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# 'O' Rings

The  
classic  
sealing  
device



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# The 'O' Ring

## What is it?

The 'O' Ring or Toroidal Seal is a simple, versatile and economical device with a vast range of uses. The most common of these is a static seal replacing a gasket or sealing washer, but it can also be utilized as a single or double acting dynamic seal. It can be used to seal radially in both internal and external positions as well as axially on its faces.

Its circular form with annular cross-section in a variety of synthetic elastomers offers inexpensive production methods for both low and very high volumes, depending on size. In short, the 'O' Ring has become irreplaceable for sealing a multitude of both simple and complex applications dealing with both liquid and gaseous media. This brochure is intended, to be a GUIDE TO 'O' RING SELECTION from the ever increasing range of sizes and materials now available to the user.

### Selecting an 'O' Ring

1) If replacing a worn or damaged seal, first measure the cross-section "W". This should quickly establish whether it is an imperial (inch) size (BS1806), a metric standard (BS4518) or another metric size. Once this is established, look through the appropriate section of this brochure (see index). Then check the inside diameter (I.D.), as accurately as possible, preferably

with a vernier caliper. Generally 'O' Rings are described by I.D. X section (e.g. 10 x 2,5) so with these two measurements you are able to choose the closest available 'O' Ring - FROM STOCK. If in doubt select a slightly larger section - as it will almost certainly be compressed with a slightly smaller I.D., as often this can be stretched. Of course the "exact" size is always best.

2) If for some reason the 'O' Ring is missing and all you have is the shaft, rod, piston or housing, often referred to as 'the metalwork', then you can use the application descriptions on page 5 and the groove dimensions on pages 30 and 31 to decide what is the closest size 'O' Ring, again bearing in mind the points made in section 1.

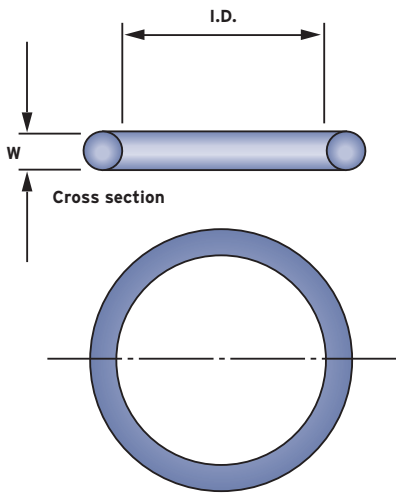
3) If you are at the design stage there are a multitude of considerations, but try to keep your selection simple. As far as possible choose ex-stock sizes and material. Only specify exotic or completely non-standards if you have no other choice. Keep to the recommended surface finishes and tolerances. You will need to know the application and media; static or dynamic, as this can influence the size and material you choose; the temperature the 'O' Ring has to withstand can affect the material you should use; the pressure it has to cope with will affect the rubber hardness

requirements, as well as the size of groove and the extrusion gap. If the pressure is high the gap must be kept to a minimum and anti-extrusion or back-up washers must be incorporated in the design - resulting in wider grooves.

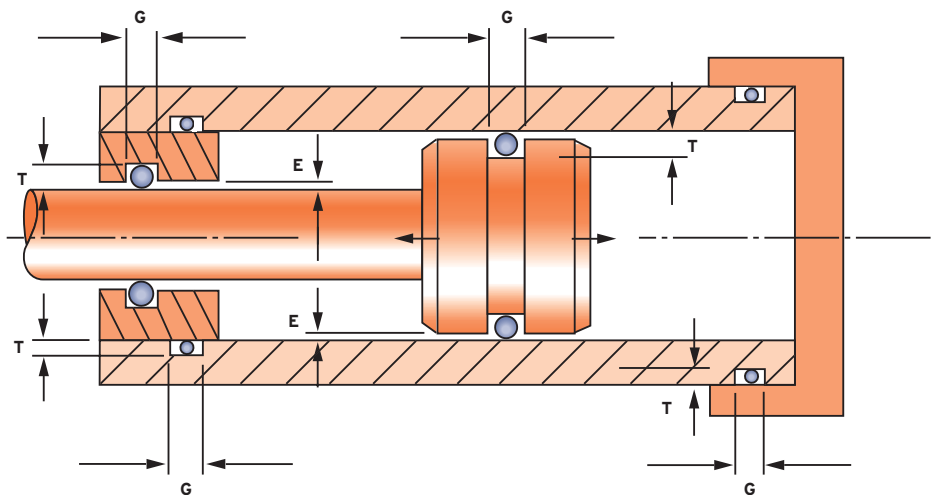
If these factors are not known, you will have to make a more general assessment. So select the largest section 'O' Ring to fit the nominal groove diameter. This will tolerate the widest range of metalwork size differences, surface defects and high temperature.

Consider how the 'O' Ring is to be fitted - a 5% stretch is acceptable but only a 3% outside diameter compression is advisable. The cross-section has to be squeezed in order for it to function, but do not make this too great, particularly with dynamic applications. Keep to the size deformation suggested in the groove depth section. Take note of sizes marked\* when a dynamic application is being sealed. Provide for good leads and chamfers, remove all sharp edges and recommend the use of fitting tools and suitable lubricant during fitting operations.

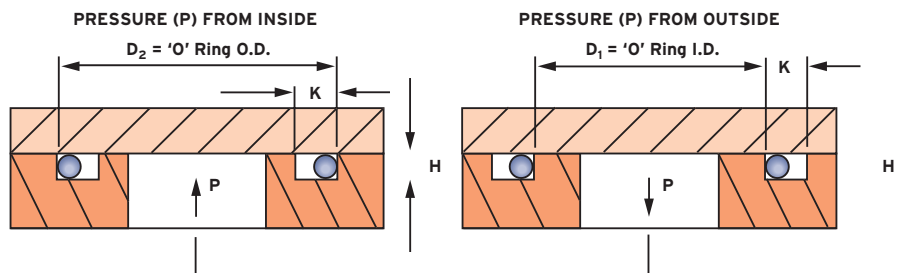
The exception to the above is on the very rare occasion when gas permeation may be a consideration. Then, keep the smallest cross-section that will effect a seal in a groove size of almost equal volume. It is



Typical Radial Installation - Dynamic and Static.



Typical Axial Installation - Static



important to seek advice at this stage as Explosive Decompression requires special materials and size selection.

Material Selection

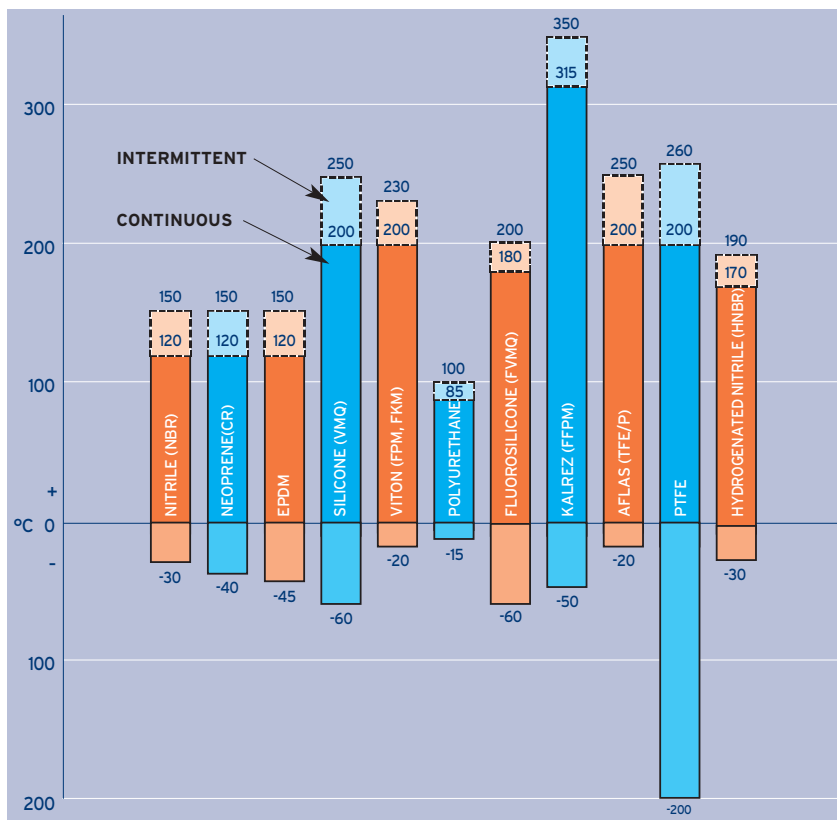
The most commonly used 'O' Ring material is Nitrile 70° Shore 'A' (NBR 70). This elastomer can seal the majority of "normal" industrial applications including water, oil, petrol and most mild chemicals up to 100°C and 1500psi, providing the mating surfaces and housings are adequate.

Consideration must be given for low temperatures (below -30°C), high temperatures and pressures, as well as hazardous chemicals and solvents. There is also an increasing demand for specific materials approved for use with Food Machinery (FDA), Potable Water (WRC) and the various Gas Standards. A commonly overlooked sealing requirement is for ozone, weathering, ambient etc., where Neoprene, EPDM or Silicone perform better than Nitrile in most circumstances.

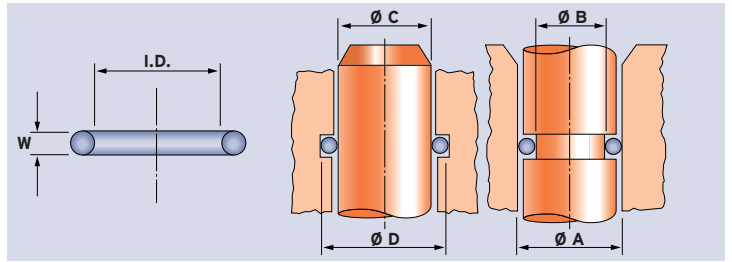
Storage

BS 3574 (1989) is a good guide for synthetic rubber shelf life. 'O' Rings should be stored in an unstressed condition, away from extremes of temperature, ozone and sunlight. Sealed opaque dust proof plastic bags are best. Avoid staples, wires and nails - they cause untold damage resulting in leakage.

Temperature range of popular materials



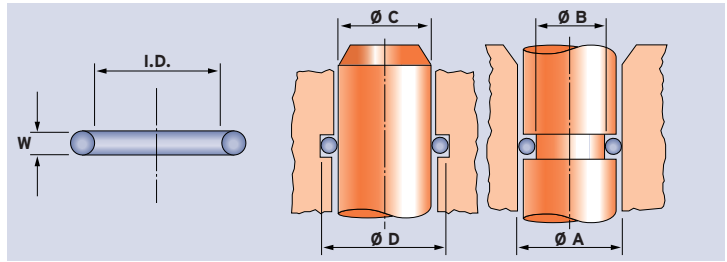
# 'O' Ring Size Chart BS1806 Imperial Range



Part No.	Nominal Size C x A x W	Inside Diameter				Cross Section W				Bore Ø A INCH	Piston Groove Ø B STAT		Gland Groove Ø D DYN STAT		Rod Ø C
		INCH	±	mm	±	INCH	±	mm	±		INCH	STAT	DYN	STAT	
*001	1/32 x 3/32 x 1/32	.029		0.74		.040		1.02		.094	.036		.089		.031
*002	3/64 x 9/64 x 3/64	.042	.004	1.07	0.1	.050		1.27		.125	.053		.119		.047
003	1/16 x 3/16 x 1/16	.056		1.42		.060		1.52		.156	.068		.150		.062
606		.070		1.78		.040		1.02							
*004	5/64 x 13/64 x 1/16	.070		1.78		.070		1.78		.188	.084		.182		.078
607		.100		2.54		.040		1.02							
*005	7/64 x 15/64 x 1/16	.101		2.57						.219	.117	.107	.211	.221	.109
*006	1/8 x 1/4 x 1/16	.114		2.90						.250	.148	.138	.227	.237	.125
801		.125		3.17											
*007	5/32 x 9/32 x 1/16	.145		3.68						.281	.179	.169	.258	.268	.156
*008	3/16 x 5/16 x 1/16	.176		4.47						.312	.210	.200	.289	.299	.187
802		.187	.005	4.76	0.13										
*009	7/32 x 11/32 x 1/16	.208		5.28						.344	.241	.231	.321	.331	.219
*010	1/4 x 3/8 x 1/16	.239		6.07						.375	.273	.263	.352	.362	.250
803		.250		6.35											
610		.266		6.75											
*011	5/16 x 7/16 x 1/16	.301		7.65						.437	.335	.325	.414	.424	.312
804		.312		7.94											
611	11/32 x 15/32 x 1/16	.344		8.73											
*012	3/8 x 1/2 x 1/16	.364		9.25						.500	.398	.388	.477	.487	.375
013	7/16 x 9/16 x 1/16	.426		10.82						.562	.462		.537		.437
806		.437	.005	11.11	0.13										
014	1/2 x 5/8 x 1/16	.489	.005	12.42	0.13					.625	.525		.600		.500
015	9/16 x 11/16 x 1/16	.551	.007	14.00	0.18	.070	.003	1.78	0.08	.687	.587		.662		.562
016	5/8 x 3/4 x 1/16	.614		15.60						.750	.650		.725		.625
017	11/16 x 13/16 x 1/16	.676		17.17						.812	.712		.787		.687
018	3/4 x 7/8 x 1/16	.739	.009	18.77	0.23					.875	.775		.850		.750
019	13/16 x 15/16 x 1/16	.801		20.35						.937	.837		.912		.812
020	7/8 x 1 x 1/16	.864		21.95						1.000	.900		.975		.875
021	15/16 x 11/16 x 1/16	.926		23.52						1.062	.962		1.037		.937
022	1 x 1 1/8 x 1/16	.989	.010	25.12	0.25					1.125	1.025		1.100		1.000
023	1 1/16 x 1 3/16 x 1/16	1.051	.010	26.70	0.25					1.188	1.088		1.162		1.062
024	1 1/8 x 1 1/4 x 1/16	1.114	.010	28.30	0.25					1.250	1.150		1.225		1.125
025	1 3/16 x 1 5/16 x 1/16	1.176	.011	29.87	0.28					1.312	1.212		1.288		1.188
026	1 1/4 x 1 3/8 x 1/16	1.239	.011	31.47	0.28					1.375	1.275		1.350		1.250
027	1 5/16 x 1 7/16 x 1/16	1.301	.011	33.05	0.28					1.437	1.337		1.412		1.312
028	1 3/8 x 1 1/2 x 1/16	1.364	.013	34.65	0.33					1.500	1.400		1.475		1.375
517	1 7/16 x 1 9/16 x 1/16	1.428	.015	36.27	0.38										
029	1 1/2 x 1 5/8 x 1/16	1.489	.010	37.82	0.33					1.625	1.525		1.600		1.500
519	1 9/16 x 1 11/16 x 1/16	1.553	.015	39.45	0.38										
030	1 5/8 x 1 3/4 x 1/16	1.614	.013	41.00	0.33					1.750	1.650		1.725		1.625
031	1 3/4 x 1 7/8 x 1/16	1.739	.015	44.17	0.38					1.875	1.775		1.850		1.750
032	1 7/8 x 2 x 1/16	1.864	.015	47.35	0.38					2.000	1.900		1.975		1.875
033	2 x 2 1/8 x 1/16	1.989	.018	50.52	0.46					2.125	2.025		2.100		2.000
034	2 1/8 x 2 1/4 x 1/16	2.114	.018	53.70	0.46					2.250	2.150		2.225		2.125
035	2 1/4 x 2 3/8 x 1/16	2.239	.018	56.87	0.46					2.375	2.275		2.350		2.250
036	2 3/8 x 2 1/2 x 1/16	2.364	.018	60.05	0.46					2.500	2.400		2.475		2.375
037	2 1/2 x 2 5/8 x 1/16	2.489	.018	63.22	0.46					2.625	2.525		2.600		2.500

Only sizes marked \* are suitable for dynamic applications.

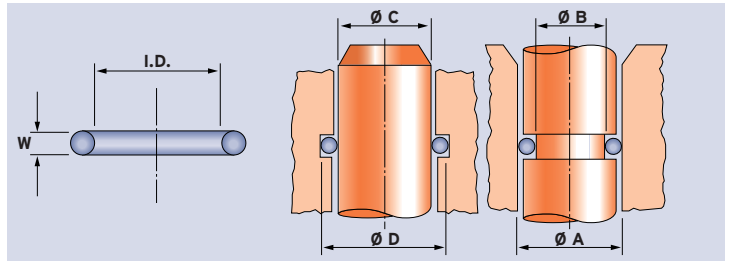
# 'O' Ring Size Chart BS1806 Imperial Range



