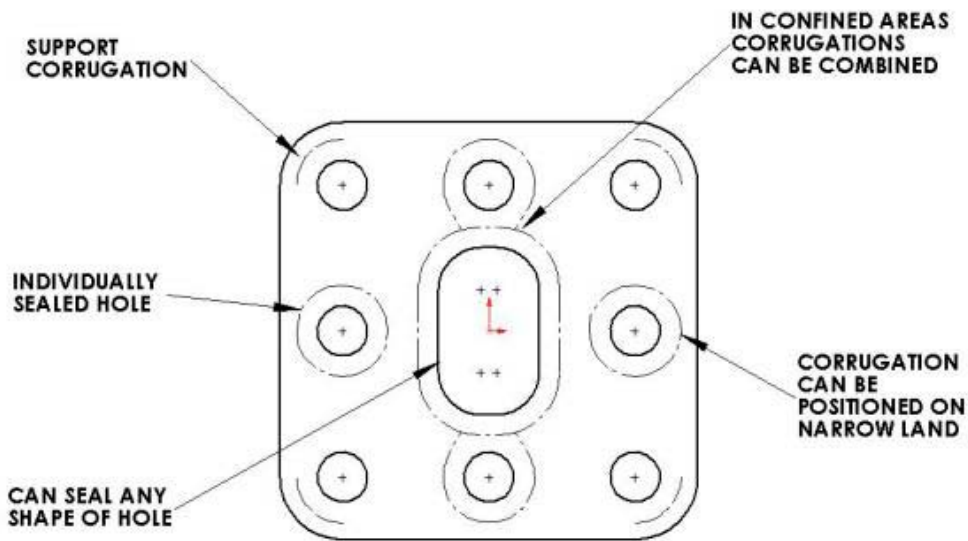


FEATURES



INTRODUCTION

Corruseal gaskets have been in use in the aerospace industry for over thirty years. They are accepted and used as standard parts by all of the major engine, airframe and accessory manufacturers.

Typical Applications:

Fuel, Oil and Air Systems
 Reheat Systems
 'V' Flange Couplings
 Oxygen Systems
 Fuel Igniters
 Turbine Cases

Accessory Drive Gearboxes
 Hydraulic Pumps and Valves
 De-icing Systems
 Pipe Couplings
 Control Valves
 Bearing Housings

Specific Applications include:

- Fuel dump assembly on Tornado RB199 engine - gasket is stainless steel, bright annealed after forming, welded to stainless steel spacer plate and silver plated.
- Internal gearbox gasket on Rolls-Royce RB211-535 engine - gasket is stainless steel, bright annealed after forming, and silver plated.
- Aluminium primary and secondary gearbox cover gaskets on Westland Lynx helicopter.
- Fuel nozzle gasket on Pratt & Whitney Canada PT6 engine series - gasket is stainless steel, bright annealed after forming, and silver plated.
- Fuel nozzle gasket for IAE V2500 engine - gasket is stainless steel, bright annealed after forming, and silver plated.
- Inconel X750 thermocouple probe gasket on General Electric CF6-80 engine.
- Stainless steel gasket for compressor case on Pratt & Whitney PW2037 engine.

The Corruseal gasket is approved as a SBAC standard part (part numbers AGS 3870 - AGS 3909) for the three bolt flanges.

Throughout this pdf file imperial dimensions are in inches, metric dimensions are in millimetres and are shown on a pale blue background (see below), except where otherwise stated.

PROPERTIES

The Corru seal is an all-metal, crush type gasket produced by embossing a patented triangular corrugation into sheet metal, the thickness of which will vary with the application requirements. The corrugation is positioned around the aperture to be sealed, and as the mating flanges are brought together the corrugation resists the compressive load and in so doing the peak and the base of the corrugation flow into the mating flange surfaces creating a seal.

The Corru seal differs from other types of corrugated or beaded gaskets, in design and performance, due to its triangular corrugation, as opposed to the conventional broad corrugation found in most gaskets of this type. This design enables the Corru seal to generate greater unit or seal line loads than other types, under equal clamping forces.

