Dichtomatik O-Ring Handbook

DICHTOMATIK

Nu-Seals INCORPORATED

TCM®

THE DICHTOMATIK O-RING HANDBOOK

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Special thanks to the Dichtomatik associates and customers who offered their assistance and expertise in the creation of this handbook.

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DICHTOMATIK
NORTH AMERICA

LETTER FROM THE PRESIDENT

Dear Customers and Friends of Dichtomatik,

In our continuous effort to improve our service to you, we have created this O-Ring Handbook. There are many unique features that can help you select the right Dichtomatik o-ring seal for your application:

- Size listings for the seven dominant international o-ring standards.
- A master size list sorted by cross-section and inside diameter for locating a particular size, with a cross reference to the size standard.
- Chemical compatibility guide with more than 1,100 chemical media and 15 elastomer groups.
- A pictorial o-ring trouble-shooting guide, and many more features.

With our new family members Transcom–Dichtomatik and Nu-Seals–Dichtomatik we have organized Dichtomatik North America to become your true ***One-Stop Shop*** for sealing products. We now offer a broad variety of products including:

- Oil Seals
- O-Rings
- Hydraulic and Fluid Power Seals
- Custom Molded Seals and Parts

Please see Section 8 of this handbook for more details, or call one of our service centers for information on our competitively priced quality sealing products.

We will continue to work hard in serving you in line with our motto **"Any Seal. Any Time."**

Kind Regards,

Jorg Schneewind

President

Please contact Matt Gadlage for additional copies of this handbook, for Dichtomatik o-ring price lists or to offer comments and suggestions.

Call Matt at (734) 354-5552 (9 am–5 pm ET, M–F) or email: mgadlage@dichtomatik.us

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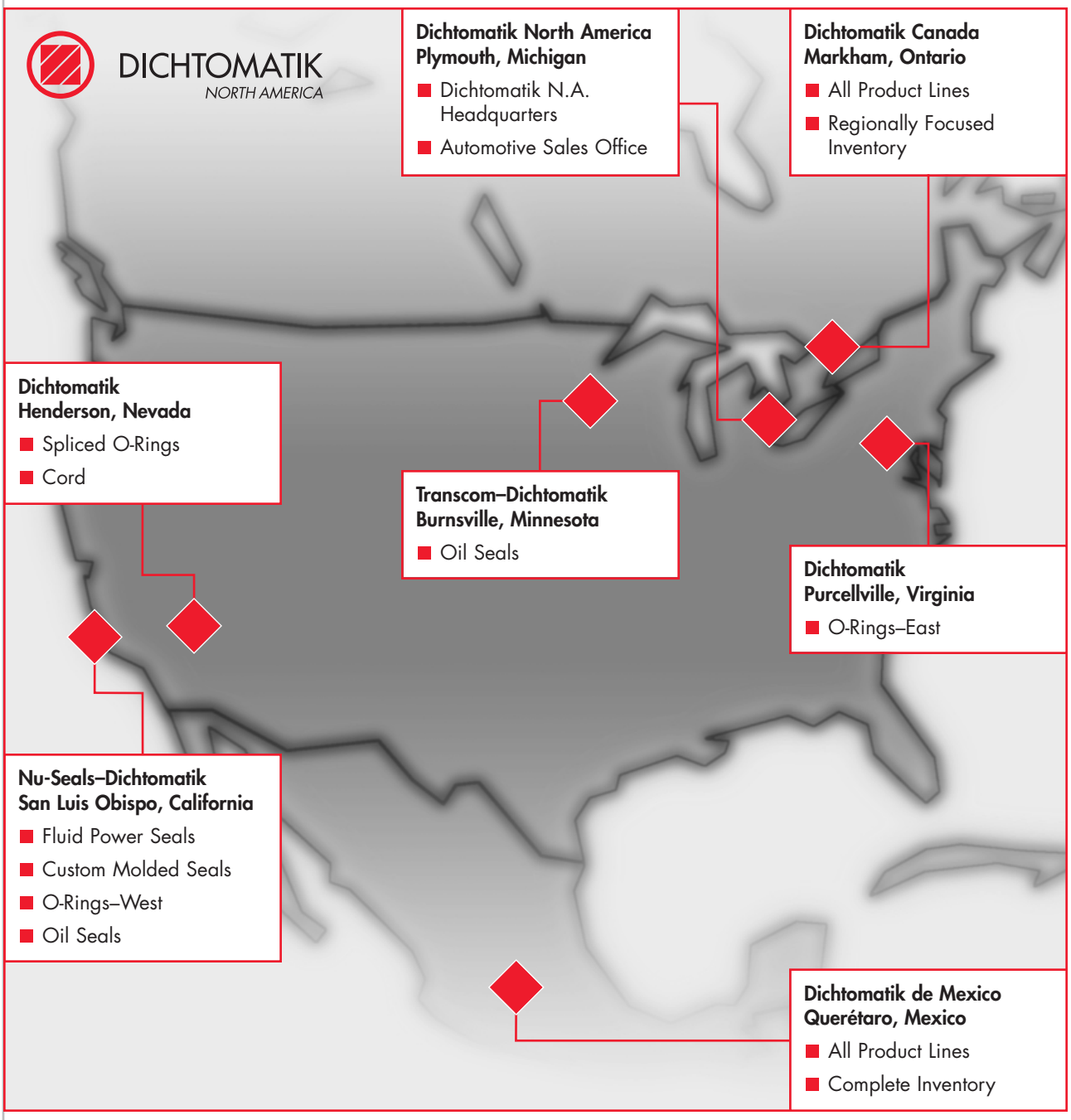


OUR MISSION...

Become the preferred ***One-Stop Shop*** for sealing products in North America by offering the broadest line of quality products combined with the best service and availability in the industry.

OUR GOAL...

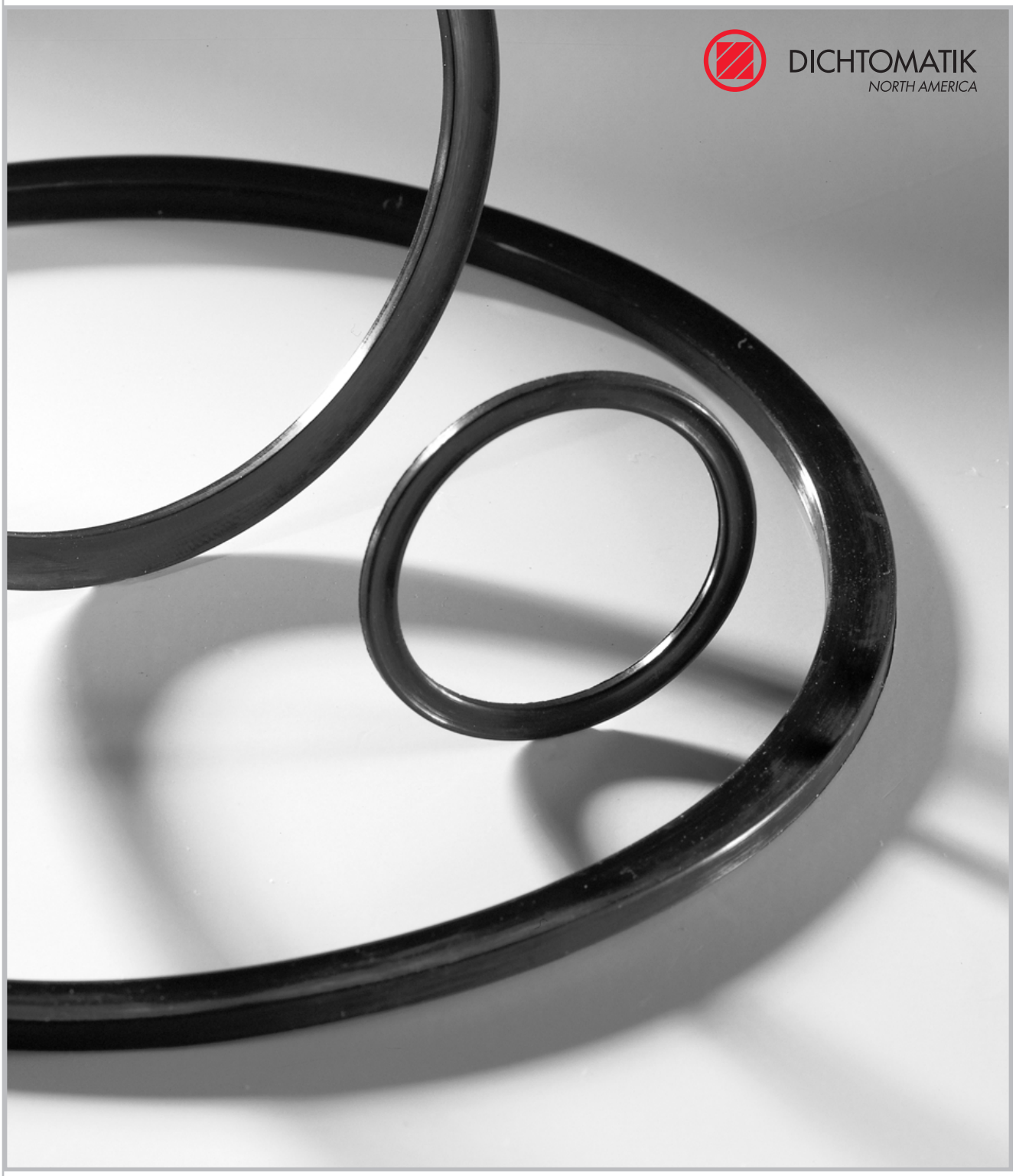
Any Seal. Any Time.

THE O-RING HANDBOOK QUICK INDEX

USING THE QUICK INDEX

To quickly access certain reference sections in the Dichtomatik O-Ring Handbook, locate the section title below, fan the pages of the handbook and turn to the section with edge markings that line up with the section title.

The AS568 Sizes, Master Size List and Chemical Compatibility Guide sections are indicated in red so that they can be found even more easily.


DICHTOMATIK
NORTH AMERICA

SECTION ONE

INTRODUCTION TO THE O-RING HANDBOOK

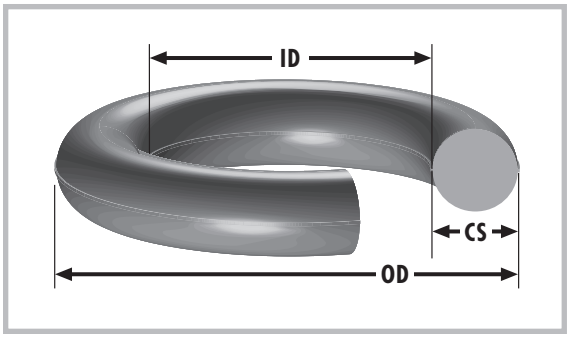
- What Is an O-Ring?
- What Is an O-Ring Seal?
- O-Ring Seal Types
- Organization of the Dichtomatik O-Ring Handbook

INTRODUCTION TO THE DICHTOMATIK O-RING HANDBOOK

WHAT IS AN O-RING?

From a sealing standpoint, two characteristics make an o-ring an o-ring—the shape and the material of construction.

The shape is a circular torus or doughnut-shaped ring (see diagram at right). As can be seen, only two of the three primary dimensions—the inner diameter (ID), the outer diameter (OD) and the cross-section (CS)—are required to completely specify the size of an o-ring.



The materials used in o-rings for sealing are elastomers. Elastomers are synthetic or natural materials with resilience or memory sufficient to return to their original shape after a major or minor distortion. Other materials, such as PTFE, nylon or even metal, can be fashioned into the circular torus shape, but for the purposes of this book, the term o-ring will only be used to describe an elastomeric circular torus.

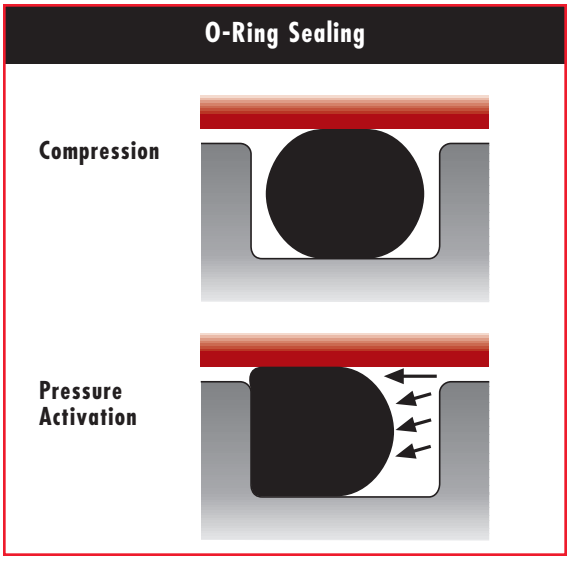
WHAT IS AN O-RING SEAL?

An o-ring seal has two basic components:

- The o-ring
- The enclosed space that both compresses and contains the o-ring

The compression (or more accurately the deformation) of the o-ring provides part of the sealing function. An additional sealing function is realized when the o-ring is activated by the pressure of the gas or liquid that the o-ring serves to contain.

The containment ensures that the sealing function is maintained by keeping the o-ring where it needs to be.



O-RING SEAL TYPES

The majority of o-ring seals can be categorized into one of the three following physical arrangements.

Male Gland Seal

For male gland seals, an o-ring is installed in a groove that is machined into the OD of the "piston." The piston and the installed o-ring are then inserted into the bore. The o-ring seals radially.

Female Gland Seal

With female gland seals, an o-ring is first installed into a groove that is machined into the ID of the bore. The rod is then inserted into the bore through the o-ring. The o-ring seals radially.

Face Seal

For face seals, an o-ring is installed in a groove that is machined into a flat face around a hole. A second flat face then seals against the o-ring. The o-ring seals axially.

Other arrangements, such as triangular seals (see diagram below) or variations on the above three arrangements with dovetail or half-dovetail grooves, are encountered but are much less common. For technical assistance with any of these alternate arrangements, please contact Dichtomatik North America.

Triangular Seal

INTRODUCTION TO THE DICHTOMATIK O-RING HANDBOOK

HOW THIS HANDBOOK IS ORGANIZED

The remainder of this handbook is divided into these eight sections:

Section 2—O-Ring Gland Design Guidelines

Section Two covers basic o-ring seal design guidelines for male gland, female gland and face o-ring seals. This section should serve as an excellent starting point for adding an o-ring seal to an application.

Section 3—Global O-Ring Size Reference Guide

Inch and metric dimensions with tolerances for most major, global o-ring size standards can be found in Section Three. O-rings can be supplied in most of these sizes without a tooling charge. Dichtomatik is also tooled on a large number of non-standard sizes and can certainly make a tool for any size that is required, usually for a very modest tooling charge.

Section 4—O-Ring Sealing Elastomers

This section offers a very brief introduction to the world of sealing elastomers. Volumes have been written on elastomers and new materials are constantly being developed. This section is intended to cover just the basics. For further assistance in selecting an elastomer for your application, please contact Dichtomatik North America.

Section 5—Chemical Compatibility Guide

Section Five offers ratings for several elastomer families when in contact with the listed chemicals and fluids. There is sometimes a great deal of variation in terms of chemical compatibility within an elastomer family, but this guide will serve as a good starting point.

Section 6—Quality Assurance

The quality assurance section deals mostly with surface quality defect standards for o-rings. It also touches on manufacturing quality systems and storage and shelf life recommendations.

Section 7—Troubleshooting & Failure Analysis

Occasionally, problems with an o-ring seal will arise. Section Seven provides an overview of the most common o-ring failure modes and offers possible causes and solutions for each.

Section 8—Other Related Products

Dichtomatik North America can supply a great deal more than o-rings. Section Eight provides an overview of most of the other product lines that are available. Make Dichtomatik your ***One-Stop Shop*** for all of your sealing needs.

Section 9—Technical Reference

Section Nine contains several technical resources that may be useful when dealing with sealing applications.

IMPORTANT NOTE: The information contained in this guide has been accumulated from several industry publications and authorities. At the time of publication all data was accurate to the best of our knowledge. It is the customer's responsibility to verify the accuracy and applicability of all data relevant to the particular application. Additionally, we strongly recommend that the selected seal be tested rigorously in the actual application prior to any production use.

SECTION TWO

O-RING GLAND DESIGN GUIDELINES

- O-Ring Seal Types
- Gland Dimension Calculations
- O-Ring Dimensions
- Selecting an O-Ring Cross-Section
- ID/OD Interference
- Reduction in Cross-Section
- Compression Squeeze and Compression Ratio
- Gland Fill
- Extrusion
- Back-Up Rings
- Additional Groove Details
- Installation

O-RING GLAND DESIGN GUIDELINES

THE O-RING DESIGN GUIDE

This o-ring gland design guide is intended for use in specifying o-ring and gland dimensions for static applications with pressures up to 1500 PSI. For dynamic applications and for pressure greater than 1500 PSI, please contact Dichtomatik North America.

The guidelines are for the nominal condition. The minimum and maximum stack-up conditions should also be checked. This entails evaluating the seal design dimensionally with the largest possible o-ring in the smallest possible gland and the smallest possible o-ring in the largest possible gland.

EXAMPLE: Consider an o-ring with a 1.78±0.08 mm cross-section and a radial o-ring gland with a 1.52±0.10 mm height. The formula for compression ratio (which will be introduced in this guide) is as follows.