Part No.	Nominal Size C x A x W	Inside Diameter				Cross Section W				Bore Ø A INCH	Piston Groove Ø B STAT	Gland Groove Ø D		Rod Ø C	
		INCH	±	mm	±	INCH	±	mm	±			DYN	STAT		
038	2 <sup>5</sup> / <sub>8</sub> x 2 <sup>3</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>16</sub>	2.614	.020	66.40	0.51					2.750	2.650		2.725		2.625
039	2 <sup>3</sup> / <sub>4</sub> x 2 <sup>7</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>16</sub>	2.739	.020	69.57	0.51					2.875	2.775		2.850		2.750
040	2 <sup>7</sup> / <sub>8</sub> x 3 x 1 <sup>1</sup> / <sub>16</sub>	2.864	.020	72.75	0.51					3.000	2.900		2.975		2.875
041	3 x 3 <sup>1</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>16</sub>	2.989	.024	75.92	0.61					3.125	3.025		3.100		3.000
532	3 <sup>1</sup> / <sub>8</sub> x 3 <sup>1</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>16</sub>	3.110	.020	79.00	0.51										
042	3 <sup>3</sup> / <sub>4</sub> x 3 <sup>3</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>16</sub>	3.239	.024	82.27	0.61					3.375	3.275		3.350		3.250
534	3 <sup>3</sup> / <sub>8</sub> x 3 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>16</sub>	3.360	.020	85.34	0.51										
043	3 <sup>1</sup> / <sub>2</sub> x 3 <sup>5</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>16</sub>	3.489	.024	88.62	0.61					3.625	3.525		3.600		3.500
536	3 <sup>5</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>16</sub>	3.610	.020	91.70	0.51										
044	3 <sup>3</sup> / <sub>4</sub> x 3 <sup>7</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>16</sub>	3.739	.027	94.97	0.69					3.875	3.775		3.850		3.750
538	3 <sup>7</sup> / <sub>8</sub> x 4 x 1 <sup>1</sup> / <sub>16</sub>	3.860	.020	98.05	0.51										
045	4 x 4 <sup>1</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>16</sub>	3.989	.027	101.32	0.69					4.125	4.025		4.100		
540	4 <sup>1</sup> / <sub>8</sub> x 4 <sup>1</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>16</sub>	4.110	.020	104.40	0.51										
046	4 <sup>1</sup> / <sub>4</sub> x 4 <sup>3</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>16</sub>	4.239	.030	107.67	0.76					4.375	4.275		4.350		4.250
542	4 <sup>3</sup> / <sub>8</sub> x 4 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>16</sub>	4.360	.020	110.74	0.51										
047	4 <sup>1</sup> / <sub>2</sub> x 4 <sup>5</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>16</sub>	4.489	.030	114.02	0.76	.070	.003	1.78	0.08	4.625	4.525		4.600		4.500
544	4 <sup>5</sup> / <sub>8</sub> x 4 <sup>3</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>16</sub>	4.610	.020	117.10	0.51										
048	4 <sup>3</sup> / <sub>4</sub> x 4 <sup>7</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>16</sub>	4.739	.030	120.37	0.76					4.875	4.775		4.850		4.750
546	4 <sup>7</sup> / <sub>8</sub> x 5 x 1 <sup>1</sup> / <sub>16</sub>	4.860	.020	123.44	0.51										
049	5 x 5 <sup>1</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>16</sub>	4.989	.037	126.72	0.94					5.125	5.025		5.100		5.000
548	5 <sup>1</sup> / <sub>8</sub> x 5 <sup>1</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>16</sub>	5.095	.028	129.40	0.71										
050	5 <sup>1</sup> / <sub>4</sub> x 5 <sup>3</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>16</sub>	5.239	.037	133.07	0.94					5.375	5.275		5.350		5.250
550	5 <sup>3</sup> / <sub>8</sub> x 5 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>16</sub>	5.345	.028	135.76	0.71										
551	5 <sup>1</sup> / <sub>2</sub> x 5 <sup>5</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>16</sub>	5.470	.028	138.94	0.71										
552	5 <sup>5</sup> / <sub>8</sub> x 5 <sup>3</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>16</sub>	5.595	.028	142.11	0.71										
553	5 <sup>3</sup> / <sub>4</sub> x 5 <sup>7</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>16</sub>	5.720	.028	145.29	0.71										
554	5 <sup>7</sup> / <sub>8</sub> x 6 x 1 <sup>1</sup> / <sub>16</sub>	5.845	.028	148.46	0.71										
555	6 x 6 <sup>1</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>16</sub>	5.970	.028	151.64	0.71										
556	6 <sup>1</sup> / <sub>8</sub> x 6 <sup>1</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>16</sub>	6.095	.028	154.81	0.71										
557	6 <sup>1</sup> / <sub>4</sub> x 6 <sup>3</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>16</sub>	6.220	.028	158.00	0.71										
558	6 <sup>3</sup> / <sub>8</sub> x 6 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>16</sub>	6.345	.028	161.16	0.71										
559	6 <sup>1</sup> / <sub>2</sub> x 6 <sup>5</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>16</sub>	6.470	.028	164.34	0.71										
560	6 <sup>5</sup> / <sub>8</sub> x 6 <sup>3</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>16</sub>	6.595	.028	167.51	0.71										
561	6 <sup>3</sup> / <sub>4</sub> x 6 <sup>7</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>16</sub>	6.720	.028	170.69	0.71										
562	6 <sup>7</sup> / <sub>8</sub> x 7 x 1 <sup>1</sup> / <sub>16</sub>	6.845	.028	173.87	0.71										
102	1 <sup>1</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>4</sub> x 3 <sup>3</sup> / <sub>32</sub>	.049	.005	1.24	0.13					.250	.090	.076	.222	.236	.062
103	3 <sup>3</sup> / <sub>32</sub> x 9 <sup>3</sup> / <sub>32</sub> x 3 <sup>3</sup> / <sub>32</sub>	.081	.005	2.06	0.13					.281	.121	.107	.253	.267	.093
104	1 <sup>1</sup> / <sub>8</sub> x 5 <sup>1</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	.112	.005	2.84	0.13					.313	.153	.139	.285	.299	.125
105	5 <sup>1</sup> / <sub>32</sub> x 1 <sup>1</sup> / <sub>32</sub> x 3 <sup>3</sup> / <sub>32</sub>	.143	.005	3.63	0.13					.344	.184	.170	.316	.330	.156
106	3 <sup>1</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>32</sub>	.174	.005	4.42	0.13					.375	.215	.201	.347	.361	.187
107	7 <sup>1</sup> / <sub>32</sub> x 1 <sup>3</sup> / <sub>32</sub> x 3 <sup>3</sup> / <sub>32</sub>	.206	.005	5.23	0.13					.406	.246	.232	.378	.392	.218
108	1 <sup>1</sup> / <sub>4</sub> x 7 <sup>1</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	.237	.005	6.02	0.13	.103	.003	2.62	0.08	.438	.278	.270	.410	.424	.250
109	5 <sup>1</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>2</sub> x 3 <sup>3</sup> / <sub>32</sub>	.299	.005	7.59	0.13					.500	.340	.336	.472	.486	.312
*110	3 <sup>3</sup> / <sub>8</sub> x 9 <sup>1</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	.362	.005	9.19	0.13					.562	.402	.388	.535	.549	.375
613	2 <sup>5</sup> / <sub>64</sub> x 3 <sup>7</sup> / <sub>64</sub> x 3 <sup>3</sup> / <sub>32</sub>	.391	.005	9.92	0.13										
*111	7 <sup>1</sup> / <sub>16</sub> x 5 <sup>5</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>32</sub>	.424	.005	10.77	0.13					.625	.465	.451	.597	.611	.437
614	1 <sup>5</sup> / <sub>32</sub> x 2 <sup>1</sup> / <sub>32</sub> x 3 <sup>3</sup> / <sub>32</sub>	.469	.005	11.91	0.13										
*112	1 <sup>1</sup> / <sub>2</sub> x 1 <sup>11</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	.487	.005	12.37	0.13					.687	.527	.513	.660	.674	.500

Only sizes marked \* are suitable for dynamic applications.

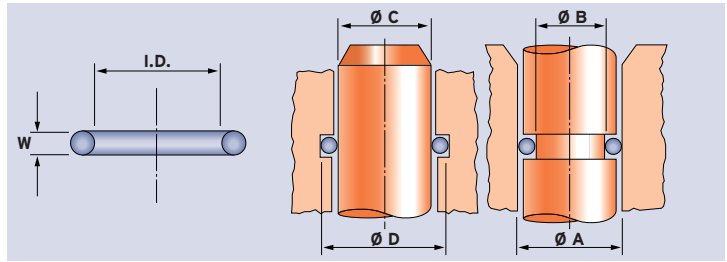
# 'O' Ring Size Chart BS1806 Imperial Range



Part No.	Nominal Size C x A x W	Inside Diameter				Cross Section W				Bore Ø A INCH	Piston Groove Ø B STAT		Gland Groove Ø D DYN STAT		Rod Ø C
		INCH	±	mm	±	INCH	±	mm	±		STAT	DYN	STAT		
807		.500	.005	12.70	0.13										
615	$33/64 \times 45/64 \times 3/32$	.516	.005	13.10	0.13										
*113	$9/16 \times 3/4 \times 3/32$	.549	.007	13.94	0.18				.750	.590	.576	.722	.736	.562	
616	$19/32 \times 25/32 \times 3/32$	.594	.005	15.08	0.13										
*114	$5/8 \times 13/16 \times 3/32$	.612	.009	15.54	0.23				.812	.652	.638	.785	.799	.625	
809		.625	.005	15.88	0.13										
*115	$11/16 \times 7/8 \times 3/32$	.674	.009	17.12	0.23				.875	.715	.701	.848	.862	.688	
810		.687	.005	17.46	0.13										
617		.703	.005	17.86	0.13										
*116	$3/4 \times 15/16 \times 3/32$	.737	.009	18.72	0.23				.937	.777	.763	.910	.924	.750	
117	$13/16 \times 1 \times 3/32$	.799	.010	20.29	0.25				1.000	.840		.972		.812	
812		.812	.006	20.64	0.15										
118	$7/8 \times 11/16 \times 3/32$	.862	.010	21.89	0.25				1.062	.902		1.035		.875	
813		.875	.006	22.23	0.15										
119	$15/16 \times 11/8 \times 3/32$	.924	.010	23.47	0.25				1.125	.965		1.097		.937	
814		.937	.006	23.81	0.15										
120	$1 \times 13/16 \times 3/32$	.987	.010	25.07	0.25				1.187	1.027		1.160		1.000	
121	$11/16 \times 11/4 \times 3/32$	1.049	.010	26.64	0.25				1.250	1.090		1.222		1.062	
122	$11/8 \times 15/16 \times 3/32$	1.112	.010	28.24	0.25				1.312	1.152		1.285		1.125	
123	$13/16 \times 13/8 \times 3/32$	1.174	.012	29.82	0.30				1.375	1.215		1.348		1.188	
124	$11/4 \times 17/16 \times 3/32$	1.237	.012	31.42	0.30				1.437	1.277		1.410		1.250	
125	$15/16 \times 11/2 \times 3/32$	1.299	.012	32.99	0.30				1.500	1.340		1.472		1.312	
126	$13/8 \times 19/16 \times 3/32$	1.362	.012	34.59	0.30				1.562	1.402		1.535		1.375	
127	$17/16 \times 15/8 \times 3/32$	1.424	.012	36.17	0.30	.103	.003	2.62	1.625	1.465		1.597		1.437	
128	$11/2 \times 111/16 \times 3/32$	1.487	.012	37.77	0.30				1.687	1.527		1.660		1.500	
129	$19/16 \times 13/4 \times 3/32$	1.549	.015	39.34	0.38				1.750	1.590		1.722		1.562	
130	$15/8 \times 113/16 \times 3/32$	1.612	.015	40.94	0.38				1.812	1.652		1.785		1.625	
131	$111/16 \times 17/8 \times 3/32$	1.674	.015	42.52	0.38				1.875	1.715		1.848		1.688	
132	$13/4 \times 115/16 \times 3/32$	1.737	.015	44.12	0.38				1.937	1.777		1.910		1.750	
133	$113/16 \times 2 \times 3/32$	1.799	.015	45.69	0.38				2.000	1.840		1.972		1.812	
134	$17/8 \times 21/16 \times 3/32$	1.862	.017	47.29	0.43				2.062	1.902		2.035		1.875	
135	$115/16 \times 21/8 \times 3/32$	1.925	.017	48.90	0.43				2.125	1.965		2.097		1.937	
136	$2 \times 23/16 \times 3/32$	1.987	.017	50.47	0.43				2.187	2.027		2.160		2.000	
137	$21/16 \times 21/4 \times 3/32$	2.050	.017	52.07	0.43				2.250	2.090		2.222		2.062	
138	$21/8 \times 25/16 \times 3/32$	2.112	.017	53.64	0.43				2.312	2.152		2.285		2.125	
139	$23/16 \times 23/8 \times 3/32$	2.175	.017	55.25	0.43				2.375	2.215		2.348		2.188	
140	$21/4 \times 27/16 \times 3/32$	2.237	.017	56.82	0.43				2.437	2.277		2.410		2.250	
141	$25/16 \times 21/2 \times 3/32$	2.300	.020	58.42	0.51				2.500	2.340		2.472		2.312	
142	$23/8 \times 29/16 \times 3/32$	2.362	.020	59.99	0.51				2.562	2.402		2.535		2.375	
143	$27/16 \times 25/8 \times 3/32$	2.425	.020	61.60	0.51				2.625	2.465		2.597		2.437	
144	$21/2 \times 211/16 \times 3/32$	2.487	.020	63.17	0.51				2.687	2.527		2.660		2.500	
145	$29/16 \times 23/4 \times 3/32$	2.550	.020	64.77	0.51				2.750	2.590		2.722		2.562	
146	$25/8 \times 213/16 \times 3/32$	2.612	.020	66.34	0.51				2.812	2.652		2.785		2.625	
147	$211/16 \times 27/8 \times 3/32$	2.675	.022	67.95	0.56				2.875	2.715		2.848		2.688	
148	$23/4 \times 215/16 \times 3/32$	2.737	.022	69.52	0.56				2.937	2.777		2.910		2.750	
149	$213/16 \times 3 \times 3/32$	2.800	.022	71.12	0.56				3.000	2.840		2.972		2.812	
150	$27/8 \times 31/16 \times 3/32$	2.862	.022	72.69	0.56				3.062	2.902		3.035		2.875	
640	$215/16 \times 31/8 \times 3/32$	2.924	.015	74.30	0.38										

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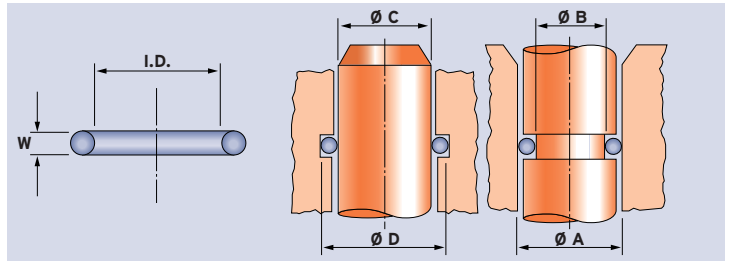
# 'O' Ring Size Chart BS1806 Imperial Range



Part No.	Nominal Size C x A x W	Inside Diameter				Cross Section W				Bore Ø A INCH	Piston Groove Ø B STAT	Gland Groove Ø D		Rod Ø C	
		INCH	±	mm	±	INCH	±	mm	±			DYN	STAT		
151	3 x 3 <sup>3</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	2.987	.024	75.87	0.61					3.187	3.027		3.160		3.000
641	3 <sup>1</sup> / <sub>16</sub> x 3 <sup>1</sup> / <sub>4</sub> x 3 <sup>3</sup> / <sub>32</sub>	3.049	.015	77.50	0.38										
642	3 <sup>3</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>32</sub>	3.174	.015	80.60	0.38										
152	3 <sup>1</sup> / <sub>4</sub> x 3 <sup>7</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	3.237	.024	82.22	0.61					3.437	3.277		3.410		3.250
643	3 <sup>5</sup> / <sub>16</sub> x 3 <sup>1</sup> / <sub>2</sub> x 3 <sup>3</sup> / <sub>32</sub>	3.299	.015	83.80	0.38										
153	3 <sup>1</sup> / <sub>2</sub> x 3 <sup>11</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	3.487	.024	88.57	0.61					3.687	3.527		3.660		3.500
154	3 <sup>3</sup> / <sub>4</sub> x 3 <sup>15</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	3.737	.028	94.92	0.71					3.937	3.777		3.910		3.750
155	4 x 4 <sup>3</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	3.987	.028	101.27	0.71					4.187	4.027		4.160		4.000
156	4 <sup>1</sup> / <sub>4</sub> x 4 <sup>7</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	4.237	.030	107.62	0.76					4.437	4.277		4.410		4.250
157	4 <sup>1</sup> / <sub>2</sub> x 4 <sup>11</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	4.487	.030	113.97	0.76					4.687	4.527		4.660		4.500
158	4 <sup>3</sup> / <sub>4</sub> x 4 <sup>15</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	4.737	.030	120.32	0.76					4.937	4.777		4.910		4.750
159	5 x 5 <sup>3</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	4.987	.035	126.67	0.89					5.187	5.027		5.160		5.000
160	5 <sup>1</sup> / <sub>4</sub> x 5 <sup>7</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	5.237	.035	133.02	0.89					5.437	5.277		5.410		5.250
161	5 <sup>1</sup> / <sub>2</sub> x 5 <sup>11</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	5.487	.035	139.37	0.89					5.687	5.527		5.660		5.500
162	5 <sup>3</sup> / <sub>4</sub> x 5 <sup>15</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	5.737	.035	145.72	0.89	.103	.003	2.62	0.08	5.937	5.777		5.910		5.750
163	6 x 6 <sup>3</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	5.987	.035	152.07	0.89					6.187	6.027		6.160		6.000
164	6 <sup>1</sup> / <sub>4</sub> x 6 <sup>7</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	6.237	.040	158.42	1.02					6.437	6.277		6.410		6.250
165	6 <sup>1</sup> / <sub>2</sub> x 6 <sup>11</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	6.487	.040	164.77	1.02					6.687	6.527		6.660		6.500
166	6 <sup>3</sup> / <sub>4</sub> x 6 <sup>15</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	6.737	.040	171.12	1.02					6.937	6.777		6.910		6.750
167	7 x 7 <sup>3</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	6.987	.040	177.47	1.02					7.187	7.027		7.160		7.000
168	7 <sup>1</sup> / <sub>4</sub> x 7 <sup>7</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	7.237	.045	183.82	1.14					7.437	7.277		7.410		7.250
169	7 <sup>1</sup> / <sub>2</sub> x 7 <sup>11</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	7.487	.045	190.17	1.14					7.687	7.527		7.660		7.500
170	7 <sup>3</sup> / <sub>4</sub> x 7 <sup>15</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	7.737	.045	196.52	1.14					7.937	7.777		7.910		7.750
171	8 x 8 <sup>3</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	7.987	.045	202.87	1.14					8.187	8.027		8.160		8.000
172	8 <sup>1</sup> / <sub>4</sub> x 8 <sup>7</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	8.237	.050	209.22	1.27					8.437	8.277		8.410		8.250
173	8 <sup>1</sup> / <sub>2</sub> x 8 <sup>11</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	8.487	.050	215.57	1.27					8.687	8.527		8.660		8.500
174	8 <sup>3</sup> / <sub>4</sub> x 8 <sup>15</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	8.737	.050	221.92	1.27					8.937	8.777		8.910		8.750
175	9 x 9 <sup>3</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	8.987	.050	228.27	1.27					9.187	9.027		9.160		9.000
176	9 <sup>1</sup> / <sub>4</sub> x 9 <sup>7</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	9.237	.055	234.62	1.40					9.437	9.277		9.410		9.250
177	9 <sup>1</sup> / <sub>2</sub> x 9 <sup>11</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	9.487	.055	240.97	1.40					9.687	9.527		9.660		9.500
178	9 <sup>3</sup> / <sub>4</sub> x 9 <sup>15</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>32</sub>	9.737	.055	247.32	1.40					9.937	9.777		9.910		9.750
201	3 <sup>1</sup> / <sub>16</sub> x 7 <sup>1</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>8</sub>	.171	.005	4.34	0.13					.437	.215	.199	.409	.425	.187
202	1 <sup>1</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>8</sub>	.234	.005	5.94	0.13					.500	.277	.261	.472	.488	.250
203	5 <sup>1</sup> / <sub>16</sub> x 9 <sup>1</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>8</sub>	.296	.005	7.52	0.13					.562	.340	.324	.514	.530	.312
204	3 <sup>3</sup> / <sub>8</sub> x 5 <sup>3</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>8</sub>	.359	.005	9.12	0.13					.625	.403	.387	.597	.613	.375
205	7 <sup>1</sup> / <sub>16</sub> x 1 <sup>11</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>8</sub>	.421	.005	10.69	0.13					.687	.465	.449	.659	.675	.437
206	1 <sup>1</sup> / <sub>2</sub> x 3 <sup>3</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>8</sub>	.484	.005	12.29	0.13					.750	.527	.511	.722	.738	.500
207	9 <sup>1</sup> / <sub>16</sub> x 1 <sup>3</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>8</sub>	.546	.007	13.87	0.18					.812	.590	.574	.814	.830	.562
208	5 <sup>3</sup> / <sub>8</sub> x 7 <sup>3</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>8</sub>	.609	.009	15.47	0.23					.875	.653	.637	.847	.863	.625
209	1 <sup>11</sup> / <sub>16</sub> x 1 <sup>15</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>8</sub>	.671	.009	17.04	0.23					.937	.715	.699	.909	.925	.687
*210	3 <sup>3</sup> / <sub>4</sub> x 1 x 1 <sup>1</sup> / <sub>8</sub>	.734	.010	18.66	0.25	.139	.004	3.53	0.10	1.000	.778	.762	.972	.988	.750
*211	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>8</sub>	.796	.010	20.22	0.25					1.062	.840	.824	1.034	1.050	.812
*212	7 <sup>7</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>8</sub>	.859	.010	21.82	0.25					1.125	.903	.887	1.097	1.113	.875
*213	1 <sup>15</sup> / <sub>16</sub> x 1 <sup>3</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>8</sub>	.921	.010	23.40	0.25					1.188	.966	.950	1.159	1.175	.937
*214	1 x 1 <sup>1</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>8</sub>	.984	.010	25.00	0.25					1.250	1.028	1.012	1.222	1.238	1.000
618		1.016	.006	25.80	0.15										
*215	1 <sup>1</sup> / <sub>16</sub> x 1 <sup>15</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>8</sub>	1.046	.010	26.58	0.25					1.312	1.090	1.074	1.284	1.300	1.062
*216	1 <sup>1</sup> / <sub>8</sub> x 1 <sup>3</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>8</sub>	1.109	.012	28.17	0.30					1.375	1.153	1.137	1.347	1.363	1.125