ADVANTAGES

- Ability to seal high and low temperatures and pressures.
- As a single piece gasket, it can be designed to seal circular, irregular and multi-aperture applications.
- Can be used to seal individual transfer ports as well as the main flange.
- Eliminates the need to machine and maintain costly O-ring grooves.
- Does not stick to mating faces.
- Few limitations on size, shape or flange width.
- Good structural strength; will not blow out during use.
- Low cost in both prototype and production runs.

CORRUSEAL DESIGN

The operating limits of Corru seal gaskets are, of course, dependent upon the gasket's configuration, material, finish, the media being sealed and the surrounding hardware.

General ranges are as follows:

Temperature: Cryogenic to 1000°C

Pressure: Differential Pressures up to 10,000 psi 70MPa

Corru seal gaskets can be manufactured in a range of materials. However, stainless steel is the most suitable material for a large percentage of applications. In certain applications, for example sealing an aluminium transmission housing an aluminium gasket offers the best solution. For very high temperatures use of nimonics and inconels may be preferred.

Typical material thickness is normally in the range .007 **.178** to .015 **.381** Material thickness is tightly toleranced so that the gasket compressed thickness is accurately controlled. This is very important when the gasket is used in an assembly arrangement and build clearances have to be maintained, for example in a gearbox.

Corru seal gaskets are used in many conditions as bare metal gaskets. However, there are applications where a plating or coating is applied to the gasket to improve performance. These finishes, under compression, flow more readily than the bare metal into the surface voids and irregularities in the flange faces, giving optimum sealing performance. Normally silver is used as the plating, with PTFE available for special lower temperature applications.

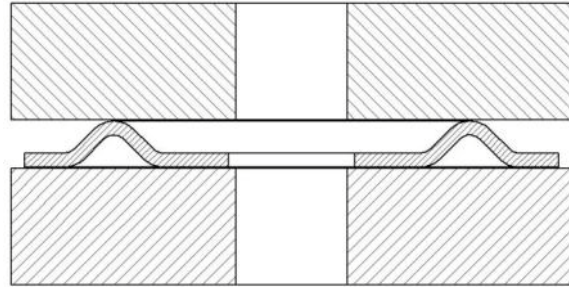
There can be no definitive rules for choosing the type of material, its thickness, heat treatment or plating, as the various factors involved require the application to be evaluated in its entirety.

INSTALLATION

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, etc.