Compression Ratio Calculation

$$\text{Compression Ratio} = \frac{\text{O-Ring CS} - \text{Gland Height}}{\text{O-Ring CS}}$$

The acceptable range is 5% to 30%.

Using the nominal values for the compression ratio yields the following result:

Compression ratio at nominal conditions:

$$\frac{1.78\text{ mm} - 1.52\text{ mm}}{1.78\text{ mm}} = 14.6\%\text{ compression}$$

A compression ratio of 14.6% falls within the acceptable range, so based on the nominal measurements, the design is good. Next we need to check the maximum and minimum conditions. The maximum compression ratio occurs when the largest o-ring is in the smallest gland. This calculation is as follows:

Largest possible o-ring in smallest possible gland:

$$\frac{1.86\text{ mm} - 1.42\text{ mm}}{1.86\text{ mm}} = 23.7\%\text{ compression}$$

We then check the minimum compression ratio which occurs with the smallest o-ring in the largest gland. This calculation is as follows:

Smallest possible o-ring in largest possible gland:

$$\frac{1.70\text{ mm} - 1.62\text{ mm}}{1.70\text{ mm}} = 4.7\%\text{ compression}$$

With this design the maximum compression ratio is 23.7% which is within the recommended range. However, the minimum compression ratio is only 4.7% which is not within the acceptable range. In this situation, the design should be modified to ensure that the minimum compression ratio is within the acceptable range or testing should be completed at this minimum condition to ensure that the seal will perform as required.

Throughout this reference guide the term "compression" is used to describe what happens to the o-ring. Since elastomers are essentially incompressible, the technically correct term would be "deformation." "Compression" is used as the more common terminology in the sealing industry.

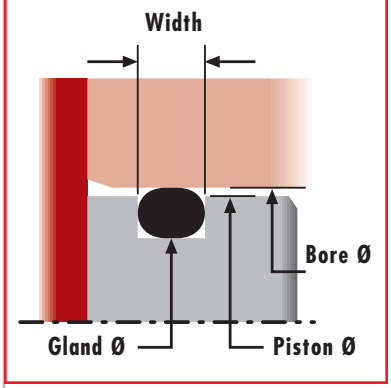
NOTE: It is critical to remember that most sealing applications are unique. Textbook guidelines regarding o-ring gland design are no substitute for actually testing the components and the seals in their real-world conditions to determine if the design is optimal and, more importantly, safe.

O-RING SEAL TYPES

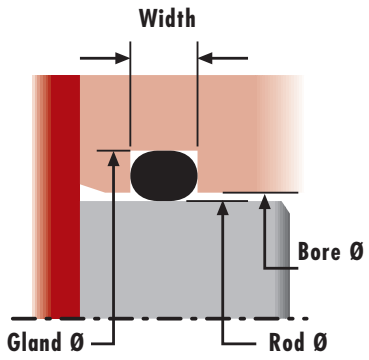
Most static o-ring seals are one of the three types shown below. In the male gland seal the groove for the o-ring is machined into the piston (the part that is inserted into the bore) and that part with the o-ring installed on it is inserted into the bore. The o-ring seals radially. In the female gland seal the groove for the o-ring is machined into the bore and a smooth rod is inserted through the installed o-ring. As with the male gland seal, the o-ring seals radially. For the face seal, the groove is machined into the face that is perpendicular to the piston or rod. The o-ring seals axially.

The variable names presented in these diagrams are used throughout the design guide.

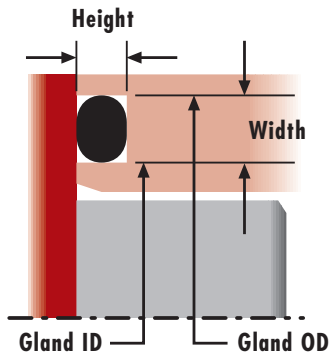
Male Gland Seal



Female Gland Seal



Face Seal



GLAND DIMENSION CALCULATIONS

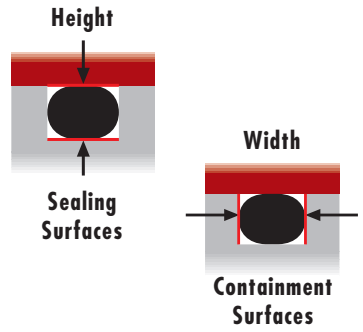
Although each physical arrangement is different, each involves the o-ring being captured in a rectangular gland which has two sets of opposing surfaces.

1. The first set of opposing surfaces is sealing surfaces, in that the distance between them, the gland height, is less than the o-ring cross-section (CS) so that the installed o-ring is compressed resulting in a sealing force.

2. The second set of opposing surfaces is containing surfaces, in that the distance between them, the gland width, is larger than the o-ring cross-section so that they only serve to keep the o-ring in place.

Gland height and width are used for compression and fill calculations. The formulas for calculating these gland dimensions for male gland, female gland and face seals are shown below.

Gland Dimensions



Male Gland Seal

$$\text{Height} = \frac{\text{Bore Ø} - \text{Gland Ø}}{2}$$

Width = Width

Female Gland Seal

$$\text{Height} = \frac{\text{Gland Ø} - \text{Rod Ø}}{2}$$

Width = Width

Face Seal

Height = Height

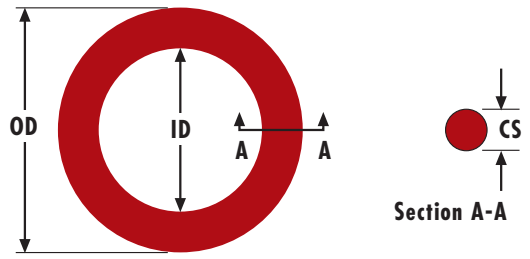
$$\text{Width} = \frac{\text{Gland OD} - \text{Gland ID}}{2}$$

O-RING GLAND DESIGN GUIDELINES

O-RING DIMENSIONS

Dimensionally specifying an o-ring is typically done with just two dimensions, the inner diameter (ID) and the cross-section (CS). Occasionally, an o-ring may be specified with an outer diameter (OD) and cross-section or an inner diameter and outer diameter. If two of the three dimensions are known, the third can be calculated using the formulas shown below.

O-Ring Dimensions



O-Ring Dimension Calculations

$OD = ID + (2 \times CS)$

$ID = OD - (2 \times CS)$

$CS = \frac{OD - ID}{2}$

SELECTING AN O-RING CROSS SECTION

Whereas the ID or OD of the o-ring for a design is significantly influenced by the diameter of the mating components (piston/rod and bore), the cross-section of the o-ring is usually fairly arbitrary. The following table describes some of the advantages when opting for a small cross-section or a large cross-section.

Advantages of Smaller Cross-Section

- More compact.
- Lighter weight.
- Less expensive—especially for higher cost elastomers like FKM or fluorosilicone.
- Less machining required for machined grooves since grooves are smaller.
- More resistant to explosive decompression.

Advantages of Larger Cross-Section

- Less prone to compression set.
- Less volume swell in liquid—on percentage basis.
- Allows for larger tolerances while still maintaining acceptable compression squeeze and compression ratio over full stack-up range.
- Less prone to leakage due to contamination—dirt, lint, scratches, etc.

ID/OD INTERFERENCE

The ID or OD of the o-ring should be chosen to minimize the potential for installation damage and to minimize wear during use. This can be accomplished by adhering to the following guidelines.

- For male gland seals the ID of the o-ring should be smaller than the OD of the gland so that the installed o-ring is always slightly stretched. As with all o-ring design calculations, this should be checked at the maximum and minimum stack-up conditions.
- For female gland seals the OD of the o-ring should be slightly larger than the ID of the gland so there is always some interference.

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ID/OD INTERFERENCE *–continued*

- For external pressure face seals the ID of the o-ring should be slightly smaller than the gland inner diameter (Gland ID) so when the pressure is applied, the o-ring is already where it would be as a result of the pressure.
- For internal pressure face seals the OD of the o-ring should be slightly larger than the gland outer diameter (Gland OD) so when the pressure is applied, the o-ring is already where it would be as a result of the pressure.

Male Gland Seal

$$\text{Interference} = \frac{\text{Gland Ø} - \text{ID}}{\text{ID}}$$

Maximum = 5% Minimum = 0%

External Pressure Face Seal

$$\text{Interference} = \frac{\text{Gland ID} - \text{ID}}{\text{ID}}$$

Maximum = 5% Minimum = 0%

Female Gland Seal

$$\text{Interference} = \frac{\text{OD} - \text{Gland Ø}}{\text{OD}}$$

Maximum = 2% Minimum = 0%

Internal Pressure Face Seal

$$\text{Interference} = \frac{\text{OD} - \text{Gland OD}}{\text{OD}}$$

Maximum = 3% Minimum = 0%

REDUCTION IN CROSS-SECTION

Since elastomers are essentially incompressible materials, if the ID of the o-ring is stretched (as a result of ID interference), the cross-section of the o-ring will decrease. The following tables give the o-ring cross-sections that result from ID interference. The new cross-section should be used for all compression and gland fill calculations.

The impact of OD interference on the o-ring cross-section varies and does not require design considerations.

For reference purposes the equation for the volume of an o-ring is as follows.

O-Ring Volume

$$\text{Volume} = \frac{\pi^2}{4} \times CS^2 \times [ID + CS]$$

AS568 Series	Original Cross-Section in Inches	Reduced Cross-Section at % ID Interference (inches)				
		1%	2%	3%	4%	5%
-0XX*	0.070 in.	.069	.069	.068	.068	.068
-1XX	0.103 in.	.102	.101	.100	.100	.100
-2XX	0.139 in.	.138	.137	.136	.135	.134
-3XX	0.210 in.	.208	.206	.205	.204	.203
-4XX	0.275 in.	.272	.270	.268	.267	.266

*Except for -001, -002 and -003 sizes.

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O-RING GLAND DESIGN GUIDELINES

REDUCTION IN CROSS-SECTION *–continued*

AS568 Series	Original Cross-Section in Millimeters	Reduced Cross-Section at % ID Interference (mm)				
		1%	2%	3%	4%	5%
-0XX*	1.78 mm	1.76	1.75	1.74	1.73	1.72
-1XX	2.62 mm	2.59	2.57	2.56	2.55	2.53
-2XX	3.53 mm	3.49	3.47	3.44	3.43	3.41
-3XX	5.33 mm	5.28	5.24	5.20	5.18	5.15
-4XX	6.99 mm	6.92	6.87	6.82	6.79	6.75

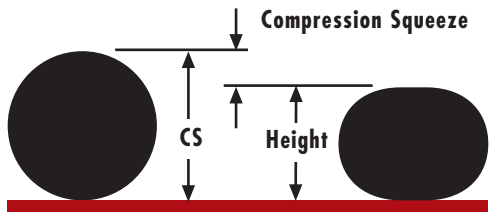
*Except for -001, -002 and -003 sizes.

COMPRESSION SQUEEZE & COMPRESSION RATIO

An elastomer is defined as a synthetic or natural material with resilience or memory sufficient to return to its original shape after a major or minor distortion. This resilience of elastomers is what makes o-rings work as seals. The design parameters that ensure this resilience is properly used and will probably have the biggest impact on o-ring sealing performance are compression squeeze and compression ratio.

Compression squeeze is the difference between the original o-ring cross-section (CS) and the gland height (Height) and is expressed in either inches or millimeters. Since almost all elastomers quickly take a 100% compression set with very light squeeze, it is essential that a minimum compression squeeze of 0.1mm (0.005 inches) be maintained.

Compression Squeeze



Calculation

Compression Squeeze = CS* – Height

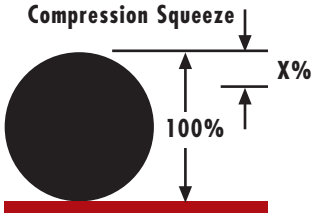
Recommended Minimum Value

Compression Squeeze > 0.1 mm (0.005 in)

* Note: Be sure to use the reduced cross-section in this calculation.

Compression ratio expresses what percentage the compression squeeze is of the uncompressed o-ring cross-section.

Compression Ratio



Calculation

$$\text{Compression Ratio} = \frac{\text{Compression Squeeze}}{\text{CS}} \times 100$$

Recommended Value

See Table

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COMPRESSION SQUEEZE & RATIO *–continued*

The compression ratio recommendations are for static sealing applications. Most dynamic sealing applications would use tighter tolerances on the mating components and then target a compression ratio range in the lower half of the static sealing recommended range (5% to 20%). The lighter compression squeeze is recommended due to friction and wear considerations.

Male or Female Gland Seal

Minimum 5% **Target 20%** **Maximum 30%**

Face Seal

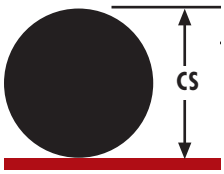
Minimum 10% **Target 25%** **Maximum 35%**

GLAND FILL

Gland fill is the percentage of the gland that is occupied by the o-ring. It is calculated by dividing the cross-sectional area of the o-ring by the cross-sectional area of the gland.

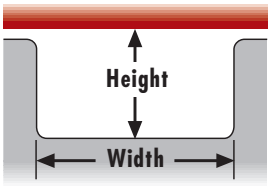
Calculations

O-Ring Cross-Sectional Area



$$\text{O-Ring CSA} = \pi \times \left(\frac{CS}{2}\right)^2$$

Gland Cross-Sectional Area



Gland CSA = Height x Width

Gland Fill

$$\text{Gland Fill (\%)} = \frac{\text{O-Ring CSA}}{\text{Gland CSA}} \times 100$$

The following target gland fill recommendations take into account several hardware and o-ring related factors including but not limited to thermal expansion, volume swell due to fluid exposure and the effect of tolerance stack-ups.

Recommended Values

Minimum 50% **Target Minimum 65%** **Target 75%** **Target Maximum 85%** **Maximum 90%**

EXTRUSION GAP

Extrusion is a concern for radial seals where there is a gap between the piston and the bore for a male gland seal or between the rod and the bore for a female gland seal. Extrusion is not a concern for face seals where the metal parts to be sealed are typically in line-to-line contact. The concern is that at higher pressures, especially for softer o-ring elastomers, the o-ring can be forced by the pressure into the small gap between the piston or rod and the bore. Unless the bore and the piston or rod are ensured to remain concentric by the hardware, we have to assume that all of the gap possible can shift to one side (see diagram next page).

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O-RING GLAND DESIGN GUIDELINES

EXTRUSION GAP *–continued*

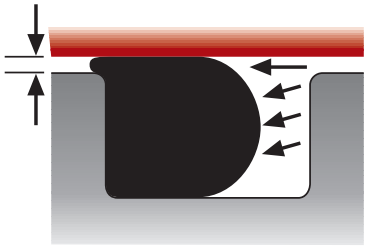
Male Gland Seal

Extrusion Gap = Bore Ø – Piston Ø

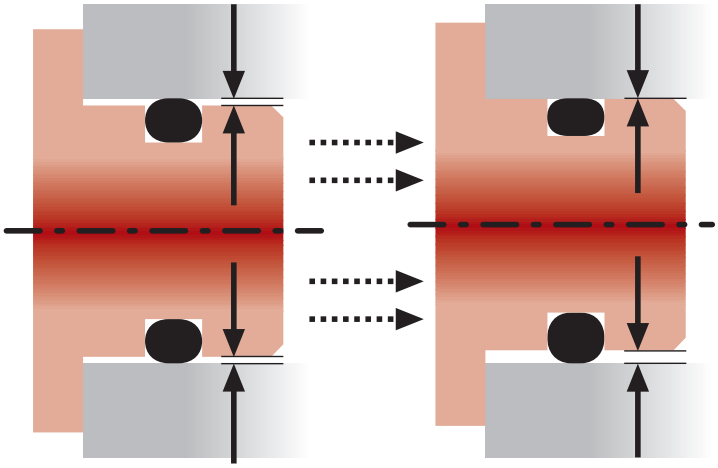
Female Gland Seal

Extrusion Gap = Bore Ø – Rod Ø

Extrusion



Concentricity & Diametric Clearance



The following table indicates the maximum recommended total diametric clearance for a given system pressure and elastomer hardness. For pressures or hardness values between those listed in the table, either interpolate to determine the value or use the next higher pressure and the next lower durometer.

Pressure PSI	Elastomer Hardness (Durometer) 60	70	80	90
500	.010" (.25 mm)	.015" (.38 mm)	.020" (.51 mm)	.025" (.64 mm)
750	.005" (.13 mm)	.011" (.28 mm)	.016" (.41 mm)	.023" (.58 mm)
1000	.002" (.05 mm)	.008" (.20 mm)	.012" (.30 mm)	.018" (.46 mm)
1250	.001" (.02 mm)	.004" (.10 mm)	.009" (.23 mm)	.015" (.38 mm)
1500	Consult Dichtomatik	.002" (.05 mm)	.007" (.18 mm)	.012" (.30 mm)

BACK-UP RINGS

Back-up rings are used to prevent o-rings from extruding when the tight tolerances listed in the previous section cannot be maintained. Back-up rings do not provide any sealing function. They are simply intended to reduce the extrusion gap on the low-pressure side so that the o-ring can fulfill its sealing function without being damaged.

Back-up rings are made of materials with better extrusion resistance than most elastomers. Several common materials are high-durometer NBR (or other elastomers), Nylon and filled PTFE.