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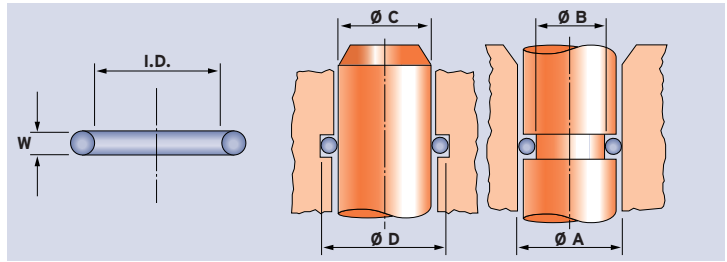
# 'O' Ring Size Chart BS1806 Imperial Range



Part No.	Nominal Size C x A x W	Inside Diameter				Cross Section W				Bore Ø A INCH	Piston Groove Ø B STAT		Gland Groove Ø D DYN STAT		Rod Ø C
		INCH	±	mm	±	INCH	±	mm	±		INCH	STAT	DYN	STAT	
*217	1 <sup>3</sup> / <sub>16</sub> x 1 <sup>7</sup> / <sub>16</sub> x 1/8	1.171	.012	29.75	0.30					1.437	1.215	1.199	1.410	1.426	1.188
*218	1 <sup>1</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>2</sub> x 1/8	1.234	.012	31.35	0.30					1.500	1.278	1.262	1.472	1.488	1.250
*219	1 <sup>5</sup> / <sub>16</sub> x 1 <sup>9</sup> / <sub>16</sub> x 1/8	1.296	.012	32.92	0.30					1.562	1.340	1.324	1.534	1.550	1.312
*220	1 <sup>3</sup> / <sub>8</sub> x 1 <sup>5</sup> / <sub>8</sub> x 1/8	1.359	.012	34.52	0.30					1.625	1.403	1.387	1.597	1.613	1.375
*221	1 <sup>7</sup> / <sub>16</sub> x 1 <sup>11</sup> / <sub>16</sub> x 1/8	1.421	.012	36.09	0.30					1.688	1.466	1.450	1.659	1.675	1.437
*222	1 <sup>1</sup> / <sub>2</sub> x 1 <sup>3</sup> / <sub>4</sub> x 1/8	1.484	.015	37.70	0.38					1.750	1.528	1.512	1.722	1.738	1.500
824	1 <sup>9</sup> / <sub>16</sub> x 1 <sup>13</sup> / <sub>16</sub> x 1/8	1.563	.010	39.70	0.25										
223	1 <sup>5</sup> / <sub>8</sub> x 1 <sup>7</sup> / <sub>8</sub> x 1/8	1.609	.015	40.87	0.38					1.875	1.653		1.847		1.625
825		1.625	.010	41.28	0.25										
826	1 <sup>11</sup> / <sub>16</sub> x 1 <sup>15</sup> / <sub>16</sub> x 1/8	1.687	.010	42.86	0.25										
224	1 <sup>3</sup> / <sub>4</sub> x 2 x 1/8	1.734	.015	44.04	0.38					2.000	1.778		1.972		1.750
827		1.750	.010	44.45	0.25										
828	1 <sup>13</sup> / <sub>16</sub> x 2 <sup>1</sup> / <sub>16</sub> x 1/8	1.812	.010	46.04	0.25										
225	1 <sup>7</sup> / <sub>8</sub> x 2 <sup>1</sup> / <sub>8</sub> x 1/8	1.859	.018	47.22	0.46					2.125	1.903		2.097		1.875
829		1.875	.010	47.62	0.25										
830	1 <sup>15</sup> / <sub>16</sub> x 2 <sup>3</sup> / <sub>16</sub> x 1/8	1.937	.010	49.20	0.25										
226	2 x 2 <sup>1</sup> / <sub>4</sub> x 1/8	1.984	.018	50.39	0.46					2.250	2.028		2.222		2.000
831		2.000	.010	50.80	0.25										
832	2 <sup>1</sup> / <sub>16</sub> x 2 <sup>5</sup> / <sub>16</sub> x 1/8	2.062	.010	52.40	0.25										
227	2 <sup>1</sup> / <sub>8</sub> x 2 <sup>3</sup> / <sub>8</sub> x 1/8	2.109	.018	53.37	0.46					2.375	2.153		2.347		2.125
833		2.125	.010	53.97	0.25										
834	2 <sup>3</sup> / <sub>16</sub> x 2 <sup>7</sup> / <sub>16</sub> x 1/8	2.187	.010	55.56	0.25										
228	2 <sup>1</sup> / <sub>4</sub> x 2 <sup>1</sup> / <sub>2</sub> x 1/8	2.234	.020	56.74	0.51					2.500	2.278		2.472		2.250
835		2.250	.010	57.15	0.25	.139	.004	3.53	0.10						
836	2 <sup>5</sup> / <sub>16</sub> x 2 <sup>9</sup> / <sub>16</sub> x 1/8	2.312	.010	58.74	0.25										
229	2 <sup>3</sup> / <sub>8</sub> x 2 <sup>5</sup> / <sub>8</sub> x 1/8	2.359	.020	59.92	0.51					2.625	2.403		2.597		2.375
837		2.375	.010	60.32	0.25										
838	2 <sup>7</sup> / <sub>16</sub> x 2 <sup>11</sup> / <sub>16</sub> x 1/8	2.437	.010	61.90	0.25										
230	2 <sup>1</sup> / <sub>2</sub> x 2 <sup>3</sup> / <sub>4</sub> x 1/8	2.484	.020	63.09	0.51					2.750	2.528		2.722		2.500
839		2.500	.010	63.50	0.25										
840	2 <sup>9</sup> / <sub>16</sub> x 2 <sup>13</sup> / <sub>16</sub> x 1/8	2.563	.010	65.10	0.25										
231	2 <sup>5</sup> / <sub>8</sub> x 2 <sup>7</sup> / <sub>8</sub> x 1/8	2.609	.020	66.27	0.51					2.875	2.653		2.847		2.625
841		2.625	.015	66.67	0.38										
842	2 <sup>11</sup> / <sub>16</sub> x 2 <sup>15</sup> / <sub>16</sub> x 1/8	2.687	.015	68.28	0.38										
232	2 <sup>3</sup> / <sub>4</sub> x 3 x 1/8	2.734	.024	69.44	0.61					3.000	2.778		2.972		2.750
843		2.750	.015	69.85	0.38										
844		2.812	.015	71.44	0.38										
233	2 <sup>7</sup> / <sub>8</sub> x 3 <sup>1</sup> / <sub>8</sub> x 1/8	2.859	.024	72.62	0.61					3.125	2.903		3.097		2.875
845		2.875	.015	73.02	0.38										
846	2 <sup>15</sup> / <sub>16</sub> x 3 <sup>3</sup> / <sub>16</sub> x 1/8	2.937	.015	74.60	0.38										
234	3 x 3 <sup>1</sup> / <sub>4</sub> x 1/8	2.984	.024	75.79	0.61					3.250	3.028		3.222		3.000
235	3 <sup>1</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>8</sub> x 1/8	3.109	.024	78.97	0.61					3.375	3.153		3.347		3.125
236	3 <sup>1</sup> / <sub>4</sub> x 3 <sup>1</sup> / <sub>2</sub> x 1/8	3.234	.024	82.14	0.61					3.500	3.278		3.472		3.250
237	3 <sup>3</sup> / <sub>8</sub> x 3 <sup>5</sup> / <sub>8</sub> x 1/8	3.359	.024	85.32	0.61					3.625	3.403		3.597		3.375
238	3 <sup>1</sup> / <sub>2</sub> x 3 <sup>3</sup> / <sub>4</sub> x 1/8	3.484	.024	88.49	0.61					3.750	3.528		3.722		3.500
239	3 <sup>5</sup> / <sub>8</sub> x 3 <sup>7</sup> / <sub>8</sub> x 1/8	3.609	.028	91.67	0.71					3.875	3.653		3.847		3.625
240	3 <sup>3</sup> / <sub>4</sub> x 4 x 1/8	3.734	.028	94.84	0.71					4.000	3.778		3.972		3.750
241	3 <sup>7</sup> / <sub>8</sub> x 4 <sup>1</sup> / <sub>8</sub> x 1/8	3.859	.028	98.02	0.71					4.125	3.903		4.097		3.875

Only sizes marked \* are suitable for dynamic applications.

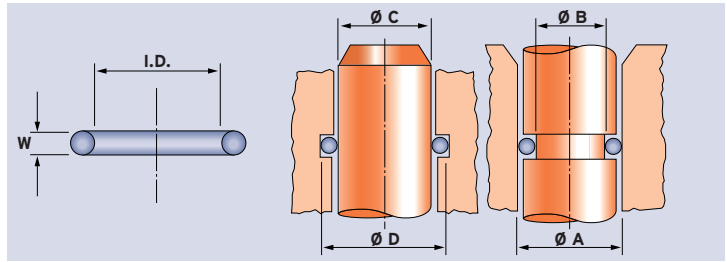
# 'O' Ring Size Chart BS1806 Imperial Range



Part No.	Nominal Size C x A x W	Inside Diameter				Cross Section W				Bore Ø A	Piston Groove Ø B	Gland Groove Ø D		Rod Ø C	
		INCH	±	mm	±	INCH	±	mm	±			INCH	STAT		DYN
242	4 x 4 <sup>1</sup> / <sub>4</sub> x 1/8	3.984	.028	101.19	0.71					4.250	4.028		4.222		4.000
243	4 <sup>1</sup> / <sub>8</sub> x 4 <sup>3</sup> / <sub>8</sub> x 1/8	4.109	.028	104.37	0.71					4.375	4.153		4.347		4.125
244	4 <sup>1</sup> / <sub>4</sub> x 4 <sup>1</sup> / <sub>2</sub> x 1/8	4.234	.030	107.54	0.76					4.500	4.278		4.472		4.250
245	4 <sup>3</sup> / <sub>8</sub> x 4 <sup>5</sup> / <sub>8</sub> x 1/8	4.359	.030	110.72	0.76					4.625	4.403		4.597		4.375
246	4 <sup>1</sup> / <sub>2</sub> x 4 <sup>3</sup> / <sub>4</sub> x 1/8	4.484	.030	113.89	0.76					4.750	4.528		4.722		4.500
247	4 <sup>5</sup> / <sub>8</sub> x 4 <sup>7</sup> / <sub>8</sub> x 1/8	4.609	.030	117.07	0.76					4.875	4.653		4.847		4.625
248	4 <sup>3</sup> / <sub>4</sub> x 5 x 1/8	4.734	.030	120.24	0.76					5.000	4.778		4.972		4.750
249	4 <sup>7</sup> / <sub>8</sub> x 5 <sup>1</sup> / <sub>8</sub> x 1/8	4.859	.035	123.42	0.89					5.125	4.903		5.097		4.875
250	5 x 5 <sup>1</sup> / <sub>4</sub> x 1/8	4.984	.035	126.59	0.89					5.250	5.028		5.222		5.000
251	5 <sup>1</sup> / <sub>8</sub> x 5 <sup>3</sup> / <sub>8</sub> x 1/8	5.109	.035	129.77	0.89					5.375	5.153		5.347		5.125
252	5 <sup>1</sup> / <sub>4</sub> x 5 <sup>1</sup> / <sub>2</sub> x 1/8	5.234	.035	132.94	0.89					5.500	5.278		5.472		5.250
253	5 <sup>3</sup> / <sub>8</sub> x 5 <sup>5</sup> / <sub>8</sub> x 1/8	5.359	.035	136.12	0.89					5.625	5.403		5.597		5.375
254	5 <sup>1</sup> / <sub>2</sub> x 5 <sup>3</sup> / <sub>4</sub> x 1/8	5.484	.035	139.29	0.89					5.750	5.528		5.722		5.500
255	5 <sup>5</sup> / <sub>8</sub> x 5 <sup>7</sup> / <sub>8</sub> x 1/8	5.609	.035	142.47	0.89					5.875	5.653		5.847		5.625
256	5 <sup>3</sup> / <sub>4</sub> x 6 x 1/8	5.734	.035	145.64	0.89					6.000	5.778		5.972		5.750
257	5 <sup>7</sup> / <sub>8</sub> x 6 <sup>1</sup> / <sub>8</sub> x 1/8	5.859	.035	148.82	0.89					6.125	5.903		6.097		5.875
258	6 x 6 <sup>1</sup> / <sub>4</sub> x 1/8	5.984	.035	151.99	0.89					6.250	6.028		6.222		6.000
259	6 <sup>1</sup> / <sub>4</sub> x 6 <sup>1</sup> / <sub>2</sub> x 1/8	6.234	.040	158.34	1.02					6.500	6.278		6.472		6.250
260	6 <sup>1</sup> / <sub>2</sub> x 6 <sup>3</sup> / <sub>4</sub> x 1/8	6.484	.040	164.69	1.02					6.750	6.528		6.722		6.500
261	6 <sup>3</sup> / <sub>4</sub> x 7 x 1/8	6.734	.040	171.04	1.02					7.000	6.778		6.972		6.750
262	7 x 7 <sup>1</sup> / <sub>4</sub> x 1/8	6.984	.040	177.39	1.02					7.250	7.028		7.222		7.000
263	7 <sup>1</sup> / <sub>4</sub> x 7 <sup>1</sup> / <sub>2</sub> x 1/8	7.234	.045	183.74	1.14					7.500	7.278		7.472		7.250
264	7 <sup>1</sup> / <sub>2</sub> x 7 <sup>3</sup> / <sub>4</sub> x 1/8	7.484	.045	190.09	1.14					7.750	7.528		7.722		7.500
265	7 <sup>3</sup> / <sub>4</sub> x 8 x 1/8	7.734	.045	196.44	1.14	.139	.004	3.53	0.10	8.000	7.778		7.972		7.750
266	8 x 8 <sup>1</sup> / <sub>4</sub> x 1/8	7.984	.045	202.79	1.14					8.250	8.028		8.222		8.000
267	8 <sup>1</sup> / <sub>4</sub> x 8 <sup>1</sup> / <sub>2</sub> x 1/8	8.234	.050	209.14	1.27					8.500	8.278		8.472		8.250
268	8 <sup>1</sup> / <sub>2</sub> x 8 <sup>3</sup> / <sub>4</sub> x 1/8	8.484	.050	215.49	1.27					8.750	8.528		8.722		8.500
269	8 <sup>3</sup> / <sub>4</sub> x 9 x 1/8	8.734	.050	221.84	1.27					9.000	8.778		8.972		8.750
270	9 x 9 <sup>1</sup> / <sub>4</sub> x 1/8	8.984	.050	228.19	1.27					9.250	9.028		9.222		9.000
271	9 <sup>1</sup> / <sub>4</sub> x 9 <sup>1</sup> / <sub>2</sub> x 1/8	9.234	.055	234.54	1.40					9.500	9.278		9.472		9.250
272	9 <sup>1</sup> / <sub>2</sub> x 9 <sup>3</sup> / <sub>4</sub> x 1/8	9.484	.055	240.89	1.40					9.750	9.528		9.722		9.500
273	9 <sup>3</sup> / <sub>4</sub> x 10 x 1/8	9.734	.055	247.24	1.40					10.000	9.778		9.972		9.750
274	10 x 10 <sup>1</sup> / <sub>4</sub> x 1/8	9.984	.055	253.59	1.40					10.250	10.028		10.222		10.000
275	10 <sup>1</sup> / <sub>2</sub> x 10 <sup>3</sup> / <sub>4</sub> x 1/8	10.484	.055	266.29	1.40					10.750	10.528		10.722		10.500
276	11 x 11 <sup>1</sup> / <sub>4</sub> x 1/8	10.984	.065	278.99	1.40					11.250	11.028		11.222		11.000
277	11 <sup>1</sup> / <sub>2</sub> x 11 <sup>3</sup> / <sub>4</sub> x 1/8	11.484	.065	291.69	1.40					11.750	11.528		11.722		11.500
278	12 x 12 <sup>1</sup> / <sub>4</sub> x 1/8	11.984	.065	304.39	1.65					12.250	12.028		12.222		12.000
279	13 x 13 <sup>1</sup> / <sub>4</sub> x 1/8	12.984	.065	329.79	1.65					13.250	13.028		13.222		13.000
280	14 x 14 <sup>1</sup> / <sub>4</sub> x 1/8	13.984	.065	355.19	1.65					14.250	14.028		14.222		14.000
281	15 x 15 <sup>1</sup> / <sub>4</sub> x 1/8	14.984	.065	380.59	1.65					15.250	15.028		15.222		15.000
282	16 x 16 <sup>1</sup> / <sub>4</sub> x 1/8	15.955	.075	405.26	1.90					16.250	16.028		16.222		16.000
283	17 x 17 <sup>1</sup> / <sub>4</sub> x 1/8	16.955	.080	430.66	2.16					17.250	17.028		17.222		17.000
284	18 x 18 <sup>1</sup> / <sub>4</sub> x 1/8	17.955	.085	456.06	2.42					18.250	18.028		18.222		18.000
309	7 <sup>1</sup> / <sub>16</sub> x 13 <sup>1</sup> / <sub>16</sub> x 3 <sup>1</sup> / <sub>16</sub>	.412	.005	10.46	0.13					.812	.462	.446	.787	.803	.437
310	1/2 x 7/8 x 3/16	.475	.005	12.07	0.13					.875	.525	.509	.850	.866	.500
311	9 <sup>1</sup> / <sub>16</sub> x 15 <sup>1</sup> / <sub>16</sub> x 3 <sup>1</sup> / <sub>16</sub>	.537	.007	13.64	0.18	.210	.005	5.33	0.13	.937	.587	.571	.912	.928	.562
312	5/8 x 1 x 3/16	.600	.009	15.24	0.23					1.000	.650	.634	.975	.991	.625
313	11 <sup>1</sup> / <sub>16</sub> x 11 <sup>1</sup> / <sub>16</sub> x 3/16	.662	.009	16.81	0.23					1.062	.712	.696	1.037	1.053	.687

Only sizes marked \* are suitable for dynamic applications.