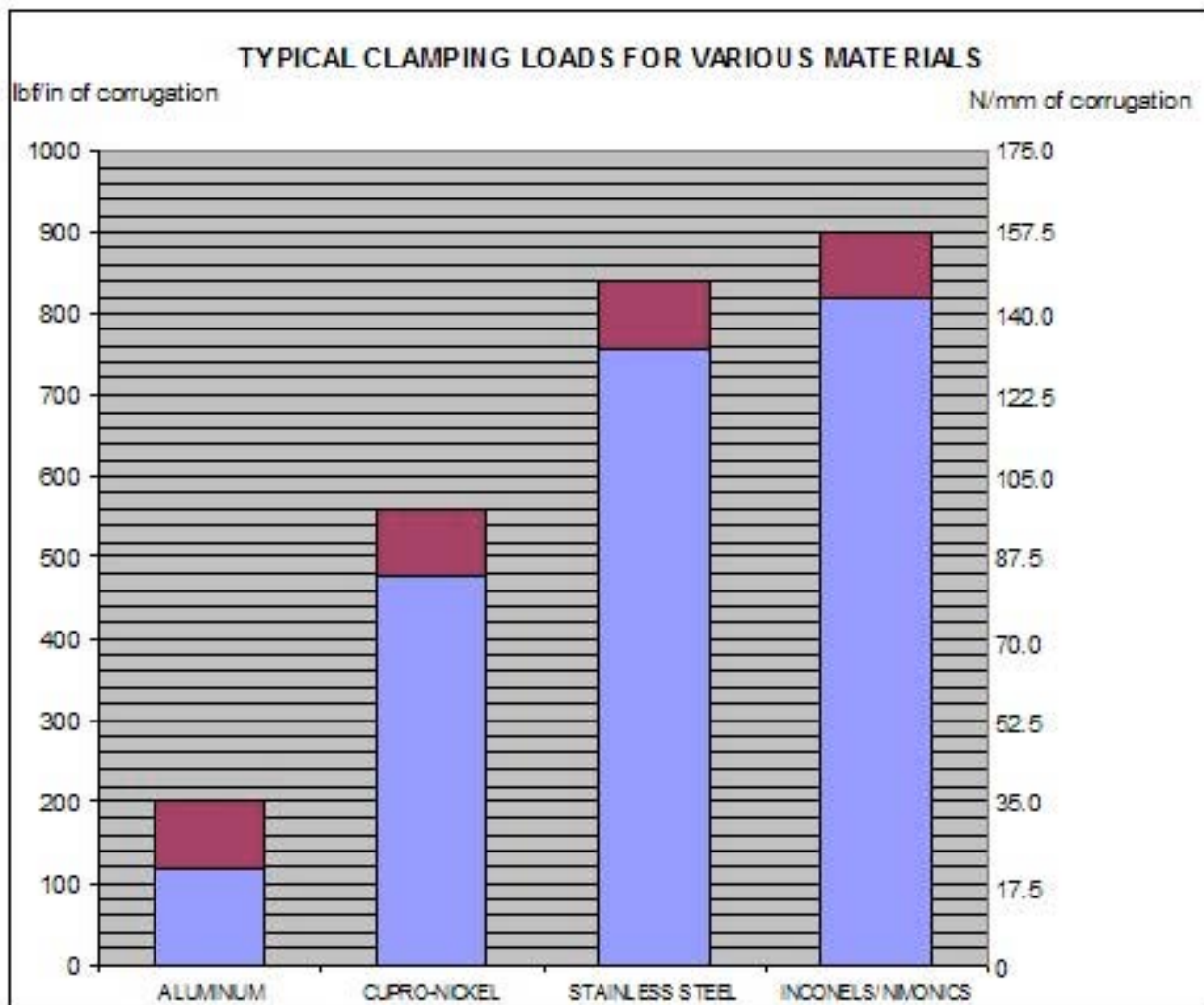
Surface finish of the mating surfaces should ideally be N6 (32 microinches, 0.8 micrometres).

Correct location of the gasket is normally achieved by utilising the flange dowels/bolts or where this is not possible, by bent over tags or by turning up a "chimney" to locate in a flange hole. 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.