Use of a Back-up Ring

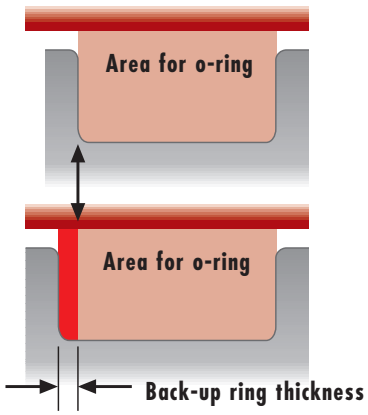
—continued next page

BACK-UP RINGS *–continued*

Since the materials used for back-up rings are basically non-compressible and non-deformable, they can typically be treated as though they are part of whatever the o-ring groove is machined into. That is, the width of the groove has to be increased just enough to accommodate the thickness of the back-up ring.

For back-up rings with a curved surface facing the o-ring, the effective thickness of the back-up ring can be determined by dividing the cross-sectional area of the back-up ring by the height of the back-up ring. This ensures that the o-ring has the same area to occupy.

Accommodating the Back-Up Ring



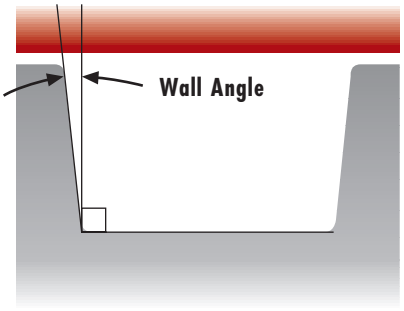
ADDITIONAL GROOVE DETAILS

Once the geometric arrangement and dimensions for the o-ring gland have been determined, the following details must be observed for correct sealing function.

Groove Wall Angle

The wall angle of the groove should be controlled to be between 0° and 5° as shown.

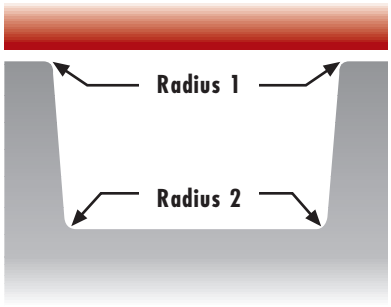
Wall Angle



Transition Radii

The transition from the piston, bore, or face to the groove edge and from the groove edge to the groove bottom must be slightly rounded as shown. Radii recommendations follow on the next page.

Transition Radii



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O-RING GLAND DESIGN GUIDELINES

ADDITIONAL GROOVE DETAILS –*continued*

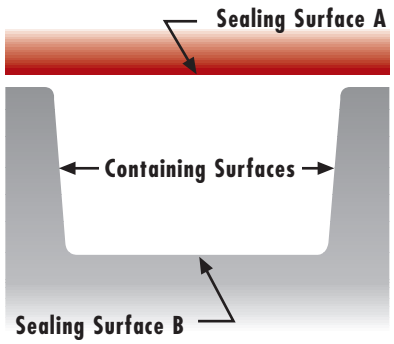
Transition Radii

TRANSITION RADII				
	Cross Section range		Radius 1	Radius 2
mm	1.0	2.0	0.10	0.30
inch	0.04	0.08	0.004	0.012
mm	2.0	3.0	0.20	0.30
inch	0.08	0.12	0.008	0.012
mm	3.0	4.0	0.20	0.50
inch	0.12	0.16	0.008	0.020
mm	4.0	5.0	0.20	0.60
inch	0.16	0.20	0.008	0.024
mm	5.0	6.0	0.20	0.60
inch	0.20	0.24	0.008	0.024
mm	6.0	8.0	0.20	0.80
inch	0.24	0.31	0.008	0.031
mm	8.0	10.0	0.20	1.00
inch	0.31	0.39	0.008	0.039
mm	10.0	12.0	0.20	1.00
inch	0.39	0.47	0.008	0.039
mm	12.0	15.0	0.20	1.20
inch	0.47	0.59	0.008	0.047

Surface Finish

The surface finish of the sealing surfaces and the sides of the gland should be controlled as shown.

Sealing Surface Finish



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ADDITIONAL GROOVE DETAILS –*continued*

Surface Finish

Surface Finish Acceptable Range for CONSTANT PRESSURE Applications		Max Ra	Max Rz	Max Rmax
Sealing Surface A	µm	1.6	6.3	10.0
	µinch	64	256	400
Sealing Surface B	µm	3.2	10.0	12.5
	µinch	128	400	500
Containing Surfaces	µm	6.3	12.5	16.0
	µinch	256	500	640

Surface Finish Acceptable Range for PULSATING PRESSURE Applications		Max Ra	Max Rz	Max Rmax
Sealing Surface A	µm	0.8	1.6	3.2
	µinch	32	64	128
Sealing Surface B	µm	1.6	3.2	6.3
	µinch	64	128	252
Containing Surfaces	µm	3.2	6.3	10.0
	µinch	128	252	400

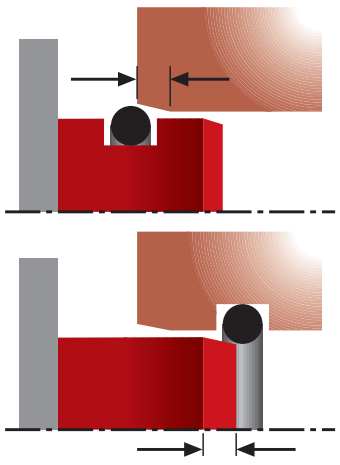
INSTALLATION

Installation Chamfer

A perfectly designed o-ring seal is of little use if the o-ring is damaged during installation. To prevent damage for male gland and female gland seals, a 15° chamfer on the bore or rod is recommended. The chamfer must be long enough to ensure that the o-ring sees only the chamfer when it is installed. Face seals do not require installation chamfers.

O-Ring CS		Chamfer Length	
Inches	mm	Inches	mm
.070	1.78	.083	2.10
.103	2.62	.122	3.10
.139	3.53	.157	4.00
.210	5.33	.236	6.00
.275	6.99	.283	7.20

Installation Chamfer Length



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O-RING GLAND DESIGN GUIDELINES

INSTALLATION *–continued*

General Installation Guidelines

The following general guidelines should be observed for installation of an o-ring to avoid damage and leakage.

- The o-ring must not be stretched beyond its elongation limit.
- Edges must be burr-free and all radii and angles should be applied smoothly.
- Dust, dirt, metal chips and other foreign material should be removed prior to installation of the o-ring.
- Tips of screws and installation housings for other sealing and guiding elements should be covered by an assembly sleeve.
- A suitable lubricant should be applied to the assembly surfaces and/or the o-ring.
- All installation tools (mandrels, sleeves, etc.) should be made of a soft material and not have any sharp edges.
- The o-ring should not be rolled over assembly surfaces.
- Ensure that the o-ring is not twisted during installation into the groove.

SECTION THREE

GLOBAL O-RING SIZE REFERENCE GUIDE

- Introduction to O-Ring Size Standards
- O-Ring Sizes by Standard
- O-Ring Size Master Table

GLOBAL O-RING SIZE REFERENCE GUIDE

O-RING SIZE STANDARDS

This o-ring size reference contains size and nomenclature information for the most common global o-ring standards. The information is organized into three sections.

1. The first section provides an introduction to each size standard and how an o-ring is specified using the nomenclature provided in the standard.
2. The second section provides a size table for each standard including the inside diameter (ID) and cross-section (CS) dimensions with tolerances in both millimeters and inches.
3. The third section is a master size table that includes all ID/CS combinations available in the standards sorted by CS, then by ID. For each ID/CS combination, it indicates which standards offer that size.

The standards included in the references are:

- SAE AS568
- ISO 3601
- DIN 3771
- BSI BS 4518
- BSI BS 1806
- JIS B 2401
- NF T 47–501

SAE AS568

SAE AS568 is published by the aerospace portion of the Society of Automotive Engineers. Its actual title is ***Aerospace Size Standard for O-Rings***, although its use is much more widespread than just the aerospace industry. SAE AS568 is the most commonly used standard in the US for aerospace, automotive and general industrial applications.

DICHTOMATIK has shrinkage-compensated tooling on all AS568 sizes and maintains inventory in all sizes for eight standard materials and in a large number of the sizes for many other materials.

The sizes in the standard are defined by maximum and minimum ID and CS dimensions (although most listings, including this one, show this as a midpoint and a ± tolerance). Each ID and CS combination is identified by a three-digit "dash number" as shown below.

SAE AS568-214

Series (see table)

Sequential by increasing ID

The first of the three digits represents the CS, except for the 9-series o-rings, where the 9 indicates that it is used for straight thread tube fitting boss gaskets. The last two digits are sequential with increasing ID.

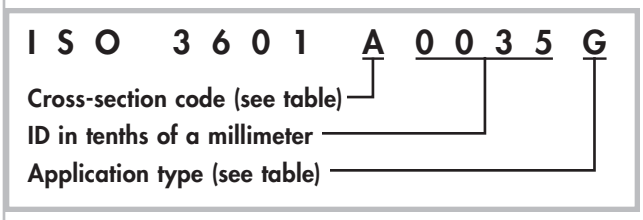
SERIES	CROSS-SECTION	
	millimeters	inches
-0XX	1.78*	0.070*
-1XX	2.62	0.103
-2XX	3.53	0.139
-3XX	5.33	0.210
-4XX	6.99	0.275
-9XX	Varies	

*Except for -001, -002 and -003 sizes

ISO 3601

ISO 3601 is published by the International Organization for Standardization. The title of the part that defines standard sizes is ***Fluid Systems—Sealing Devices—O-Rings—Part 1: Inside diameters, cross-sections, tolerances and size identification code***. There are two additional parts that deal with design criteria for o-ring housings and quality acceptance criteria for o-rings.

The size identification code per the standard is as follows:



NOTE: The general-purpose application sizes and tolerances and the aerospace application sizes and tolerances are listed separately. DICHTOMATIK can provide the aerospace application parts when the tighter tolerances are required, but does not currently have any materials that are approved for use in the aerospace industry.

SERIES	CROSS-SECTION millimeters	CROSS-SECTION inches
A	1.80	0.071
B	2.65	0.104
C	3.55	0.140
D	5.30	0.209
E	7.00	0.276

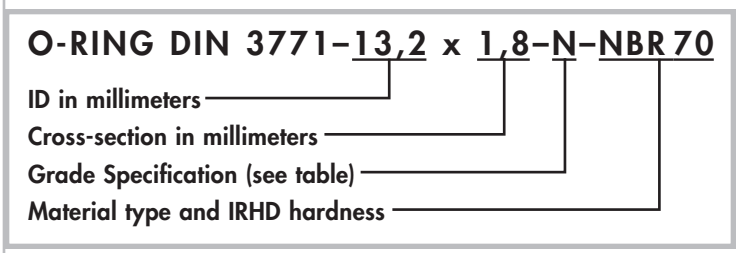
APPLICATION TYPE CODE	DESCRIPTION
A	Aerospace Application
G	General-Purpose Application

DIN 3771

DIN 3771 is published by the German Institute for Standardization (Deutsches Institut für Normung e.V.). The title of the part that defines standard sizes is ***Fluid Systems; O-rings; Dimensions.*** There are four additional parts to the DIN 3771 standard that cover o-ring markings, materials and fields of application, quality acceptance criteria and design details and dimensions of housings.

The o-ring sizes in the DIN standard are very similar to the ISO 3601 sizes. The most significant difference between the standards is that the DIN standard uses grade specification rather than an application type to differentiate between standard and precision o-rings.

O-Rings are identified under the DIN 3771 standard as follows:



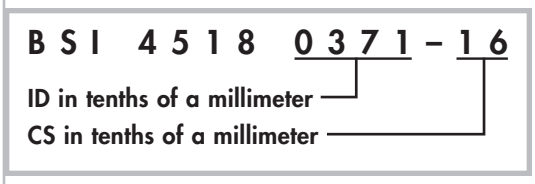
GRADE CODE	DESCRIPTION	REQUIRED AQL
N	Normal Quality	1.0
S	Special Quality	0.65

GLOBAL O-RING SIZE REFERENCE GUIDE

BSI BS 4518

BS 4518 is published by the British Standards Institution. The full title of the standard is ***Specification for Metric dimensions of toroidal sealing rings ('O'-rings) and their housings.*** As indicated in the title, the standard includes both the standard o-ring dimensions and the dimensions of the glands to house the o-rings in a variety of configurations.

The standard for identifying a British standard metric o-ring is as follows:



BSI BS 1806

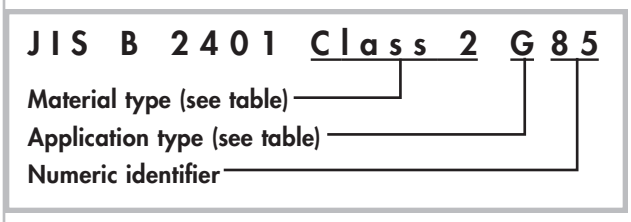
BS 1806 is also published by the British Standards Institution. The full title of this standard is ***British Standard Specification for Dimensions of toroidal sealing rings ('O'-rings) and their housings (inch series).*** As with BS 4518, the standard offers both standard o-ring and gland dimensions.

The sizes are almost identical to the sizes available in SAE AS568. There are some additional sizes in the 4XX series which are indicated by an A following the next smallest AS568 4XX series size. Also, in earlier versions of the standard there are 5XX, 6XX and 8XX series o-ring interspersed throughout the standard that fill gaps between AS568 sizes. These sizes are not included in the current version of the standard, but are still frequently tooled and held in inventory at European o-ring sources, so they have been included in the table.

BS 1806 o-rings are identified as shown here:

JIS B 2401

JIS B 2401 is published by the Japanese Standards Association. Its official title is ***O-Rings***. JIS B 2401 is unique in that it specifies standard o-ring dimensions and standard materials. Most of the o-rings are identified as shown here:



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JIS B 2401 *–continued*

TYPE	SYMBOL	REMARKS	TYPICAL MATERIAL
Class 1A	1A	For mineral oil use	NBR 70
Class 1B	1B	For mineral oil use	NBR 90
Class 2	2	For gasoline use	NBR 70
Class 3	3	For animal & vegetable oil use	EPDM 70
Class 4C	4C	For thermal-resistant use	VMQ 70
Class 4D	4D	For thermal-resistant use	FKM 70

APPLICATION TYPE CODE	DESCRIPTION
P	For moving (packing)
G	For fixing (gasket)
V	For vacuum flange

In addition to the sizes included in the JIS B 2401 standard, the standard also makes provisions for using the JIS B 2401 material types with the ISO 3601 Series G o-ring sizes as shown here:

JIS B 2401 Class 2 A0035G

Material type (see table)
ISO 3601 G Series designation

NF T 47-501

NF T 47-501 is published by AFNOR which is the Association Française De Normalisation. The title of the standard is ***Rubber O-Ring—Designation, sizes and tolerances***. NF T 47-501 has most of the same sizes as ISO 3601 and DIN 3771. The distinction of this specification is that it uses a precision class, which is almost identical to ISO 3601 application type, and a visual class, which is very similar to the DIN 3771 grade specification. O-rings per this standard are identified as shown here:

NF T47-501 A0035GS

Cross-section code (see table)
ID in tenths of a millimeter
Precision class (see table)
Visual class (see table)

PRECISION CLASS	DESCRIPTION
A	Aerospace Application
G	General-Purpose Application

VISUAL CLASS	DESCRIPTION	REQUIRED AQL
N	Normal Quality	1.0
S	Special Quality	0.65

SERIES	CROSS-SECTION millimeters	CROSS-SECTION inches
A	1.80	0.071
B	2.65	0.104
C	3.55	0.140
D	5.30	0.209
E	7.00	0.276