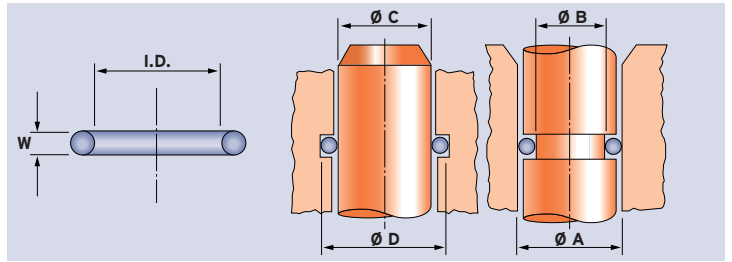
# 'O' Ring Size Chart BS1806 Imperial Range



Part No.	Nominal Size C x A x W	Inside Diameter				Cross Section W				Bore Ø A INCH	Piston Groove Ø B		Gland Groove Ø D		Rod Ø C
		INCH	±	mm	±	INCH	±	mm	±		STAT	DYN	STAT		
314	3/4 x 1 1/8 x 3/16	.725	.010	18.42	0.25					1.125	.774	.758	1.100	1.116	.750
315	13/16 x 1 3/16 x 3/16	.787	.010	19.99	0.25					1.187	.837	.821	1.162	1.178	.812
316	7/8 x 1 1/4 x 3/16	.850	.010	21.59	0.25					1.250	.900	.884	1.225	1.241	.875
317	15/16 x 1 5/16 x 3/16	.912	.010	23.16	0.25					1.312	.962	.946	1.287	1.303	.937
318	1 x 1 3/8 x 3/16	.975	.010	24.77	0.25					1.375	1.025	1.009	1.350	1.366	1.000
319	1 1/16 x 1 7/16 x 3/16	1.037	.010	26.34	0.25					1.437	1.087	1.071	1.412	1.428	1.062
320	1 1/8 x 1 1/2 x 3/16	1.100	.012	27.94	0.30					1.500	1.150	1.134	1.475	1.491	1.125
321	1 3/16 x 1 9/16 x 3/16	1.162	.012	29.51	0.30					1.562	1.212	1.196	1.537	1.553	1.187
322	1 1/4 x 1 5/8 x 3/16	1.225	.012	31.12	0.30					1.625	1.275	1.259	1.600	1.616	1.250
323	1 5/16 x 1 11/16 x 3/16	1.287	.012	32.69	0.30					1.687	1.357	1.341	1.662	1.678	1.312
324	1 3/8 x 1 3/4 x 3/16	1.350	.012	34.29	0.30					1.750	1.400	1.384	1.725	1.741	1.375
*325	1 1/2 x 1 7/8 x 3/16	1.475	.015	37.47	0.38					1.875	1.525	1.509	1.850	1.866	1.500
*326	1 5/8 x 2 x 3/16	1.600	.015	40.64	0.38					2.000	1.650	1.634	1.975	1.991	1.625
*327	1 3/4 x 2 1/8 x 3/16	1.725	.015	43.82	0.38					2.125	1.775	1.759	2.100	2.116	1.750
*328	1 7/8 x 2 1/4 x 3/16	1.850	.015	46.99	0.38					2.250	1.900	1.884	2.225	2.241	1.875
*329	2 x 2 3/8 x 3/16	1.975	.018	50.17	0.46					2.375	2.025	2.009	2.350	2.366	2.000
*330	2 1/8 x 2 1/2 x 3/16	2.100	.018	53.34	0.46					2.500	2.150	2.134	2.475	2.491	2.125
*331	2 1/4 x 2 5/8 x 3/16	2.225	.018	56.52	0.46					2.625	2.275	2.259	2.600	2.616	2.250
*332	2 3/8 x 2 3/4 x 3/16	2.350	.018	59.69	0.46					2.750	2.400	2.384	2.725	2.741	2.375
*333	2 1/2 x 2 7/8 x 3/16	2.475	.020	62.87	0.51					2.875	2.525	2.509	2.850	2.866	2.500
*334	2 5/8 x 3 x 3/16	2.600	.020	66.04	0.51					3.000	2.650	2.634	2.975	2.991	2.625
*335	2 3/4 x 3 1/8 x 3/16	2.725	.020	69.22	0.51					3.125	2.775	2.759	3.100	3.116	2.750
*336	2 7/8 x 3 1/4 x 3/16	2.850	.020	72.39	0.51	.210	.005	5.33	0.13	3.250	2.900	2.884	3.225	3.241	2.875
*619	2 15/16 x 3 5/16 x 3/16	2.938	.015	74.63	0.36										
*337	3 x 3 3/8 x 3/16	2.975	.024	75.57	0.61					3.375	3.025	3.009	3.350	3.366	3.000
*338	3 1/8 x 3 1/2 x 3/16	3.100	.024	78.74	0.61					3.500	3.150	3.134	3.475	3.491	3.125
*620		3.141	.015	79.77	0.38										
*339	3 1/4 x 3 5/8 x 3/16	3.225	.024	81.92	0.61					3.625	3.275	3.259	3.600	3.616	3.250
*340	3 3/8 x 3 3/4 x 3/16	3.350	.024	85.09	0.61					3.750	3.400	3.384	3.725	3.741	3.375
*341	3 1/2 x 3 7/8 x 3/16	3.475	.024	88.27	0.61					3.875	3.525	3.509	3.850	3.866	3.500
*621	3 9/16 x 3 15/16 x 3/16	3.531	.015	89.69	0.38										
*342	3 5/8 x 4 x 3/16	3.600	.028	91.44	0.71					4.000	3.650	3.634	3.975	3.991	3.625
*343	3 3/4 x 4 1/8 x 3/16	3.725	.028	94.62	0.71					4.125	3.775	3.759	4.100	4.116	3.750
*344	3 7/8 x 4 1/4 x 3/16	3.850	.028	97.79	0.71					4.250	3.900	3.884	4.225	4.241	3.875
*622	3 15/16 x 4 5/16 x 3/16	3.937	.015	100.00	0.38										
*345	4 x 4 3/8 x 3/16	3.975	.028	100.97	0.71					4.375	4.025	4.009	4.350	4.366	4.000
*346	4 1/8 x 4 1/2 x 3/16	4.100	.028	104.14	0.71					4.500	4.150	4.134	4.475	4.491	4.125
*347	4 1/4 x 4 5/8 x 3/16	4.225	.030	107.32	0.76					4.625	4.275	4.259	4.600	4.616	4.250
*623		4.312	.015	109.54	0.38										4.375
*348	4 3/8 x 4 3/4 x 3/16	4.350	.030	110.49	0.76					4.750	4.400	4.384	4.725	4.741	
*349	4 1/2 x 4 7/8 x 3/16	4.475	.030	113.67	0.76					4.875	4.525	4.509	4.850	4.866	4.500
350	4 5/8 x 5 x 3/16	4.600	.030	116.84	0.76					5.000	4.650		4.975		4.625
860		4.625	.015	117.48	0.38										
351	4 3/4 x 5 1/8 x 3/16	4.725	.030	120.02	0.76					5.125	4.775		5.100		4.750
861		4.750	.015	120.65	0.38										
352	4 7/8 x 5 1/4 x 3/16	4.850	.030	123.19	0.76					5.250	4.900		5.225		4.875
862		4.875	.015	123.83	0.38										
353	5 x 5 3/8 x 3/16	4.975	.037	126.37	0.94					5.375	5.025		5.350		5.000

Only sizes marked \* are suitable for dynamic applications.

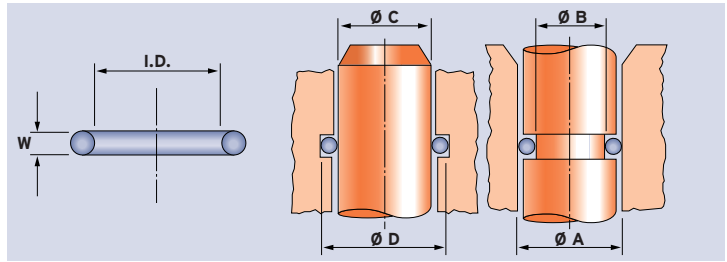
# 'O' Ring Size Chart BS1806 Imperial Range



Part No.	Nominal Size C x A x W	Inside Diameter				Cross Section W				Bore Ø A INCH	Piston Groove Ø B STAT	Gland Groove Ø D		Rod Ø C
		INCH	±	mm	±	INCH	±	mm	±			DYN	STAT	
863		5.000	.023	127.00	0.58									
354	5 <sup>1</sup> / <sub>8</sub> x 5 <sup>1</sup> / <sub>2</sub> x 3 <sup>3</sup> / <sub>16</sub>	5.100	.037	129.54	0.95					5.500	5.150		5.475	5.125
864		5.125	.023	130.18	0.58									
355	5 <sup>1</sup> / <sub>4</sub> x 5 <sup>5</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	5.225	.037	132.72	0.94					5.625	5.275		5.600	5.250
865		5.250	.023	133.35	0.58									
356	5 <sup>3</sup> / <sub>8</sub> x 5 <sup>3</sup> / <sub>4</sub> x 3 <sup>3</sup> / <sub>16</sub>	5.350	.037	135.89	0.94					5.750	5.400		5.725	5.375
866		5.375	.023	136.53	0.58									
357	5 <sup>1</sup> / <sub>2</sub> x 5 <sup>7</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	5.475	.037	139.07	0.94					5.875	5.525		5.850	5.500
867		5.500	.023	139.70	0.58									
358	5 <sup>5</sup> / <sub>8</sub> x 6 x 3 <sup>3</sup> / <sub>16</sub>	5.600	.037	142.24	0.94					6.000	5.650		5.975	5.625
868		5.625	.023	142.88	0.58									
359	5 <sup>3</sup> / <sub>4</sub> x 6 <sup>1</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	5.725	.037	145.42	0.94					6.125	5.775		6.100	5.750
869		5.750	.023	146.05	0.58									
360	5 <sup>7</sup> / <sub>8</sub> x 6 <sup>1</sup> / <sub>4</sub> x 3 <sup>3</sup> / <sub>16</sub>	5.850	.037	148.49	0.94					6.250	5.900		6.225	5.875
870		5.875	.023	149.23	0.58									
361	6 x 6 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	5.975	.037	151.77	0.94					6.375	6.025		6.350	6.000
644	6 <sup>1</sup> / <sub>8</sub> x 6 <sup>1</sup> / <sub>2</sub> x 3 <sup>3</sup> / <sub>16</sub>	6.100	.023	155.00	0.58									
362	6 <sup>1</sup> / <sub>4</sub> x 6 <sup>5</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	6.225	.040	158.12	1.02					6.625	6.275		6.600	6.250
645	6 <sup>3</sup> / <sub>8</sub> x 6 <sup>3</sup> / <sub>4</sub> x 3 <sup>3</sup> / <sub>16</sub>	6.350	.023	161.30	0.58									
363	6 <sup>1</sup> / <sub>2</sub> x 6 <sup>7</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	6.475	.040	164.47	1.02					6.875	6.525		6.850	6.500
646	6 <sup>5</sup> / <sub>8</sub> x 7 x 3 <sup>3</sup> / <sub>16</sub>	6.600	.023	167.70	0.58									
364	6 <sup>3</sup> / <sub>4</sub> x 7 <sup>1</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	6.725	.040	170.82	1.02					7.125	6.775		7.100	6.750
647	6 <sup>7</sup> / <sub>8</sub> x 7 <sup>1</sup> / <sub>4</sub> x 3 <sup>3</sup> / <sub>16</sub>	6.850	.023	174.00	0.58	.210	.005	5.33	0.13					
365	7 x 7 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	6.975	.040	177.17	1.02					7.375	7.025		7.350	7.000
366	7 <sup>1</sup> / <sub>4</sub> x 7 <sup>5</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	7.225	.045	183.52	1.14					7.625	7.275		7.600	7.250
367	7 <sup>1</sup> / <sub>2</sub> x 7 <sup>7</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	7.475	.045	189.87	1.14					7.875	7.525		7.850	7.500
368	7 <sup>3</sup> / <sub>4</sub> x 8 <sup>1</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	7.725	.045	196.22	1.14					8.125	7.775		8.100	7.750
369	8 x 8 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	7.975	.045	202.57	1.14					8.375	8.025		8.350	8.000
370	8 <sup>1</sup> / <sub>4</sub> x 8 <sup>5</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	8.225	.050	208.92	1.30					8.625	8.275		8.600	8.250
371	8 <sup>1</sup> / <sub>2</sub> x 8 <sup>7</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	8.475	.050	215.27	1.30					8.875	8.525		8.850	8.500
372	8 <sup>3</sup> / <sub>4</sub> x 9 <sup>1</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	8.725	.050	221.62	1.30					9.125	8.775		9.100	8.750
373	9 x 9 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	8.975	.050	227.97	1.30					9.375	9.025		9.350	9.000
374	9 <sup>1</sup> / <sub>4</sub> x 9 <sup>5</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	9.225	.055	234.32	1.40					9.625	9.275		9.600	9.250
375	9 <sup>1</sup> / <sub>2</sub> x 9 <sup>7</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	9.475	.055	240.67	1.40					9.875	9.525		9.850	9.500
376	9 <sup>3</sup> / <sub>4</sub> x 10 <sup>1</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	9.725	.055	247.02	1.40					10.125	9.775		10.100	9.750
377	10 x 10 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	9.975	.055	253.37	1.40					10.375	10.025		10.350	10.000
378	10 <sup>1</sup> / <sub>2</sub> x 10 <sup>7</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	10.475	.060	266.07	1.52					10.875	10.525		10.850	10.500
379	11 x 11 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	10.975	.060	278.77	1.52					11.375	11.025		11.350	11.000
380	11 <sup>1</sup> / <sub>2</sub> x 11 <sup>7</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	11.475	.065	291.47	1.65					11.875	11.525		11.850	11.500
381	12 x 12 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	11.975	.065	304.17	1.65					12.375	12.025		12.350	12.000
382	13 x 13 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	12.975	.065	329.57	1.65					13.375	13.025		13.350	13.000
383	14 x 14 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	13.975	.070	354.97	1.78					14.375	14.025		14.350	14.000
384	15 x 15 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	14.975	.070	380.37	1.78					15.375	15.025		15.350	15.000
385	16 x 16 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	15.955	.075	405.26	1.90					16.375	16.025		16.350	16.000
386	17 x 17 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	16.955	.075	430.66	1.90					17.375	17.025		17.350	17.000
387	18 x 18 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	17.955	.080	456.06	2.15					18.375	18.025		18.350	18.000
388	19 x 19 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	18.952	.090	481.38	2.25					19.375	19.025		19.350	19.000
389	20 x 20 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	19.952	.095	506.78	2.40					20.375	20.025		20.350	20.000

Only sizes marked \* are suitable for dynamic applications.

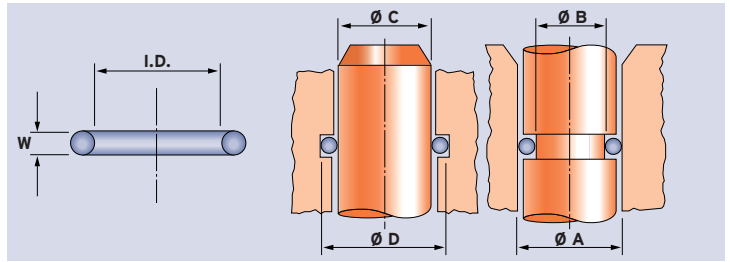
# 'O' Ring Size Chart BS1806 Imperial Range



