	·	·	·	11.000	11.375	11.003	11.372
EES 0178	·	·	·	·	·	·	·	·	11.125	11.500	11.128	11.497
EES 0180	·	·	·	·	·	·	·	·	11.250	11.625	11.253	11.622
EES 0182	·	·	·	·	·	·	·	·	11.375	11.750	11.378	11.747
EES 0184	·	·	·	·	·	·	·	·	11.500	11.875	11.503	11.872
EES 0186	·	·	·	·	·	·	·	·	11.625	12.000	11.628	11.997
EES 0188	·	·	·	·	·	·	·	·	11.750	12.125	11.753	12.122
EES 0190	·	·	·	·	·	·	·	·	11.875	12.250	11.878	12.247
EES 0192	·	·	·	·	·	·	·	·	12.000	12.375	12.003	12.372

Seal dimensions are in inches and are prior to plating or coating

EIL Series – Internal Pressure Long Leg E-Seal



Internal E-Seal Cavity

– Weld permitted

– Plating may be incomplete away from sealing surfaces

– Seals are manufactured to an average diameter then made to be a snap fit in their cavities. Therefore seal diameters are out of round in excess of tolerances

– See the E-Seal introduction pages for details of seal free height, cavity depth and radius R

SEAL TYPE & DIAMETER	FREE HEIGHT 3/32				FREE HEIGHT 1/8			
	CAVITY		SEAL		CAVITY		SEAL	
	I.D max.	O.D +0.003 -0.000	I.D min.	O.D +0.000 -0.006	I.D max.	O.D +0.003 -0.000	I.D min.	O.D +0.000 -0.006
EIL 0033	2.062	2.372	2.076	2.367	2.062	2.469	2.076	2.464
EIL 0034	2.125	2.435	2.139	2.430	2.125	2.532	2.139	2.527
EIL 0035	2.187	2.497	2.201	2.492	2.187	2.594	2.201	2.589
EIL 4261	2.212	2.522	2.226	2.517	2.212	2.619	2.226	2.614
EIL 0036	2.250	2.560	2.264	2.555	2.250	2.657	2.264	2.652
EIL 0037	2.312	2.622	2.326	2.617	2.312	2.719	2.326	2.714
EIL 0038	2.375	2.685	2.389	2.680	2.375	2.782	2.389	2.777
EIL 0039	2.437	2.747	2.451	2.742	2.437	2.844	2.451	2.839
EIL 3274	2.444	2.754	2.458	2.749	2.444	2.851	2.458	2.846
EIL 4286	2.462	2.772	2.476	2.767	2.462	2.869	2.476	2.864
EIL 0040	2.500	2.810	2.514	2.805	2.500	2.907	2.514	2.902
EIL 0041	2.562	2.872	2.576	2.867	2.562	2.969	2.576	2.964
EIL 0042	2.625	2.935	2.639	2.930	2.625	3.032	2.639	3.027
EIL 0043	2.687	2.997	2.701	2.992	2.687	3.094	2.701	3.089
EIL 4311	2.712	3.022	2.726	3.017	2.712	3.119	2.726	3.114
EIL 0044	2.750	3.060	2.764	3.055	2.750	3.157	2.764	3.152
EIL 0045	2.812	3.122	2.826	3.117	2.812	3.219	2.826	3.214
EIL 0046	2.875	3.185	2.889	3.180	2.875	3.282	2.889	3.277
EIL 0047	2.937	3.247	2.951	3.242	2.937	3.344	2.951	3.339
EIL 4336	2.962	3.272	2.976	3.267	2.962	3.369	2.976	3.364
EIL 0048	3.000	3.312	3.016	3.307	3.000	3.409	3.016	3.404
EIL 0049	3.062	3.374	3.078	3.369	3.062	3.471	3.078	3.466
EIL 0050	3.125	3.437	3.141	3.432	3.125	3.534	3.141	3.529

Seal dimensions are in inches and are prior to plating or coating

EIL Series – Internal Pressure Long Leg E-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 3/32				FREE HEIGHT 1/8			
	CAVITY		SEAL		CAVITY		SEAL	
	I.D max.	O.D +0.004 -0.000	I.D min.	O.D +0.000 -0.008	I.D max.	O.D +0.004 -0.000	I.D min.	O.D +0.000 -0.008
EIL 0051	3.187	3.499	3.203	3.494	3.187	3.596	3.203	3.591
EIL 4361	3.210	3.522	3.226	3.517	3.210	3.619	3.226	3.614
EIL 0052	3.250	3.562	3.266	3.557	3.250	3.659	3.266	3.654
EIL 0053	3.312	3.624	3.328	3.619	3.312	3.721	3.328	3.716
EIL 0054	3.375	3.687	3.391	3.682	3.375	3.784	3.391	3.779
EIL 0055	3.437	3.749	3.453	3.744	3.437	3.846	3.453	3.841
EIL 4386	3.461	3.773	3.477	3.768	3.461	3.870	3.477	3.865
EIL 0056	3.500	3.812	3.516	3.807	3.500	3.909	3.516	3.904
EIL 3386	3.558	3.870	3.574	3.865	3.558	3.967	3.574	3.962
EIL 0057	3.562	3.874	3.578	3.869	3.562	3.971	3.578	3.966
EIL 0058	3.625	3.937	3.641	3.932	3.625	4.034	3.641	4.029
EIL 0059	3.687	3.999	3.703	3.994	3.687	4.096	3.703	4.091
EIL 0060	3.750	4.062	3.766	4.057	3.750	4.159	3.766	4.154
EIL 0061	3.812	4.124	3.828	4.119	3.812	4.221	3.828	4.216
EIL 0062	3.875	4.187	3.891	4.182	3.875	4.284	3.891	4.279
EIL 0063	3.937	4.249	3.953	4.244	3.937	4.346	3.953	4.341
EIL 4436	3.961	4.273	3.977	4.268	3.961	4.370	3.977	4.365
EIL 0064	4.000	4.314	4.018	4.309	4.000	4.411	4.018	4.406
EIL 0065	4.062	4.376	4.080	4.371	4.062	4.473	4.080	4.468
	I.D max.	O.D +0.005 -0.000	I.D min.	O.D +0.000 -0.010	I.D max.	O.D +0.005 -0.000	I.D min.	O.D +0.000 -0.010
EIL 0066	4.125	4.439	4.143	4.434	4.125	4.536	4.143	4.531
EIL 0067	4.187	4.501	4.205	4.496	4.187	4.598	4.205	4.593
EIL 0068	4.250	4.564	4.268	4.559	4.250	4.661	4.268	4.656
EIL 0069	4.312	4.626	4.330	4.621	4.312	4.723	4.330	4.718
EIL 0070	4.375	4.689	4.393	4.684	4.375	4.786	4.393	4.781
EIL 0071	4.437	4.751	4.455	4.746	4.437	4.848	4.455	4.843
EIL 4486	4.459	4.773	4.477	4.768	4.459	4.870	4.477	4.865
EIL 0072	4.500	4.814	4.518	4.809	4.500	4.911	4.518	4.906
EIL 0073	4.562	4.876	4.580	4.871	4.562	4.973	4.580	4.968
EIL 0074	4.625	4.939	4.643	4.934	4.625	5.036	4.643	5.031
EIL 0075	4.687	5.001	4.705	4.996	4.687	5.098	4.705	5.093
EIL 0076	4.750	5.064	4.768	5.059	4.750	5.161	4.768	5.156
EIL 0077	4.812	5.126	4.830	5.121	4.812	5.223	4.830	5.218
EIL 0078	4.875	5.189	4.893	5.184	4.875	5.286	4.893	5.281
EIL 0079	4.937	5.251	4.955	5.246	4.937	5.348	4.955	5.343
EIL 4536	4.961	5.275	4.979	5.270	4.961	5.372	4.979	5.367

Seal dimensions are in inches and are prior to plating or coating

EIL Series – Internal Pressure Long Leg E-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 3/32				FREE HEIGHT 1/8			
	CAVITY		SEAL		CAVITY		SEAL	
	I.D max.	O.D +0.006 -0.000	I.D min.	O.D +0.000 -0.012	I.D max.	O.D +0.006 -0.000	I.D min.	O.D +0.000 -0.012
EIL 0080	5.000	5.316	5.020	5.311	5.000	5.413	5.020	5.408
EIL 0081	5.062	5.378	5.082	5.373	5.062	5.475	5.082	5.470
EIL 0082	5.125	5.441	5.145	5.436	5.125	5.538	5.145	5.533
EIL 0083	5.187	5.503	5.207	5.498	5.187	5.600	5.207	5.595
EIL 0084	5.250	5.566	5.270	5.561	5.250	5.663	5.270	5.658
EIL 0085	5.312	5.628	5.332	5.623	5.312	5.725	5.332	5.720
EIL 0086	5.375	5.691	5.395	5.686	5.375	5.788	5.395	5.783
EIL 0087	5.437	5.753	5.457	5.748	5.437	5.850	5.457	5.845
EIL 4586	5.459	5.775	5.479	5.770	5.459	5.872	5.479	5.867
EIL 0088	5.500	5.816	5.520	5.811	5.500	5.913	5.520	5.908
EIL 0089	5.562	5.878	5.582	5.873	5.562	5.975	5.582	5.970
EIL 0090	5.625	5.941	5.645	5.936	5.625	6.038	5.645	6.033
EIL 0092	5.750	6.066	5.770	6.061	5.750	6.163	5.770	6.158
EIL 0094	5.875	6.191	5.895	6.186	5.875	6.288	5.895	6.283
EIL 4636	5.959	6.275	5.979	6.270	5.959	6.372	5.979	6.367
EIL 0096	6.000	6.318	6.022	6.313	6.000	6.415	6.022	6.410
	I.D max.	O.D +0.007 -0.000	I.D min.	O.D +0.000 -0.014	I.D max.	O.D +0.007 -0.000	I.D min.	O.D +0.000 -0.014
EIL 4646	·	·	·	·	6.059	6.474	6.081	6.469
EIL 0098	·	·	·	·	6.125	6.540	6.147	6.535
EIL 0100	·	·	·	·	6.250	6.665	6.272	6.660
EIL 0102	·	·	·	·	6.375	6.790	6.397	6.785
EIL 0104	·	·	·	·	6.500	6.915	6.522	6.910
EIL 0106	·	·	·	·	6.625	7.040	6.647	7.035
EIL 0105	·	·	·	·	6.750	7.165	6.772	7.160
EIL 0110	·	·	·	·	6.875	7.290	6.897	7.285
EIL 0112	·	·	·	·	7.000	7.417	7.024	7.412
	I.D max.	O.D +0.008 -0.000	I.D min.	O.D +0.000 -0.016	I.D max.	O.D +0.008 -0.000	I.D min.	O.D +0.000 -0.016
EIL 0114	·	·	·	·	7.125	7.542	7.149	7.537
EIL 0116	·	·	·	·	7.250	7.667	7.274	7.662
EIL 0118	·	·	·	·	7.375	7.792	7.399	7.787
EIL 0120	·	·	·	·	7.500	7.917	7.524	7.912
EIL 0122	·	·	·	·	7.625	8.042	7.649	8.037
EIL 0124	·	·	·	·	7.750	8.167	7.774	8.162
EIL 0126	·	·	·	·	7.875	8.292	7.899	8.287
EIL 0128	·	·	·	·	8.000	8.419	8.026	8.414