GLOBAL O-RING SIZE REFERENCE GUIDE

AS568 SIZES

AS568 SIZE	NOMINAL (REF.) ID	CS	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	AS568 SIZE
-001	1/32	1/32	0.74	0.10	1.02	0.08	0.029	0.004	0.040	0.003	-001
-002	3/64	3/64	1.07	0.10	1.27	0.08	0.042	0.004	0.050	0.003	-002
-003	1/16	1/16	1.42	0.10	1.52	0.08	0.056	0.004	0.060	0.003	-003
-004	5/64	1/16	1.78	0.13	1.78	0.08	0.070	0.005	0.070	0.003	-004
-005	3/32	1/16	2.57	0.13	1.78	0.08	0.101	0.005	0.070	0.003	-005
-006	1/8	1/16	2.90	0.13	1.78	0.08	0.114	0.005	0.070	0.003	-006
-007	5/32	1/16	3.68	0.13	1.78	0.08	0.145	0.005	0.070	0.003	-007
-008	3/16	1/16	4.47	0.13	1.78	0.08	0.176	0.005	0.070	0.003	-008
-009	7/32	1/16	5.28	0.13	1.78	0.08	0.208	0.005	0.070	0.003	-009
-010	1/4	1/16	6.07	0.13	1.78	0.08	0.239	0.005	0.070	0.003	-010
-011	5/16	1/16	7.65	0.13	1.78	0.08	0.301	0.005	0.070	0.003	-011
-012	3/8	1/16	9.25	0.13	1.78	0.08	0.364	0.005	0.070	0.003	-012
-013	7/16	1/16	10.82	0.13	1.78	0.08	0.426	0.005	0.070	0.003	-013
-014	1/2	1/16	12.42	0.13	1.78	0.08	0.489	0.005	0.070	0.003	-014
-015	9/16	1/16	14.00	0.18	1.78	0.08	0.551	0.007	0.070	0.003	-015
-016	5/8	1/16	15.60	0.23	1.78	0.08	0.614	0.009	0.070	0.003	-016
-017	11/16	1/16	17.17	0.23	1.78	0.08	0.676	0.009	0.070	0.003	-017
-018	3/4	1/16	18.77	0.23	1.78	0.08	0.739	0.009	0.070	0.003	-018
-019	13/16	1/16	20.35	0.23	1.78	0.08	0.801	0.009	0.070	0.003	-019
-020	7/8	1/16	21.95	0.23	1.78	0.08	0.864	0.009	0.070	0.003	-020
-021	15/16	1/16	23.52	0.23	1.78	0.08	0.926	0.009	0.070	0.003	-021
-022	1	1/16	25.12	0.25	1.78	0.08	0.989	0.010	0.070	0.003	-022
-023	1 1/16	1/16	26.70	0.25	1.78	0.08	1.051	0.010	0.070	0.003	-023
-024	1 1/8	1/16	28.30	0.25	1.78	0.08	1.114	0.010	0.070	0.003	-024
-025	1 3/16	1/16	29.87	0.28	1.78	0.08	1.176	0.011	0.070	0.003	-025
-026	1 1/4	1/16	31.47	0.28	1.78	0.08	1.239	0.011	0.070	0.003	-026
-027	1 5/16	1/16	33.05	0.28	1.78	0.08	1.301	0.011	0.070	0.003	-027
-028	1 3/8	1/16	34.65	0.33	1.78	0.08	1.364	0.013	0.070	0.003	-028
-029	1 1/2	1/16	37.82	0.33	1.78	0.08	1.489	0.013	0.070	0.003	-029
-030	1 5/8	1/16	41.00	0.33	1.78	0.08	1.614	0.013	0.070	0.003	-030
-031	1 3/4	1/16	44.17	0.38	1.78	0.08	1.739	0.015	0.070	0.003	-031
-032	1 7/8	1/16	47.35	0.38	1.78	0.08	1.864	0.015	0.070	0.003	-032
-033	2	1/16	50.52	0.46	1.78	0.08	1.989	0.018	0.070	0.003	-033
-034	2 1/8	1/16	53.70	0.46	1.78	0.08	2.114	0.018	0.070	0.003	-034
-035	2 1/4	1/16	56.87	0.46	1.78	0.08	2.239	0.018	0.070	0.003	-035
-036	2 3/8	1/16	60.05	0.46	1.78	0.08	2.364	0.018	0.070	0.003	-036
-037	2 1/2	1/16	63.22	0.46	1.78	0.08	2.489	0.018	0.070	0.003	-037
-038	2 5/8	1/16	66.40	0.51	1.78	0.08	2.614	0.020	0.070	0.003	-038
-039	2 3/4	1/16	69.57	0.51	1.78	0.08	2.739	0.020	0.070	0.003	-039

AS568 SIZES

AS568 SIZE	NOMINAL (REF.) ID	CS	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	AS568 SIZE
-040	2 7/8	1/16	72.75	0.51	1.78	0.08	2.864	0.020	0.070	0.003	-040
-041	3	1/16	75.92	0.61	1.78	0.08	2.989	0.024	0.070	0.003	-041
-042	3 1/4	1/16	82.27	0.61	1.78	0.08	3.239	0.024	0.070	0.003	-042
-043	3 1/2	1/16	88.62	0.61	1.78	0.08	3.489	0.024	0.070	0.003	-043
-044	3 3/4	1/16	94.97	0.69	1.78	0.08	3.739	0.027	0.070	0.003	-044
-045	4	1/16	101.32	0.69	1.78	0.08	3.989	0.027	0.070	0.003	-045
-046	4 1/4	1/16	107.67	0.76	1.78	0.08	4.239	0.030	0.070	0.003	-046
-047	4 1/2	1/16	114.02	0.76	1.78	0.08	4.489	0.030	0.070	0.003	-047
-048	4 3/4	1/16	120.37	0.76	1.78	0.08	4.739	0.030	0.070	0.003	-048
-049	5	1/16	126.72	0.94	1.78	0.08	4.989	0.037	0.070	0.003	-049
-050	5 1/4	1/16	133.07	0.94	1.78	0.08	5.239	0.037	0.070	0.003	-050
-102	1/16	3/32	1.24	0.13	2.62	0.08	0.049	0.005	0.103	0.003	-102
-103	3/32	3/32	2.06	0.13	2.62	0.08	0.081	0.005	0.103	0.003	-103
-104	1/8	3/32	2.84	0.13	2.62	0.08	0.112	0.005	0.103	0.003	-104
-105	5/32	3/32	3.63	0.13	2.62	0.08	0.143	0.005	0.103	0.003	-105
-106	3/16	3/32	4.42	0.13	2.62	0.08	0.174	0.005	0.103	0.003	-106
-107	7/32	3/32	5.23	0.13	2.62	0.08	0.206	0.005	0.103	0.003	-107
-108	1/4	3/32	6.02	0.13	2.62	0.08	0.237	0.005	0.103	0.003	-108
-109	5/16	3/32	7.59	0.13	2.62	0.08	0.299	0.005	0.103	0.003	-109
-110	3/8	3/32	9.19	0.13	2.62	0.08	0.362	0.005	0.103	0.003	-110
-111	7/16	3/32	10.77	0.13	2.62	0.08	0.424	0.005	0.103	0.003	-111
-112	1/2	3/32	12.37	0.13	2.62	0.08	0.487	0.005	0.103	0.003	-112
-113	9/16	3/32	13.94	0.18	2.62	0.08	0.549	0.007	0.103	0.003	-113
-114	5/8	3/32	15.54	0.23	2.62	0.08	0.612	0.009	0.103	0.003	-114
-115	11/16	3/32	17.12	0.23	2.62	0.08	0.674	0.009	0.103	0.003	-115
-116	3/4	3/32	18.72	0.23	2.62	0.08	0.737	0.009	0.103	0.003	-116
-117	13/16	3/32	20.29	0.25	2.62	0.08	0.799	0.010	0.103	0.003	-117
-118	7/8	3/32	21.89	0.25	2.62	0.08	0.862	0.010	0.103	0.003	-118
-119	15/16	3/32	23.47	0.25	2.62	0.08	0.924	0.010	0.103	0.003	-119
-120	1	3/32	25.07	0.25	2.62	0.08	0.987	0.010	0.103	0.003	-120
-121	1 1/16	3/32	26.64	0.25	2.62	0.08	1.049	0.010	0.103	0.003	-121
-122	1 1/8	3/32	28.24	0.25	2.62	0.08	1.112	0.010	0.103	0.003	-122
-123	1 3/16	3/32	29.82	0.30	2.62	0.08	1.174	0.012	0.103	0.003	-123
-124	1 1/4	3/32	31.42	0.30	2.62	0.08	1.237	0.012	0.103	0.003	-124
-125	1 5/16	3/32	32.99	0.30	2.62	0.08	1.299	0.012	0.103	0.003	-125
-126	1 3/8	3/32	34.59	0.30	2.62	0.08	1.362	0.012	0.103	0.003	-126
-127	1 7/16	3/32	36.17	0.30	2.62	0.08	1.424	0.012	0.103	0.003	-127
-128	1 1/2	3/32	37.77	0.30	2.62	0.08	1.487	0.012	0.103	0.003	-128
-129	1 9/16	3/32	39.34	0.38	2.62	0.08	1.549	0.015	0.103	0.003	-129

GLOBAL O-RING SIZE REFERENCE GUIDE

AS568 SIZES

AS568 SIZE	NOMINAL (REF.) ID	CS	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	AS568 SIZE
-130	1 5/8	3/32	40.94	0.38	2.62	0.08	1.612	0.015	0.103	0.003	-130
-131	1 11/16	3/32	42.52	0.38	2.62	0.08	1.674	0.015	0.103	0.003	-131
-132	1 3/4	3/32	44.12	0.38	2.62	0.08	1.737	0.015	0.103	0.003	-132
-133	1 13/16	3/32	45.69	0.38	2.62	0.08	1.799	0.015	0.103	0.003	-133
-134	1 7/8	3/32	47.29	0.38	2.62	0.08	1.862	0.015	0.103	0.003	-134
-135	1 15/16	3/32	48.90	0.43	2.62	0.08	1.925	0.017	0.103	0.003	-135
-136	2	3/32	50.47	0.43	2.62	0.08	1.987	0.017	0.103	0.003	-136
-137	2 1/16	3/32	52.07	0.43	2.62	0.08	2.050	0.017	0.103	0.003	-137
-138	2 1/8	3/32	53.64	0.43	2.62	0.08	2.112	0.017	0.103	0.003	-138
-139	2 3/16	3/32	55.25	0.43	2.62	0.08	2.175	0.017	0.103	0.003	-139
-140	2 1/4	3/32	56.82	0.43	2.62	0.08	2.237	0.017	0.103	0.003	-140
-141	2 5/16	3/32	58.42	0.51	2.62	0.08	2.300	0.020	0.103	0.003	-141
-142	2 3/8	3/32	59.99	0.51	2.62	0.08	2.362	0.020	0.103	0.003	-142
-143	2 7/16	3/32	61.60	0.51	2.62	0.08	2.425	0.020	0.103	0.003	-143
-144	2 1/2	3/32	63.17	0.51	2.62	0.08	2.487	0.020	0.103	0.003	-144
-145	2 9/16	3/32	64.77	0.51	2.62	0.08	2.550	0.020	0.103	0.003	-145
-146	2 5/8	3/32	66.34	0.51	2.62	0.08	2.612	0.020	0.103	0.003	-146
-147	2 11/16	3/32	67.95	0.56	2.62	0.08	2.675	0.022	0.103	0.003	-147
-148	2 3/4	3/32	69.52	0.56	2.62	0.08	2.737	0.022	0.103	0.003	-148
-149	2 13/16	3/32	71.12	0.56	2.62	0.08	2.800	0.022	0.103	0.003	-149
-150	2 7/8	3/32	72.69	0.56	2.62	0.08	2.862	0.022	0.103	0.003	-150
-151	3	3/32	75.87	0.61	2.62	0.08	2.987	0.024	0.103	0.003	-151
-152	3 1/4	3/32	82.22	0.61	2.62	0.08	3.237	0.024	0.103	0.003	-152
-153	3 1/2	3/32	88.57	0.61	2.62	0.08	3.487	0.024	0.103	0.003	-153
-154	3 3/4	3/32	94.92	0.71	2.62	0.08	3.737	0.028	0.103	0.003	-154
-155	4	3/32	101.27	0.71	2.62	0.08	3.987	0.028	0.103	0.003	-155
-156	4 1/4	3/32	107.62	0.76	2.62	0.08	4.237	0.030	0.103	0.003	-156
-157	4 1/2	3/32	113.97	0.76	2.62	0.08	4.487	0.030	0.103	0.003	-157
-158	4 3/4	3/32	120.32	0.76	2.62	0.08	4.737	0.030	0.103	0.003	-158
-159	5	3/32	126.67	0.89	2.62	0.08	4.987	0.035	0.103	0.003	-159
-160	5 1/4	3/32	133.02	0.89	2.62	0.08	5.237	0.035	0.103	0.003	-160
-161	5 1/2	3/32	139.37	0.89	2.62	0.08	5.487	0.035	0.103	0.003	-161
-162	5 3/4	3/32	145.72	0.89	2.62	0.08	5.737	0.035	0.103	0.003	-162
-163	6	3/32	152.07	0.89	2.62	0.08	5.987	0.035	0.103	0.003	-163
-164	6 1/4	3/32	158.42	1.02	2.62	0.08	6.237	0.040	0.103	0.003	-164
-165	6 1/2	3/32	164.77	1.02	2.62	0.08	6.487	0.040	0.103	0.003	-165
-166	6 3/4	3/32	171.12	1.02	2.62	0.08	6.737	0.040	0.103	0.003	-166
-167	7	3/32	177.47	1.02	2.62	0.08	6.987	0.040	0.103	0.003	-167
-168	7 1/4	3/32	183.82	1.14	2.62	0.08	7.237	0.045	0.103	0.003	-168

AS568 SIZES

AS568 SIZE	NOMINAL (REF.) ID	CS	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	AS568 SIZE
-169	7 1/2	3/32	190.17	1.14	2.62	0.08	7.487	0.045	0.103	0.003	-169
-170	7 3/4	3/32	196.52	1.14	2.62	0.08	7.737	0.045	0.103	0.003	-170
-171	8	3/32	202.87	1.14	2.62	0.08	7.987	0.045	0.103	0.003	-171
-172	8 1/4	3/32	209.22	1.27	2.62	0.08	8.237	0.050	0.103	0.003	-172
-173	8 1/2	3/32	215.57	1.27	2.62	0.08	8.487	0.050	0.103	0.003	-173
-174	8 3/4	3/32	221.92	1.27	2.62	0.08	8.737	0.050	0.103	0.003	-174
-175	9	3/32	228.27	1.27	2.62	0.08	8.987	0.050	0.103	0.003	-175
-176	9 1/4	3/32	234.62	1.40	2.62	0.08	9.237	0.055	0.103	0.003	-176
-177	9 1/2	3/32	240.97	1.40	2.62	0.08	9.487	0.055	0.103	0.003	-177
-178	9 3/4	3/32	247.32	1.40	2.62	0.08	9.737	0.055	0.103	0.003	-178
-201	3/16	1/8	4.34	0.13	3.53	0.10	0.171	0.005	0.139	0.004	-201
-202	1/4	1/8	5.94	0.13	3.53	0.10	0.234	0.005	0.139	0.004	-202
-203	5/16	1/8	7.52	0.13	3.53	0.10	0.296	0.005	0.139	0.004	-203
-204	3/8	1/8	9.12	0.13	3.53	0.10	0.359	0.005	0.139	0.004	-204
-205	7/16	1/8	10.69	0.13	3.53	0.10	0.421	0.005	0.139	0.004	-205
-206	1/2	1/8	12.29	0.13	3.53	0.10	0.484	0.005	0.139	0.004	-206
-207	9/16	1/8	13.87	0.18	3.53	0.10	0.546	0.007	0.139	0.004	-207
-208	5/8	1/8	15.47	0.23	3.53	0.10	0.609	0.009	0.139	0.004	-208
-209	11/16	1/8	17.04	0.23	3.53	0.10	0.671	0.009	0.139	0.004	-209
-210	3/4	1/8	18.64	0.25	3.53	0.10	0.734	0.010	0.139	0.004	-210
-211	13/16	1/8	20.22	0.25	3.53	0.10	0.796	0.010	0.139	0.004	-211
-212	7/8	1/8	21.82	0.25	3.53	0.10	0.859	0.010	0.139	0.004	-212
-213	15/16	1/8	23.39	0.25	3.53	0.10	0.921	0.010	0.139	0.004	-213
-214	1	1/8	24.99	0.25	3.53	0.10	0.984	0.010	0.139	0.004	-214
-215	1 1/16	1/8	26.57	0.25	3.53	0.10	1.046	0.010	0.139	0.004	-215
-216	1 1/8	1/8	28.17	0.30	3.53	0.10	1.109	0.012	0.139	0.004	-216
-217	1 3/16	1/8	29.74	0.30	3.53	0.10	1.171	0.012	0.139	0.004	-217
-218	1 1/4	1/8	31.34	0.30	3.53	0.10	1.234	0.012	0.139	0.004	-218
-219	1 5/16	1/8	32.92	0.30	3.53	0.10	1.296	0.012	0.139	0.004	-219
-220	1 3/8	1/8	34.52	0.30	3.53	0.10	1.359	0.012	0.139	0.004	-220
-221	1 7/16	1/8	36.09	0.30	3.53	0.10	1.421	0.012	0.139	0.004	-221
-222	1 1/2	1/8	37.69	0.38	3.53	0.10	1.484	0.015	0.139	0.004	-222
-223	1 5/8	1/8	40.87	0.38	3.53	0.10	1.609	0.015	0.139	0.004	-223
-224	1 3/4	1/8	44.04	0.38	3.53	0.10	1.734	0.015	0.139	0.004	-224
-225	1 7/8	1/8	47.22	0.46	3.53	0.10	1.859	0.018	0.139	0.004	-225
-226	2	1/8	50.39	0.46	3.53	0.10	1.984	0.018	0.139	0.004	-226
-227	2 1/8	1/8	53.57	0.46	3.53	0.10	2.109	0.018	0.139	0.004	-227
-228	2 1/4	1/8	56.74	0.51	3.53	0.10	2.234	0.020	0.139	0.004	-228
-229	2 3/8	1/8	59.92	0.51	3.53	0.10	2.359	0.020	0.139	0.004	-229