Part No.	Nominal Size C x A x W	Inside Diameter				Cross Section W				Bore Ø A	Piston Groove Ø B		Gland Groove Ø D		Rod Ø C
		INCH	±	mm	±	INCH	±	mm	±		INCH	STAT	DYN	STAT	
390	21 x 21 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	20.952	.095	532.18	2.40					21.375	21.025		21.350		21.000
391	22 x 22 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	21.952	.100	557.58	2.55					22.375	22.025		22.350		22.000
392	23 x 23 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	22.940	.105	582.68	2.75	.210	.005	5.33	0.13	23.375	23.025		23.350		23.000
393	24 x 24 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	23.940	.110	608.08	2.80					24.375	24.025		24.350		24.000
394	25 x 25 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	24.940	.115	633.48	2.90					25.375	25.025		25.350		25.000
395	26 x 26 <sup>3</sup> / <sub>8</sub> x 3 <sup>3</sup> / <sub>16</sub>	25.940	.120	658.88	3.05					26.375	26.025		26.350		26.000
*425	4 <sup>1</sup> / <sub>2</sub> x 5 x 1 <sup>1</sup> / <sub>4</sub>	4.475	.033	113.67	0.84					5.000	4.544	4.532	4.956	4.968	4.500
*624	4 <sup>9</sup> / <sub>16</sub> x 5 <sup>1</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>4</sub>	4.516	.015	114.70	0.38										
*426	4 <sup>5</sup> / <sub>8</sub> x 5 <sup>1</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub>	4.600	.033	116.84	0.84					5.125	4.669	4.657	5.081	5.093	4.625
*427	4 <sup>3</sup> / <sub>4</sub> x 5 <sup>1</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>4</sub>	4.725	.033	120.02	0.84					5.250	4.794	4.782	5.206	5.218	4.750
*428	4 <sup>7</sup> / <sub>8</sub> x 5 <sup>3</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub>	4.850	.015	123.19	0.84					5.375	4.919	4.907	5.331	5.343	4.875
*625		4.906	.015	124.60	0.38										
*429	5 x 5 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>4</sub>	4.975	.037	126.37	0.94					5.500	5.044	5.032	5.456	5.468	5.000
*430	5 <sup>1</sup> / <sub>8</sub> x 5 <sup>5</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub>	5.100	.037	129.54	0.94					5.625	5.169	5.157	5.581	5.593	5.125
*431	5 <sup>1</sup> / <sub>4</sub> x 5 <sup>3</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>4</sub>	5.225	.023	132.72	0.94					5.750	5.294	5.282	5.706	5.718	5.250
*626		5.297	.023	134.50	0.58										
*432	5 <sup>3</sup> / <sub>8</sub> x 5 <sup>7</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub>	5.350	.037	135.89	0.94					5.875	5.419	5.407	5.831	5.843	5.375
*433	5 <sup>1</sup> / <sub>2</sub> x 6 x 1 <sup>1</sup> / <sub>4</sub>	5.475	.037	139.07	0.94					6.000	5.544	5.532	5.956	5.968	5.500
*434	5 <sup>5</sup> / <sub>8</sub> x 6 <sup>1</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub>	5.600	.037	142.24	0.94					6.125	5.669	5.657	6.081	6.093	5.625
*435	5 <sup>3</sup> / <sub>4</sub> x 6 <sup>1</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>4</sub>	5.725	.037	145.42	0.94					6.250	5.794	5.782	6.206	6.218	5.750
*436	5 <sup>7</sup> / <sub>8</sub> x 6 <sup>3</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub>	5.850	.037	148.59	0.94					6.375	5.919	5.907	6.331	6.343	5.875
*437	6 x 6 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>4</sub>	5.975	.023	151.77	0.94					6.500	6.044	6.032	6.456	6.468	6.000
*872	6 <sup>1</sup> / <sub>8</sub> x 6 <sup>5</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub>	6.125	.023	155.60	0.58										
*438	6 <sup>1</sup> / <sub>4</sub> x 6 <sup>3</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>4</sub>	6.225	.023	158.12	1.02	.275	.006	6.99	0.15	6.750	6.294	6.282	6.706	6.718	6.250
*627		6.281	.023	159.50	0.58										
*874		6.375	.023	161.90	0.58										
*439	6 <sup>1</sup> / <sub>2</sub> x 7 x 1 <sup>1</sup> / <sub>4</sub>	6.475	.023	164.47	1.08					7.000	6.544	6.532	6.956	6.968	6.500
*628	6 <sup>9</sup> / <sub>16</sub> x 7 <sup>1</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>4</sub>	6.563	.023	166.70	0.58										
*876	6 <sup>5</sup> / <sub>8</sub> x 7 <sup>1</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub>	6.625	.023	168.30	0.58										
*440	6 <sup>3</sup> / <sub>4</sub> x 7 <sup>1</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>4</sub>	6.725	.040	170.82	1.02					7.250	6.794	6.782	7.206	7.218	6.750
*878	6 <sup>7</sup> / <sub>8</sub> x 7 <sup>7</sup> / <sub>16</sub> x 1 <sup>1</sup> / <sub>4</sub>	6.875	.023	174.60	0.58										
*441	7 x 7 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>4</sub>	6.975	.030	177.17	1.02					7.500	7.044	7.032	7.456	7.468	7.000
*880	7 <sup>1</sup> / <sub>8</sub> x 7 <sup>5</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub>	7.125	.030	181.00	0.76										
*442	7 <sup>1</sup> / <sub>4</sub> x 7 <sup>3</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>4</sub>	7.225	.030	183.52	1.14					7.750	7.294	7.282	7.706	7.718	7.250
*882	7 <sup>3</sup> / <sub>8</sub> x 7 <sup>7</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub>	7.375	.030	187.30	0.76										
*443	7 <sup>1</sup> / <sub>2</sub> x 8 x 1 <sup>1</sup> / <sub>4</sub>	7.475	.030	189.87	1.14					8.000	7.544	7.532	7.956	7.968	7.500
*884	7 <sup>5</sup> / <sub>8</sub> x 8 <sup>1</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub>	7.625	.030	193.70	0.76										
*444	7 <sup>3</sup> / <sub>4</sub> x 8 <sup>1</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>4</sub>	7.725	.030	196.22	1.14					8.250	7.794	7.782	8.206	8.218	7.750
*886	7 <sup>7</sup> / <sub>8</sub> x 8 <sup>3</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub>	7.875	.030	200.00	0.76										
*445	8 x 8 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>4</sub>	7.975	.030	202.57	1.14					8.500	8.044	8.032	8.456	8.468	8.000
*674	8 <sup>1</sup> / <sub>4</sub> x 8 <sup>3</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>4</sub>	8.225	.030	208.92	0.76										
*446	8 <sup>1</sup> / <sub>2</sub> x 9 x 1 <sup>1</sup> / <sub>4</sub>	8.475	.030	215.27	1.40					9.000	8.544	8.532	8.956	8.968	8.500
*676	8 <sup>3</sup> / <sub>4</sub> x 9 <sup>1</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>4</sub>	8.725	.030	221.62	0.76										
*447	9 x 9 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>4</sub>	8.975	.055	227.97	1.40					9.500	9.044	9.032	9.456	9.468	9.000
*678	9 <sup>1</sup> / <sub>4</sub> x 9 <sup>3</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>4</sub>	9.225	.030	234.32	0.76										
*448	9 <sup>1</sup> / <sub>2</sub> x 10 x 1 <sup>1</sup> / <sub>4</sub>	9.475	.055	240.67	1.40					10.000	9.544	9.532	9.956	9.968	9.500
*680	9 <sup>3</sup> / <sub>4</sub> x 10 <sup>1</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>4</sub>	9.725	.030	247.00	0.76										
*449	10 x 10 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>4</sub>	9.975	.055	253.37	1.40					10.500	10.044	10.032	10.456	10.468	10.000

Only sizes marked \* are suitable for dynamic applications.

# 'O' Ring Size Chart BS1806 Imperial Range

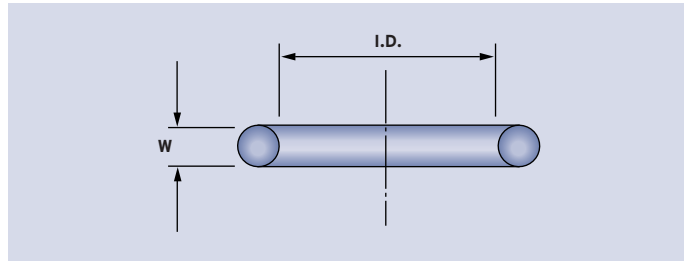


Part No.	Nominal Size C x A x W	Inside Diameter				Cross Section W				Bore Ø A INCH	Piston Groove Ø B STAT		Gland Groove Ø D DYN STAT		Rod Ø C
		INCH	±	mm	±	INCH	±	mm	±		INCH	STAT	DYN	STAT	
*682	10 <sup>1</sup> / <sub>4</sub> x 10 <sup>3</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>4</sub>	10.225	.030	259.70	0.76										
*450	10 <sup>1</sup> / <sub>2</sub> x 11 x 1 <sup>1</sup> / <sub>4</sub>	10.475	.060	266.07	1.52				11.000	10.544	10.532	10.956	10.968	10.500	
*684	10 <sup>3</sup> / <sub>4</sub> x 11 <sup>1</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>4</sub>	10.725	.030	272.40	0.76										
*451	11 x 11 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>4</sub>	10.975	.060	278.77	1.52				11.500	11.044	11.032	11.456	11.468	11.000	
*686	11 <sup>1</sup> / <sub>4</sub> x 11 <sup>3</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>4</sub>	11.225	.030	285.10	0.76										
*452	11 <sup>1</sup> / <sub>2</sub> x 12 x 1 <sup>1</sup> / <sub>4</sub>	11.475	.060	291.47	1.52				12.000	11.544	11.532	11.956	11.968	11.500	
*688	11 <sup>3</sup> / <sub>4</sub> x 12 <sup>1</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>4</sub>	11.725	.030	297.80	0.76										
*453	12 x 12 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>4</sub>	11.975	.060	304.17	1.52				12.500	12.044	12.032	12.456	12.468	12.000	
*648	12 <sup>1</sup> / <sub>4</sub> x 12 <sup>3</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>4</sub>	12.225	.030	310.50	0.76										
*454	12 <sup>1</sup> / <sub>2</sub> x 13 x 1 <sup>1</sup> / <sub>4</sub>	12.475	.060	316.87	1.52				13.000	12.544	12.532	12.956	12.968	12.500	
*649	12 <sup>3</sup> / <sub>4</sub> x 13 <sup>1</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>4</sub>	12.725	.030	323.20	0.76										
*455	13 x 13 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>4</sub>	12.975	.060	329.57	1.52				13.500	13.044	13.032	13.456	13.468	13.000	
*650	13 <sup>1</sup> / <sub>4</sub> x 13 <sup>3</sup> / <sub>4</sub> x 1 <sup>1</sup> / <sub>4</sub>	13.225	.030	335.90	0.76										
*456	13 <sup>1</sup> / <sub>2</sub> x 14 x 1 <sup>1</sup> / <sub>4</sub>	13.475	.070	342.27	1.78				14.000	13.544	13.532	13.956	13.968	13.500	
*457	14 x 14 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>4</sub>	13.975	.070	354.97	1.78				14.500	14.044	14.032	14.456	14.468	14.000	
*458	14 <sup>1</sup> / <sub>2</sub> x 15 x 1 <sup>1</sup> / <sub>4</sub>	14.475	.070	367.67	1.78	.275	.006	6.99	0.15	15.000	14.544	14.352	14.956	14.968	14.500
*459	15 x 15 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>4</sub>	14.975	.070	380.37	1.78				15.500	15.044	15.032	15.456	15.468	15.000	
*460	15 <sup>1</sup> / <sub>2</sub> x 16 x 1 <sup>1</sup> / <sub>4</sub>	15.475	.070	393.07	1.78				16.000	15.544	15.532	15.956	15.968	15.500	
461	16 x 16 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>4</sub>	15.955	.075	405.26	1.90				16.500	16.044		16.456		16.000	
462	16 <sup>1</sup> / <sub>2</sub> x 17 x 1 <sup>1</sup> / <sub>4</sub>	16.455	.075	417.96	1.90				17.000	16.544		16.956		16.500	
463	17 x 17 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>4</sub>	16.955	.080	430.66	2.05				17.500	17.044		17.456		17.000	
464	17 <sup>1</sup> / <sub>2</sub> x 18 x 1 <sup>1</sup> / <sub>4</sub>	17.455	.085	443.36	2.15				18.000	17.544		17.956		17.500	
465	18 x 18 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>4</sub>	17.955	.085	456.06	2.15				18.500	18.044		18.456		18.000	
466	18 <sup>1</sup> / <sub>2</sub> x 19 x 1 <sup>1</sup> / <sub>4</sub>	18.455	.085	468.76	2.15				19.000	18.544		18.956		18.500	
467	19 x 19 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>4</sub>	18.955	.090	481.46	2.25				19.500	19.044		19.456		19.000	
468	19 <sup>1</sup> / <sub>2</sub> x 20 x 1 <sup>1</sup> / <sub>4</sub>	19.455	.090	494.16	2.25				20.000	19.544		19.956		19.500	
469	20 x 20 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>4</sub>	19.955	.090	506.86	2.25				20.500	20.044		20.456		20.000	
470	21 x 21 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>4</sub>	20.955	.090	532.26	2.25				21.500	21.044		21.456		21.000	
471	22 x 22 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>4</sub>	21.955	.100	557.66	2.55				22.500	22.044		22.456		22.000	
472	23 x 23 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>4</sub>	22.940	.105	582.68	2.65				23.500	23.044		23.456		23.000	
473	24 x 24 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>4</sub>	23.940	.110	608.08	2.80				24.500	24.044		24.456		24.000	
474	25 x 25 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>4</sub>	24.940	.115	633.48	2.90				25.500	25.044		25.456		25.000	
475	26 x 26 <sup>1</sup> / <sub>2</sub> x 1 <sup>1</sup> / <sub>4</sub>	25.940	.120	658.88	3.05				26.500	26.044		26.456		26.000	

Only sizes marked \* are suitable for dynamic applications.

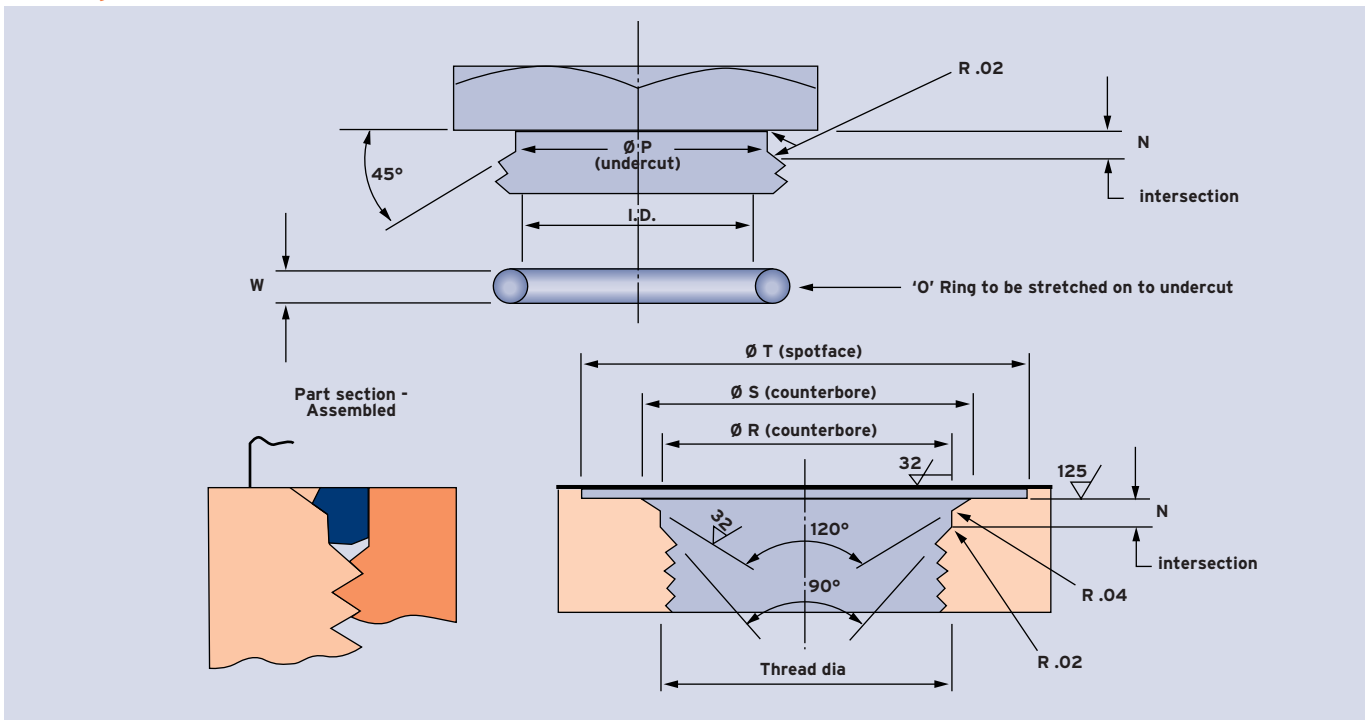
# 'O' Rings for Pipe Fittings

(inch sizes only)

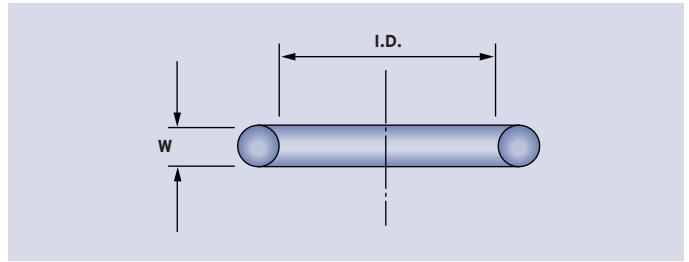


Part No.	Nom Ø Thread	Nom O.D. Pipe	'O' Ring Dimensions		Ø P	Ø N	Ø R	Ø S	Ø T
			Inside Ø (I.D.)	Cross Section W					
901	.250	.093	.185 ± .006	.056 ± .003	-	-	-	-	-
902	.312	.125	.239 ± .006	.064 ± .003	.252	.063	.328	.438	.67
903	.375	.187	.301 ± .006	.064 ± .003	.314	.063	.390	.500	.75
904	.437	.250	.351 ± .007	.072 ± .003	.366	.075	.454	.562	.81
905	.500	.312	.414 ± .007	.072 ± .003	.428	.075	.517	.625	.90
906	.562	.375	.468 ± .007	.078 ± .003	.483	.083	.580	.688	.96
907	.625	.437	.530 ± .007	.082 ± .003	.545	.083	.643	.750	1.03
908	.750	.500	.644 ± .007	.087 ± .003	.662	.094	.769	.875	1.18
909	.812	.562	.706 ± .007	.097 ± .003	.725	.094	.832	.938	1.25
910	.875	.625	.755 ± .009	.097 ± .003	.775	.107	.896	1.000	1.34
911	1.000	.687	.863 ± .009	.116 ± .004	.884	.125	1.023	1.156	1.55
912	1.062	.750	.924 ± .009	.116 ± .004	.947	.125	1.086	1.234	1.61
913	1.125	.812	.986 ± .009	.116 ± .004	-	-	-	-	-
914	1.187	.875	1.048 ± .010	.116 ± .004	1.072	.125	1.211	1.362	1.75
916	1.312	1.000	1.171 ± .010	.116 ± .004	1.197	.125	1.336	1.487	1.91
918	1.500	1.125	1.355 ± .012	.116 ± .004	1.384	.125	1.524	1.675	2.04
920	1.625	1.250	1.475 ± .014	.118 ± .004	1.509	.125	1.648	1.800	2.17
924	1.875	1.500	1.720 ± .014	.118 ± .004	1.758	.125	1.898	2.050	2.38
928	2.250	1.750	2.090 ± .018	.118 ± .004	2.133	.125	2.273	2.425	2.86
932	2.500	2.000	2.337 ± .018	.118 ± .004	2.383	.125	2.524	2.675	3.17

## Housing data for inch unified standard threads (UNF)



# 'O' Ring Size Chart BS4518 Metric Range

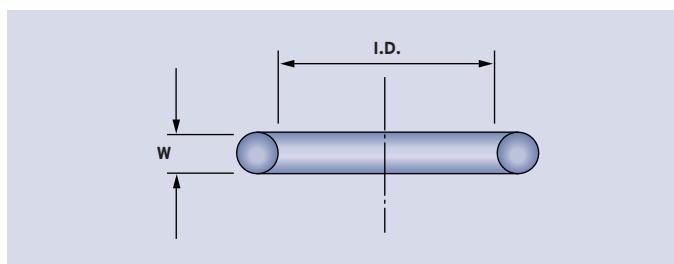


Part No.	Inside Diameter		Cross Section		Part No.	Inside Diameter		Cross Section				
	ID	±	W	±		ID	±	W	±			
0031-16	3.1	0.15	1.6	0.08	0396-24	39.6	0.30	2.4	0.08			
0041-16	4.1											
0051-16	5.1											
0061-16	6.1											
0071-16	7.1											
0081-16	8.1											
0091-16	9.1											
0101-16	10.1	0.20	1.6	0.08	0516-24	51.6	0.40	2.4	0.08			
0111-16	11.1											
0121-16	12.1											
0131-16	13.1											
0141-16	14.1											
0151-16	15.1											
0161-16	16.1											
0171-16	17.1											
0181-16	18.1	0.25	1.6	0.08	0195-30	19.5	0.25	2.4	0.08			
0191-16	19.1											
0221-16	22.1											
0251-16	25.1											
0271-16	27.1											
0291-16	29.1											
0321-16	32.1	0.30	1.6	0.08	0215-30	21.5	0.30	2.4	0.10			
0351-16	35.1											
0371-16	37.1											
0036-24	3.6	0.15	1.6	0.08	0225-30	22.5				0.30	2.4	0.10
0046-24	4.6											
0056-24	5.6											
0066-24	6.6											
0076-24	7.6											
0086-24	8.6											
0096-24	9.6											
0106-24	10.6	0.20	2.4	0.08	0245-30	24.5	0.40	2.4	0.10			
0116-24	11.6											
0126-24	12.6											
0136-24	13.6											
0146-24	14.6											
0156-24	15.6											
0166-24	16.6											
0176-24	17.6											
0186-24	18.6	0.25	2.4	0.08	0255-30	25.5	0.50	2.4	0.10			
0196-24	19.6											
0216-24	21.6											
0246-24	24.6											
0276-24	27.6											
0296-24	29.6											
0316-24	31.6	0.30	2.4	0.08	0265-30	26.5	0.60	2.4	0.10			
0346-24	34.6											
0376-24	37.6											
					0275-30	27.5				0.60	2.4	0.10
					0295-30	29.5						
					0315-30	31.5						
					0325-30	32.5						
					0345-30	34.5						
					0355-30	35.5	0.30	2.4	0.10			
					0365-30	36.5						
					0375-30	37.5						
					0395-30	39.5						
					0415-30	41.5						
					0425-30	42.5	0.40	2.4	0.10			
					0445-30	44.5						
					0495-30	49.5						
					0545-30	54.5						
					0595-30	59.5						
					0645-30	64.5	0.50	2.4	0.10			
					0695-30	69.5						
					0745-30	74.5						
					0795-30	79.5						
					0845-30	84.5						
					0895-30	89.5	0.60	2.4	0.10			
					0945-30	94.5						
					0995-30	99.5						
					1045-30	104.5						
					1095-30	109.5						
					1145-30	114.5	0.60	2.4	0.10			
					1195-30	119.5						
					1245-30	124.5						
					1295-30	129.5						