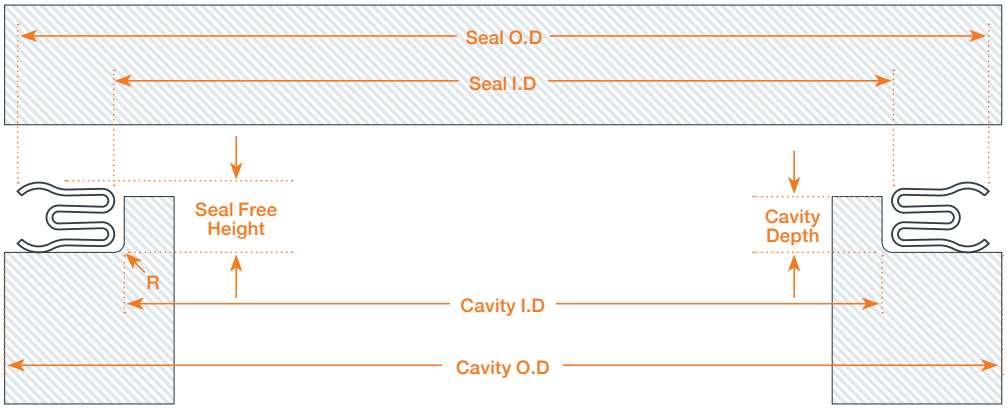
Seal dimensions are in inches and are prior to plating or coating

EIL Series – Internal Pressure Long Leg E-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 3/32				FREE HEIGHT 1/8			
	CAVITY		SEAL		CAVITY		SEAL	
	I.D max.	O.D +0.009 -0.000	I.D min.	O.D +0.000 -0.018	I.D max.	O.D +0.009 -0.000	I.D min.	O.D +0.000 -0.018
EIL 0130	·	·	·	·	8.125	8.544	8.151	8.539
EIL 0132	·	·	·	·	8.250	8.669	8.276	8.664
EIL 0134	·	·	·	·	8.375	8.794	8.401	8.789
EIL 0136	·	·	·	·	8.500	8.919	8.526	8.914
EIL 0138	·	·	·	·	8.625	9.044	8.651	9.039
EIL 0140	·	·	·	·	8.750	9.169	8.776	9.164
EIL 0142	·	·	·	·	8.875	9.294	8.901	9.289
EIL 0144	·	·	·	·	9.000	9.421	9.028	9.416
	I.D max.	O.D +0.010 -0.000	I.D min.	O.D +0.000 -0.020	I.D max.	O.D +0.010 -0.000	I.D min.	O.D +0.000 -0.020
EIL 0146	·	·	·	·	9.125	9.546	9.153	9.541
EIL 0148	·	·	·	·	9.250	9.671	9.278	9.666
EIL 0150	·	·	·	·	9.375	9.796	9.403	9.791
EIL 0152	·	·	·	·	9.500	9.921	9.528	9.916
EIL 0154	·	·	·	·	9.625	10.046	9.653	10.041
EIL 0156	·	·	·	·	9.750	10.171	9.778	10.166
EIL 0158	·	·	·	·	9.875	10.296	9.903	10.291
EIL 0160	·	·	·	·	10.000	10.423	10.030	10.418
EIL 0162	·	·	·	·	10.125	10.548	10.155	10.543
EIL 0164	·	·	·	·	10.250	10.673	10.280	10.668
EIL 0166	·	·	·	·	10.375	10.798	10.405	10.793

Seal dimensions are in inches and are prior to plating or coating

EEL Series – External Pressure Long Leg E-Seal



– Weld permitted

– Plating may be incomplete away from sealing surfaces

– Seals are manufactured to an average diameter then made to be a snap fit in their cavities. Therefore seal diameters are out of round in excess of tolerances

– See the E-Seal introduction pages for details of seal free height, cavity depth and radius R

External E-Seal Cavity

SEAL TYPE & DIAMETER	FREE HEIGHT 3/32				FREE HEIGHT 1/8			
	CAVITY		SEAL		CAVITY		SEAL	
	I.D +0.000 -0.003	O.D min.	I.D +0.006 -0.000	O.D max.	I.D +0.000 -0.003	O.D min.	I.D +0.006 -0.000	O.D max.
EEL 0032	2.000	2.310	2.005	2.296	2.000	2.407	2.005	2.393
EEL 0033	2.062	2.372	2.067	2.358	2.062	2.469	2.067	2.455
EEL 0034	2.125	2.435	2.130	2.421	2.125	2.532	2.130	2.518
EEL 0035	2.187	2.497	2.192	2.483	2.187	2.594	2.192	2.580
EEL 0036	2.250	2.560	2.255	2.546	2.250	2.657	2.255	2.643
EEL 0037	2.312	2.622	2.317	2.608	2.312	2.719	2.317	2.705
EEL 0038	2.375	2.685	2.380	2.671	2.375	2.782	2.380	2.768
EEL 0039	2.437	2.747	2.442	2.733	2.437	2.844	2.442	2.830
EEL 0040	2.500	2.810	2.505	2.796	2.500	2.907	2.505	2.893
EEL 0041	2.562	2.872	2.567	2.858	2.562	2.969	2.567	2.955
EEL 0042	2.625	2.935	2.630	2.921	2.625	3.032	2.630	3.018
EEL 0043	2.687	2.997	2.692	2.983	2.687	3.094	2.692	3.080
EEL 0044	2.750	3.060	2.755	3.046	2.750	3.157	2.755	3.143
EEL 0045	2.812	3.122	2.817	3.108	2.812	3.219	2.817	3.205
EEL 0046	2.875	3.185	2.880	3.171	2.875	3.282	2.880	3.268
EEL 0047	2.937	3.247	2.942	3.233	2.937	3.344	2.942	3.330
EEL 0048	3.000	3.312	3.005	3.296	3.000	3.409	3.005	3.393
EEL 0049	3.062	3.374	3.067	3.358	3.062	3.471	3.067	3.455
EEL 0050	3.125	3.437	3.130	3.421	3.125	3.534	3.130	3.518
EEL 0051	3.187	3.499	3.192	3.483	3.187	3.596	3.192	3.580
	I.D +0.000 -0.004	O.D min.	I.D +0.008 -0.000	O.D max.	I.D +0.000 -0.004	O.D min.	I.D +0.008 -0.000	O.D max.
EEL 0052	3.250	3.562	3.255	3.546	3.250	3.659	3.255	3.643

Seal dimensions are in inches and are prior to plating or coating

EEL Series – External Pressure Long Leg E-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 3/32				FREE HEIGHT 1/8			
	CAVITY		SEAL		CAVITY		SEAL	
	I.D +0.000 -0.004	O.D min.	I.D +0.008 -0.000	O.D max.	I.D +0.000 -0.004	O.D min.	I.D +0.008 -0.000	O.D max.
EEL 0053	3.312	3.624	3.317	3.608	3.312	3.721	3.317	3.705
EEL 0054	3.375	3.687	3.380	3.671	3.375	3.784	3.380	3.768
EEL 0055	3.437	3.749	3.442	3.733	3.437	3.846	3.442	3.830
EEL 0056	3.500	3.812	3.505	3.796	3.500	3.909	3.505	3.893
EEL 0057	3.562	3.874	3.567	3.858	3.562	3.971	3.567	3.955
EEL 0058	3.625	3.937	3.630	3.921	3.625	4.034	3.630	4.018
EEL 0059	3.687	3.999	3.692	3.983	3.687	4.096	3.692	4.080
EEL 0060	3.750	4.062	3.755	4.046	3.750	4.159	3.755	4.143
EEL 0061	3.812	4.124	3.817	4.108	3.812	4.221	3.817	4.205
EEL 0062	3.875	4.187	3.880	4.171	3.875	4.284	3.880	4.268
EEL 0063	3.937	4.249	3.942	4.233	3.937	4.346	3.942	4.330
EEL 0064	4.000	4.314	4.005	4.296	4.000	4.411	4.005	4.393
EEL 0065	4.062	4.376	4.067	4.358	4.062	4.473	4.067	4.455
EEL 0066	4.125	4.439	4.130	4.421	4.125	4.536	4.130	4.518
EEL 0067	4.187	4.501	4.192	4.483	4.187	4.598	4.192	4.580
	I.D +0.000 -0.005	O.D min.	I.D +0.010 -0.000	O.D max.	I.D +0.000 -0.005	O.D min.	I.D +0.010 -0.000	O.D max.
EEL 0068	4.250	4.564	4.255	4.546	4.250	4.661	4.255	4.643
EEL 0069	4.312	4.626	4.317	4.608	4.312	4.723	4.317	4.705
EEL 0070	4.375	4.689	4.380	4.671	4.375	4.786	4.380	4.768
EEL 0071	4.437	4.751	4.442	4.733	4.437	4.848	4.442	4.830
EEL 0072	4.500	4.814	4.505	4.796	4.500	4.911	4.505	4.893
EEL 0073	4.562	4.876	4.567	4.858	4.562	4.973	4.567	4.955
EEL 0074	4.625	4.939	4.630	4.921	4.625	5.036	4.630	5.018
EEL 0075	4.687	5.001	4.692	4.983	4.687	5.098	4.692	5.080
EEL 0076	4.750	5.064	4.755	5.046	4.750	5.161	4.755	5.143
EEL 0077	4.812	5.126	4.817	5.108	4.812	5.223	4.817	5.205
EEL 0078	4.875	5.189	4.880	5.171	4.875	5.286	4.880	5.268
EEL 0079	4.937	5.251	4.942	5.233	4.937	5.348	4.942	5.330
EEL 0080	5.000	5.316	5.005	5.296	5.000	5.413	5.005	5.393
EEL 0081	5.062	5.378	5.067	5.358	5.062	5.475	5.067	5.455
EEL 0082	5.125	5.441	5.130	5.421	5.125	5.538	5.130	5.518
	I.D +0.000 -0.006	O.D min.	I.D +0.012 -0.000	O.D max.	I.D +0.000 -0.006	O.D min.	I.D +0.012 -0.000	O.D max.
EEL 0083	5.187	5.503	5.192	5.483	5.187	5.600	5.192	5.580
EEL 0084	5.250	5.566	5.255	5.546	5.250	5.663	5.255	5.643
EEL 0085	5.312	5.628	5.317	5.608	5.312	5.725	5.317	5.705