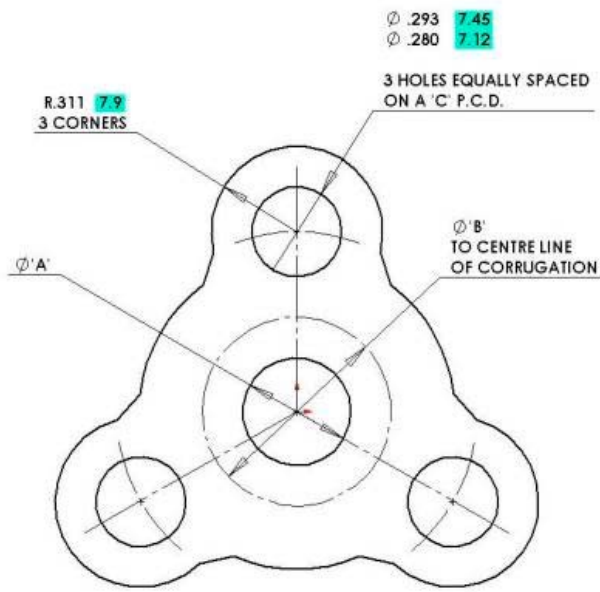


CLAMPING LOADS

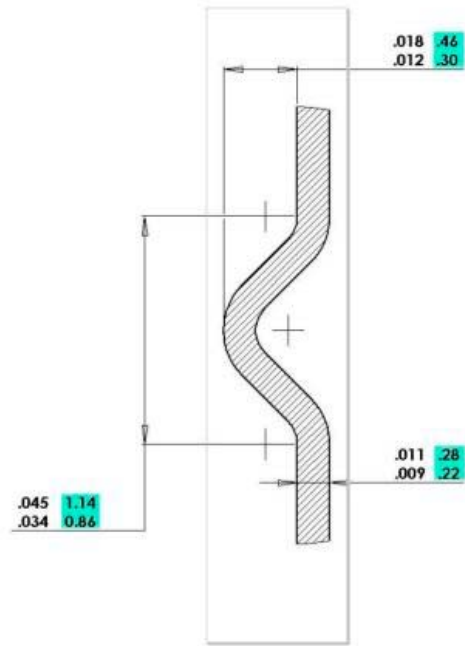
The load required to compress the gasket depends on many factors: material type, thickness, heat treatment, length and configuration of corrugation. The accompanying chart gives an indication of load required per unit length of corrugation. The figures are for .010 **25** thick material. Heat treatment can be used to alter these loads: for example, annealing stainless steel after forming can reduce the load required by approximately 25%. The chart can only be used as a guide as it can not possibly allow for all the permutations of the factors mentioned above.



CORRUSEAL GASKETS AGS 3870 - 3889



MATERIAL: CUPRO-NICKEL

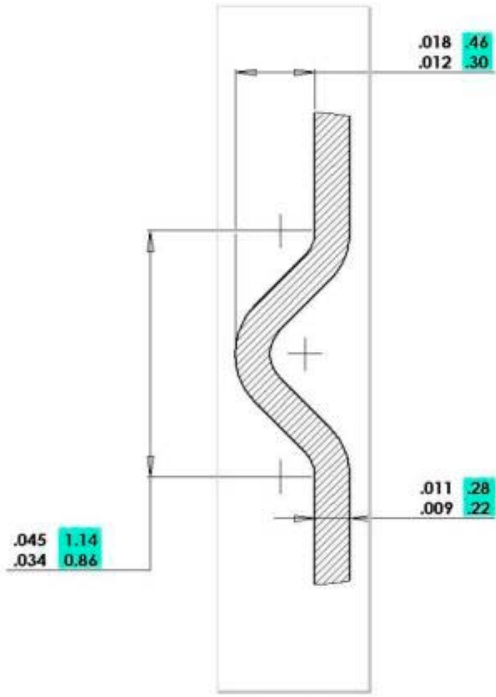
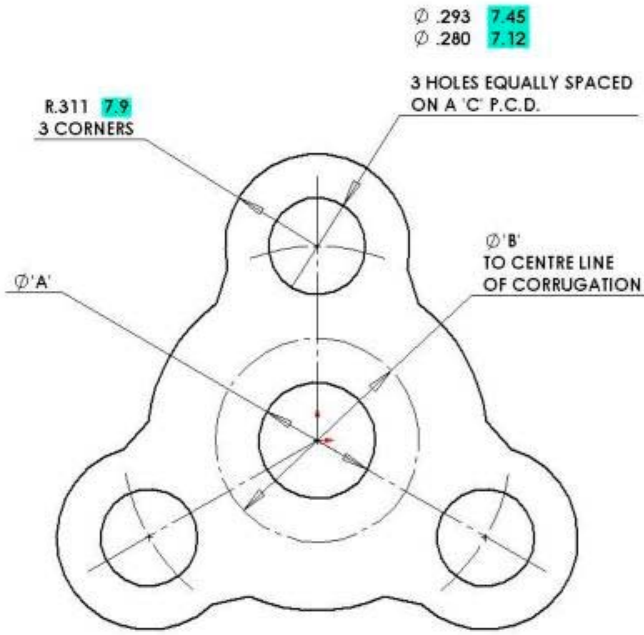