GLOBAL O-RING SIZE REFERENCE GUIDE

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AS568 SIZE	NOMINAL (REF.) ID	CS	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	AS568 SIZE
-230	2 1/2	1/8	63.09	0.51	3.53	0.10	2.484	0.020	0.139	0.004	-230
-231	2 5/8	1/8	66.27	0.51	3.53	0.10	2.609	0.020	0.139	0.004	-231
-232	2 3/4	1/8	69.44	0.61	3.53	0.10	2.734	0.024	0.139	0.004	-232
-233	2 7/8	1/8	72.62	0.61	3.53	0.10	2.859	0.024	0.139	0.004	-233
-234	3	1/8	75.79	0.61	3.53	0.10	2.984	0.024	0.139	0.004	-234
-235	3 1/8	1/8	78.97	0.61	3.53	0.10	3.109	0.024	0.139	0.004	-235
-236	3 1/4	1/8	82.14	0.61	3.53	0.10	3.234	0.024	0.139	0.004	-236
-237	3 3/8	1/8	85.32	0.61	3.53	0.10	3.359	0.024	0.139	0.004	-237
-238	3 1/2	1/8	88.49	0.61	3.53	0.10	3.484	0.024	0.139	0.004	-238
-239	3 5/8	1/8	91.67	0.71	3.53	0.10	3.609	0.028	0.139	0.004	-239
-240	3 3/4	1/8	94.84	0.71	3.53	0.10	3.734	0.028	0.139	0.004	-240
-241	3 7/8	1/8	98.02	0.71	3.53	0.10	3.859	0.028	0.139	0.004	-241
-242	4	1/8	101.19	0.71	3.53	0.10	3.984	0.028	0.139	0.004	-242
-243	4 1/8	1/8	104.37	0.71	3.53	0.10	4.109	0.028	0.139	0.004	-243
-244	4 1/4	1/8	107.54	0.76	3.53	0.10	4.234	0.030	0.139	0.004	-244
-245	4 3/8	1/8	110.72	0.76	3.53	0.10	4.359	0.030	0.139	0.004	-245
-246	4 1/2	1/8	113.89	0.76	3.53	0.10	4.484	0.030	0.139	0.004	-246
-247	4 5/8	1/8	117.07	0.76	3.53	0.10	4.609	0.030	0.139	0.004	-247
-248	4 3/4	1/8	120.24	0.76	3.53	0.10	4.734	0.030	0.139	0.004	-248
-249	4 7/8	1/8	123.42	0.89	3.53	0.10	4.859	0.035	0.139	0.004	-249
-250	5	1/8	126.59	0.89	3.53	0.10	4.984	0.035	0.139	0.004	-250
-251	5 1/8	1/8	129.77	0.89	3.53	0.10	5.109	0.035	0.139	0.004	-251
-252	5 1/4	1/8	132.94	0.89	3.53	0.10	5.234	0.035	0.139	0.004	-252
-253	5 3/8	1/8	136.12	0.89	3.53	0.10	5.359	0.035	0.139	0.004	-253
-254	5 1/2	1/8	139.29	0.89	3.53	0.10	5.484	0.035	0.139	0.004	-254
-255	5 5/8	1/8	142.47	0.89	3.53	0.10	5.609	0.035	0.139	0.004	-255
-256	5 3/4	1/8	145.64	0.89	3.53	0.10	5.734	0.035	0.139	0.004	-256
-257	5 7/8	1/8	148.82	0.89	3.53	0.10	5.859	0.035	0.139	0.004	-257
-258	6	1/8	151.99	0.89	3.53	0.10	5.984	0.035	0.139	0.004	-258
-259	6 1/4	1/8	158.34	1.02	3.53	0.10	6.234	0.040	0.139	0.004	-259
-260	6 1/2	1/8	164.69	1.02	3.53	0.10	6.484	0.040	0.139	0.004	-260
-261	6 3/4	1/8	171.04	1.02	3.53	0.10	6.734	0.040	0.139	0.004	-261
-262	7	1/8	177.39	1.02	3.53	0.10	6.984	0.040	0.139	0.004	-262
-263	7 1/4	1/8	183.74	1.14	3.53	0.10	7.234	0.045	0.139	0.004	-263
-264	7 1/2	1/8	190.09	1.14	3.53	0.10	7.484	0.045	0.139	0.004	-264
-265	7 3/4	1/8	196.44	1.14	3.53	0.10	7.734	0.045	0.139	0.004	-265
-266	8	1/8	202.79	1.14	3.53	0.10	7.984	0.045	0.139	0.004	-266
-267	8 1/4	1/8	209.14	1.27	3.53	0.10	8.234	0.050	0.139	0.004	-267
-268	8 1/2	1/8	215.49	1.27	3.53	0.10	8.484	0.050	0.139	0.004	-268

AS568 SIZES

AS568 SIZE	NOMINAL (REF.) ID	CS	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	AS568 SIZE
-269	8 3/4	1/8	221.84	1.27	3.53	0.10	8.734	0.050	0.139	0.004	-269
-270	9	1/8	228.19	1.27	3.53	0.10	8.984	0.050	0.139	0.004	-270
-271	9 1/4	1/8	234.54	1.40	3.53	0.10	9.234	0.055	0.139	0.004	-271
-272	9 1/2	1/8	240.89	1.40	3.53	0.10	9.484	0.055	0.139	0.004	-272
-273	9 3/4	1/8	247.24	1.40	3.53	0.10	9.734	0.055	0.139	0.004	-273
-274	10	1/8	253.59	1.40	3.53	0.10	9.984	0.055	0.139	0.004	-274
-275	10 1/2	1/8	266.29	1.40	3.53	0.10	10.484	0.055	0.139	0.004	-275
-276	11	1/8	278.99	1.65	3.53	0.10	10.984	0.065	0.139	0.004	-276
-277	11 1/2	1/8	291.69	1.65	3.53	0.10	11.484	0.065	0.139	0.004	-277
-278	12	1/8	304.39	1.65	3.53	0.10	11.984	0.065	0.139	0.004	-278
-279	13	1/8	329.79	1.65	3.53	0.10	12.984	0.065	0.139	0.004	-279
-280	14	1/8	355.19	1.65	3.53	0.10	13.984	0.065	0.139	0.004	-280
-281	15	1/8	380.59	1.65	3.53	0.10	14.984	0.065	0.139	0.004	-281
-282	16	1/8	405.26	1.91	3.53	0.10	15.955	0.075	0.139	0.004	-282
-283	17	1/8	430.66	2.03	3.53	0.10	16.955	0.080	0.139	0.004	-283
-284	18	1/8	456.06	2.16	3.53	0.10	17.955	0.085	0.139	0.004	-284
-309	7/16	3/16	10.46	0.13	5.33	0.13	0.412	0.005	0.210	0.005	-309
-310	1/2	3/16	12.07	0.13	5.33	0.13	0.475	0.005	0.210	0.005	-310
-311	9/16	3/16	13.64	0.18	5.33	0.13	0.537	0.007	0.210	0.005	-311
-312	5/8	3/16	15.24	0.23	5.33	0.13	0.600	0.009	0.210	0.005	-312
-313	11/16	3/16	16.81	0.23	5.33	0.13	0.662	0.009	0.210	0.005	-313
-314	3/4	3/16	18.42	0.25	5.33	0.13	0.725	0.010	0.210	0.005	-314
-315	13/16	3/16	19.99	0.25	5.33	0.13	0.787	0.010	0.210	0.005	-315
-316	7/8	3/16	21.59	0.25	5.33	0.13	0.850	0.010	0.210	0.005	-316
-317	15/16	3/16	23.16	0.25	5.33	0.13	0.912	0.010	0.210	0.005	-317
-318	1	3/16	24.77	0.25	5.33	0.13	0.975	0.010	0.210	0.005	-318
-319	1 1/16	3/16	26.34	0.25	5.33	0.13	1.037	0.010	0.210	0.005	-319
-320	1 1/8	3/16	27.94	0.30	5.33	0.13	1.100	0.012	0.210	0.005	-320
-321	1 3/16	3/16	29.51	0.30	5.33	0.13	1.162	0.012	0.210	0.005	-321
-322	1 1/4	3/16	31.12	0.30	5.33	0.13	1.225	0.012	0.210	0.005	-322
-323	1 5/16	3/16	32.69	0.30	5.33	0.13	1.287	0.012	0.210	0.005	-323
-324	1 3/8	3/16	34.29	0.30	5.33	0.13	1.350	0.012	0.210	0.005	-324
-325	1 1/2	3/16	37.47	0.38	5.33	0.13	1.475	0.015	0.210	0.005	-325
-326	1 5/8	3/16	40.64	0.38	5.33	0.13	1.600	0.015	0.210	0.005	-326
-327	1 3/4	3/16	43.82	0.38	5.33	0.13	1.725	0.015	0.210	0.005	-327
-328	1 7/8	3/16	46.99	0.38	5.33	0.13	1.850	0.015	0.210	0.005	-328
-329	2	3/16	50.17	0.46	5.33	0.13	1.975	0.018	0.210	0.005	-329
-330	2 1/8	3/16	53.34	0.46	5.33	0.13	2.100	0.018	0.210	0.005	-330
-331	2 1/4	3/16	56.52	0.46	5.33	0.13	2.225	0.018	0.210	0.005	-331

GLOBAL O-RING SIZE REFERENCE GUIDE

AS568 SIZES

AS568 SIZE	NOMINAL (REF.) ID	CS	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	AS568 SIZE
-332	2 3/8	3/16	59.69	0.46	5.33	0.13	2.350	0.018	0.210	0.005	-332
-333	2 1/2	3/16	62.87	0.51	5.33	0.13	2.475	0.020	0.210	0.005	-333
-334	2 5/8	3/16	66.04	0.51	5.33	0.13	2.600	0.020	0.210	0.005	-334
-335	2 3/4	3/16	69.22	0.51	5.33	0.13	2.725	0.020	0.210	0.005	-335
-336	2 7/8	3/16	72.39	0.51	5.33	0.13	2.850	0.020	0.210	0.005	-336
-337	3	3/16	75.57	0.61	5.33	0.13	2.975	0.024	0.210	0.005	-337
-338	3 1/8	3/16	78.74	0.61	5.33	0.13	3.100	0.024	0.210	0.005	-338
-339	3 1/4	3/16	81.92	0.61	5.33	0.13	3.225	0.024	0.210	0.005	-339
-340	3 3/8	3/16	85.09	0.61	5.33	0.13	3.350	0.024	0.210	0.005	-340
-341	3 1/2	3/16	88.27	0.61	5.33	0.13	3.475	0.024	0.210	0.005	-341
-342	3 5/8	3/16	91.44	0.71	5.33	0.13	3.600	0.028	0.210	0.005	-342
-343	3 3/4	3/16	94.62	0.71	5.33	0.13	3.725	0.028	0.210	0.005	-343
-344	3 7/8	3/16	97.79	0.71	5.33	0.13	3.850	0.028	0.210	0.005	-344
-345	4	3/16	100.97	0.71	5.33	0.13	3.975	0.028	0.210	0.005	-345
-346	4 1/8	3/16	104.14	0.71	5.33	0.13	4.100	0.028	0.210	0.005	-346
-347	4 1/4	3/16	107.32	0.76	5.33	0.13	4.225	0.030	0.210	0.005	-347
-348	4 3/8	3/16	110.49	0.76	5.33	0.13	4.350	0.030	0.210	0.005	-348
-349	4 1/2	3/16	113.67	0.76	5.33	0.13	4.475	0.030	0.210	0.005	-349
-350	4 5/8	3/16	116.84	0.76	5.33	0.13	4.600	0.030	0.210	0.005	-350
-351	4 3/4	3/16	120.02	0.76	5.33	0.13	4.725	0.030	0.210	0.005	-351
-352	4 7/8	3/16	123.19	0.76	5.33	0.13	4.850	0.030	0.210	0.005	-352
-353	5	3/16	126.37	0.94	5.33	0.13	4.975	0.037	0.210	0.005	-353
-354	5 1/8	3/16	129.54	0.94	5.33	0.13	5.100	0.037	0.210	0.005	-354
-355	5 1/4	3/16	132.72	0.94	5.33	0.13	5.225	0.037	0.210	0.005	-355
-356	5 3/8	3/16	135.89	0.94	5.33	0.13	5.350	0.037	0.210	0.005	-356
-357	5 1/2	3/16	139.07	0.94	5.33	0.13	5.475	0.037	0.210	0.005	-357
-358	5 5/8	3/16	142.24	0.94	5.33	0.13	5.600	0.037	0.210	0.005	-358
-359	5 3/4	3/16	145.42	0.94	5.33	0.13	5.725	0.037	0.210	0.005	-359
-360	5 7/8	3/16	148.59	0.94	5.33	0.13	5.850	0.037	0.210	0.005	-360
-361	6	3/16	151.77	0.94	5.33	0.13	5.975	0.037	0.210	0.005	-361
-362	6 1/4	3/16	158.12	1.02	5.33	0.13	6.225	0.040	0.210	0.005	-362
-363	6 1/2	3/16	164.47	1.02	5.33	0.13	6.475	0.040	0.210	0.005	-363
-364	6 3/4	3/16	170.82	1.02	5.33	0.13	6.725	0.040	0.210	0.005	-364
-365	7	3/16	177.17	1.02	5.33	0.13	6.975	0.040	0.210	0.005	-365
-366	7 1/4	3/16	183.52	1.14	5.33	0.13	7.225	0.045	0.210	0.005	-366
-367	7 1/2	3/16	189.87	1.14	5.33	0.13	7.475	0.045	0.210	0.005	-367
-368	7 3/4	3/16	196.22	1.14	5.33	0.13	7.725	0.045	0.210	0.005	-368
-369	8	3/16	202.57	1.14	5.33	0.13	7.975	0.045	0.210	0.005	-369
-370	8 1/4	3/16	208.92	1.27	5.33	0.13	8.225	0.050	0.210	0.005	-370

AS568 SIZES

AS568 SIZE	NOMINAL (REF.) ID	CS	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	AS568 SIZE
-371	8 1/2	3/16	215.27	1.27	5.33	0.13	8.475	0.050	0.210	0.005	-371
-372	8 3/4	3/16	221.62	1.27	5.33	0.13	8.725	0.050	0.210	0.005	-372
-373	9	3/16	227.97	1.27	5.33	0.13	8.975	0.050	0.210	0.005	-373
-374	9 1/4	3/16	234.32	1.40	5.33	0.13	9.225	0.055	0.210	0.005	-374
-375	9 1/2	3/16	240.67	1.40	5.33	0.13	9.475	0.055	0.210	0.005	-375
-376	9 3/4	3/16	247.02	1.40	5.33	0.13	9.725	0.055	0.210	0.005	-376
-377	10	3/16	253.37	1.40	5.33	0.13	9.975	0.055	0.210	0.005	-377
-378	10 1/2	3/16	266.07	1.52	5.33	0.13	10.475	0.060	0.210	0.005	-378
-379	11	3/16	278.77	1.52	5.33	0.13	10.975	0.060	0.210	0.005	-379
-380	11 1/2	3/16	291.47	1.65	5.33	0.13	11.475	0.065	0.210	0.005	-380
-381	12	3/16	304.17	1.65	5.33	0.13	11.975	0.065	0.210	0.005	-381
-382	13	3/16	329.57	1.65	5.33	0.13	12.975	0.065	0.210	0.005	-382
-383	14	3/16	354.97	1.78	5.33	0.13	13.975	0.070	0.210	0.005	-383
-384	15	3/16	380.37	1.78	5.33	0.13	14.975	0.070	0.210	0.005	-384
-385	16	3/16	405.26	1.91	5.33	0.13	15.955	0.075	0.210	0.005	-385
-386	17	3/16	430.66	2.03	5.33	0.13	16.955	0.080	0.210	0.005	-386
-387	18	3/16	456.06	2.16	5.33	0.13	17.955	0.085	0.210	0.005	-387
-388	19	3/16	481.45	2.29	5.33	0.13	18.955	0.090	0.210	0.005	-388
-389	20	3/16	506.85	2.41	5.33	0.13	19.955	0.095	0.210	0.005	-389
-390	21	3/16	532.25	2.41	5.33	0.13	20.955	0.095	0.210	0.005	-390
-391	22	3/16	557.65	2.54	5.33	0.13	21.955	0.100	0.210	0.005	-391
-392	23	3/16	582.68	2.67	5.33	0.13	22.940	0.105	0.210	0.005	-392
-393	24	3/16	608.08	2.79	5.33	0.13	23.940	0.110	0.210	0.005	-393
-394	25	3/16	633.48	2.92	5.33	0.13	24.940	0.115	0.210	0.005	-394
-395	26	3/16	658.88	3.05	5.33	0.13	25.940	0.120	0.210	0.005	-395
-425	4 1/2	1/4	113.67	0.84	6.99	0.15	4.475	0.033	0.275	0.006	-425
-426	4 5/8	1/4	116.84	0.84	6.99	0.15	4.600	0.033	0.275	0.006	-426
-427	4 3/4	1/4	120.02	0.84	6.99	0.15	4.725	0.033	0.275	0.006	-427
-428	4 7/8	1/4	123.19	0.84	6.99	0.15	4.850	0.033	0.275	0.006	-428
-429	5	1/4	126.37	0.94	6.99	0.15	4.975	0.037	0.275	0.006	-429
-430	5 1/8	1/4	129.54	0.94	6.99	0.15	5.100	0.037	0.275	0.006	-430
-431	5 1/4	1/4	132.72	0.94	6.99	0.15	5.225	0.037	0.275	0.006	-431
-432	5 3/8	1/4	135.89	0.94	6.99	0.15	5.350	0.037	0.275	0.006	-432
-433	5 1/2	1/4	139.07	0.94	6.99	0.15	5.475	0.037	0.275	0.006	-433
-434	5 5/8	1/4	142.24	0.94	6.99	0.15	5.600	0.037	0.275	0.006	-434
-435	5 3/4	1/4	145.42	0.94	6.99	0.15	5.725	0.037	0.275	0.006	-435
-436	5 7/8	1/4	148.59	0.94	6.99	0.15	5.850	0.037	0.275	0.006	-436
-437	6	1/4	151.77	0.94	6.99	0.15	5.975	0.037	0.275	0.006	-437
-438	6 1/4	1/4	158.12	1.02	6.99	0.15	6.225	0.040	0.275	0.006	-438