Seal dimensions are in inches and are prior to plating or coating

EEL Series – External Pressure Long Leg E-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 3/32				FREE HEIGHT 1/8			
	CAVITY		SEAL		CAVITY		SEAL	
	I.D +0.000 -0.006	O.D min.	I.D +0.012 -0.000	O.D max.	I.D +0.000 -0.006	O.D min.	I.D +0.012 -0.000	O.D max.
EEL 0086	5.375	5.691	5.380	5.671	5.375	5.788	5.380	5.768
EEL 0087	5.437	5.753	5.442	5.733	5.437	5.850	5.442	5.830
EEL 0088	5.500	5.816	5.505	5.796	5.500	5.913	5.505	5.893
EEL 0089	5.562	5.878	5.567	5.858	5.562	5.975	5.567	5.955
EEL 0090	5.625	5.941	5.630	5.921	5.625	6.038	5.630	6.018
EEL 0092	5.750	6.066	5.755	6.046	5.750	6.163	5.755	6.143
EEL 0094	5.875	6.191	5.880	6.171	5.875	6.288	5.880	6.268
EEL 0096	6.000	6.318	6.005	6.296	6.000	6.415	6.005	6.393
	I.D +0.000 -0.007	O.D min.	I.D +0.014 -0.000	O.D max.	I.D +0.000 -0.007	O.D min.	I.D +0.014 -0.000	O.D max.
EEL 0098	·	·	·	·	6.125	6.540	6.130	6.518
EEL 0100	·	·	·	·	6.250	6.665	6.255	6.643
EEL 0102	·	·	·	·	6.375	6.790	6.380	6.768
EEL 0104	·	·	·	·	6.500	6.915	6.505	6.893
EEL 0106	·	·	·	·	6.625	7.040	6.630	7.018
EEL 0108	·	·	·	·	6.750	7.165	6.755	7.143
EEL 0110	·	·	·	·	6.875	7.290	6.880	7.268
EEL 0112	·	·	·	·	7.000	7.417	7.005	7.393
	I.D +0.000 -0.008	O.D min.	I.D +0.016 -0.000	O.D max.	I.D +0.000 -0.008	O.D min.	I.D +0.016 -0.000	O.D max.
EEL 0114	·	·	·	·	7.125	7.542	7.130	7.518
EEL 0116	·	·	·	·	7.250	7.667	7.255	7.643
EEL 0118	·	·	·	·	7.375	7.792	7.380	7.768
EEL 0120	·	·	·	·	7.500	7.917	7.505	7.893
EEL 0122	·	·	·	·	7.625	8.042	7.630	8.018
EEL 0124	·	·	·	·	7.750	8.167	7.755	8.143
EEL 0126	·	·	·	·	7.875	8.292	7.880	8.268
EEL 0128	·	·	·	·	8.000	8.419	8.005	8.393
	I.D +0.000 -0.009	O.D min.	I.D +0.018 -0.000	O.D max.	I.D +0.000 -0.009	O.D min.	I.D +0.018 -0.000	O.D max.
EEL 0130	·	·	·	·	8.125	8.544	8.130	8.518
EEL 0132	·	·	·	·	8.250	8.669	8.255	8.643
EEL 0134	·	·	·	·	8.375	8.794	8.380	8.768
EEL 0136	·	·	·	·	8.500	8.919	8.505	8.893
EEL 0138	·	·	·	·	8.625	9.044	8.630	9.018
EEL 0140	·	·	·	·	8.750	9.169	8.755	9.143

Seal dimensions are in inches and are prior to plating or coating

EEL Series – External Pressure Long Leg E-Seal

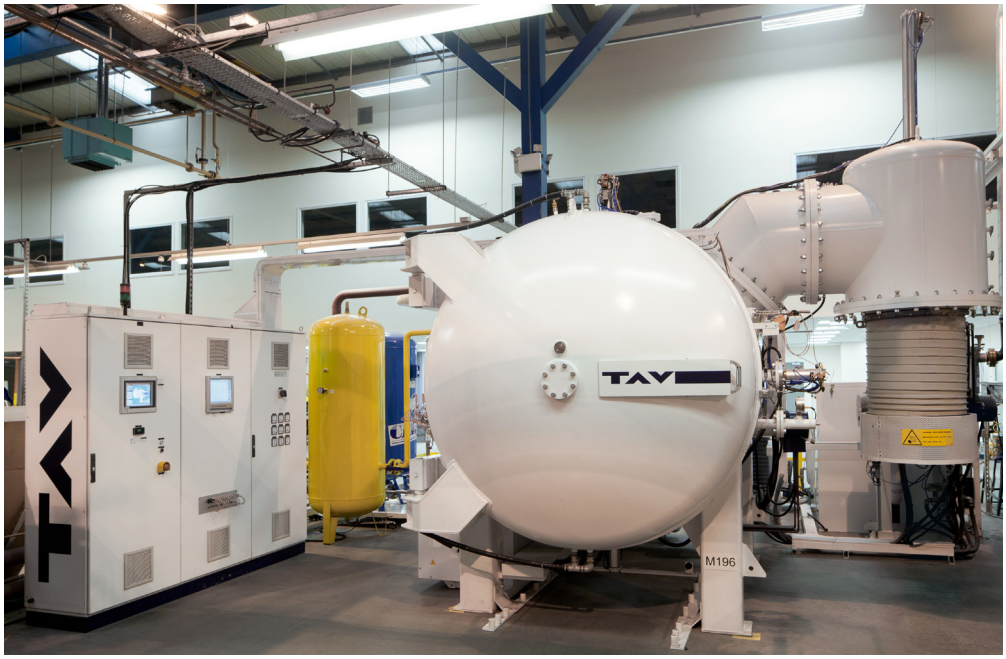
SEAL TYPE & DIAMETER	FREE HEIGHT 3/32				FREE HEIGHT 1/8			
	CAVITY		SEAL		CAVITY		SEAL	
	I.D +0.000 -0.009	O.D min.	I.D +0.018 -0.000	O.D max.	I.D +0.000 -0.009	O.D min.	I.D +0.018 -0.000	O.D max.
EEL 0142	·	·	·	·	8.875	9.294	8.880	9.268
EEL 0144	·	·	·	·	9.000	9.421	9.005	9.393
	I.D +0.000 -0.010	O.D min.	I.D +0.020 -0.000	O.D max.	I.D +0.000 -0.010	O.D min.	I.D +0.020 -0.000	O.D max.
EEL 0146	·	·	·	·	9.125	9.546	9.130	9.518
EEL 0148	·	·	·	·	9.250	9.671	9.255	9.643
EEL 0150	·	·	·	·	9.375	9.796	9.380	9.768
EEL 0152	·	·	·	·	9.500	9.921	9.505	9.893
EEL 0154	·	·	·	·	9.625	10.046	9.630	10.018
EEL 0156	·	·	·	·	9.750	10.171	9.755	10.143
EEL 0158	·	·	·	·	9.875	10.296	9.880	10.268
EEL 0160	·	·	·	·	10.000	10.423	10.005	10.393
	I.D +0.000 -0.011	O.D min.	I.D +0.022 -0.000	O.D max.	I.D +0.000 -0.011	O.D min.	I.D +0.022 -0.000	O.D max.
EEL 0162	·	·	·	·	10.125	10.548	10.130	10.518
EEL 0164	·	·	·	·	10.250	10.673	10.255	10.643
EEL 0166	·	·	·	·	10.375	10.798	10.380	10.768
EEL 0168	·	·	·	·	10.500	10.923	10.505	10.893
EEL 0170	·	·	·	·	10.625	11.048	10.630	11.018
EEL 0172	·	·	·	·	10.750	11.173	10.755	11.143
EEL 0174	·	·	·	·	10.875	11.298	10.880	11.268
EEL 0176	·	·	·	·	11.000	11.425	11.005	11.393
	I.D +0.000 -0.012	O.D min.	I.D +0.024 -0.000	O.D max.	I.D +0.000 -0.012	O.D min.	I.D +0.024 -0.000	O.D max.
EEL 0178	·	·	·	·	11.125	11.550	11.130	11.518
EEL 0180	·	·	·	·	11.250	11.675	11.255	11.643
EEL 0182	·	·	·	·	11.375	11.800	11.380	11.768
EEL 0184	·	·	·	·	11.500	11.925	11.505	11.893
EEL 0186	·	·	·	·	11.625	12.050	11.630	12.018
EEL 0188	·	·	·	·	11.750	12.175	11.755	12.143
EEL 0190	·	·	·	·	11.875	12.300	11.880	12.268
EEL 0192	·	·	·	·	12.000	12.427	12.005	12.393

Seal dimensions are in inches and are prior to plating or coating

EEL Series – External Pressure Long Leg E-Seal

SEAL TYPE & DIAMETER	FREE HEIGHT 3/32				FREE HEIGHT 1/8			
	CAVITY		SEAL		CAVITY		SEAL	
	I.D +0.000 -0.013	O.D min.	I.D +0.026 -0.000	O.D max.	I.D +0.000 -0.013	O.D min.	I.D +0.026 -0.000	O.D max.
EEL 0194	·	·	·	·	12.125	12.552	12.130	12.518
EEL 0196	·	·	·	·	12.250	12.677	12.255	12.643
EEL 0198	·	·	·	·	12.375	12.802	12.380	12.768
EEL 0200	·	·	·	·	12.500	12.927	12.505	12.893
EEL 0202	·	·	·	·	12.625	13.052	12.630	13.018
EEL 0204	·	·	·	·	12.750	13.177	12.755	13.143
EEL 0206	·	·	·	·	12.875	13.302	12.880	13.268
EEL 0208	·	·	·	·	13.000	13.427	13.005	13.393
EEL 0210	·	·	·	·	13.125	13.552	13.130	13.518

Seal dimensions are in inches and are prior to plating or coating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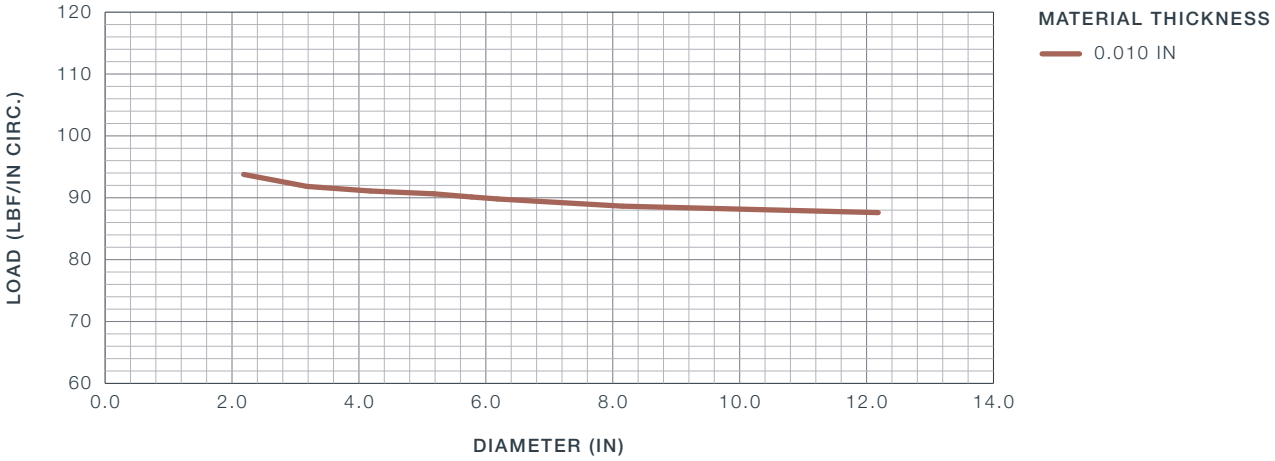
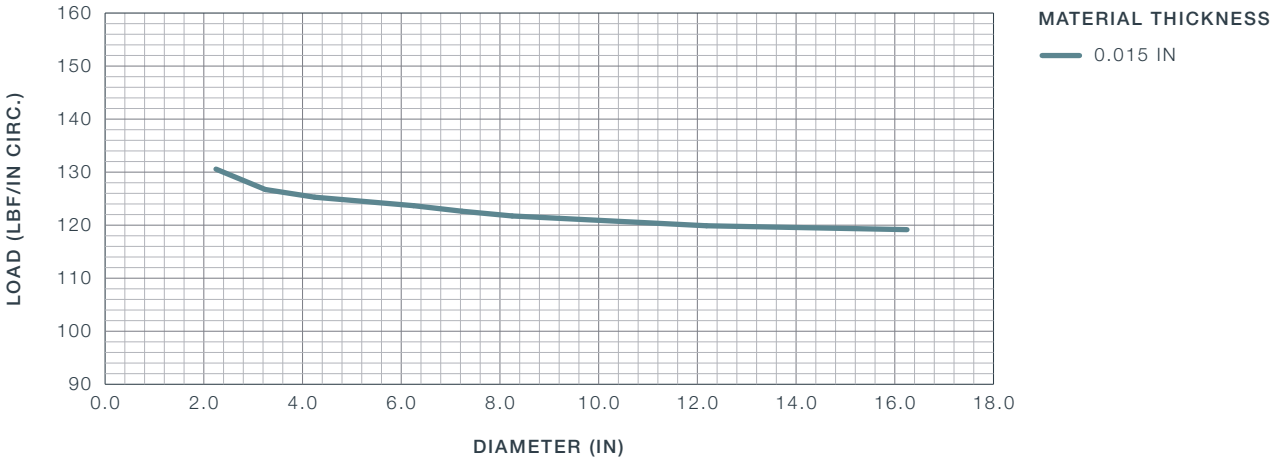
Load