ENLARGED SECTION SHOWING CORRUGATION

PART NUMBER	Tube O.D.		A		B		C	
	INCHES	mm.	INCHES	mm.	INCHES	mm.	INCHES	mm.
	NOM.	NOM.	+ .010 - .003	+ .25 - .08	+ .020 - .020	+ .50 - .50	-	-
AGS3872	.2500	6	.248	6.3	.386	9.8	1.004	25.5
AGS3873	.3125	8	.307	7.8	.445	11.3	1.063	27.0
AGS3874	.3750	10	.386	9.8	.524	13.3	1.142	29.0
AGS3876	.5000	12	.524	13.3	.661	16.8	1.280	32.5
AGS3878	.6250	16	.681	17.3	.819	20.8	1.437	36.5
AGS3880	.7500	20	.760	19.3	.898	22.8	1.575	40.0

NOT ALL PART NUMBERS HAVE BEEN ASSIGNED

CORRUSEAL GASKETS AGS 3890 - 3909



MATERIAL: STAINLESS STEEL

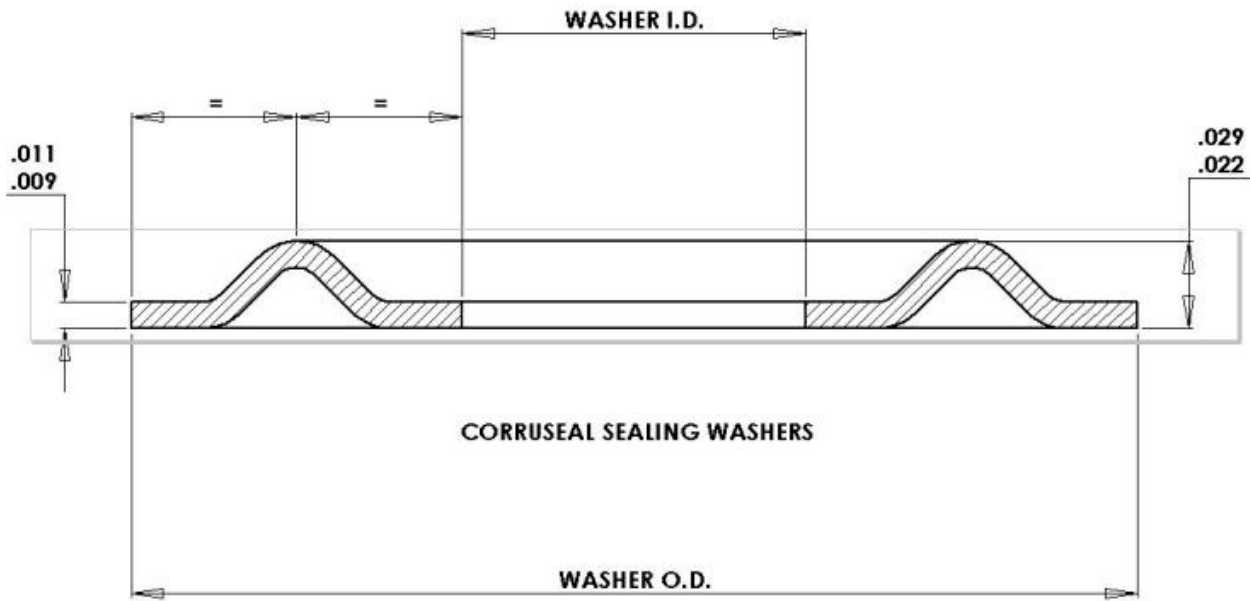
FINISH: SILVER PLATE .0006 .015 THICK
 .0004 .010