GLOBAL O-RING SIZE REFERENCE GUIDE

AS568 SIZES

AS568 SIZE	NOMINAL (REF.) ID	CS	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	AS568 SIZE
-439	6 1/2	1/4	164.47	1.02	6.99	0.15	6.475	0.040	0.275	0.006	-439
-440	6 3/4	1/4	170.82	1.02	6.99	0.15	6.725	0.040	0.275	0.006	-440
-441	7	1/4	177.17	1.02	6.99	0.15	6.975	0.040	0.275	0.006	-441
-442	7 1/4	1/4	183.52	1.14	6.99	0.15	7.225	0.045	0.275	0.006	-442
-443	7 1/2	1/4	189.87	1.14	6.99	0.15	7.475	0.045	0.275	0.006	-443
-444	7 3/4	1/4	196.22	1.14	6.99	0.15	7.725	0.045	0.275	0.006	-444
-445	8	1/4	202.57	1.14	6.99	0.15	7.975	0.045	0.275	0.006	-445
-446	8 1/2	1/4	215.27	1.40	6.99	0.15	8.475	0.055	0.275	0.006	-446
-447	9	1/4	227.97	1.40	6.99	0.15	8.975	0.055	0.275	0.006	-447
-448	9 1/2	1/4	240.67	1.40	6.99	0.15	9.475	0.055	0.275	0.006	-448
-449	10	1/4	253.37	1.40	6.99	0.15	9.975	0.055	0.275	0.006	-449
-450	10 1/2	1/4	266.07	1.52	6.99	0.15	10.475	0.060	0.275	0.006	-450
-451	11	1/4	278.77	1.52	6.99	0.15	10.975	0.060	0.275	0.006	-451
-452	11 1/2	1/4	291.47	1.52	6.99	0.15	11.475	0.060	0.275	0.006	-452
-453	12	1/4	304.17	1.52	6.99	0.15	11.975	0.060	0.275	0.006	-453
-454	12 1/2	1/4	316.87	1.52	6.99	0.15	12.475	0.060	0.275	0.006	-454
-455	13	1/4	329.57	1.52	6.99	0.15	12.975	0.060	0.275	0.006	-455
-456	13 1/2	1/4	342.27	1.78	6.99	0.15	13.475	0.070	0.275	0.006	-456
-457	14	1/4	354.97	1.78	6.99	0.15	13.975	0.070	0.275	0.006	-457
-458	14 1/2	1/4	367.67	1.78	6.99	0.15	14.475	0.070	0.275	0.006	-458
-459	15	1/4	380.37	1.78	6.99	0.15	14.975	0.070	0.275	0.006	-459
-460	15 1/2	1/4	393.07	1.78	6.99	0.15	15.475	0.070	0.275	0.006	-460
-461	16	1/4	405.26	1.91	6.99	0.15	15.955	0.075	0.275	0.006	-461
-462	16 1/2	1/4	417.96	1.91	6.99	0.15	16.455	0.075	0.275	0.006	-462
-463	17	1/4	430.66	2.03	6.99	0.15	16.955	0.080	0.275	0.006	-463
-464	17 1/2	1/4	443.36	2.16	6.99	0.15	17.455	0.085	0.275	0.006	-464
-465	18	1/4	456.06	2.16	6.99	0.15	17.955	0.085	0.275	0.006	-465
-466	18 1/2	1/4	468.76	2.16	6.99	0.15	18.455	0.085	0.275	0.006	-466
-467	19	1/4	481.46	2.29	6.99	0.15	18.955	0.090	0.275	0.006	-467
-468	19 1/2	1/4	494.16	2.29	6.99	0.15	19.455	0.090	0.275	0.006	-468
-469	20	1/4	506.86	2.41	6.99	0.15	19.955	0.095	0.275	0.006	-469
-470	21	1/4	532.26	2.41	6.99	0.15	20.955	0.095	0.275	0.006	-470
-471	22	1/4	557.66	2.54	6.99	0.15	21.955	0.100	0.275	0.006	-471
-472	23	1/4	582.68	2.67	6.99	0.15	22.940	0.105	0.275	0.006	-472
-473	24	1/4	608.08	2.79	6.99	0.15	23.940	0.110	0.275	0.006	-473
-474	25	1/4	633.48	2.92	6.99	0.15	24.940	0.115	0.275	0.006	-474
-475	26	1/4	658.88	3.05	6.99	0.15	25.940	0.120	0.275	0.006	-475
-901	3/32		4.70	0.13	1.42	0.08	0.185	0.005	0.056	0.003	-901
-902	1/8		6.07	0.13	1.63	0.08	0.239	0.005	0.064	0.003	-902

AS568 SIZES

AS568 SIZE	NOMINAL (REF.) ID	CS	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	AS568 SIZE
-903	3/16		7.65	0.13	1.63	0.08	0.301	0.005	0.064	0.003	-903
-904	1/4		8.92	0.13	1.83	0.08	0.351	0.005	0.072	0.003	-904
-905	5/16		10.52	0.13	1.83	0.08	0.414	0.005	0.072	0.003	-905
-906	3/8		11.89	0.13	1.98	0.08	0.468	0.005	0.078	0.003	-906
-907	7/16		13.46	0.18	2.08	0.08	0.530	0.007	0.082	0.003	-907
-908	1/2		16.36	0.23	2.21	0.08	0.644	0.009	0.087	0.003	-908
-909	9/16		17.93	0.23	2.46	0.08	0.706	0.009	0.097	0.003	-909
-910	5/8		19.18	0.23	2.46	0.08	0.755	0.009	0.097	0.003	-910
-911	11/16		21.92	0.23	2.95	0.10	0.863	0.009	0.116	0.004	-911
-912	3/4		23.47	0.23	2.95	0.10	0.924	0.009	0.116	0.004	-912
-913	13/16		25.04	0.25	2.95	0.10	0.986	0.010	0.116	0.004	-913
-914	7/8		26.59	0.25	2.95	0.10	1.047	0.010	0.116	0.004	-914
-916	1		29.74	0.25	2.95	0.10	1.171	0.010	0.116	0.004	-916
-918	1 1/8		34.42	0.30	2.95	0.10	1.355	0.012	0.116	0.004	-918
-920	1 1/4		37.47	0.36	3.00	0.10	1.475	0.014	0.118	0.004	-920
-924	1 1/2		43.69	0.36	3.00	0.10	1.720	0.014	0.118	0.004	-924
-928	1 3/4		53.09	0.46	3.00	0.10	2.090	0.018	0.118	0.004	-928
-932	2		59.36	0.46	3.00	0.10	2.337	0.018	0.118	0.004	-932

GLOBAL O-RING SIZE REFERENCE GUIDE

ISO 3601 G SERIES SIZES

ISO 3601 G SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				ISO 3601 G SIZE
	ID	±	CS	±	ID	±	CS	±	
A0018G	1.80	0.13	1.80	0.08	0.071	0.005	0.071	0.003	A0018G
A0020G	2.00	0.13	1.80	0.08	0.079	0.005	0.071	0.003	A0020G
A0022G	2.24	0.13	1.80	0.08	0.088	0.005	0.071	0.003	A0022G
A0025G	2.50	0.13	1.80	0.08	0.098	0.005	0.071	0.003	A0025G
A0028G	2.80	0.14	1.80	0.08	0.110	0.006	0.071	0.003	A0028G
A0032G	3.15	0.14	1.80	0.08	0.124	0.006	0.071	0.003	A0032G
A0036G	3.55	0.14	1.80	0.08	0.140	0.006	0.071	0.003	A0036G
A0040G	4.00	0.14	1.80	0.08	0.157	0.006	0.071	0.003	A0040G
A0045G	4.50	0.14	1.80	0.08	0.177	0.006	0.071	0.003	A0045G
A0049G	4.87	0.15	1.80	0.08	0.192	0.006	0.071	0.003	A0049G
A0050G	5.00	0.15	1.80	0.08	0.197	0.006	0.071	0.003	A0050G
A0052G	5.15	0.15	1.80	0.08	0.203	0.006	0.071	0.003	A0052G
A0053G	5.30	0.15	1.80	0.08	0.209	0.006	0.071	0.003	A0053G
A0056G	5.60	0.15	1.80	0.08	0.220	0.006	0.071	0.003	A0056G
A0060G	6.00	0.15	1.80	0.08	0.236	0.006	0.071	0.003	A0060G
A0063G	6.30	0.15	1.80	0.08	0.248	0.006	0.071	0.003	A0063G
A0067G	6.70	0.16	1.80	0.08	0.264	0.006	0.071	0.003	A0067G
A0069G	6.90	0.16	1.80	0.08	0.272	0.006	0.071	0.003	A0069G
A0071G	7.10	0.16	1.80	0.08	0.280	0.006	0.071	0.003	A0071G
A0075G	7.50	0.16	1.80	0.08	0.295	0.006	0.071	0.003	A0075G
A0080G	8.00	0.16	1.80	0.08	0.315	0.006	0.071	0.003	A0080G
A0085G	8.50	0.16	1.80	0.08	0.335	0.006	0.071	0.003	A0085G
A0088G	8.75	0.17	1.80	0.08	0.344	0.007	0.071	0.003	A0088G
A0090G	9.00	0.17	1.80	0.08	0.354	0.007	0.071	0.003	A0090G
A0095G	9.50	0.17	1.80	0.08	0.374	0.007	0.071	0.003	A0095G
A0100G	10.00	0.17	1.80	0.08	0.394	0.007	0.071	0.003	A0100G
A0106G	10.60	0.18	1.80	0.08	0.417	0.007	0.071	0.003	A0106G
A0112G	11.20	0.18	1.80	0.08	0.441	0.007	0.071	0.003	A0112G
A0118G	11.80	0.19	1.80	0.08	0.465	0.007	0.071	0.003	A0118G
A0125G	12.50	0.19	1.80	0.08	0.492	0.007	0.071	0.003	A0125G
A0132G	13.20	0.19	1.80	0.08	0.520	0.007	0.071	0.003	A0132G
A0140G	14.00	0.19	1.80	0.08	0.551	0.007	0.071	0.003	A0140G
A0150G	15.00	0.20	1.80	0.08	0.591	0.008	0.071	0.003	A0150G
A0160G	16.00	0.20	1.80	0.08	0.630	0.008	0.071	0.003	A0160G
A0170G	17.00	0.21	1.80	0.08	0.669	0.008	0.071	0.003	A0170G
B0140G	14.00	0.19	2.65	0.09	0.551	0.007	0.104	0.004	B0140G
B0150G	15.00	0.20	2.65	0.09	0.591	0.008	0.104	0.004	B0150G
B0160G	16.00	0.20	2.65	0.09	0.630	0.008	0.104	0.004	B0160G
B0170G	17.00	0.21	2.65	0.09	0.669	0.008	0.104	0.004	B0170G

ISO 3601 G SERIES SIZES

ISO 3601 G SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	ISO 3601 G SIZE
B0180G	18.00	0.21	2.65	0.09	0.709	0.008	0.104	0.004	B0180G
B0190G	19.00	0.22	2.65	0.09	0.748	0.009	0.104	0.004	B0190G
B0200G	20.00	0.22	2.65	0.09	0.787	0.009	0.104	0.004	B0200G
B0212G	21.20	0.23	2.65	0.09	0.835	0.009	0.104	0.004	B0212G
B0224G	22.40	0.24	2.65	0.09	0.882	0.009	0.104	0.004	B0224G
B0236G	23.60	0.24	2.65	0.09	0.929	0.009	0.104	0.004	B0236G
B0250G	25.00	0.25	2.65	0.09	0.984	0.010	0.104	0.004	B0250G
B0258G	25.80	0.26	2.65	0.09	1.016	0.010	0.104	0.004	B0258G
B0265G	26.50	0.26	2.65	0.09	1.043	0.010	0.104	0.004	B0265G
B0280G	28.00	0.28	2.65	0.09	1.102	0.011	0.104	0.004	B0280G
B0300G	30.00	0.29	2.65	0.09	1.181	0.011	0.104	0.004	B0300G
B0315G	31.50	0.31	2.65	0.09	1.240	0.012	0.104	0.004	B0315G
B0325G	32.50	0.32	2.65	0.09	1.280	0.013	0.104	0.004	B0325G
B0335G	33.50	0.32	2.65	0.09	1.319	0.013	0.104	0.004	B0335G
B0345G	34.50	0.33	2.65	0.09	1.358	0.013	0.104	0.004	B0345G
B0355G	35.50	0.34	2.65	0.09	1.398	0.013	0.104	0.004	B0355G
B0365G	36.50	0.35	2.65	0.09	1.437	0.014	0.104	0.004	B0365G
B0375G	37.50	0.36	2.65	0.09	1.476	0.014	0.104	0.004	B0375G
B0387G	38.70	0.37	2.65	0.09	1.524	0.015	0.104	0.004	B0387G
C0180G	18.00	0.21	3.55	0.10	0.709	0.008	0.140	0.004	C0180G
C0190G	19.00	0.22	3.55	0.10	0.748	0.009	0.140	0.004	C0190G
C0200G	20.00	0.22	3.55	0.10	0.787	0.009	0.140	0.004	C0200G
C0212G	21.20	0.23	3.55	0.10	0.835	0.009	0.140	0.004	C0212G
C0224G	22.40	0.24	3.55	0.10	0.882	0.009	0.140	0.004	C0224G
C0236G	23.60	0.24	3.55	0.10	0.929	0.009	0.140	0.004	C0236G
C0250G	25.00	0.25	3.55	0.10	0.984	0.010	0.140	0.004	C0250G
C0258G	25.80	0.26	3.55	0.10	1.016	0.010	0.140	0.004	C0258G
C0265G	26.50	0.26	3.55	0.10	1.043	0.010	0.140	0.004	C0265G
C0280G	28.00	0.28	3.55	0.10	1.102	0.011	0.140	0.004	C0280G
C0300G	30.00	0.29	3.55	0.10	1.181	0.011	0.140	0.004	C0300G
C0315G	31.50	0.31	3.55	0.10	1.240	0.012	0.140	0.004	C0315G
C0325G	32.50	0.32	3.55	0.10	1.280	0.013	0.140	0.004	C0325G
C0335G	33.50	0.32	3.55	0.10	1.319	0.013	0.140	0.004	C0335G
C0345G	34.50	0.33	3.55	0.10	1.358	0.013	0.140	0.004	C0345G
C0355G	35.50	0.34	3.55	0.10	1.398	0.013	0.140	0.004	C0355G
C0365G	36.50	0.35	3.55	0.10	1.437	0.014	0.140	0.004	C0365G
C0375G	37.50	0.36	3.55	0.10	1.476	0.014	0.140	0.004	C0375G
C0387G	38.70	0.37	3.55	0.10	1.524	0.015	0.140	0.004	C0387G
C0400G	40.00	0.38	3.55	0.10	1.575	0.015	0.140	0.004	C0400G

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ISO 3601 G SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				ISO 3601 G SIZE
	ID	±	CS	±	ID	±	CS	±	
C0412G	41.20	0.39	3.55	0.10	1.622	0.015	0.140	0.004	C0412G
C0425G	42.50	0.40	3.55	0.10	1.673	0.016	0.140	0.004	C0425G
C0437G	43.70	0.41	3.55	0.10	1.720	0.016	0.140	0.004	C0437G
C0450G	45.00	0.42	3.55	0.10	1.772	0.017	0.140	0.004	C0450G
C0462G	46.20	0.43	3.55	0.10	1.819	0.017	0.140	0.004	C0462G
C0475G	47.50	0.44	3.55	0.10	1.870	0.017	0.140	0.004	C0475G
C0487G	48.70	0.45	3.55	0.10	1.917	0.018	0.140	0.004	C0487G
C0500G	50.00	0.46	3.55	0.10	1.969	0.018	0.140	0.004	C0500G
C0515G	51.50	0.47	3.55	0.10	2.028	0.019	0.140	0.004	C0515G
C0530G	53.00	0.48	3.55	0.10	2.087	0.019	0.140	0.004	C0530G
C0545G	54.50	0.49	3.55	0.10	2.146	0.019	0.140	0.004	C0545G
C0560G	56.00	0.51	3.55	0.10	2.205	0.020	0.140	0.004	C0560G
C0580G	58.00	0.52	3.55	0.10	2.283	0.020	0.140	0.004	C0580G
C0600G	60.00	0.54	3.55	0.10	2.362	0.021	0.140	0.004	C0600G
C0615G	61.50	0.55	3.55	0.10	2.421	0.022	0.140	0.004	C0615G
C0630G	63.00	0.56	3.55	0.10	2.480	0.022	0.140	0.004	C0630G
C0650G	65.00	0.58	3.55	0.10	2.559	0.023	0.140	0.004	C0650G
C0670G	67.00	0.59	3.55	0.10	2.638	0.023	0.140	0.004	C0670G
C0690G	69.00	0.61	3.55	0.10	2.717	0.024	0.140	0.004	C0690G
C0710G	71.00	0.63	3.55	0.10	2.795	0.025	0.140	0.004	C0710G
C0730G	73.00	0.64	3.55	0.10	2.874	0.025	0.140	0.004	C0730G
C0750G	75.00	0.66	3.55	0.10	2.953	0.026	0.140	0.004	C0750G
C0775G	77.50	0.67	3.55	0.10	3.051	0.026	0.140	0.004	C0775G
C0800G	80.00	0.69	3.55	0.10	3.150	0.027	0.140	0.004	C0800G
C0825G	82.50	0.71	3.55	0.10	3.248	0.028	0.140	0.004	C0825G
C0850G	85.00	0.73	3.55	0.10	3.346	0.029	0.140	0.004	C0850G
C0875G	87.50	0.75	3.55	0.10	3.445	0.030	0.140	0.004	C0875G
C0900G	90.00	0.77	3.55	0.10	3.543	0.030	0.140	0.004	C0900G
C0925G	92.50	0.79	3.55	0.10	3.642	0.031	0.140	0.004	C0925G
C0950G	95.00	0.81	3.55	0.10	3.740	0.032	0.140	0.004	C0950G
C0975G	97.50	0.83	3.55	0.10	3.839	0.033	0.140	0.004	C0975G
C1000G	100.00	0.84	3.55	0.10	3.937	0.033	0.140	0.004	C1000G
C1030G	103.00	0.87	3.55	0.10	4.055	0.034	0.140	0.004	C1030G
C1060G	106.00	0.89	3.55	0.10	4.173	0.035	0.140	0.004	C1060G
C1090G	109.00	0.91	3.55	0.10	4.291	0.036	0.140	0.004	C1090G
C1120G	112.00	0.93	3.55	0.10	4.409	0.037	0.140	0.004	C1120G
C1150G	115.00	0.95	3.55	0.10	4.528	0.037	0.140	0.004	C1150G
C1180G	118.00	0.97	3.55	0.10	4.646	0.038	0.140	0.004	C1180G
C1220G	122.00	1.00	3.55	0.10	4.803	0.039	0.140	0.004	C1220G