The seating loads for each seal section are shown below. The values shown are for solution and long cycle precipitation heat treated Inconel 718 seals. These values are for guidance only as a number of factors can have a significant effect on the load including:

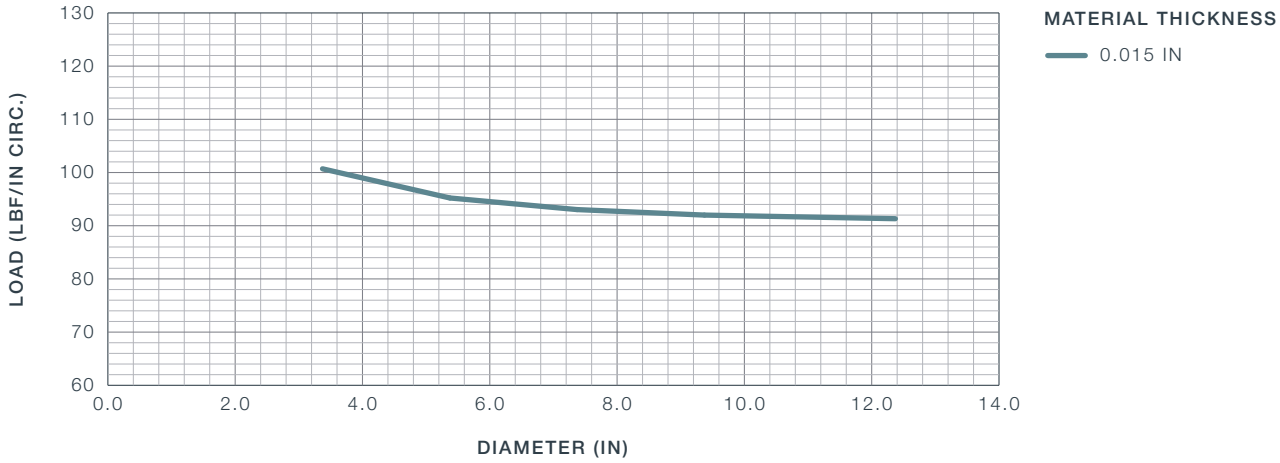
– Seal diameter
– Seal free height
– Cavity depth
– Tolerances
– Variations in material thickness and properties
– Coatings and platings



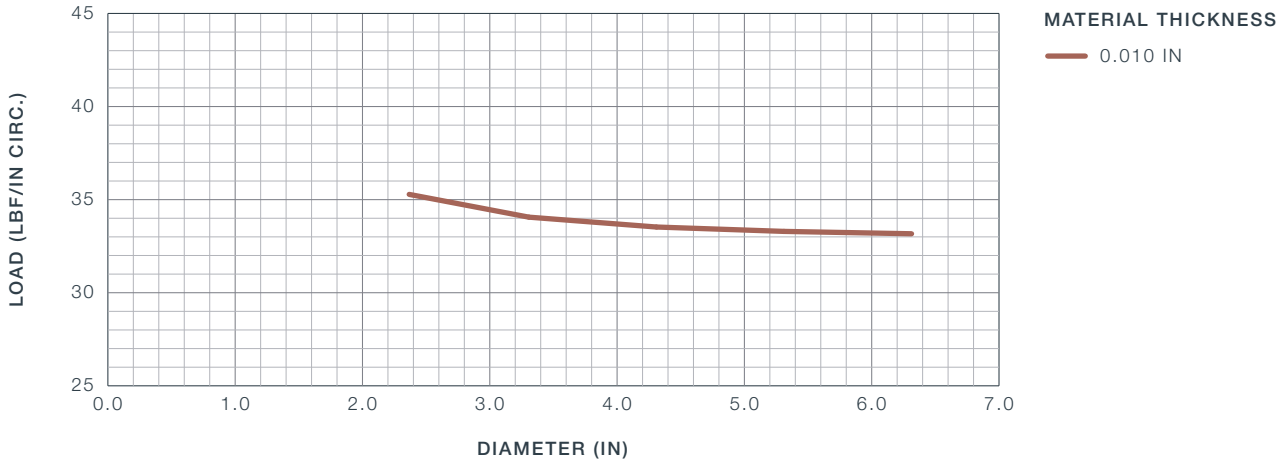
3/32 Section Short Leg Seating Load



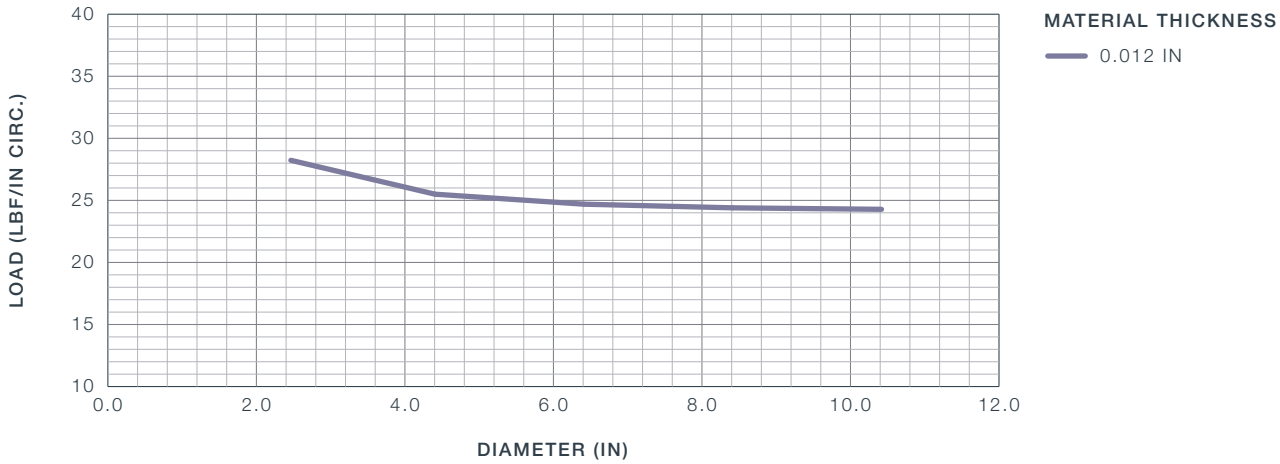
1/8 Section Short Leg Seating Load



3/16 Section Short Leg Seating Load



3/32 Section Long Leg Seating Load

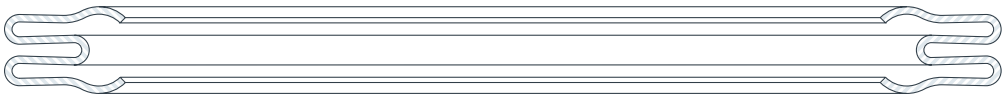


1/8 Section Long Leg Seating Load

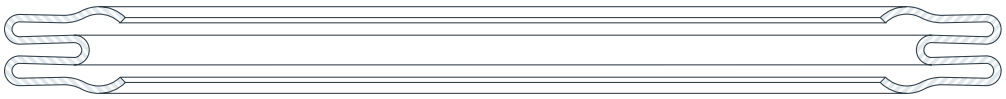
High Temperature Duct Seals

Product Description

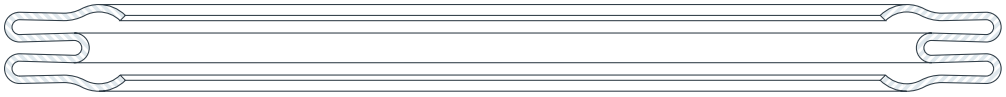
High Temperature Duct Seals are a specialist range of E-Seals designed to be used in standard aerospace flange and duct systems. The following series are offered:



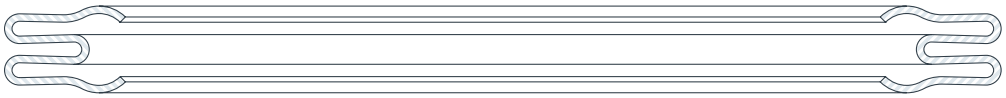
S2283–XXX Series and S2283–XXX-SP Series



S2314–XXX Series



S2346–XXX Series



S2347–XXX Series

Part Properties

– A flexible low load seal with good recovery
– Available in a range of standard industry sizes

High Temperature Duct Seal Specification

Nicholsons offer S2283–XXX Series, S2283–XXX-SP Series, S2314–XXX Series, S2346–XXX Series and S2347–XXX Series as E-Seal options for standard aerospace flange and ducting systems. Available sizes and further information for each of the Series are listed on pages 100 to 104.

Seal diameters are manufactured out of round in excess of tolerances so that they are a snap fit in their cavities.

MATERIAL TYPE

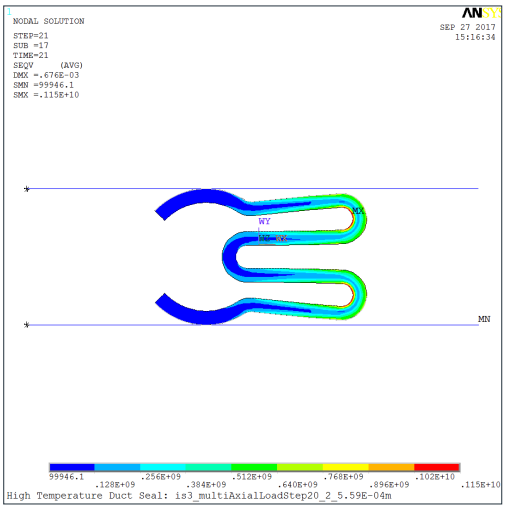
The standard material for a High Temperature Duct Seal is Inconel 718.

HEAT TREATMENT

The standard treatment is Solution and Long Cycle Precipitation.

PLATING OR COATING

The standard plating where applicable is silver plate to a thickness of 0.0003"/0.0006". The S2283–XXX-SP series is the silver plated version of the S2283–XXX Series.