# 'O' Ring Size Chart

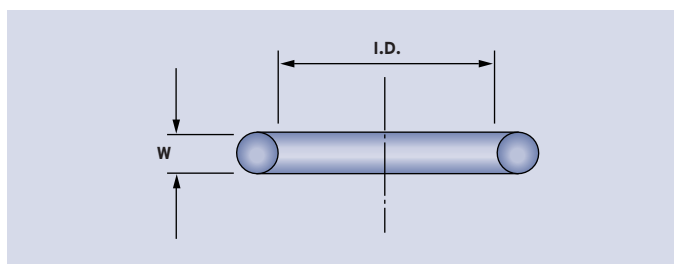
## BS4518

### Metric Range



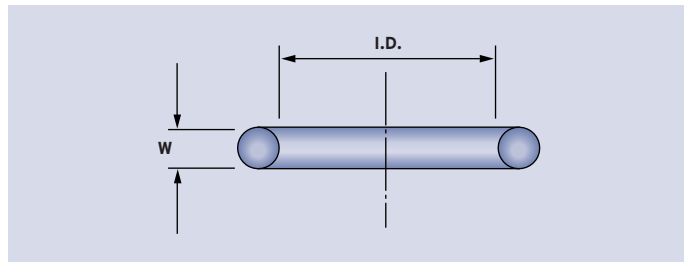
Part No.	Inside Diameter		Cross Section		Part No.	Inside Diameter		Cross Section							
	ID	±	W	±		ID	±	W	±						
1345-30	134.5	0.60	3.0	0.10	1693-57	169.3	0.60	5.7	0.12						
1395-30	139.5				1743-57	174.3									
1445-30	144.5				1793-57	179.3									
1495-30	149.5				1843-57	184.3									
1545-30	154.5				1893-57	189.3									
1595-30	159.5				1943-57	194.3									
1645-30	164.5				1993-57	199.3									
1695-30	169.5				2093-57	209.3									
1745-30	174.5				2193-57	219.3									
1795-30	179.5				2293-57	229.3									
1845-30	184.5	0.80	5.7	0.12	2393-57	239.3	1.0	5.7	0.12						
1895-30	189.5				2493-57	249.3									
1945-30	194.5				2593-57	259.3									
1995-30	199.5				2693-57	269.3									
2095-30	209.5				2793-57	279.3									
2195-30	219.5				2893-57	289.3									
2295-30	229.5				2993-57	299.3									
2395-30	239.5				3193-57	319.3									
2495-30	249.5				3393-57	339.3									
0443-57	44.3				0.30	5.7				0.12	3593-57	359.3	1.5	5.7	0.12
0453-57	45.3	3793-57	379.3												
0493-57	49.3	3993-57	399.3												
0523-57	52.3	0.40	5.7	0.12	4193-57	419.3	2.0	5.7	0.12						
0543-57	54.3				4393-57	439.3									
0553-57	55.3				4593-57	459.3									
0593-57	59.3				4793-57	479.3									
0623-57	62.3				4993-57	499.3									
0643-57	64.3				1441-84	144.1									
0693-57	69.3				1491-84	149.1									
0743-57	74.3				1541-84	154.1									
0793-57	79.3				1591-84	159.1									
0843-57	84.3				0.50	5.7				0.12	1641-84	164.1	0.60	5.7	0.12
0893-57	89.3	1741-84	174.1												
0943-57	94.3	1791-84	179.1												
0993-57	99.3	1841-84	184.1												
1043-57	104.3	1891-84	189.1												
1093-57	109.3	1941-84	194.1												
1143-57	114.3	1991-84	199.1												
1193-57	119.3	2041-84	204.1												
1243-57	124.3	0.60	5.7	0.12			2091-84	209.1	0.80		5.7	0.12			
1293-57	129.3						2191-84	219.1							
1343-57	134.3				2291-84	229.1									
1393-57	139.3				2341-84	234.1									
1443-57	144.3				2391-84	239.1									
1493-57	149.3				2491-84	249.1									
1543-57	154.3														
1593-57	159.3														
1643-57	164.3														

# 'O' Ring Size Chart Metric Range



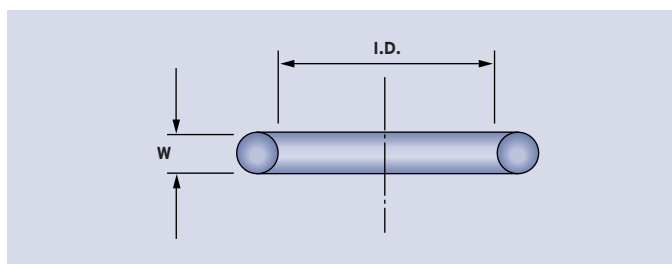
Part No.	Inside Diameter		Cross Section		Part No.	Inside Diameter		Cross Section							
	ID	±	W	±		ID	±	W	±						
0020-10	2.0	0.15	1.0	0.08	0090-15	9.0	0.15	1.5	0.08						
0030-10	3.0														
0035-10	3.5														
0040-10	4.0														
0050-10	5.0														
0060-10	6.0														
0070-10	7.0														
0080-10	8.0														
0090-10	9.0														
0100-10	10.0														
0110-10	11.0	0.20	1.0	0.08	0110-15	11.0	0.20	1.5	0.08						
0120-10	12.0														
0130-10	13.0														
0140-10	14.0														
0150-10	15.0														
0160-10	16.0														
0170-10	17.0														
0180-10	18.0														
0190-10	19.0	0.25	1.0	0.08	0190-15	19.0	0.25	1.5	0.08						
0200-10	20.0														
0210-10	21.0														
0220-10	22.0														
0230-10	23.0														
0240-10	24.0														
0250-10	25.0														
0260-10	26.0														
0270-10	27.0														
0280-10	28.0														
0290-10	29.0														
0300-10	30.0														
0320-10	32.0	0.3	1.0	0.08	0310-15	31.0	0.33	1.5	0.08						
0330-10	33.0														
0340-10	34.0														
0370-10	37.0														
0380-10	38.0														
0390-10	39.0														
0400-10	40.0														
0410-15	41.0				0.42	1.5				0.08	0360-15	36.0	0.38	1.5	0.08
0420-15	42.0														
0430-15	43.0														
0440-15	44.0														
0450-15	45.0														
0460-15	46.0														
0470-15	47.0														
0480-15	48.0														
0490-15	49.0														
0500-15	50.0														
0510-15	51.0	0.54	1.5	0.08	0510-15	51.0	0.54	1.5	0.08						
0520-15	52.0														
0530-15	53.0														
0020-15	2.0	0.15	1.5	0.08	0510-15	51.0	0.54	1.5	0.08						
0030-15	3.0														
0035-15	3.5														
0040-15	4.0														
0050-15	5.0														
0060-15	6.0														
0070-15	7.0														
0080-15	8.0														

# 'O' Ring Size Chart Metric Range



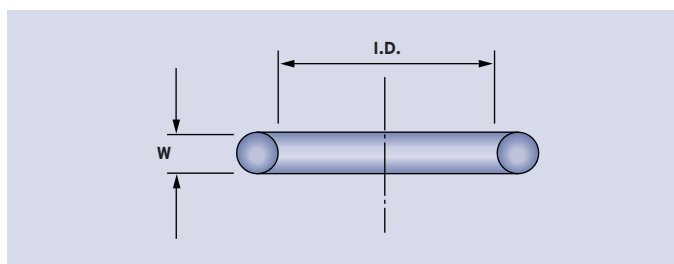
Part No.	Inside Diameter		Cross Section		Part No.	Inside Diameter		Cross Section	
	ID	±	W	±		ID	±	W	±
0540-15	54.0	0.54	1.5	0.08	0230-20	23.0	0.25	2.0	0.08
0550-15	55.0								
0560-15	56.0								
0570-15	57.0								
0580-15	58.0								
0590-15	59.0								
0600-15	60.0								
0650-15	65.0	0.65	1.5	0.08	0260-20	26.0	0.28	2.0	0.08
0700-15	70.0								
0750-15	75.0								
0800-15	80.0								
0850-15	85.0	0.84	1.5	0.08	0310-20	31.0	0.33	2.0	0.08
0900-15	90.0								
0950-15	95.0								
1000-15	100.0								
0026-19	2.6	0.15	1.9	0.08	0360-20	36.0	0.38	2.0	0.08
0034-19	3.4								
0042-19	4.2								
0049-19	4.9								
0057-19	5.7								
0064-19	6.4								
0072-19	7.2								
0080-19	8.0								
0089-19	8.9								
0020-20	2.0				0.15	1.9	0.08		
0030-20	3.0								
0040-20	4.0								
0050-20	5.0								
0060-20	6.0								
0070-20	7.0								
0080-20	8.0								
0090-20	9.0								
0100-20	10.0								
0110-20	11.0	0.20	2.0	0.08				0420-20	42.0
0120-20	12.0								
0130-20	13.0								
0140-20	14.0								
0150-20	15.0								
0160-20	16.0								
0170-20	17.0								
0180-20	18.0								
0190-20	19.0	0.25	2.0	0.08	0430-20	43.0	0.65	2.0	0.08
0200-20	20.0								
0210-20	21.0								
0220-20	22.0								
					0440-20	44.0	0.65	2.0	0.08
					0450-20	45.0			
					0460-20	46.0			
					0470-20	47.0			
					0480-20	48.0	0.65	2.0	0.08
					0490-20	49.0			
					0500-20	50.0			
					0510-20	51.0			
					0520-20	52.0	0.65	2.0	0.08
					0530-20	53.0			
					0540-20	54.0			
					0550-20	55.0			
					0560-20	56.0	0.65	2.0	0.08
					0570-20	57.0			
					0580-20	58.0			
					0590-20	59.0			
					0600-20	60.0	0.65	2.0	0.08
					0610-20	61.0			
					0620-20	62.0			
					0630-20	63.0			
					0640-20	64.0	0.65	2.0	0.08
					0650-20	65.0			
					0660-20	66.0			
					0670-20	67.0			

# 'O' Ring Size Chart Metric Range



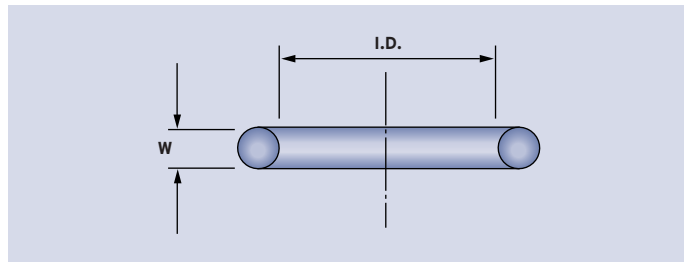
Part No.	Inside Diameter		Cross Section		Part No.	Inside Diameter		Cross Section	
	ID	±	W	±		ID	±	W	±
0680-20	68.0	0.65	2.0	0.08	0220-25	22.0	0.25	2.5	0.08
0690-20	69.0								
0700-20	70.0								
0710-20	71.0								
0720-20	72.0								
0730-20	73.0								
0740-20	74.0								
0750-20	75.0								
0760-20	76.0								
0780-20	78.0								
0790-20	79.0								
0800-20	80.0								
0820-20	82.0	0.84	2.0	0.08	0260-25	26.0	0.28	2.5	0.08
0830-20	83.0								
0840-20	84.0								
0850-20	85.0								
0860-20	86.0								
0870-20	87.0								
0880-20	88.0								
0900-20	90.0								
0920-20	92.0								
0930-20	93.0								
0940-20	94.0								
0960-20	96.0								
0980-20	98.0								
1000-20	100.0								
0030-25	3.0	0.15	2.5	0.08	0310-25	31.0	0.33	2.5	0.08
0040-25	4.0								
0050-25	5.0								
0060-25	6.0								
0070-25	7.0								
0080-25	8.0								
0090-25	9.0								
0100-25	10.0								
0110-25	11.0								
0120-25	12.0								
0130-25	13.0	0.20	2.5	0.08	0320-25	32.0	0.38	2.5	0.08
0140-25	14.0								
0150-25	15.0								
0160-25	16.0								
0170-25	17.0								
0180-25	18.0								
0190-25	19.0								
0200-25	20.0								
0210-25	21.0								
		0.25	2.5	0.08	0330-25	33.0	0.42	2.5	0.08
		0.54	2.5	0.08	0340-25	34.0	0.42	2.5	0.08
		0.65	2.5	0.08	0350-25	35.0	0.42	2.5	0.08
		0.65	2.5	0.08	0360-25	36.0	0.42	2.5	0.08
		0.65	2.5	0.08	0370-25	37.0	0.42	2.5	0.08
		0.65	2.5	0.08	0380-25	38.0	0.42	2.5	0.08
		0.65	2.5	0.08	0390-25	39.0	0.42	2.5	0.08
		0.65	2.5	0.08	0400-25	40.0	0.42	2.5	0.08
		0.65	2.5	0.08	0410-25	41.0	0.42	2.5	0.08
		0.65	2.5	0.08	0420-25	42.0	0.42	2.5	0.08
		0.65	2.5	0.08	0430-25	43.0	0.42	2.5	0.08
		0.65	2.5	0.08	0440-25	44.0	0.42	2.5	0.08
		0.65	2.5	0.08	0450-25	45.0	0.42	2.5	0.08
		0.65	2.5	0.08	0460-25	46.0	0.42	2.5	0.08
		0.65	2.5	0.08	0470-25	47.0	0.42	2.5	0.08
		0.65	2.5	0.08	0480-25	48.0	0.42	2.5	0.08
		0.65	2.5	0.08	0490-25	49.0	0.42	2.5	0.08
		0.65	2.5	0.08	0500-25	50.0	0.42	2.5	0.08
		0.65	2.5	0.08	0510-25	51.0	0.42	2.5	0.08
		0.65	2.5	0.08	0520-25	52.0	0.42	2.5	0.08
		0.65	2.5	0.08	0530-25	53.0	0.42	2.5	0.08
		0.65	2.5	0.08	0540-25	54.0	0.42	2.5	0.08
		0.65	2.5	0.08	0550-25	55.0	0.42	2.5	0.08
		0.65	2.5	0.08	0560-25	56.0	0.42	2.5	0.08
		0.65	2.5	0.08	0570-25	57.0	0.42	2.5	0.08
		0.65	2.5	0.08	0580-25	58.0	0.42	2.5	0.08
		0.65	2.5	0.08	0590-25	59.0	0.42	2.5	0.08
		0.65	2.5	0.08	0600-25	60.0	0.42	2.5	0.08
		0.65	2.5	0.08	0610-25	61.0	0.42	2.5	0.08
		0.65	2.5	0.08	0620-25	62.0	0.42	2.5	0.08
		0.65	2.5	0.08	0630-25	63.0	0.42	2.5	0.08
		0.65	2.5	0.08	0640-25	64.0	0.42	2.5	0.08
		0.65	2.5	0.08	0650-25	65.0	0.42	2.5	0.08
		0.65	2.5	0.08	0660-25	66.0	0.42	2.5	0.08

# 'O' Ring Size Chart Metric Range



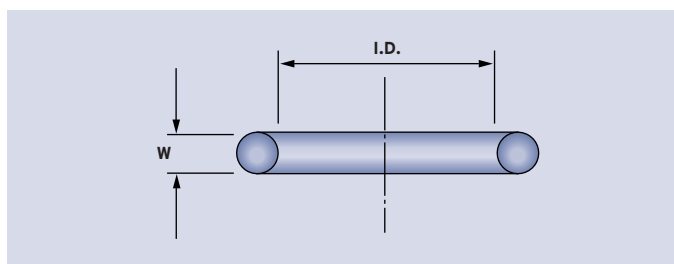
Part No.	Inside Diameter		Cross Section		Part No.	Inside Diameter		Cross Section											
	ID	±	W	±		ID	±	W	±										
0670-25	67.0	0.65	2.5	0.08	0120-30	12.0	0.20	3.0	0.10										
0680-25	68.0																		
0690-25	69.0																		
0700-25	70.0																		
0710-25	71.0																		
0720-25	72.0																		
0730-25	73.0																		
0740-25	74.0																		
0750-25	75.0																		
0760-25	76.0																		
0770-25	77.0																		
0780-25	78.0																		
0790-25	79.0																		
0800-25	80.0																		
0850-25	85.0				0.84	2.5				0.08	0190-30	19.0	0.25	3.0	0.10				
0900-25	90.0																		
0950-25	95.0																		
1000-25	100.0																		
1050-25	105.0	0.95	2.5	0.08	0200-30		20.0	0.28	3.0		0.10								
1100-25	110.0																		
1150-25	115.0																		
1200-25	120.0	1.20			2.5		0.08	0210-30				21.0	0.33			3.0	0.10		
1250-25	125.0																		
1300-25	130.0																		
1350-25	135.0																		
1400-25	140.0																		
1450-25	145.0																		
1500-25	150.0																		
0089-27	8.9	0.15						2.7				0.08	0220-30					22.0	0.38
0105-27	10.5	0.20				2.7				0.08			0230-30	23.0					
0121-27	12.1																		
0136-27	13.6																		
0151-27	15.1																		
0169-27	16.9																		
0184-27	18.4																		
0294-27	29.4																		
0030-30	3.0		0.15	3.0	0.10		0300-30	30.0	0.42		3.0	0.10							
0040-30	4.0																		
0050-30	5.0																		
0060-30	6.0																		
0070-30	7.0																		
0080-30	8.0																		
0090-30	9.0																		
0100-30	10.0																		
0110-30	11.0																		
020	20.0	0.20				3.0	0.10	0310-30		31.0			0.54	3.0	0.10				
021	21.0																		
022	22.0																		
023	23.0																		
024	24.0																		
025	25.0																		
026	26.0																		
027	27.0																		
028	28.0																		
029	29.0																		
030	30.0																		
031	31.0	0.20	3.0	0.10	0320-30	32.0	0.54	3.0	0.10										
032	32.0																		
033	33.0																		
034	34.0																		
035	35.0																		
036	36.0																		
037	37.0																		
038	38.0																		
039	39.0																		
040	40.0																		
041	41.0																		
042	42.0	0.20	3.0	0.10	0330-30	33.0	0.54			3.0	0.10								
043	43.0																		
044	44.0																		
045	45.0																		
046	46.0																		
047	47.0																		
048	48.0																		
049	49.0																		
050	50.0																		
051	51.0																		
052	52.0																		
053	53.0	0.20	3.0	0.10	0340-30	34.0	0.54	3.0	0.10										
054	54.0																		
055	55.0																		
056	56.0																		