GASKET DIMENSIONS ARE PRIOR TO PLATING

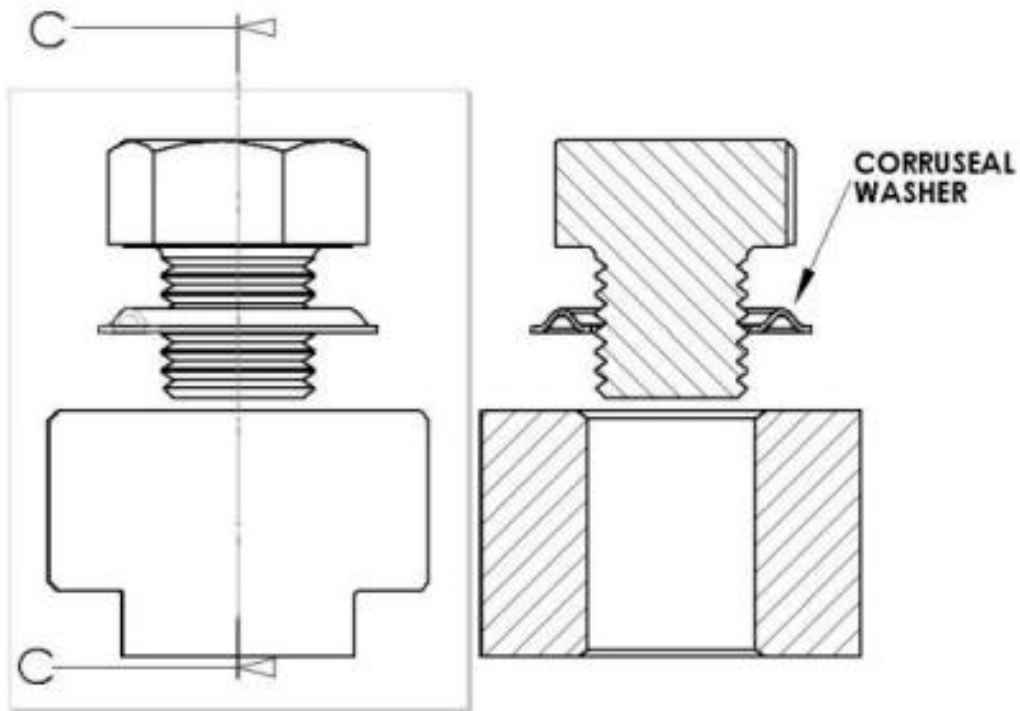
PART NUMBER	Tube O.D.		A		B		C	
	INCHES	mm.	INCHES	mm.	INCHES	mm.	INCHES	mm.
	NOM.	NOM.	+010 -003	+025 -08	+020 -020	+050 -50	-	-
AGS3872	.2500	6	.248	6.3	.386	9.8	1.004	25.5
AGS3873	.3125	8	.307	7.8	.445	11.3	1.063	27.0
AGS3874	.3750	10	.386	9.8	.524	13.3	1.142	29.0
AGS3876	.5000	12	.524	13.3	.661	16.8	1.280	32.5
AGS3878	.6250	16	.681	17.3	.819	20.8	1.437	36.5
AGS3880	.7500	20	.760	19.3	.898	22.8	1.575	40.0

NOT ALL PART NUMBERS HAVE BEEN ASSIGNED

CORRUSEAL SEALING WASHERS – IMPERIAL



STANDARD MATERIAL: STAINLESS STEEL (FOR OTHER MATERIALS - CONSULT FACTORY)
 STANDARD FINISH: UNPLATED (FOR OTHER FINISHES - CONSULT FACTORY)