Part List – S2283–XXX Series

PART NUMBER	SEAL				OUT OF ROUNDNESS OF OUTER DIAMETER	DUCT SIZE	EQUIVALENT TO
	O.D	I.D (REF)	FREE HT.	MAT'L THK			
S2283-100	1.249 1.245	0.958	0.113 0.103	0.011 0.009	0.040 0.020	1.00	A3475 AS1895/7-100
S2283-125	1.499 1.495	1.208	0.113 0.103	0.011 0.009	0.040 0.020	1.25	A3478 AS1895/7-125
S2283-150	1.749 1.745	1.458	0.113 0.103	0.011 0.009	0.040 0.020	1.50	A0944 AS1895/7-150
S2283-175	1.999 1.995	1.708	0.113 0.103	0.011 0.009	0.040 0.020	1.75	A3624 AS1895/7-175
S2283-200	2.249 2.245	1.958	0.113 0.103	0.011 0.009	0.040 0.020	2.00	A0945 AS1895/7-200
S2283-225	2.499 2.493	2.208	0.113 0.103	0.011 0.009	0.040 0.020	2.25	A3505 AS1895/7-225
S2283-250	2.749 2.743	2.458	0.113 0.103	0.011 0.009	0.040 0.020	2.50	A0946 AS1895/7-250
S2283-275	2.999 2.993	2.708	0.113 0.103	0.011 0.009	0.040 0.020	2.75	A2873-275 AS1895/7-275
S2283-300	3.249 3.243	2.958	0.113 0.103	0.011 0.009	0.040 0.020	3.00	A2873-300 AS1895/7-300
S2283-325	3.499 3.491	3.208	0.113 0.103	0.011 0.009	0.040 0.020	3.25	A2873-325 AS1895/7-325
S2283-350	3.749 3.741	3.458	0.113 0.103	0.011 0.009	0.050 0.030	3.50	A2873-350 AS1895/7-350
S2283-400	4.249 4.241	3.958	0.113 0.103	0.011 0.009	0.050 0.030	4.00	A2873-400 AS1895/7-400
S2283-450	4.749 4.739	4.458	0.113 0.103	0.011 0.009	0.050 0.030	4.50	A2873-450 AS1895/7-450
S2283-500	5.249 5.239	4.958	0.113 0.103	0.011 0.009	0.060 0.040	5.00	A2873-500 AS1895/7-500
S2283-550	5.749 5.737	5.458	0.113 0.103	0.011 0.009	0.060 0.040	5.50	A2873-550 AS1895/7-550
S2283-600	6.249 6.237	5.958	0.113 0.103	0.011 0.009	0.060 0.040	6.00	A2873-600 AS1895/7-600
S2283-650	6.749 6.735	6.458	0.113 0.103	0.011 0.009	0.065 0.045	6.50	AS1895/7-650
S2283-700	7.249 7.235	6.958	0.113 0.103	0.011 0.009	0.065 0.045	7.00	AS1895/7-700
S2283-750	7.749 7.733	7.458	0.113 0.103	0.011 0.009	0.065 0.045	7.50	A2873-750

Seal dimensions are in inches and are prior to plating or coating

Part List – S2283–XXX-SP Series

PART NUMBER	SEAL				OUT OF ROUNDNESS OF OUTER DIAMETER	DUCT SIZE	EQUIVALENT TO
	O.D	I.D (REF)	FREE HT.	MAT'L THK			
S2283-100-SP	1.249 1.245	0.958	0.113 0.103	0.011 0.009	0.040 0.020	1.00	A3475 AS1895/7-100
S2283-125-SP	1.499 1.495	1.208	0.113 0.103	0.011 0.009	0.040 0.020	1.25	A3478 AS1895/7-125
S2283-150-SP	1.749 1.745	1.458	0.113 0.103	0.011 0.009	0.040 0.020	1.50	A0944 AS1895/7-150
S2283-175-SP	1.999 1.995	1.708	0.113 0.103	0.011 0.009	0.040 0.020	1.75	A3624 AS1895/7-175
S2283-200-SP	2.249 2.245	1.958	0.113 0.103	0.011 0.009	0.040 0.020	2.00	A0945 AS1895/7-200
S2283-225-SP	2.499 2.493	2.208	0.113 0.103	0.011 0.009	0.040 0.020	2.25	A3505 AS1895/7-225
S2283-250-SP	2.749 2.743	2.458	0.113 0.103	0.011 0.009	0.040 0.020	2.50	A0946 AS1895/7-250
S2283-275-SP	2.999 2.993	2.708	0.113 0.103	0.011 0.009	0.040 0.020	2.75	A2873-275 AS1895/7-275
S2283-300-SP	3.249 3.243	2.958	0.113 0.103	0.011 0.009	0.040 0.020	3.00	A2873-300 AS1895/7-300
S2283-325-SP	3.499 3.491	3.208	0.113 0.103	0.011 0.009	0.040 0.020	3.25	A2873-325 AS1895/7-325
S2283-350-SP	3.749 3.741	3.458	0.113 0.103	0.011 0.009	0.050 0.030	3.50	A2873-350 AS1895/7-350
S2283-400-SP	4.249 4.241	3.958	0.113 0.103	0.011 0.009	0.050 0.030	4.00	A2873-400 AS1895/7-400
S2283-450-SP	4.749 4.739	4.458	0.113 0.103	0.011 0.009	0.050 0.030	4.50	A2873-450 AS1895/7-450
S2283-500-SP	5.249 5.239	4.958	0.113 0.103	0.011 0.009	0.060 0.040	5.00	A2873-500 AS1895/7-500
S2283-550-SP	5.749 5.737	5.458	0.113 0.103	0.011 0.009	0.060 0.040	5.50	A2873-550 AS1895/7-550
S2283-600-SP	6.249 6.237	5.958	0.113 0.103	0.011 0.009	0.060 0.040	6.00	A2873-600 AS1895/7-600
S2283-650-SP	6.749 6.735	6.458	0.113 0.103	0.011 0.009	0.065 0.045	6.50	AS1895/7-650
S2283-700-SP	7.249 7.235	6.958	0.113 0.103	0.011 0.009	0.065 0.045	7.00	AS1895/7-700
S2283-750-SP	7.749 7.733	7.458	0.113 0.103	0.011 0.009	0.065 0.045	7.50	A2873-750

Seal dimensions are in inches and are prior to plating or coating

Part List – S2314–XXX Series

PART NUMBER	SEAL				OUT OF ROUNDNESS OF OUTER DIAMETER	DUCT SIZE	EQUIVALENT TO
	O.D	I.D (REF)	FREE HT.	MAT'L THK			
S2314-100	1.363 1.359	1.002	0.145 0.135	0.013 0.011	0.030 0.015	1.00	A0855 BE28931
S2314-125	1.613 1.609	1.252	0.145 0.135	0.013 0.011	0.030 0.015	1.25	A0856 BE28932
S2314-150	1.863 1.859	1.502	0.145 0.135	0.013 0.011	0.030 0.015	1.50	A0857 BE28933
S2314-175	2.113 2.109	1.752	0.145 0.135	0.013 0.011	0.030 0.015	1.75	A0864 BE28934
S2314-200	2.363 2.359	2.002	0.145 0.135	0.013 0.011	0.030 0.015	2.00	A0858 BE28935
S2314-225	2.614 2.608	2.252	0.145 0.135	0.013 0.011	0.035 0.020	2.25	A0865 BE28936
S2314-250	2.864 2858	2.502	0.145 0.135	0.013 0.011	0.035 0.020	2.50	A0859 BE28937
S2314-275	3.114 3.108	2.752	0.145 0.135	0.013 0.011	0.035 0.020	2.75	A0866 A0938 BE28938
S2314-300	3.364 3.358	3.002	0.145 0.135	0.013 0.011	0.040 0.020	3.00	A0860 BE28939
S2314-325	3.614 3.608	3.252	0.145 0.135	0.013 0.011	0.035 0.020	3.25	A0867 BE28940
S2314-350	3.865 3.857	3.502	0.145 0.135	0.013 0.011	0.050 0.030	3.50	A0861 BE28941
S2314-400	4.365 4.357	4.002	0.145 0.135	0.013 0.011	0.050 0.030	4.00	A0862 BE28942
S2314-450	4.865 4.857	4.502	0.145 0.135	0.013 0.011	0.050 0.030	4.50	A0863 BE28943
S2314-500	5.367 5.355	5.002	0.145 0.135	0.013 0.011	0.060 0.040	5.00	A0868 BE28944
S2314-550	5.867 5.855	5.502	0.145 0.135	0.013 0.011	0.060 0.040	5.50	A0869 BE28945
S2314-600	6.367 6.355	6.002	0.145 0.135	0.013 0.011	0.065 0.045	6.00	A0805 BE28946
S2314-650	6.867 6.855	6.502	0.145 0.135	0.013 0.011	0.060 0.040	6.50	A2802
NA10092	6.469 6.457	6.104	0.145 0.135	0.013 0.011	0.060 0.040	.	A0870 BE28990

Seal dimensions are in inches and are prior to plating or coating

Part List – S2346–XXX Series

PART NUMBER	SEAL				OUT OF ROUNDNESS OF OUTER DIAMETER	DUCT SIZE	EQUIVALENT TO
	O.D	I.D (REF)	FREE HT.	MAT'L THK			
S2346-100	1.365 1.361	1.079	0.113 0.103	0.011 0.009	0.035 0.025	1.00	A7387-100
S2346-125	1.615 1.611	1.329	0.113 0.103	0.011 0.009	0.035 0.025	1.25	A7387-125
S2346-150	1.865 1.861	1.579	0.113 0.103	0.011 0.009	0.035 0.025	1.50	A7387-150
S2346-175	2.115 2.111	1.829	0.113 0.103	0.011 0.009	0.035 0.025	1.75	A7387-175
S2346-200	2.365 2.361	2.079	0.113 0.103	0.011 0.009	0.040 0.025	2.00	A7387-200
S2346-225	2.615 2.609	2.329	0.113 0.103	0.011 0.009	0.040 0.025	2.25	A7387-225
S2346-250	2.865 2.859	2.578	0.113 0.103	0.011 0.009	0.045 0.030	2.50	A7387-250
S2346-275	3.115 3.109	2.828	0.113 0.103	0.011 0.009	0.045 0.030	2.75	A7387-275
S2346-300	3.365 3.359	3.078	0.113 0.103	0.011 0.009	0.045 0.030	3.00	A7387-300
S2346-325	3.615 3.607	3.327	0.113 0.103	0.011 0.009	0.050 0.035	3.25	A7387-325
S2346-350	3.865 3.857	3.577	0.113 0.103	0.011 0.009	0.050 0.035	3.50	A7387-350
S2346-400	4.365 4.357	4.077	0.113 0.103	0.011 0.009	0.050 0.035	4.00	A7387-400
S2346-450	4.865 4.855	4.575	0.113 0.103	0.011 0.009	0.060 0.040	4.50	A7387-450
S2346-500	5.365 5.353	5.075	0.113 0.103	0.011 0.009	0.060 0.040	5.00	A7387-500
S2346-550	5.865 5.853	5.573	0.113 0.103	0.011 0.009	0.065 0.045	5.50	A7387-550
S2346-600	6.365 6.353	6.073	0.113 0.103	0.011 0.009	0.065 0.045	6.00	A7387-600