ISO 3601 G SERIES SIZES

ISO 3601 G SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	ISO 3601 G SIZE
C1250G	125.00	1.03	3.55	0.10	4.921	0.041	0.140	0.004	C1250G
C1280G	128.00	1.05	3.55	0.10	5.039	0.041	0.140	0.004	C1280G
C1320G	132.00	1.08	3.55	0.10	5.197	0.043	0.140	0.004	C1320G
C1360G	136.00	1.10	3.55	0.10	5.354	0.043	0.140	0.004	C1360G
C1400G	140.00	1.13	3.55	0.10	5.512	0.044	0.140	0.004	C1400G
C1450G	145.00	1.17	3.55	0.10	5.709	0.046	0.140	0.004	C1450G
C1500G	150.00	1.20	3.55	0.10	5.906	0.047	0.140	0.004	C1500G
C1550G	155.00	1.24	3.55	0.10	6.102	0.049	0.140	0.004	C1550G
C1600G	160.00	1.27	3.55	0.10	6.299	0.050	0.140	0.004	C1600G
C1650G	165.00	1.31	3.55	0.10	6.496	0.052	0.140	0.004	C1650G
C1700G	170.00	1.34	3.55	0.10	6.693	0.053	0.140	0.004	C1700G
C1750G	175.00	1.38	3.55	0.10	6.890	0.054	0.140	0.004	C1750G
C1800G	180.00	1.41	3.55	0.10	7.087	0.056	0.140	0.004	C1800G
C1850G	185.00	1.44	3.55	0.10	7.283	0.057	0.140	0.004	C1850G
C1900G	190.00	1.48	3.55	0.10	7.480	0.058	0.140	0.004	C1900G
C1950G	195.00	1.51	3.55	0.10	7.677	0.059	0.140	0.004	C1950G
C2000G	200.00	1.55	3.55	0.10	7.874	0.061	0.140	0.004	C2000G
D0400G	40.00	0.38	5.30	0.13	1.575	0.015	0.209	0.005	D0400G
D0412G	41.20	0.39	5.30	0.13	1.622	0.015	0.209	0.005	D0412G
D0425G	42.50	0.40	5.30	0.13	1.673	0.016	0.209	0.005	D0425G
D0437G	43.70	0.41	5.30	0.13	1.720	0.016	0.209	0.005	D0437G
D0450G	45.00	0.42	5.30	0.13	1.772	0.017	0.209	0.005	D0450G
D0462G	46.20	0.43	5.30	0.13	1.819	0.017	0.209	0.005	D0462G
D0475G	47.50	0.44	5.30	0.13	1.870	0.017	0.209	0.005	D0475G
D0487G	48.70	0.45	5.30	0.13	1.917	0.018	0.209	0.005	D0487G
D0500G	50.00	0.46	5.30	0.13	1.969	0.018	0.209	0.005	D0500G
D0515G	51.50	0.47	5.30	0.13	2.028	0.019	0.209	0.005	D0515G
D0530G	53.00	0.48	5.30	0.13	2.087	0.019	0.209	0.005	D0530G
D0545G	54.50	0.49	5.30	0.13	2.146	0.019	0.209	0.005	D0545G
D0560G	56.00	0.51	5.30	0.13	2.205	0.020	0.209	0.005	D0560G
D0580G	58.00	0.52	5.30	0.13	2.283	0.020	0.209	0.005	D0580G
D0600G	60.00	0.54	5.30	0.13	2.362	0.021	0.209	0.005	D0600G
D0615G	61.50	0.55	5.30	0.13	2.421	0.022	0.209	0.005	D0615G
D0630G	63.00	0.56	5.30	0.13	2.480	0.022	0.209	0.005	D0630G
D0650G	65.00	0.58	5.30	0.13	2.559	0.023	0.209	0.005	D0650G
D0670G	67.00	0.59	5.30	0.13	2.638	0.023	0.209	0.005	D0670G
D0690G	69.00	0.61	5.30	0.13	2.717	0.024	0.209	0.005	D0690G
D0710G	71.00	0.63	5.30	0.13	2.795	0.025	0.209	0.005	D0710G
D0730G	73.00	0.64	5.30	0.13	2.874	0.025	0.209	0.005	D0730G

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ISO 3601 G SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	ISO 3601 G SIZE
D0750G	75.00	0.66	5.30	0.13	2.953	0.026	0.209	0.005	D0750G
D0775G	77.50	0.67	5.30	0.13	3.051	0.026	0.209	0.005	D0775G
D0800G	80.00	0.69	5.30	0.13	3.150	0.027	0.209	0.005	D0800G
D0825G	82.50	0.71	5.30	0.13	3.248	0.028	0.209	0.005	D0825G
D0850G	85.00	0.73	5.30	0.13	3.346	0.029	0.209	0.005	D0850G
D0875G	87.50	0.75	5.30	0.13	3.445	0.030	0.209	0.005	D0875G
D0900G	90.00	0.77	5.30	0.13	3.543	0.030	0.209	0.005	D0900G
D0925G	92.50	0.79	5.30	0.13	3.642	0.031	0.209	0.005	D0925G
D0950G	95.00	0.81	5.30	0.13	3.740	0.032	0.209	0.005	D0950G
D0975G	97.50	0.83	5.30	0.13	3.839	0.033	0.209	0.005	D0975G
D1000G	100.00	0.84	5.30	0.13	3.937	0.033	0.209	0.005	D1000G
D1030G	103.00	0.87	5.30	0.13	4.055	0.034	0.209	0.005	D1030G
D1060G	106.00	0.89	5.30	0.13	4.173	0.035	0.209	0.005	D1060G
D1090G	109.00	0.91	5.30	0.13	4.291	0.036	0.209	0.005	D1090G
D1120G	112.00	0.93	5.30	0.13	4.409	0.037	0.209	0.005	D1120G
D1150G	115.00	0.95	5.30	0.13	4.528	0.037	0.209	0.005	D1150G
D1180G	118.00	0.97	5.30	0.13	4.646	0.038	0.209	0.005	D1180G
D1220G	122.00	1.00	5.30	0.13	4.803	0.039	0.209	0.005	D1220G
D1250G	125.00	1.03	5.30	0.13	4.921	0.041	0.209	0.005	D1250G
D1280G	128.00	1.05	5.30	0.13	5.039	0.041	0.209	0.005	D1280G
D1320G	132.00	1.08	5.30	0.13	5.197	0.043	0.209	0.005	D1320G
D1360G	136.00	1.10	5.30	0.13	5.354	0.043	0.209	0.005	D1360G
D1400G	140.00	1.13	5.30	0.13	5.512	0.044	0.209	0.005	D1400G
D1450G	145.00	1.17	5.30	0.13	5.709	0.046	0.209	0.005	D1450G
D1500G	150.00	1.20	5.30	0.13	5.906	0.047	0.209	0.005	D1500G
D1550G	155.00	1.24	5.30	0.13	6.102	0.049	0.209	0.005	D1550G
D1600G	160.00	1.27	5.30	0.13	6.299	0.050	0.209	0.005	D1600G
D1650G	165.00	1.31	5.30	0.13	6.496	0.052	0.209	0.005	D1650G
D1700G	170.00	1.34	5.30	0.13	6.693	0.053	0.209	0.005	D1700G
D1750G	175.00	1.38	5.30	0.13	6.890	0.054	0.209	0.005	D1750G
D1800G	180.00	1.41	5.30	0.13	7.087	0.056	0.209	0.005	D1800G
D1850G	185.00	1.44	5.30	0.13	7.283	0.057	0.209	0.005	D1850G
D1900G	190.00	1.48	5.30	0.13	7.480	0.058	0.209	0.005	D1900G
D1950G	195.00	1.51	5.30	0.13	7.677	0.059	0.209	0.005	D1950G
D2000G	200.00	1.55	5.30	0.13	7.874	0.061	0.209	0.005	D2000G
D2060G	206.00	1.59	5.30	0.13	8.110	0.063	0.209	0.005	D2060G
D2120G	212.00	1.63	5.30	0.13	8.346	0.064	0.209	0.005	D2120G
D2180G	218.00	1.67	5.30	0.13	8.583	0.066	0.209	0.005	D2180G
D2240G	224.00	1.71	5.30	0.13	8.819	0.067	0.209	0.005	D2240G

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ISO 3601 G SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	ISO 3601 G SIZE
D2300G	230.00	1.75	5.30	0.13	9.055	0.069	0.209	0.005	D2300G
D2360G	236.00	1.79	5.30	0.13	9.291	0.070	0.209	0.005	D2360G
D2430G	243.00	1.83	5.30	0.13	9.567	0.072	0.209	0.005	D2430G
D2500G	250.00	1.88	5.30	0.13	9.843	0.074	0.209	0.005	D2500G
D2580G	258.00	1.93	5.30	0.13	10.157	0.076	0.209	0.005	D2580G
D2650G	265.00	1.98	5.30	0.13	10.433	0.078	0.209	0.005	D2650G
D2720G	272.00	2.02	5.30	0.13	10.709	0.080	0.209	0.005	D2720G
D2800G	280.00	2.08	5.30	0.13	11.024	0.082	0.209	0.005	D2800G
D2900G	290.00	2.14	5.30	0.13	11.417	0.084	0.209	0.005	D2900G
D3000G	300.00	2.21	5.30	0.13	11.811	0.087	0.209	0.005	D3000G
D3070G	307.00	2.25	5.30	0.13	12.087	0.089	0.209	0.005	D3070G
D3150G	315.00	2.30	5.30	0.13	12.402	0.091	0.209	0.005	D3150G
D3250G	325.00	2.37	5.30	0.13	12.795	0.093	0.209	0.005	D3250G
D3350G	335.00	2.43	5.30	0.13	13.189	0.096	0.209	0.005	D3350G
D3450G	345.00	2.49	5.30	0.13	13.583	0.098	0.209	0.005	D3450G
D3550G	355.00	2.56	5.30	0.13	13.976	0.101	0.209	0.005	D3550G
D3650G	365.00	2.62	5.30	0.13	14.370	0.103	0.209	0.005	D3650G
D3750G	375.00	2.68	5.30	0.13	14.764	0.106	0.209	0.005	D3750G
D3870G	387.00	2.76	5.30	0.13	15.236	0.109	0.209	0.005	D3870G
D4000G	400.00	2.84	5.30	0.13	15.748	0.112	0.209	0.005	D4000G
E1090G	109.00	0.91	7.00	0.15	4.291	0.036	0.276	0.006	E1090G
E1120G	112.00	0.93	7.00	0.15	4.409	0.037	0.276	0.006	E1120G
E1150G	115.00	0.95	7.00	0.15	4.528	0.037	0.276	0.006	E1150G
E1180G	118.00	0.97	7.00	0.15	4.646	0.038	0.276	0.006	E1180G
E1220G	122.00	1.00	7.00	0.15	4.803	0.039	0.276	0.006	E1220G
E1250G	125.00	1.03	7.00	0.15	4.921	0.041	0.276	0.006	E1250G
E1280G	128.00	1.05	7.00	0.15	5.039	0.041	0.276	0.006	E1280G
E1320G	132.00	1.08	7.00	0.15	5.197	0.043	0.276	0.006	E1320G
E1360G	136.00	1.10	7.00	0.15	5.354	0.043	0.276	0.006	E1360G
E1400G	140.00	1.13	7.00	0.15	5.512	0.044	0.276	0.006	E1400G
E1450G	145.00	1.17	7.00	0.15	5.709	0.046	0.276	0.006	E1450G
E1500G	150.00	1.20	7.00	0.15	5.906	0.047	0.276	0.006	E1500G
E1550G	155.00	1.24	7.00	0.15	6.102	0.049	0.276	0.006	E1550G
E1600G	160.00	1.27	7.00	0.15	6.299	0.050	0.276	0.006	E1600G
E1650G	165.00	1.31	7.00	0.15	6.496	0.052	0.276	0.006	E1650G
E1700G	170.00	1.34	7.00	0.15	6.693	0.053	0.276	0.006	E1700G
E1750G	175.00	1.38	7.00	0.15	6.890	0.054	0.276	0.006	E1750G
E1800G	180.00	1.41	7.00	0.15	7.087	0.056	0.276	0.006	E1800G
E1850G	185.00	1.44	7.00	0.15	7.283	0.057	0.276	0.006	E1850G

GLOBAL O-RING SIZE REFERENCE GUIDE

ISO 3601 G SERIES SIZES

ISO 3601 G SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				ISO 3601 G SIZE
	ID	±	CS	±	ID	±	CS	±	
E1900G	190.00	1.48	7.00	0.15	7.480	0.058	0.276	0.006	E1900G
E1950G	195.00	1.51	7.00	0.15	7.677	0.059	0.276	0.006	E1950G
E2000G	200.00	1.55	7.00	0.15	7.874	0.061	0.276	0.006	E2000G
E2060G	206.00	1.59	7.00	0.15	8.110	0.063	0.276	0.006	E2060G
E2120G	212.00	1.63	7.00	0.15	8.346	0.064	0.276	0.006	E2120G
E2180G	218.00	1.67	7.00	0.15	8.583	0.066	0.276	0.006	E2180G
E2240G	224.00	1.71	7.00	0.15	8.819	0.067	0.276	0.006	E2240G
E2300G	230.00	1.75	7.00	0.15	9.055	0.069	0.276	0.006	E2300G
E2360G	236.00	1.79	7.00	0.15	9.291	0.070	0.276	0.006	E2360G
E2430G	243.00	1.83	7.00	0.15	9.567	0.072	0.276	0.006	E2430G
E2500G	250.00	1.88	7.00	0.15	9.843	0.074	0.276	0.006	E2500G
E2580G	258.00	1.93	7.00	0.15	10.157	0.076	0.276	0.006	E2580G
E2650G	265.00	1.98	7.00	0.15	10.433	0.078	0.276	0.006	E2650G
E2720G	272.00	2.02	7.00	0.15	10.709	0.080	0.276	0.006	E2720G
E2800G	280.00	2.08	7.00	0.15	11.024	0.082	0.276	0.006	E2800G
E2900G	290.00	2.14	7.00	0.15	11.417	0.084	0.276	0.006	E2900G
E3000G	300.00	2.21	7.00	0.15	11.811	0.087	0.276	0.006	E3000G
E3070G	307.00	2.25	7.00	0.15	12.087	0.089	0.276	0.006	E3070G
E3150G	315.00	2.30	7.00	0.15	12.402	0.091	0.276	0.006	E3150G
E3250G	325.00	2.37	7.00	0.15	12.795	0.093	0.276	0.006	E3250G
E3350G	335.00	2.43	7.00	0.15	13.189	0.096	0.276	0.006	E3350G
E3450G	345.00	2.49	7.00	0.15	13.583	0.098	0.276	0.006	E3450G
E3550G	355.00	2.56	7.00	0.15	13.976	0.101	0.2 76	0.006	E3550G
E3650G	365.00	2.62	7.00	0.15	14.370	0.103	0.276	0.006	E3650G
E3750G	375.00	2.68	7.00	0.15	14.764	0.106	0.276	0.006	E3750G
E3870G	387.00	2.76	7.00	0.15	15.236	0.109	0.276	0.006	E3870G
E4000G	400.00	2.84	7.00	0.15	15.748	0.112	0.276	0.006	E4000G
E4120G	412.00	2.91	7.00	0.15	16.220	0.115	0.276	0.006	E4120G
E4250G	425.00	2.99	7.00	0.15	16.732	0.118	0.276	0.006	E4250G
E4370G	437.00	3.07	7.00	0.15	17.205	0.121	0.276	0.006	E4370G
E4500G	450.00	3.15	7.00	0.15	17.717	0.124	0.276	0.006	E4500G
E4620G	462.00	3.22	7.00	0.15	18.189	0.127	0.276	0.006	E4620G
E4750G	475.00	3.30	7.00	0.15	18.701	0.130	0.276	0.006	E4750G
E4870G	487.00	3.37	7.00	0.15	19.173	0.133	0.276	0.006	E4870G
E5000G	500.00	3.45	7.00	0.15	19.685	0.136	0.276	0.006	E5000G
E5150G	515.00	3.54	7.00	0.15	20.276	0.139	0.276	0.006	E5150G
E5300G	530.00	3.63	7.00	0.15	20.866	0.143	0.276	0.006	E5300G
E5450G	545.00	3.72	7.00	0.15	21.457	0.146	0.276	0.006	E5450G
E5600G	560.00	3.81	7.00	0.15	22.047	0.150	0.276	0.006	E5600G