# 'O' Ring Size Chart Metric Range



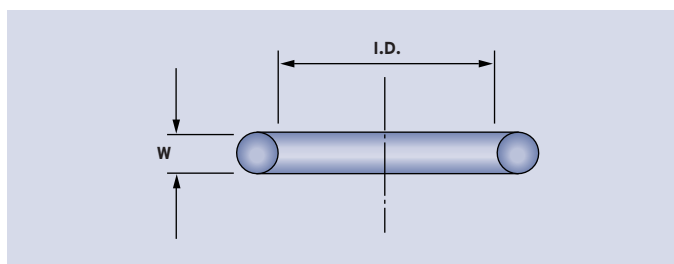
Part No.	Inside Diameter		Cross Section		Part No.	Inside Diameter		Cross Section		
	ID	±	W	±		ID	±	W	±	
0570-30	57.0	0.54	3.0	0.10	1100-30	110.0	0.95	3.0	0.10	
0580-30	58.0				1150-30	115.0	1.20			
0590-30	59.0				1200-30	120.0				
0600-30	60.0				1250-30	125.0				
0610-30	61.0	0.65			1.40	1300-30				130.0
0620-30	62.0					1350-30	135.0			
0630-30	63.0					1400-30	140.0			
0640-30	64.0					1450-30	145.0			
0650-30	65.0				0.84	1.80	1500-30			150.0
0660-30	66.0						1550-30			155.0
0670-30	67.0		1600-30	160.0						
0680-30	68.0		1650-30	165.0						
0690-30	69.0		1700-30	170.0						
0700-30	70.0		0.95	3.5			0.10	1750-30	175.0	
0710-30	71.0	1800-30						180.0		
0720-30	72.0	1850-30						185.0		
0730-30	73.0	1900-30						190.0		
0740-30	74.0	1950-30						195.0		
0750-30	75.0	2000-30			200.0					
0760-30	76.0	2050-30			205.0					
0770-30	77.0	2100-30			210.0					
0780-30	78.0	2150-30			215.0					
0790-30	79.0	2200-30			220.0					
0800-30	80.0	0.20	3.5	0.10	2250-30	225.0				
0810-30	81.0				2300-30	230.0				
0820-30	82.0				2350-30	235.0				
0830-30	83.0				2400-30	240.0				
0840-30	84.0				2450-30	245.0				
0850-30	85.0				2500-30	250.0				
0860-30	86.0				0.25	3.5	0.10	0060-35	6.0	
0870-30	87.0							0080-35	8.0	
0880-30	88.0							0090-35	9.0	
0890-30	89.0							0100-35	10.0	
0990-30	99.0	0110-35	11.0							
1000-30	100.0	0120-35	12.0							
1050-30	105.0	0130-35	13.0							
		0140-35	14.0							
		0150-35	15.0							
		0160-35	16.0							
		0170-35	17.0							
		0180-35	18.0							
		0190-35	19.0							
		0200-35	20.0							
		0210-35	21.0							
		0220-35	22.0							

# 'O' Ring Size Chart Metric Range



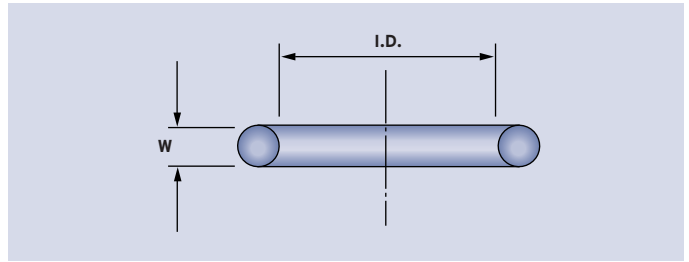
Part No.	Inside Diameter		Cross Section		Part No.	Inside Diameter		Cross Section	
	ID	±	W	±		ID	±	W	±
0230-35	23.0	0.25	3.5	0.10	0246-36	24.6	0.25	4.0	0.10
0240-35	24.0								
0250-35	25.0								
0260-35	25.0	0.28			0293-36	29.3	0.30		
0270-35	27.0								
0280-35	28.0								
0290-35	29.0								
0300-35	30.0								
0320-35	32.0	0.33			0308-36	30.8	0.30		
0340-35	34.0								
0350-35	35.0								
0360-35	36.0	0.38			0040-40	4.0	0.15		
0380-35	38.0								
0390-35	39.0								
0400-35	40.0	0.42			0050-40	5.0			
0420-35	42.0								
0440-35	44.0								
0450-35	45.0								
0460-35	46.0								
0480-35	48.0	0.54	0060-40	6.0					
0500-35	50.0								
0550-35	55.0								
0600-35	60.0								
0650-35	65.0								
0700-35	70.0	0.65	0070-40	7.0					
0750-35	75.0								
0800-35	80.0								
0850-35	85.0	0.84	0080-40	8.0					
0900-35	90.0								
0950-35	95.0								
1000-35	100.0	0.95	0090-40	9.0					
1050-35	105.0								
1100-35	110.0								
1150-35	115.0								
1200-35	120.0								
1250-35	125.0	1.20	0100-40	10.0					
1300-35	130.0								
1350-35	135.0								
1400-35	140.0								
1450-35	145.0								
1500-35	150.0								
0183-36	18.3		0.25	0110-40	11.0				
0198-36	19.8								
0213-36	21.3								
0230-36	23.0								
		0.25	0180-40	18.0					
		0.38	0190-40	19.0					
		0.38	0200-40	20.0					
		0.38	0210-40	21.0					
		0.38	0220-40	22.0					
		0.38	0230-40	23.0					
		0.38	0240-40	24.0					
		0.38	0250-40	25.0					
		0.38	0260-40	26.0					
		0.38	0270-40	27.0					
		0.38	0280-40	28.0					
		0.38	0290-40	29.0					
		0.38	0300-40	30.0					
		0.38	0310-40	31.0					
		0.38	0320-40	32.0					
		0.38	0330-40	33.0					
		0.38	0340-40	34.0					
		0.38	0350-40	35.0					
		0.38	0360-40	36.0					
		0.38	0370-40	37.0					
		0.38	0380-40	38.0					
		0.38	0390-40	39.0					

# 'O' Ring Size Chart Metric Range



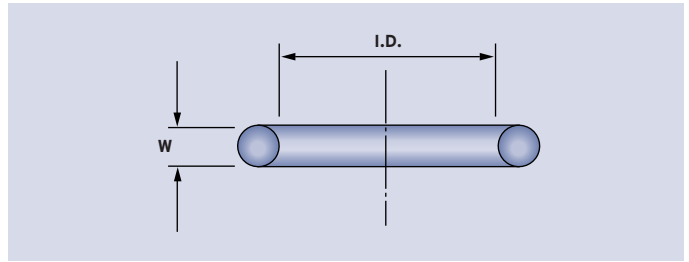
Part No.	Inside Diameter		Cross Section		Part No.	Inside Diameter		Cross Section	
	ID	±	W	±		ID	±	W	±
0400-40	40.0	0.38	4.0	0.10	1900-40	190.0	1.80	4.0	0.10
0410-40	41.0	0.42			1950-40	195.0			
0420-40	42.0				2000-40	200.0			
0430-40	43.0				0060-45	6.0	0.15		
0440-40	44.0				0080-45	8.0			
0450-40	45.0				0090-45	9.0	0.20		
0460-40	46.0				0100-45	10.0			
0470-40	47.0				0110-45	11.0			
0480-40	48.0				0120-45	12.0			
0490-40	49.0				0130-45	13.0			
0500-40	50.0				0150-45	15.0	0.25		
0510-40	51.0	0160-45			16.0				
0520-40	52.0	0170-45			17.0				
0530-40	53.0	0.54			0180-45	18.0	0.28		
0540-40	54.0				0190-45	19.0			
0550-40	55.0				0200-45	20.0			
0560-40	56.0				0210-45	21.0			
0570-40	57.0				0220-45	22.0			
0580-40	58.0				0230-45	23.0			
0590-40	59.0				0240-45	24.0			
0600-40	60.0		0250-45	25.0					
0650-40	65.0		0.65	0260-45	26.0	4.5			
0700-40	70.0			0270-45	27.0				
0750-40	75.0	0280-45		28.0					
0800-40	80.0	0.84	0290-45	29.0					
0850-40	85.0		0300-45	30.0					
0900-40	90.0		0310-45	31.0					
0950-40	95.0		0320-45	32.0					
1000-40	100.0		0330-45	33.0					
1050-40	105.0	0.95	0340-45	34.0	0.33				
1100-40	110.0		0350-45	35.0					
1150-40	115.0		0360-45	36.0					
1200-40	120.0	1.20	0380-45	38.0					
1250-40	125.0		0400-45	40.0					
1300-40	130.0		0420-45	42.0					
1350-40	135.0		0440-45	44.0					
1400-40	140.0		0450-45	45.0					
1450-40	145.0	1.40	0500-45	50.0		0.42			
1500-40	150.0		0600-45	60.0					
1600-40	160.0		0650-45	65.0					
1650-40	165.0	0700-45	70.0						
1700-40	170.0	1.80	0750-45	75.0					
1750-40	175.0		0800-45	80.0					
1800-40	180.0	0.84	0850-45	85.0					
1850-40	185.0		0900-45	90.0					

# 'O' Ring Size Chart Metric Range



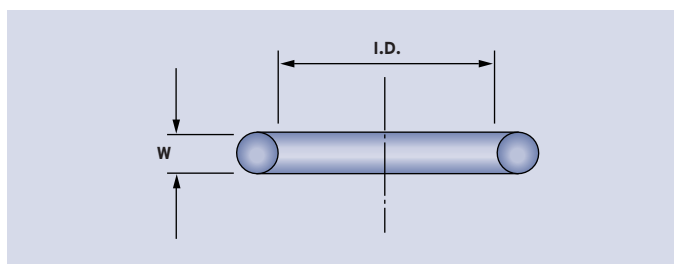
Part No.	Inside Diameter		Cross Section		Part No.	Inside Diameter		Cross Section	
	ID	±	W	±		ID	±	W	±
0950-45	95.0	0.84	4.5	0.13	0390-50	39.0	0.38	5.0	0.13
1000-45	100.0	0.95			0400-50	40.0	0.42		
1050-45	105.0				0410-50	41.0			
1100-45	110.0				0420-50	42.0			
1150-45	115.0				0430-50	43.0			
1200-45	120.0				0440-50	44.0			
1300-45	130.0	1.20			0450-50	45.0	0.54		
1350-45	135.0				0460-50	46.0			
1400-45	140.0				0470-50	47.0			
1500-45	150.0				0480-50	48.0			
			0490-50	49.0					
0040-50	4.0	0.15	0500-50	50.0	5.0	0.13			
0050-50	5.0		0510-50	51.0					
0060-50	6.0		0520-50	52.0					
0070-50	7.0		0530-50	53.0					
0080-50	8.0		0540-50	54.0					
0090-50	9.0		0.20	0550-50			55.0	0.65	
0100-50	10.0			0560-50			56.0		
0110-50	11.0			0570-50			57.0		
0120-50	12.0			0580-50			58.0		
0130-50	13.0			0590-50			59.0		
0140-50	14.0	0.25	0600-50	60.0	0.84				
0150-50	15.0		0650-50	65.0					
0160-50	16.0		0700-50	70.0					
0170-50	17.0		0750-50	75.0					
0180-50	18.0		0800-50	80.0					
0190-50	19.0	0.28	0850-50	85.0	0.95				
0200-50	20.0		0900-50	90.0					
0210-50	21.0		0950-50	95.0					
0220-50	22.0		1000-50	100.0					
0230-50	23.0		0.33	1050-50		105.0	1.20		
0240-50	24.0	1100-50		110.0					
0250-50	25.0	1150-50		115.0					
0260-50	26.0	1200-50		120.0					
0270-50	27.0	0.38		1250-50	125.0	1.40			
0280-50	28.0		1300-50	130.0					
0290-50	29.0		1350-50	135.0					
0300-50	30.0		1400-50	140.0					
0310-50	31.0		1450-50	145.0					
0320-50	32.0	0.38	1500-50	150.0	1.40				
0330-50	33.0		1550-50	155.0					
0340-50	34.0		1600-50	160.0					
0350-50	35.0		1650-50	165.0					
0360-50	36.0		1700-50	170.0					
0370-50	37.0	0.38	1750-50	175.0					
0380-50	38.0								

# 'O' Ring Size Chart Metric Range



Part No.	Inside Diameter		Cross Section		Part No.	Inside Diameter		Cross Section				
	ID	±	W	±		ID	±	W	±			
1800-50	180.0	1.80	5.0	0.13	1000-60	100.0	0.84	6.0	0.15			
1850-50	185.0											
1900-50	190.0											
1950-50	195.0											
2000-50	200.0											
2050-50	205.0											
2100-50	210.0											
2150-50	215.0											
2200-50	220.0											
2250-50	225.0											
2300-50	230.0											
2350-50	235.0											
2400-50	240.0											
2450-50	245.0											
2500-50	250.0											
0100-60	10.0				0.15	6.0	0.15			1050-60	105.0	0.95
0110-60	11.0	0.20	1100-60	110.0	0.95							
0120-60	12.0		1150-60	115.0	1.20							
0130-60	13.0		1200-60	120.0	1.40							
0140-60	14.0		1250-60	125.0								
0150-60	15.0		1300-60	130.0								
0160-60	16.0		1350-60	135.0								
0170-60	17.0		1.80	1400-60	140.0			6.0	0.15			
0180-60	18.0			1450-60	145.0							
0190-60	19.0	0.25	1500-60	150.0	1.40							
0200-60	20.0		1550-60	155.0						1.80		
0210-60	21.0		1600-60	160.0								
0220-60	22.0		1650-60	165.0								
0230-60	23.0		0.25	1700-60							170.0	7.0
0240-60	24.0			1750-60						175.0		
0250-60	25.0			1800-60						180.0		
0300-60	30.0			1850-60						185.0		
0350-60	35.0			1900-60	190.0							
0400-60	40.0			1950-60	195.0							
0450-60	45.0	2000-60		200.0								
0500-60	50.0	0.25		0250-70	25.0	0.25						
0550-60	55.0			0.28	0260-70	26.0	7.0			0.18		
0600-60	60.0			0.33	0270-70	27.0						
0650-60	65.0		0.38	0280-70	28.0							
0700-60	70.0		0.42	0300-70	30.0							
0750-60	75.0		0.42	0320-70	32.0							
0800-60	80.0		0.38	0340-70	34.0							
0850-60	85.0		0.42	0350-70	35.0							
0900-60	90.0		0.54	0400-70	40.0							
0950-60	95.0		0.54	0450-70	45.0							
		0.65	0500-70	50.0	0.38							
			0.65	0550-70	55.0	0.42						
			0.84	0600-70	60.0	0.54						
			0.84	0650-70	65.0	0.65						
				0.84	0700-70	70.0		7.0	0.18			
				0.95	0750-70	75.0						
				0.95	0850-70	85.0						
				0.95	0900-70	90.0						
				0.95	0950-70	95.0						
				0.95	1000-70	100.0						
		0.95		1050-70	105.0							
		0.95		1100-70	110.0							
		0.95		1150-70	115.0							
		0.95	1200-70	120.0								

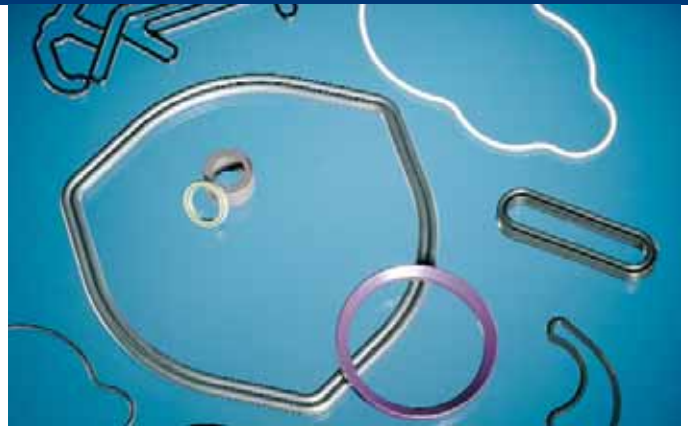
# 'O' Ring Size Chart Metric Range



Part No.	Inside Diameter		Cross Section		Part No.	Inside Diameter		Cross Section				
	ID	±	W	±		ID	±	W	±			
1250-70	125.0	1.20	7.0	0.18	1900-80	190.0	1.80	8.0	0.21			
1300-70	130.0											
1350-70	135.0											
1400-70	140.0											
1450-70	145.0											
1500-70	150.0											
1600-70	160.0				1.40	7.0	0.18	2000-80	200.0	10.0	0.25	
1650-70	165.0											
1700-70	170.0											
1750-70	175.0											
1900-70	190.0	1.80	7.0	0.18				0500-100	50.0			
1950-70	195.0											
2000-70	200.0	0.25	8.0	0.21	0520-100	52.0						
0250-80	25.0				0.25	8.0	0.21	0550-100	55.0			
0260-80	26.0				0.28			0600-100	60.0			
0280-80	28.0				0.33			0650-100	65.0			
0300-80	30.0				0.38			0700-100	70.0			
0350-80	35.0				0.42			0750-100	75.0			
0400-80	40.0				0.54			0800-100	80.0			
0450-80	45.0				0.65			0850-100	85.0			
0500-80	50.0				0.84			0900-100	90.0			
0550-80	55.0				0.95			0950-100	95.0			
0600-80	60.0				1.20			1000-100	100.0			
0650-80	65.0				1.40			1050-100	105.0			
0700-80	70.0				1.80			1100-100	110.0			
0750-80	75.0				0.25			8.0	0.21	1200-100	120.0	
0800-80	80.0											
0850-80	85.0									0.42	1250-100	125.0
0900-80	90.0									0.54	1300-100	130.0
0950-80	95.0									0.65	1350-100	135.0
1000-80	100.0									0.84	1400-100	140.0
1050-80	105.0	0.95	1450-100	145.0								
1100-80	110.0	1.20	1600-100	160.0								
1250-80	125.0	1.40	1650-100	165.0								
1300-80	130.0	1.80	1700-100	170.0								
1400-80	140.0	0.25	8.0	0.21		1800-100	180.0					
1450-80	145.0											
1500-80	150.0					0.42	1850-100			185.0		
1550-80	155.0					0.54	1900-100			190.0		
1600-80	160.0					0.65	1950-100			195.0		
1650-80	165.0					0.84	2000-100			200.0		
1700-80	170.0					1.20						
1750-80	175.0					1.40						
1800-80	180.0					1.80						
1850-80	185.0											

# Special mouldings

An extensive range of mouldings for individual applications is available. Contact your nearest Barnwell Service Centre for expert advice.



# Quality standards

The cost-effective use of 'O'Rings is influenced to a great extent by the definition of quality criteria. The choice of the compound according to the quality characteristics influence the costs and the reliability of use. ISO3601/3-DIN 3771/4 defines permissible form and surface deviations.

Distinctions are made in the table between permissible flaw sizes according to type characteristics.

**Type characteristic N.**

'O'Rings falling under this characteristic meet the

requirements made on a standard quality. They satisfy the demands made on static and dynamic seals.

If no other demands are specified, Barnwell supply 'O'Rings with type characteristic N.