Seal dimensions are in inches and are prior to plating or coating

Part List – S2347–XXX Series

PART NUMBER	SEAL				OUT OF ROUNDNESS OF OUTER DIAMETER	DUCT SIZE	EQUIVALENT TO
	O.D	I.D (REF)	FREE HT.	MAT'L THK			
S2347-150	1.944 1.940	1.663	0.113 0.103	0.011 0.009	0.030 0.015	1.50	8757-150
S2347-175	2.199 2.195	1.918	0.113 0.103	0.011 0.009	0.030 0.015	1.75	8757-175
S2347-200	2.444 2.438	2.163	0.113 0.103	0.011 0.009	0.035 0.025	2.00	8757-200
S2347-250	2.944 2.938	2.663	0.113 0.103	0.011 0.009	0.035 0.025	2.50	8757-250
S2347-300	3.434 3.426	3.153	0.113 0.103	0.011 0.009	0.040 0.025	3.00	8757-300
S2347-350	3.934 3.926	3.653	0.113 0.103	0.011 0.009	0.040 0.025	3.50	8757-350
S2347-400	4.434 4.424	4.153	0.113 0.103	0.011 0.009	0.050 0.030	4.00	8757-400
S2347-450	4.934 4.924	4.653	0.113 0.103	0.011 0.009	0.050 0.030	4.50	8757-450
S2347-500	5.434 5.422	5.153	0.113 0.103	0.011 0.009	0.050 0.030	5.00	8757-500
S2347-550	5.934 5.922	5.653	0.113 0.103	0.011 0.009	0.050 0.035	5.50	8757-550
S2347-600	6.434 6.420	6.153	0.113 0.103	0.011 0.009	0.055 0.035	6.00	8757-600
S2347-650	6.934 6.920	6.653	0.113 0.103	0.011 0.009	0.055 0.035	6.50	8757-650
S2347-700	7.434 7.420	7.153	0.113 0.103	0.011 0.009	0.060 0.040	7.00	8757-700
S2347-750	7.934 7.918	7.653	0.113 0.103	0.011 0.009	0.060 0.040	7.50	8757-750
S2347-800	8.434 8.418	8.153	0.113 0.103	0.011 0.009	0.065 0.045	8.00	8757-800

Seal dimensions are in inches and are prior to plating or coating

Cross Reference Table

EQUIVALENT PART NUMBER	NICHOLSONS PART NUMBER			
	UNPLATED	SEE PAGE	SILVER PLATED	SEE PAGE
8757-150	S2347-150	p104	-	-
8757-175	S2347-175	p104	-	-
8757-200	S2347-200	p104	-	-
8757-250	S2347-250	p104	-	-
8757-300	S2347-300	p104	-	-
8757-350	S2347-350	p104	-	-
8757-400	S2347-400	p104	-	-
8757-450	S2347-450	p104	-	-
8757-500	S2347-500	p104	-	-
8757-550	S2347-550	p104	-	-
8757-600	S2347-600	p104	-	-
8757-650	S2347-650	p104	-	-
8757-700	S2347-700	p104	-	-
8757-750	S2347-750	p104	-	-
8757-800	S2347-800	p104	-	-
A0805	S2314-600	p102	-	-
A0855	S2314-100	p102	-	-
A0856	S2314-125	p102	-	-
A0857	S2314-150	p102	-	-
A0858	S2314-200	p102	-	-
A0859	S2314-250	p102	-	-
A0860	S2314-300	p102	-	-
A0861	S2314-350	p102	-	-
A0862	S2314-400	p102	-	-
A0863	S2314-450	p102	-	-
A0864	S2314-175	p102	-	-
A0865	S2314-225	p102	-	-
A0866	S2314-275	p102	-	-
A0867	S2314-325	p102	-	-
A0868	S2314-500	p102	-	-
A0869	S2314-550	p102	-	-
A0870	NA10092	p102	-	-
A0938	S2314-275	p102	-	-
A0944	S2283-150	p101	S2283-150-SP	p101
A0945	S2283-200	p101	S2283-200-SP	p101
A0946	S2283-250	p101	S2283-250-SP	p101
A2802	S2314-650	p102	-	-
A2873-275	S2283-275	p100	S2283-275-SP	p101
A2873-300	S2283-300	p100	S2283-300-SP	p101
A2873-325	S2283-325	p100	S2283-325-SP	p101
A2873-350	S2283-350	p100	S2283-350-SP	p101
A2873-400	S2283-400	p100	S2283-400-SP	p101

EQUIVALENT PART NUMBER	NICHOLSONS PART NUMBER			
	UNPLATED	SEE PAGE	SILVER PLATED	SEE PAGE
A2873-450	S2283-450	p100	S2283-450-SP	p101
A2873-500	S2283-500	p100	S2283-500-SP	p101
A2873-550	S2283-550	p100	S2283-550-SP	p101
A2873-600	S2283-600	p100	S2283-600-SP	p101
A2873-750	S2283-750	p100	S2283-750-SP	p101
A3475	S2283-100	p100	S2283-100-SP	p101
A3478	S2283-125	p100	S2283-125-SP	p101
A3505	S2283-225	p100	S2283-225-SP	p101
A3624	S2283-175	p100	S2283-175-SP	p101
A7387-100	S2346-100	p103	-	-
A7387-125	S2346-125	p103	-	-
A7387-150	S2346-150	p103	-	-
A7387-175	S2346-175	p103	-	-
A7387-200	S2346-200	p103	-	-
A7387-225	S2346-225	p103	-	-
A7387-250	S2346-250	p103	-	-
A7387-275	S2346-275	p103	-	-
A7387-300	S2346-300	p103	-	-
A7387-325	S2346-325	p103	-	-
A7387-350	S2346-350	p103	-	-
A7387-400	S2346-400	p103	-	-
A7387-450	S2346-450	p103	-	-
A7387-500	S2346-500	p103	-	-
A7387-550	S2346-550	p103	-	-
A7387-600	S2346-600	p103	-	-
AS1895/7-100	S2283-100	p100	S2283-100-SP	p101
AS1895/7-125	S2283-125	p100	S2283-125-SP	p101
AS1895/7-150	S2283-150	p100	S2283-150-SP	p101
AS1895/7-175	S2283-175	p100	S2283-175-SP	p101
AS1895/7-200	S2283-200	p100	S2283-200-SP	p101
AS1895/7-225	S2283-225	p100	S2283-225-SP	p101
AS1895/7-250	S2283-250	p100	S2283-250-SP	p101
AS1895/7-275	S2283-275	p100	S2283-275-SP	p101
AS1895/7-300	S2283-300	p100	S2283-300-SP	p101
AS1895/7-325	S2283-325	p100	S2283-325-SP	p101
AS1895/7-350	S2283-350	p100	S2283-350-SP	p101
AS1895/7-400	S2283-400	p100	S2283-400-SP	p101
AS1895/7-450	S2283-450	p100	S2283-450-SP	p101
AS1895/7-500	S2283-500	p100	S2283-500-SP	p101
AS1895/7-550	S2283-550	p100	S2283-550-SP	p101
AS1895/7-600	S2283-600	p100	S2283-600-SP	p101
AS1895/7-650	S2283-650	p100	S2283-650-SP	p101

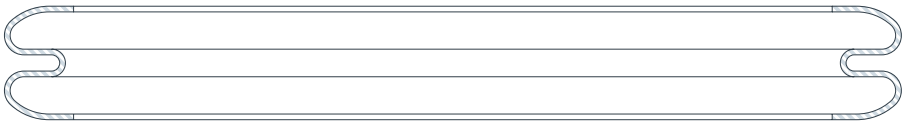
EQUIVALENT PART NUMBER	NICHOLSONS PART NUMBER			
	UNPLATED	SEE PAGE	SILVER PLATED	SEE PAGE
AS1895/7-700	S2283-700	p100	S2283-700-SP	p101
BE28931	S2314-100	p102	-	-
BE28932	S2314-125	p102	-	-
BE28933	S2314-150	p102	-	-
BE28934	S2314-175	p102	-	-
BE28935	S2314-200	p102	-	-
BE28936	S2314-225	p102	-	-
BE28937	S2314-250	p102	-	-
BE28938	S2314-275	p102	-	-
BE28939	S2314-300	p102	-	-
BE28940	S2314-325	p102	-	-
BE28941	S2314-350	p102	-	-
BE28942	S2314-400	p102	-	-
BE28943	S2314-450	p102	-	-
BE28944	S2314-500	p102	-	-
BE28945	S2314-550	p102	-	-
BE28946	S2314-600	p102	-	-
BE28990	NA10092	p102	-	-

Sigma Seals

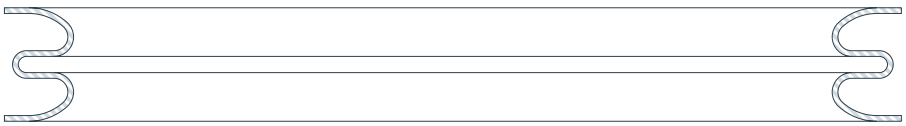
Product Description

Sigma Seals are single or multi bellow flexible metal seals designed for demanding applications where large thermal movement or tolerance stack-ups need to be accommodated.

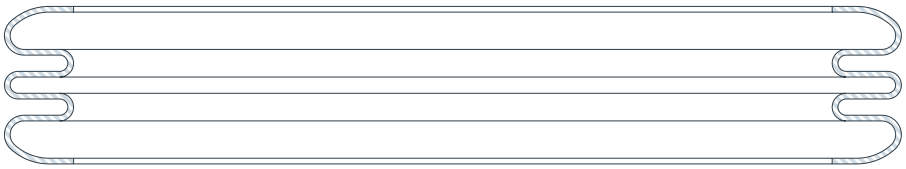
Standard Sigma Seal sections are available and can be designed to seal either internal or external pressure applications.



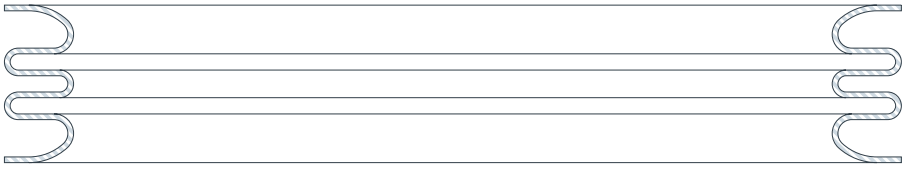
Single Bellow Internal Pressure



Single Bellow External Pressure



Multiple Bellows Internal Pressure



Multiple Bellows External Pressure

Part Properties

– Able to seal high and low temperatures and pressures
– A flexible low load seal with good recovery
– Designed to cope with large movements
– Can be manufactured to suit large cavity depths
– Three standard seal sections available to large diameters
– Non-standard seal sections available
– Non-round seal shapes can be manufactured

Sigma Seal Specification

Sigma Seals are designed on an individual basis to suit the customer's applications. A standard part list is not available for this product due to the large range of section and diameter options that can be selected.

There are three standard Sigma Seal sections available which are suited to many applications that utilise industry standard flanges. The details of the three standard sections and their corresponding cavity dimensions are shown on pages 112 and 113.

For other applications where standard sections are not appropriate, Nicholsons can design an alternative section to suit your particular requirements. Further options can be found in the Multi Bellow Seals section on page 118.

Please consult us if you require a bespoke design or need any assistance specifying a Sigma Seal or Multi Bellow Seal for your application.