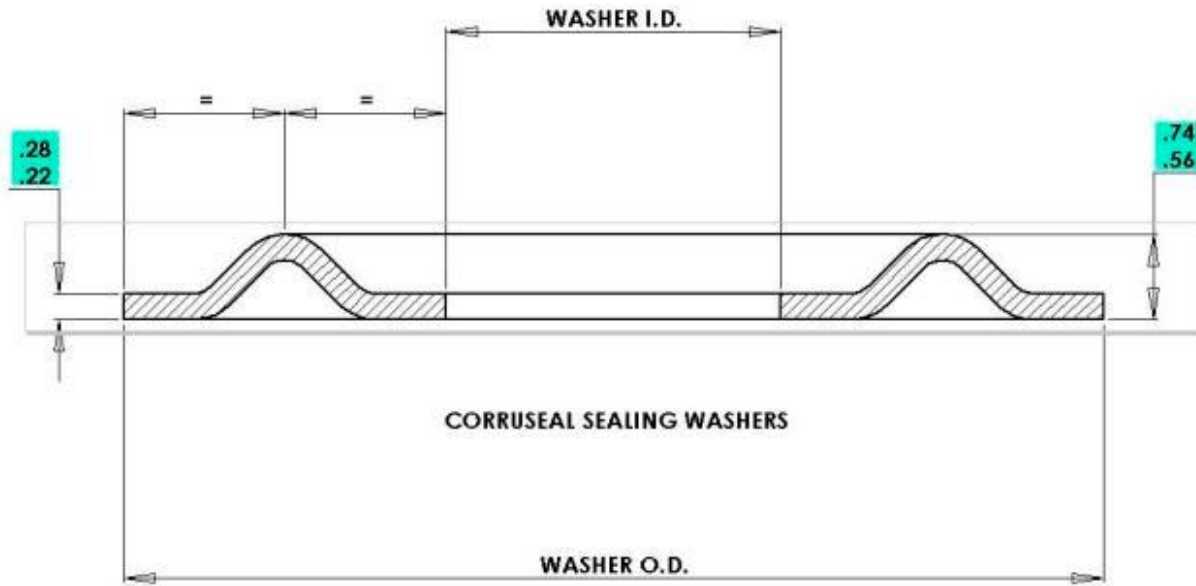


PART NUMBER	THREAD SIZE	I.D.		O.D.
		INCHES		INCHES
		MAX.	MIN.	-
CP 535	1/8 BSP	.389	.386	.562
CP 536	1/4 BSP	.524	.521	.750
CP538	3/8 BSP	.662	.659	.875
CP539	1/2 BSP	.831	.828	1.020
CP540	5/8 BSP	.908	.905	1.125

CORRUSEAL SEALING WASHERS – IMPERIAL

PART NUMBER	BOLT SIZE	I.D.		O.D.
		INCHES		INCHES
		MAX.	MIN.	-
CP 501	3/16 BSW	.1935	.1905	.319
CP 502	1/4 BSW	.2560	.2530	.438
CP 503	5/16 BSW	.3185	.3155	.518
CP 504	3/8 BSW	.3810	.3780	.592
CP 505	7/16 BSW	.4435	.4405	.702
CP 506	1/2 BSW	.5080	.5030	.812
CP 507	5/8 BSW	.6330	.6280	1.000
CP 508	3/4 BSW	.7580	.7530	1.190
CP 509	7/8 BSW	.8830	.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	.1960	.1930	.307
CP 516	1/4 UNF	.2560	.2530	.430
CP 517	5/16 UNF	.3185	.3155	.493
CP 518	3/8 UNF	.3810	.3780	.554
CP 519	7/16 UNF	.4435	.4405	.617
CP 520	1/2 UNF	.5080	.5030	.742
CP 521	5/8 UNF	.6330	.6280	.929
CP 522	3/4 UNF	.7580	.7530	1.115
CP 523	7/8 UNF	.8830	.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	.1152	.1122	.189
CP 531	4 BA	.1467	.1437	.243
CP 532	2 BA	.1900	.1870	.319
CP 533	0 BA	.2412	.2382	.408

CORRUSEAL SEALING WASHERS – METRIC



STANDARD MATERIAL: STAINLESS STEEL (FOR OTHER MATERIALS - CONSULT FACTORY)
 STANDARD FINISH: UNPLATED (FOR OTHER FINISHES - CONSULT FACTORY)

PART NUMBER	BOLT SIZE	I.D.		O.D.	
		MILLIMETRES		MILLIMETRES	
		MAX.	MIN.	MAX.	MIN.
CP603	M3	3.40	3.20	5.07	4.82
CP604	M4	4.50	4.30	6.53	6.28
CP605	M5	5.50	5.30	7.53	7.28
CP606	M6	6.70	6.40	9.53	9.28
CP608	M8	8.70	8.40	12.48	12.23
CP610	M10	10.90	10.50	16.48	16.23
CP612	M12	13.40	13.00	18.37	18.12
CP616	M16	17.40	17.00	23.18	22.93
CP620	M20	21.50	21.00	29.10	28.85
CP624	M24	25.50	25.00	35.00	34.75
CP630	M30	31.60	31.00	44.95	44.55
CP636	M36	37.60	37.00	53.83	53.43