**Type characteristic S.**

'O'Rings falling under type characteristic S are subject to exceptional demands, e.g. for safety relevant components in automobile engineering. The permissible flaw sizes are very limited. This demands a greater process technology and stricter quality control procedures.

Limits for permissible form and surface deviations in accordance with DIN 3771/4

Types of deviation	Cross sections in principle	Size	Type Characteristic N					Type Characteristic S				
			1.8	2.65	3.55	5.3	7.0	1.8	2.65	3.55	5.3	7.0
			d <sub>2</sub> Maximum Size					d <sub>2</sub>				
Offset and form deviations		e	0.08	0.10	0.13	0.15	0.15	0.08	0.08	0.10	0.12	0.13
Bead, burr, offset combined		f	0.10	0.12	0.14	0.16	0.18	0.10	0.10	0.13	0.15	0.15
Notch		g	0.18	0.27	0.36	0.53	0.70	0.10	0.15	0.20	0.20	0.30
		h	0.08	0.08	0.10	0.10	0.13	0.08	0.08	0.10	0.10	0.13
Deburring area		-	Deviations from the round cross section are permissible if the flattening has a smooth transition into the round surface and d <sub>2</sub> is maintained									
Flow lines (radial elongation is not permissible)		j	0.05 x d <sub>1</sub> or <sup>1)</sup>					0.03 x d <sub>1</sub> or <sup>1)</sup>				
		k	1.50	1.50	6.50	6.50	6.50	1.50	1.50	5	5	5
Recesses, distortion		l	0.60	0.80	1.00	1.30	1.70	0.15	0.25	0.40	0.63	1.00
		m	0.08	0.08	0.10	0.10	0.13	0.08	0.08	0.10	0.10	0.13
Foreign particles		-	Not permissible									

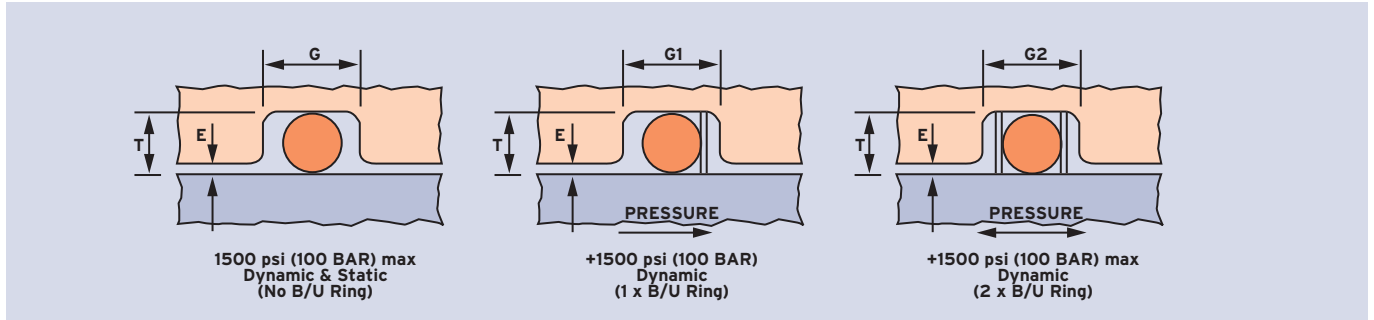
<sup>1)</sup> Depending on which value is larger

# A Guide to Housings

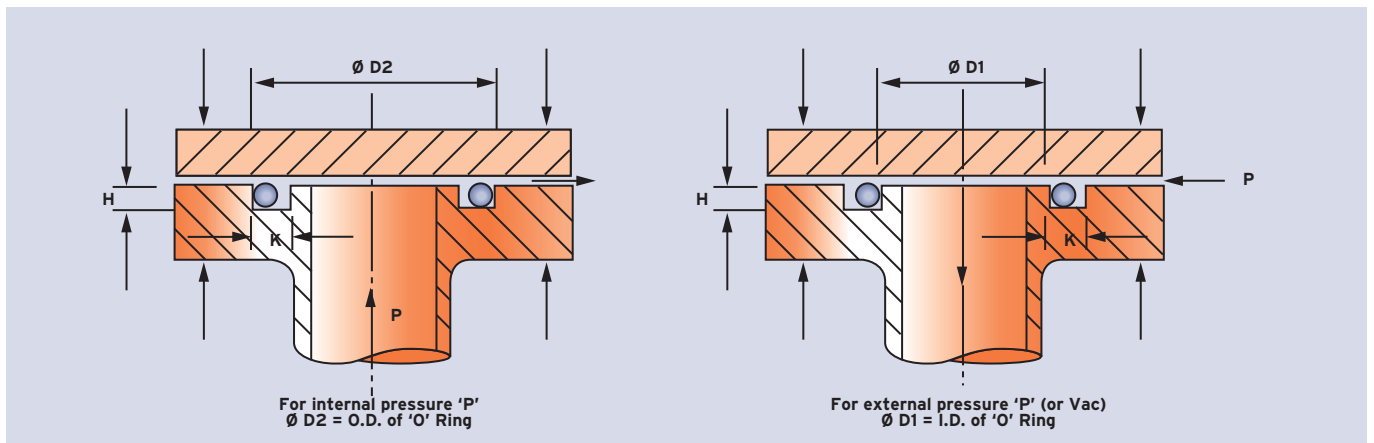
(see page 32 for back-up ring information)

## Groove Dimensions for Radial Sealing (static and dynamic)

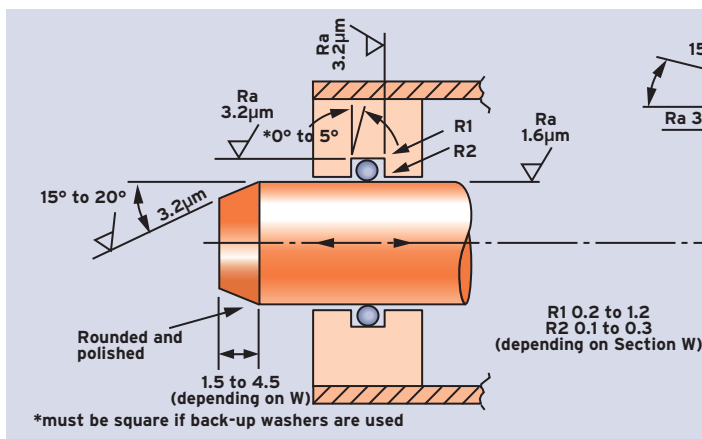
\*only sizes marked thus in this brochure are suitable for dynamic applications. (See BS1806 range)



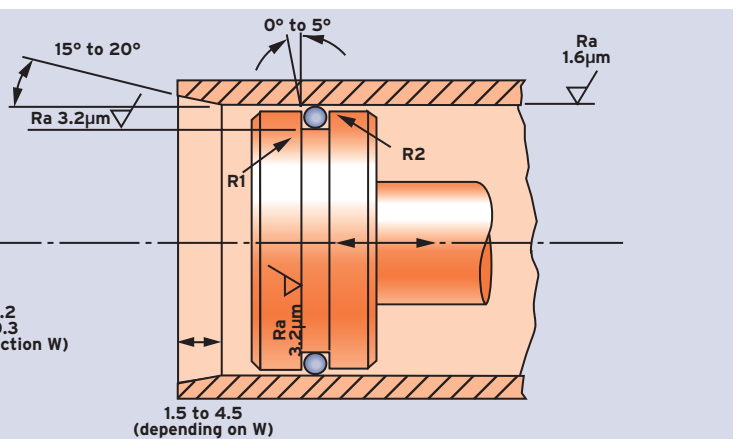
## Groove dimensions for axial sealing (static only)



## Typical Rod Seal



## Typical Piston Seal

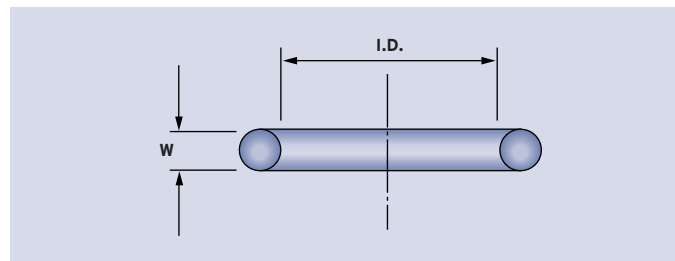


### Note

These housing dimensions and surface finishes will be suitable for the majority of applications regardless of the 'O' Ring material. They generally refer to metal components,

so for other materials such as "plastics" and nylon your own research and experience will be essential in finding the optimum sealing solution.

# Housing Details



See Notes	Section W		Gland Depth T mm	Width G No B-U mm	Width G1 1B-U mm	Width G2 2B-U mm	Radial Gap E mm		Gland Depth H mm	Width K mm
	Ref. ins	mm					70°	90°		
	-	1.0	0.86/0.81	1.6/1.5	-	-	0.05	0.10	0.9/0.8	1.7/1.6
	-	1.5	1.32/1.26	2.2/2.1	-	-	0.05	0.10	1.3/1.2	1.8/1.7
2)	.062	1.6	1.42/1.36	2.5/2.3	3.9/3.7	5.2/5.0	0.05	0.10	1.4/1.3	1.9/1.8
1)	.070	1.78	1.57/1.52	2.5/2.3	3.9/3.7	5.4/5.3	0.05	0.10	1.5/1.3	2.5/2.4
3)	-	1.9	1.64/1.58	2.6/2.4	4.1/3.9	5.6/5.5	0.05	0.10	1.6/1.5	2.6/2.5
	-	2.0	1.79/1.72	2.7/2.6	4.2/4.1	5.7/5.6	0.05	0.10	1.7/1.6	2.9/2.8
2)	-	2.4	2.09/1.97	3.4/3.2	4.8/4.6	6.2/6.0	0.07	0.13	1.8/1.7	3.3/3.2
	-	2.5	2.25/2.17	3.5/3.3	4.8/4.6	6.3/6.2	0.07	0.13	2.1/2.0	3.5/3.3
1)	.103	2.62	2.39/2.31	3.7/3.5	5.1/5.0	6.6/6.5	0.07	0.13	2.3/2.2	3.7/3.5
3)	-	2.7	2.43/2.35	3.7/3.5	5.3/5.1	6.8/6.6	0.07	0.13	2.3/2.2	3.7/3.6
2)	-	3.0	2.65/2.50	4.2/4.0	5.6/5.4	7.0/6.8	0.08	0.13	2.3/2.2	4.6/4.4
1)	.139	3.53	3.18/3.10	4.9/4.7	6.4/6.2	7.9/7.7	0.08	0.15	3.0/2.8	5.0/4.8
3)	-	3.6	3.22/3.12	5.0/4.8	6.5/6.3	7.9/7.7	0.08	0.15	3.1/2.9	5.0/4.8
	-	4.0	3.62/3.52	5.3/5.1	6.8/6.6	8.3/8.1	0.08	0.15	3.4/3.2	5.7/5.5
	-	5.0	4.54/4.42	6.6/6.4	8.4/8.2	10.2/10.0	0.09	0.18	4.3/4.1	6.9/6.7
1)	.210	5.33	4.78/4.67	7.2/7.0	9.0/8.8	10.8/10.6	0.09	0.18	4.5/4.3	7.3/7.1
2)	-	5.7	5.18/4.95	7.7/7.5	9.5/9.3	11.3/11.1	0.09	0.18	4.6/4.4	7.8/7.6
	-	6.0	5.45/5.31	8.0/7.8	9.8/9.6	11.6/11.4	0.09	0.18	5.2/5.0	8.1/7.9
1)	.275	6.99	6.35/6.22	9.6/9.4	12.2/12.0	14.8/14.6	0.10	0.18	6.1/5.9	9.7/9.5
2)	-	8.4	7.75/7.50	11.2/11.0	13.8/13.6	16.4/16.2	0.10	0.20	7.2/7.0	11.5/11.3
	-	10.0	9.10/8.90	14.0/13.8	17.3/17.1	20.6/20.4	0.11	0.20	8.6/8.4	14.3/14.1
	.500	12.7	11.39/11.13	18.8/18.5	22.1/21.8	25.4/25.1	0.13	0.20	10.8/10.5	19.1/18.9

4) 4)

**Notes**





- 1) BS 1806 - Imperial Range
- 2) BS 4518 - Metric Range
- 3) Previously French metric series
- All others now in metric size range.
- 4) 'O'Ring hardness value - SHORE 'A'

## Back-Up Rings

(also called anti-extrusion rings)

The range of products is designed to overcome the extrusion of an 'O'Ring when the system pressure is too great for an unsupported 'O'Ring. Back up rings are usually required on system pressures above 105 bar (1500 psi) or where extrusion gaps are excessive. Four types of back up ring are available.



 <b>BKS</b>	Spiral back up ring; normally manufactured from virgin PTFE. This is the most common style of PTFE ring, being self adjusting to design diametrical tolerances
 <b>BKE</b>	Endless back up ring; normally manufactured from virgin PTFE. Used where problems are possible, as with rotation of screwed end caps, which would cause the spirale type to unwind
 <b>BKE/S</b>	Single turn, split back up ring; manufactured as the BKE, but is split to facilitate ease of assembly in certain applications
 <b>CONTOURED</b>	Supplied unsplit; manufactured from NBR/polyester

## Quadri-Lip Rings



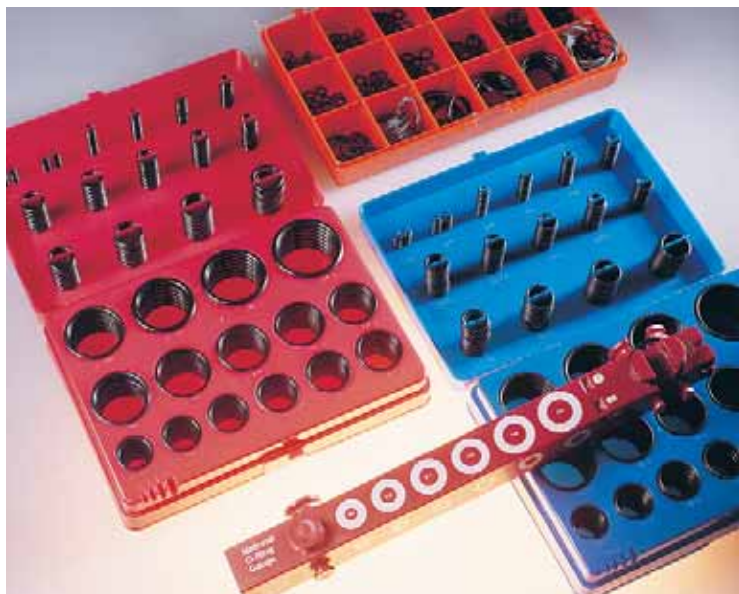
These are similar to conventional 'O'Rings and can be used in both dynamic and static applications. They generally conform in size to the BS 1806 Imperial range and use the same size grooves as the 'O'Rings.

They have several distinct advantages though; in a reciprocating movement found in both piston and rod sealing there is no likelihood of the ring twisting. Lighter radial loads are required and lubrication becomes trapped in the Quadri-Lip profile resulting in lower friction and therefore less wear and longer life. With light pneumatic applications the O.D. and I.D. "flash" present with 'O'Rings can be a problem, resulting in poor performance - this is eliminated with Quadri-Lip rings because the mould parting line is located between the lips and does not affect movement.

Quadri-Lip rings can be successfully used for rotary shaft sealing, providing speeds are low and the shaft surface and lubrication is good.

For static sealing the double lip affect of the Quadri-Lip will prove very beneficial.

## 'O' Ring Sealing Kits



Barnwell Sealing Kits are available in a robust box that contains an assortment of the most popular sizes, essential for either emergency repairs or routine maintenance. Listed below are typical selections that are held in stock and can be supplied at short notice. These kits are ideal for maintenance engineers to provide a quick and reliable choice of sealing solutions to suit the job in hand.

MBK-01N	Imperial range	BS1806	NBR 70	30 sizes
MBK-01V	Imperial range	BS1806	Viton 75	30 sizes
MBK-01S	Imperial range	BS1806	Silicone 70	18 sizes
MBK-02N	Metric range	BS4518	NBR 70	18 sizes
MBK-02V	Metric range	BS4518	Viton 75	18 sizes
MBK-02S	Metric range	BS4518	Silicone 70	18 sizes
MBK-05N	Metric range		NBR 70	30 sizes
MBK-05V	Metric range		Viton 75	30 sizes
MBK-05S	Metric range		Silicone 70	18 sizes
MBG-01	'O' Ring Measuring Gauge	BS1806		

## 'O' Ring Splicing Kits



The Barnwell Splicing Kit contains all the necessary items to produce hand made 'O' Rings for use in static applications, ideal for non-standard sizes or emergency breakdowns.

Each kit contains:

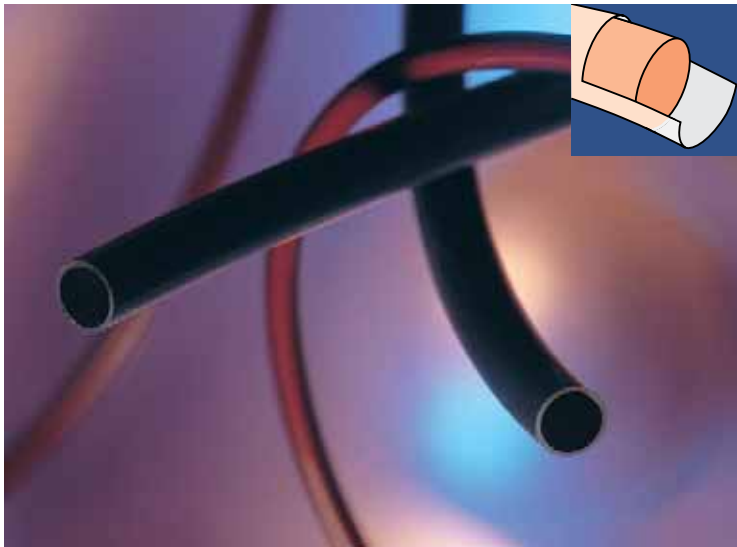
- Metric and Imperial 'O' Ring Cord
- Cyanoacrylate Adhesive
- Splicing Jig
- Tape Measure
- Knife
- Instruction Leaflet

MBSK-1	Splicing kit	Imperial & Metric NBR cord
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Available in a range of different cord materials.

Replacement 'O' Ring cord and adhesive is available separately.

## Encapsulated 'O' Rings



As the name implies these special 'O' Rings have a resilient elastomeric core, usually Viton or Silicone, with a complete seamless covering of a PTFE, FEP or PFA. This results in a seal capable of operating at very high temperatures, (up to +260°C) with outstanding chemical resistance, high pressure capability and the low friction/dry running properties normally associated with PTFE.

FEP (Fluoronated Ethylene Propylene) and PFA (Per Fluoro Alkoxy) have proved to be the most suitable jacket materials, but because of the thickness of this encapsulation care must be taken during assembly to ensure the coating is not over-stretched, resulting in cracking. 2 piece piston assemblies are recommended to avoid any possible damage.

Encapsulated 'O' Rings are available in a wide range of "standard" inch and metric sections.

## 'O' Ring Cord



A wide range of extruded 'O' Ring Cord is available in various materials, including, Nitrile, Viton, Silicone, Neoprene and EPDM, in solid or "sponge" form, to suit virtually any requirement.