MATERIAL TYPE

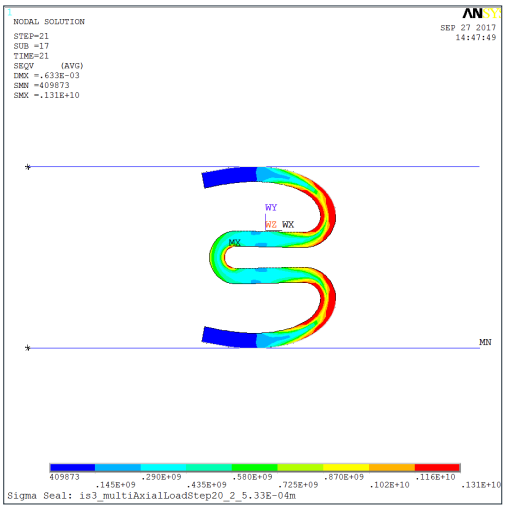
Sigma Seal materials are selected according to service requirements. They include high strength nickel alloys such as Inconels, Waspaloy and cobalt based alloys such as Haynes 25. Suitable material options are listed on page 12. Typical material thickness is within the range 0.006" to 0.015".

HEAT TREATMENT

Full heat treatment is usually applied to the seal to ensure maximum use of the material properties. Further heat treatment options for this product are listed on page 13.

PLATING OR COATING

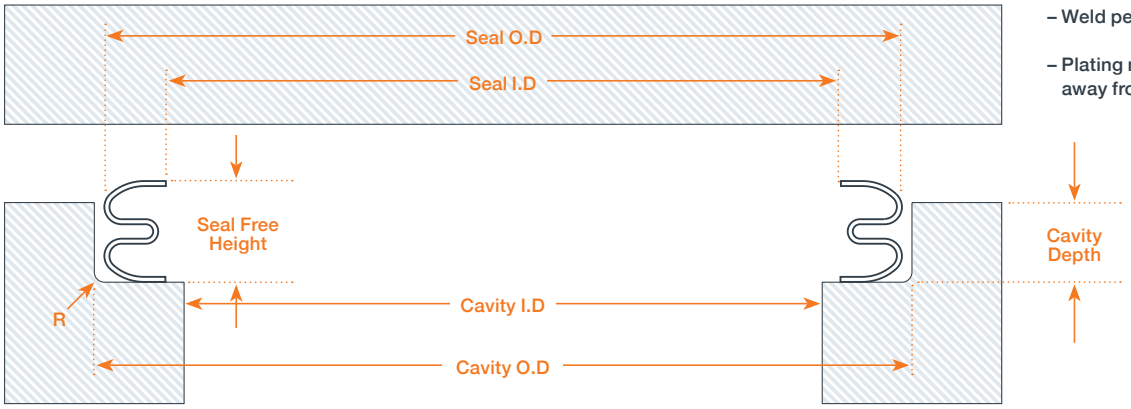
The standard Sigma Seal is uncoated. Plating or coating is available and options are listed on page 14. Wear resistance coatings can be applied to help protect the seal in arduous conditions. Not all plating or coating options are valid for Sigma Seals. Please consult us if you require any assistance in selecting the appropriate plating or coating.



Standard Sigma Seal Sections

Tolerances for Seal Design

SEAL DIAMETERS	SEAL OD TOL T_1 +0.000	SEAL ID TOL T_2 -0.000	SEAL RADIAL WIDTH W TOL T_3
Up to 10.000	-0.010	+0.010	±0.005
10.001 to 20.000	-0.020	+0.020	±0.010
20.001 to 30.000	-0.030	+0.030	±0.015
30.001 and above	-0.040	+0.040	±0.020



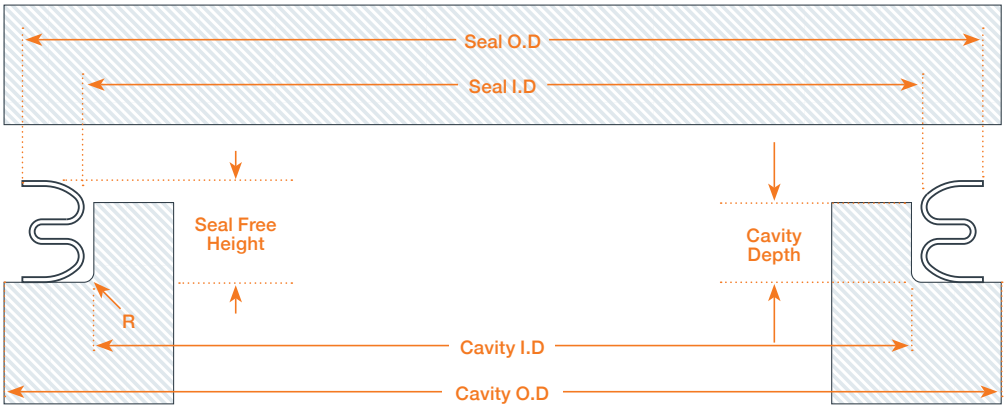
– Weld permitted

– Plating may be incomplete away from sealing surfaces

Internal Sigma Seal Cavity

NOMINAL SIZE	CAVITY				SEAL			
	DEPTH	O.D (min.)	I.D (max.)	CORNER RADIUS (max.) R	FREE HEIGHT	RADIAL WIDTH W	O.D (max.) A	I.D (min.) B
1/8	0.120 0.116	A+0.010	B-(0.020+T_2+T_4)	0.030	0.144 0.134	0.083±T_3	A	A-2WMAX
3/16	0.183 0.179	A+0.010	B-(0.020+T_2+T_4)	0.030	0.218 0.208	0.120±T_3	A	A-2WMAX
1/4	0.246 0.242	A+0.010	B-(0.020+T_2+T_4)	0.060	0.292 0.282	0.167±T_3	A	A-2WMAX

T_4 is the total tolerance on the cavity O/D



– Weld permitted

– Plating may be incomplete away from sealing surfaces

External Sigma Seal Cavity

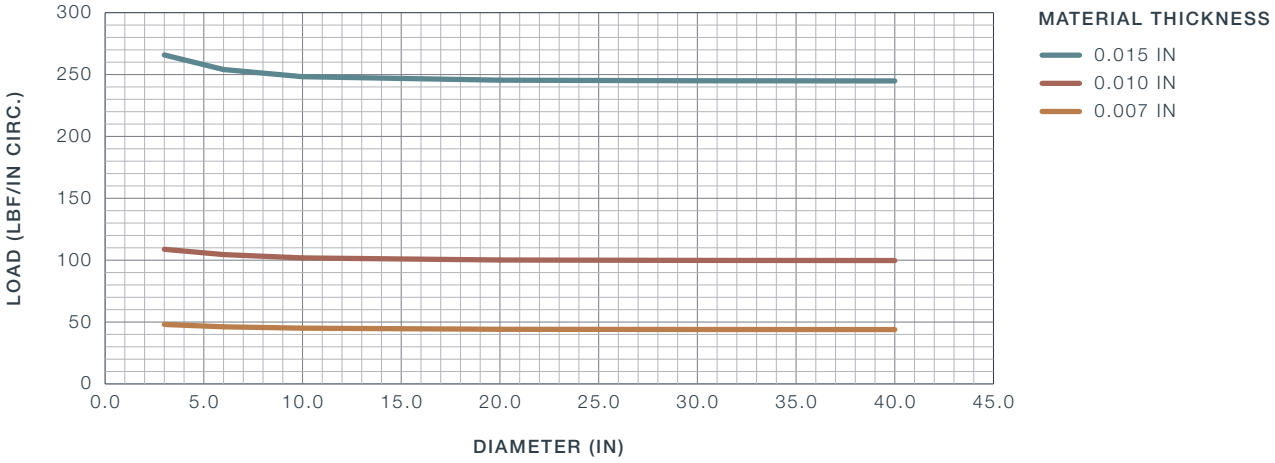
NOMINAL SIZE	CAVITY				SEAL			
	DEPTH	O.D (min.)	I.D (max.)	CORNER RADIUS (max.) R	FREE HEIGHT	RADIAL WIDTH W	O.D (max.) A	I.D (min.) B
1/8	0.120 0.116	$A+(0.020+T_2+T_5)$	B-0.010	0.030	0.144 0.134	$0.083\pm T_3$	B+2WMAX	B
3/16	0.183 0.179	$A+(0.020+T_2+T_5)$	B-0.010	0.030	0.218 0.208	$0.120\pm T_3$	B+2WMAX	B
1/4	0.246 0.242	$A+(0.020+T_2+T_5)$	B-0.010	0.060	0.292 0.282	$0.167\pm T_3$	B+2WMAX	B

T_5 is the total tolerance on the cavity O/D

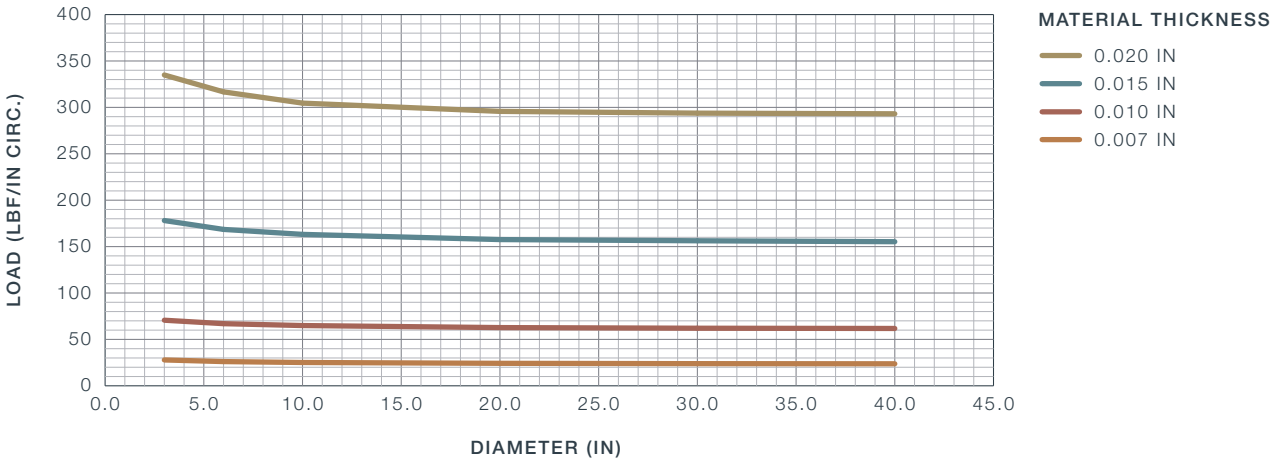
Load

The seating loads for each seal section are shown below. The values shown are for long cycle precipitation heat treated Inconel 718 seals. These values are for guidance only as a number of factors can have a significant effect on the load including:

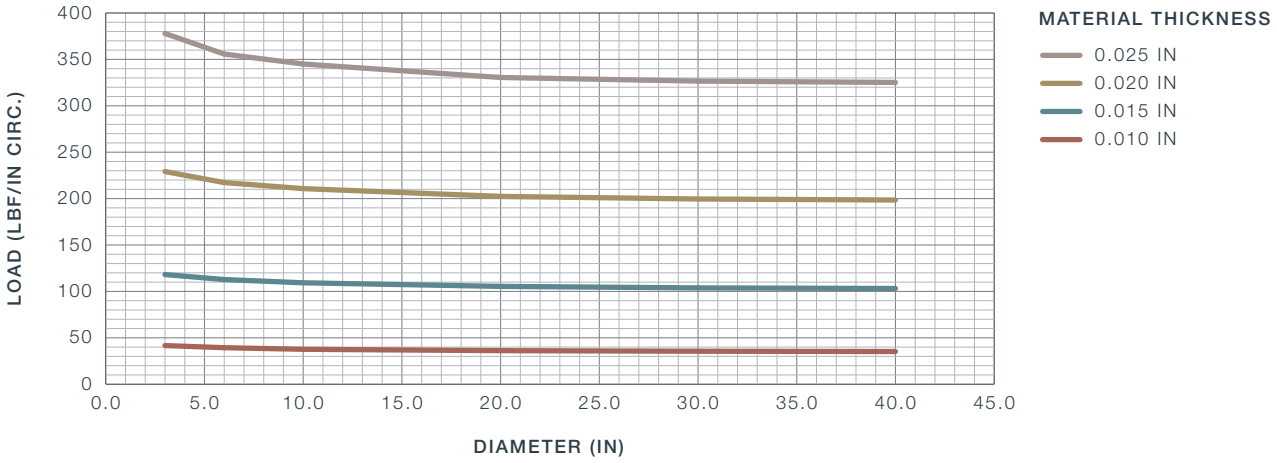
– Seal diameter
– Seal free height
– Cavity depth
– Tolerances
– Variations in material thickness and properties
– Coatings and platings



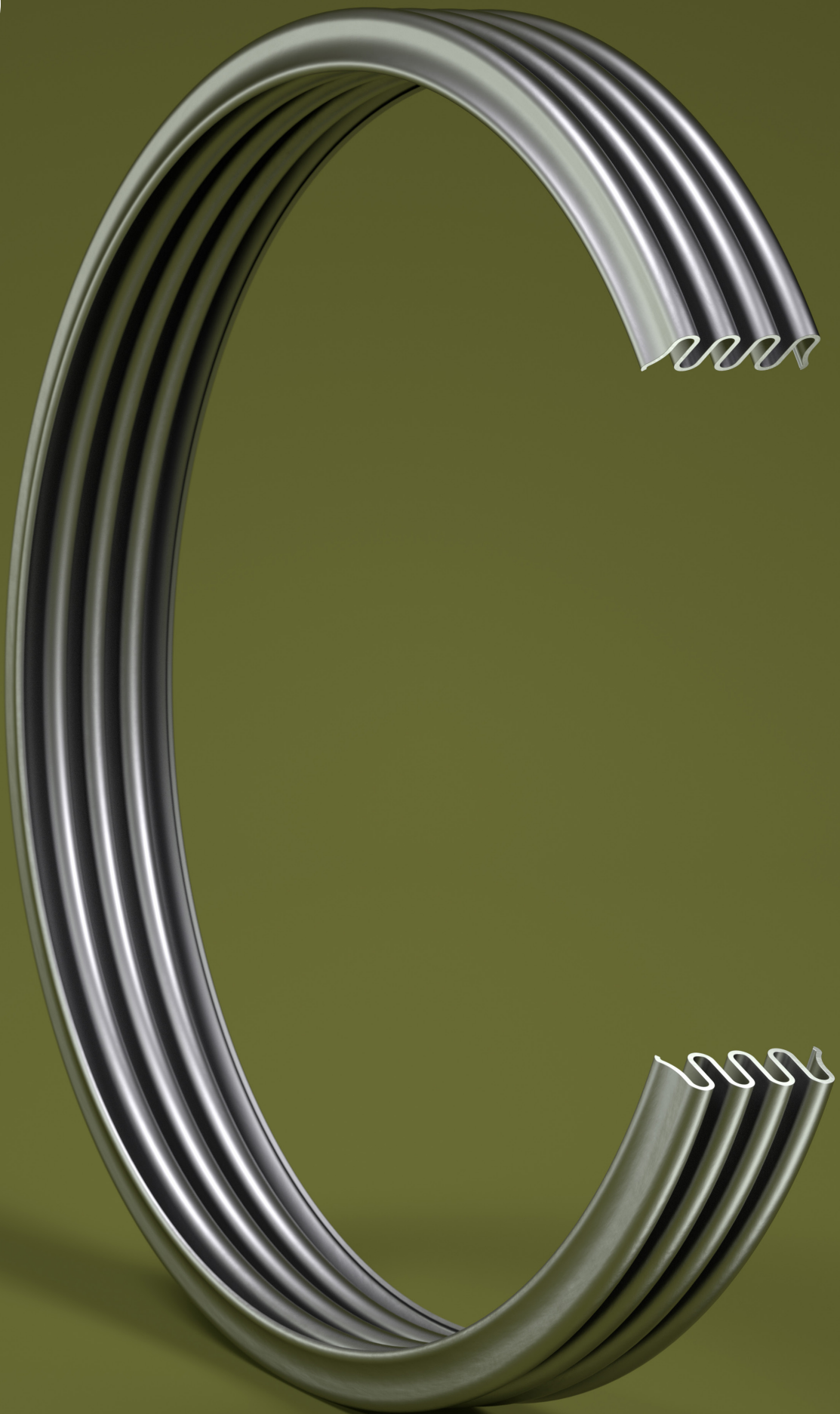
1/8 Section Seating Load



3/16 Section Seating Load



1/4 Section Seating Load



Multi Bellow Seals

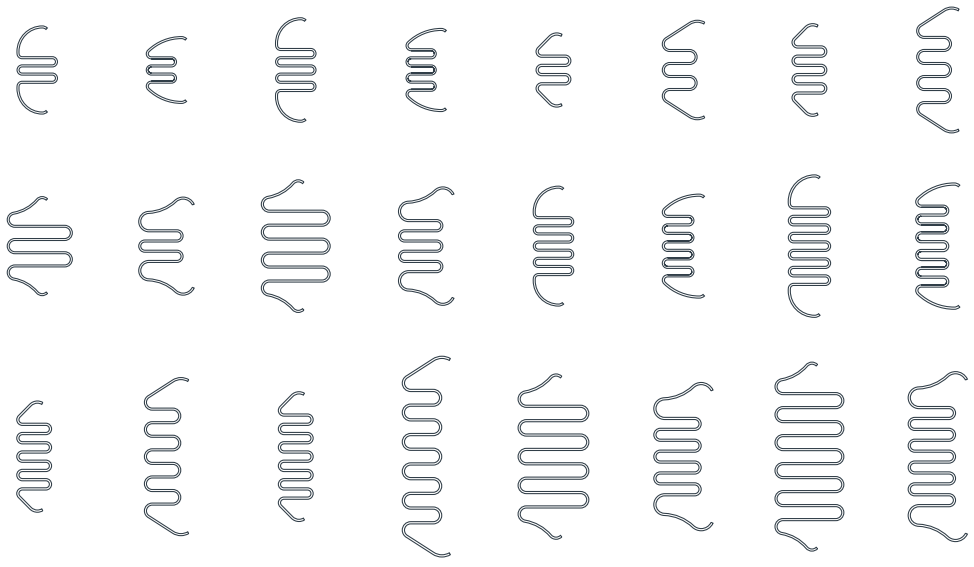
Product Description

Multi Bellow Seals are a range of flexible metal seals that are designed for more specialised applications where a non-standard section is required.

Sometimes referred to as W- or M-Seals, Multi Bellow Seals are particularly suitable for use where the available cavity radial width is limited or where the ratio of cavity radial width to cross section height is less than one.

Large scale vibration and cavity thermal growth can be accommodated by using a multiple bellow configuration. A non-standard section can be designed to produce a seal which exerts a greater specific load at the area of contact than the standard Sigma Seal sections which is beneficial for high pressure applications. Finite Element Analysis is often used during the design process to model the sealing load generated upon the cavity and the structural abilities of the seal to meet required cyclic operating conditions and fatigue life.

Multi Bellow Seals can be designed to seal either internal or external pressure applications. Some seal section examples are shown below.



Part Properties

– Able to seal high and low temperatures and pressures
– A flexible low load seal with good recovery
– Designed to cope with large movements
– Can be manufactured to suit large cavity depths
– Available in a range of sections to virtually any diameter
– Non-round seal shapes can be manufactured

Multi Bellow Seal Specification

Multi Bellow Seals are designed on an individual basis to suit the customer's application. A standard part list is not available for this product due to the large range of section and diameter options that can be selected.
Please contact us if you require a Multi Bellow Seal for your application.

MATERIAL TYPE

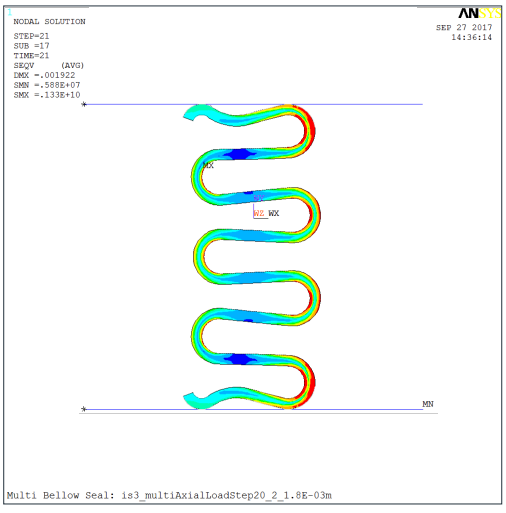
Multi Bellow Seal materials are selected according to service requirements. They include high strength nickel alloys such as Inconels, Waspaloy and cobalt based alloys such as Haynes 25. Suitable material options are listed on page 12. Typical material thickness is within the range 0.006" to 0.015".

HEAT TREATMENT

Full heat treatment is usually applied to the seal to ensure maximum use of the material properties. Further heat treatment options for this product are listed on page 13.

PLATING OR COATING

The standard Multi Bellow Seal is uncoated.
Plating or coating is available and options are listed on page 14. Wear resistance coatings can be applied to help protect the seal in arduous conditions. Not all plating or coating options are valid for Multi Bellow Seals. Please consult us if you require any assistance in selecting the appropriate plating or coating.



Glossary

Axial Seal:	A seal that contacts the hardware on the OD and ID.
Contact Line:	The location at which the seal contacts the hardware.
External Seal:	A face seal that has higher pressure on its OD.
Face Seal:	A Seal that contacts the hardware in the axial direction.
Free Height:	The length of a seal in the axial direction.
ID:	Inner Diameter.
Internal Seal:	A face seal that has higher pressure on its ID.
Nominal:	The value specified in the catalogue or the mid-point of a toleranced dimension.
OD:	Outer Diameter.
Out-of-round Seal:	A seal that is made slightly oval to retain the seal in the hardware.
Radial Width:	The width of the seal section in the radial direction ((OD-ID)/2).
Seal Compression:	The difference between free height and compressed height.
Seal Set:	The seal free height minus the height of the seal after compression.
Seating Load:	The load required to fully compress the seal.
Snap-Fit:	The retention of an out-of-round seal in a cavity regardless of orientation.
Springback:	The height of seal after compression minus the compressed height.
Witness Line:	The visible line on a used seal indicating where contact between the seal and the hardware has occurred.

The information included in this catalogue is for general information purposes only and is not specific to a particular application. Whilst every effort has been made to ensure that all technical data contained within is correct, it is the ultimate responsibility of the customer to ensure that the selected product is suitable for the operating conditions of their individual application, including but not limited to temperature, pressure, compression and coupling materials.

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