ISO 3601 G SERIES SIZES

ISO 3601 G SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	ISO 3601 G SIZE
E5800G	580.00	3.93	7.00	0.15	22.835	0.155	0.276	0.006	E5800G
E6000G	600.00	4.05	7.00	0.15	23.622	0.159	0.276	0.006	E6000G
E6150G	615.00	4.13	7.00	0.15	24.213	0.163	0.276	0.006	E6150G
E6300G	630.00	4.22	7.00	0.15	24.803	0.166	0.276	0.006	E6300G
E6500G	650.00	4.34	7.00	0.15	25.591	0.171	0.276	0.006	E6500G
E6700G	670.00	4.46	7.00	0.15	26.378	0.176	0.276	0.006	E6700G

GLOBAL O-RING SIZE REFERENCE GUIDE

ISO 3601 A SERIES SIZES

ISO 3601 A SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				ISO 3601 A SIZE
	ID	±	CS	±	ID	±	CS	±	
A0018A	1.80	0.13	1.80	0.08	0.071	0.005	0.071	0.003	A0018A
A0020A	2.00	0.13	1.80	0.08	0.079	0.005	0.071	0.003	A0020A
A0022A	2.24	0.13	1.80	0.08	0.088	0.005	0.071	0.003	A0022A
A0025A	2.50	0.13	1.80	0.08	0.098	0.005	0.071	0.003	A0025A
A0028A	2.80	0.13	1.80	0.08	0.110	0.005	0.071	0.003	A0028A
A0032A	3.15	0.13	1.80	0.08	0.124	0.005	0.071	0.003	A0032A
A0036A	3.55	0.13	1.80	0.08	0.140	0.005	0.071	0.003	A0036A
A0040A	4.00	0.13	1.80	0.08	0.157	0.005	0.071	0.003	A0040A
A0045A	4.50	0.13	1.80	0.08	0.177	0.005	0.071	0.003	A0045A
A0049A	4.87	0.13	1.80	0.08	0.192	0.005	0.071	0.003	A0049A
A0050A	5.00	0.13	1.80	0.08	0.197	0.005	0.071	0.003	A0050A
A0052A	5.15	0.13	1.80	0.08	0.203	0.005	0.071	0.003	A0052A
A0053A	5.30	0.13	1.80	0.08	0.209	0.005	0.071	0.003	A0053A
A0056A	5.60	0.13	1.80	0.08	0.220	0.005	0.071	0.003	A0056A
A0060A	6.00	0.13	1.80	0.08	0.236	0.005	0.071	0.003	A0060A
A0063A	6.30	0.13	1.80	0.08	0.248	0.005	0.071	0.003	A0063A
A0067A	6.70	0.13	1.80	0.08	0.264	0.005	0.071	0.003	A0067A
A0069A	6.90	0.14	1.80	0.08	0.272	0.006	0.071	0.003	A0069A
A0071A	7.10	0.14	1.80	0.08	0.280	0.006	0.071	0.003	A0071A
A0075A	7.50	0.14	1.80	0.08	0.295	0.006	0.071	0.003	A0075A
A0080A	8.00	0.14	1.80	0.08	0.315	0.006	0.071	0.003	A0080A
A0085A	8.50	0.15	1.80	0.08	0.335	0.006	0.071	0.003	A0085A
A0088A	8.75	0.15	1.80	0.08	0.344	0.006	0.071	0.003	A0088A
A0090A	9.00	0.15	1.80	0.08	0.354	0.006	0.071	0.003	A0090A
A0095A	9.50	0.15	1.80	0.08	0.374	0.006	0.071	0.003	A0095A
A0100A	10.00	0.15	1.80	0.08	0.394	0.006	0.071	0.003	A0100A
A0106A	10.60	0.16	1.80	0.08	0.417	0.006	0.071	0.003	A0106A
A0112A	11.20	0.16	1.80	0.08	0.441	0.006	0.071	0.003	A0112A
A0118A	11.80	0.17	1.80	0.08	0.465	0.007	0.071	0.003	A0118A
A0125A	12.50	0.17	1.80	0.08	0.492	0.007	0.071	0.003	A0125A
A0132A	13.20	0.17	1.80	0.08	0.520	0.007	0.071	0.003	A0132A
A0140A	14.00	0.18	1.80	0.08	0.551	0.007	0.071	0.003	A0140A
A0150A	15.00	0.18	1.80	0.08	0.591	0.007	0.071	0.003	A0150A
A0160A	16.00	0.19	1.80	0.08	0.630	0.007	0.071	0.003	A0160A
A0170A	17.00	0.20	1.80	0.08	0.669	0.008	0.071	0.003	A0170A
A0180A	18.00	0.20	1.80	0.08	0.709	0.008	0.071	0.003	A0180A
A0190A	19.00	0.21	1.80	0.08	0.748	0.008	0.071	0.003	A0190A
A0200A	20.00	0.21	1.80	0.08	0.787	0.008	0.071	0.003	A0200A
A0212A	21.20	0.22	1.80	0.08	0.835	0.009	0.071	0.003	A0212A

ISO 3601 A SERIES SIZES

ISO 3601 A SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				ISO 3601 A SIZE
	ID	±	CS	±	ID	±	CS	±	
A0224A	22.40	0.23	1.80	0.08	0.882	0.009	0.071	0.003	A0224A
A0236A	23.60	0.24	1.80	0.08	0.929	0.009	0.071	0.003	A0236A
A0250A	25.00	0.24	1.80	0.08	0.984	0.009	0.071	0.003	A0250A
A0258A	25.80	0.25	1.80	0.08	1.016	0.010	0.071	0.003	A0258A
A0265A	26.50	0.25	1.80	0.08	1.043	0.010	0.071	0.003	A0265A
A0280A	28.00	0.26	1.80	0.08	1.102	0.010	0.071	0.003	A0280A
A0300A	30.00	0.27	1.80	0.08	1.181	0.011	0.071	0.003	A0300A
A0315A	31.50	0.28	1.80	0.08	1.240	0.011	0.071	0.003	A0315A
A0325A	32.50	0.29	1.80	0.08	1.280	0.011	0.071	0.003	A0325A
A0335A	33.50	0.29	1.80	0.08	1.319	0.011	0.071	0.003	A0335A
A0345A	34.50	0.30	1.80	0.08	1.358	0.012	0.071	0.003	A0345A
A0355A	35.50	0.31	1.80	0.08	1.398	0.012	0.071	0.003	A0355A
A0365A	36.50	0.31	1.80	0.08	1.437	0.012	0.071	0.003	A0365A
A0375A	37.50	0.32	1.80	0.08	1.476	0.013	0.071	0.003	A0375A
A0387A	38.70	0.32	1.80	0.08	1.524	0.013	0.071	0.003	A0387A
A0400A	40.00	0.33	1.80	0.08	1.575	0.013	0.071	0.003	A0400A
A0412A	41.20	0.34	1.80	0.08	1.622	0.013	0.071	0.003	A0412A
A0425A	42.50	0.35	1.80	0.08	1.673	0.014	0.071	0.003	A0425A
A0437A	43.70	0.35	1.80	0.08	1.720	0.014	0.071	0.003	A0437A
A0450A	45.00	0.36	1.80	0.08	1.772	0.014	0.071	0.003	A0450A
A0475A	47.50	0.38	1.80	0.08	1.870	0.015	0.071	0.003	A0475A
A0500A	50.00	0.39	1.80	0.08	1.969	0.015	0.071	0.003	A0500A
A0530A	53.00	0.41	1.80	0.08	2.087	0.016	0.071	0.003	A0530A
A0560A	56.00	0.42	1.80	0.08	2.205	0.017	0.071	0.003	A0560A
A0600A	60.00	0.45	1.80	0.08	2.362	0.018	0.071	0.003	A0600A
A0630A	63.00	0.46	1.80	0.08	2.480	0.018	0.071	0.003	A0630A
A0670A	67.00	0.49	1.80	0.08	2.638	0.019	0.071	0.003	A0670A
A0710A	71.00	0.51	1.80	0.08	2.795	0.020	0.071	0.003	A0710A
A0750A	75.00	0.53	1.80	0.08	2.953	0.021	0.071	0.003	A0750A
A0800A	80.00	0.56	1.80	0.08	3.150	0.022	0.071	0.003	A0800A
A0850A	85.00	0.59	1.80	0.08	3.346	0.023	0.071	0.003	A0850A
A0900A	90.00	0.62	1.80	0.08	3.543	0.024	0.071	0.003	A0900A
A0950A	95.00	0.64	1.80	0.08	3.740	0.025	0.071	0.003	A0950A
A1000A	100.00	0.67	1.80	0.08	3.937	0.026	0.071	0.003	A1000A
A1060A	106.00	0.71	1.80	0.08	4.173	0.028	0.071	0.003	A1060A
A1120A	112.00	0.74	1.80	0.08	4.409	0.029	0.071	0.003	A1120A
A1180A	118.00	0.77	1.80	0.08	4.646	0.030	0.071	0.003	A1180A
A1250A	125.00	0.81	1.80	0.08	4.921	0.032	0.071	0.003	A1250A
B0045A	4.50	0.13	2.65	0.09	0.177	0.005	0.104	0.004	B0045A

GLOBAL O-RING SIZE REFERENCE GUIDE

ISO 3601 A SERIES SIZES

ISO 3601 A SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				ISO 3601 A SIZE
	ID	±	CS	±	ID	±	CS	±	
B0053A	5.30	0.13	2.65	0.09	0.209	0.005	0.104	0.004	B0053A
B0060A	6.00	0.13	2.65	0.09	0.236	0.005	0.104	0.004	B0060A
B0069A	6.90	0.14	2.65	0.09	0.272	0.006	0.104	0.004	B0069A
B0080A	8.00	0.14	2.65	0.09	0.315	0.006	0.104	0.004	B0080A
B0090A	9.00	0.15	2.65	0.09	0.354	0.006	0.104	0.004	B0090A
B0095A	9.50	0.15	2.65	0.09	0.374	0.006	0.104	0.004	B0095A
B0100A	10.00	0.15	2.65	0.09	0.394	0.006	0.104	0.004	B0100A
B0106A	10.60	0.16	2.65	0.09	0.417	0.006	0.104	0.004	B0106A
B0112A	11.20	0.16	2.65	0.09	0.441	0.006	0.104	0.004	B0112A
B0118A	11.80	0.17	2.65	0.09	0.465	0.007	0.104	0.004	B0118A
B0125A	12.50	0.17	2.65	0.09	0.492	0.007	0.104	0.004	B0125A
B0132A	13.20	0.17	2.65	0.09	0.520	0.007	0.104	0.004	B0132A
B0140A	14.00	0.18	2.65	0.09	0.551	0.007	0.104	0.004	B0140A
B0150A	15.00	0.18	2.65	0.09	0.591	0.007	0.104	0.004	B0150A
B0160A	16.00	0.19	2.65	0.09	0.630	0.007	0.104	0.004	B0160A
B0170A	17.00	0.20	2.65	0.09	0.669	0.008	0.104	0.004	B0170A
B0180A	18.00	0.20	2.65	0.09	0.709	0.008	0.104	0.004	B0180A
B0190A	19.00	0.21	2.65	0.09	0.748	0.008	0.104	0.004	B0190A
B0200A	20.00	0.21	2.65	0.09	0.787	0.008	0.104	0.004	B0200A
B0212A	21.20	0.22	2.65	0.09	0.835	0.009	0.104	0.004	B0212A
B0224A	22.40	0.23	2.65	0.09	0.882	0.009	0.104	0.004	B0224A
B0236A	23.60	0.24	2.65	0.09	0.929	0.009	0.104	0.004	B0236A
B0250A	25.00	0.24	2.65	0.09	0.984	0.009	0.104	0.004	B0250A
B0258A	25.80	0.25	2.65	0.09	1.016	0.010	0.104	0.004	B0258A
B0265A	26.50	0.25	2.65	0.09	1.043	0.010	0.104	0.004	B0265A
B0280A	28.00	0.26	2.65	0.09	1.102	0.010	0.104	0.004	B0280A
B0300A	30.00	0.27	2.65	0.09	1.181	0.011	0.104	0.004	B0300A
B0315A	31.50	0.28	2.65	0.09	1.240	0.011	0.104	0.004	B0315A
B0325A	32.50	0.29	2.65	0.09	1.280	0.011	0.104	0.004	B0325A
B0335A	33.50	0.29	2.65	0.09	1.319	0.011	0.104	0.004	B0335A
B0345A	34.50	0.30	2.65	0.09	1.358	0.012	0.104	0.004	B0345A
B0355A	35.50	0.31	2.65	0.09	1.398	0.012	0.104	0.004	B0355A
B0365A	36.50	0.31	2.65	0.09	1.437	0.012	0.104	0.004	B0365A
B0375A	37.50	0.32	2.65	0.09	1.476	0.013	0.104	0.004	B0375A
B0387A	38.70	0.32	2.65	0.09	1.524	0.013	0.104	0.004	B0387A
B0400A	40.00	0.33	2.65	0.09	1.575	0.013	0.104	0.004	B0400A
B0412A	41.20	0.34	2.65	0.09	1.622	0.013	0.104	0.004	B0412A
B0425A	42.50	0.35	2.65	0.09	1.673	0.014	0.104	0.004	B0425A
B0437A	43.70	0.35	2.65	0.09	1.720	0.014	0.104	0.004	B0437A

ISO 3601 A SERIES SIZES

ISO 3601 A SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				ISO 3601 A SIZE
	ID	±	CS	±	ID	±	CS	±	
B0450A	45.00	0.36	2.65	0.09	1.772	0.014	0.104	0.004	B0450A
B0462A	46.20	0.37	2.65	0.09	1.819	0.015	0.104	0.004	B0462A
B0475A	47.50	0.38	2.65	0.09	1.870	0.015	0.104	0.004	B0475A
B0487A	48.70	0.38	2.65	0.09	1.917	0.015	0.104	0.004	B0487A
B0500A	50.00	0.39	2.65	0.09	1.969	0.015	0.104	0.004	B0500A
B0515A	51.50	0.40	2.65	0.09	2.028	0.016	0.104	0.004	B0515A
B0530A	53.00	0.41	2.65	0.09	2.087	0.016	0.104	0.004	B0530A
B0545A	54.50	0.42	2.65	0.09	2.146	0.017	0.104	0.004	B0545A
B0560A	56.00	0.42	2.65	0.09	2.205	0.017	0.104	0.004	B0560A
B0580A	58.00	0.44	2.65	0.09	2.283	0.017	0.104	0.004	B0580A
B0600A	60.00	0.45	2.65	0.09	2.362	0.018	0.104	0.004	B0600A
B0615A	61.50	0.45	2.65	0.09	2.421	0.018	0.104	0.004	B0615A
B0630A	63.00	0.46	2.65	0.09	2.480	0.018	0.104	0.004	B0630A
B0650A	65.00	0.48	2.65	0.09	2.559	0.019	0.104	0.004	B0650A
B0670A	67.00	0.49	2.65	0.09	2.638	0.019	0.104	0.004	B0670A
B0690A	69.00	0.50	2.65	0.09	2.717	0.020	0.104	0.004	B0690A
B0710A	71.00	0.51	2.65	0.09	2.795	0.020	0.104	0.004	B0710A
B0730A	73.00	0.52	2.65	0.09	2.874	0.020	0.104	0.004	B0730A
B0750A	75.00	0.53	2.65	0.09	2.953	0.021	0.104	0.004	B0750A
B0800A	80.00	0.56	2.65	0.09	3.150	0.022	0.104	0.004	B0800A
B0850A	85.00	0.59	2.65	0.09	3.346	0.023	0.104	0.004	B0850A
B0900A	90.00	0.62	2.65	0.09	3.543	0.024	0.104	0.004	B0900A
B0950A	95.00	0.64	2.65	0.09	3.740	0.025	0.104	0.004	B0950A
B1000A	100.00	0.67	2.65	0.09	3.937	0.026	0.104	0.004	B1000A
B1060A	106.00	0.71	2.65	0.09	4.173	0.028	0.104	0.004	B1060A
B1120A	112.00	0.74	2.65	0.09	4.409	0.029	0.104	0.004	B1120A
B1180A	118.00	0.77	2.65	0.09	4.646	0.030	0.104	0.004	B1180A
B1250A	125.00	0.81	2.65	0.09	4.921	0.032	0.104	0.004	B1250A
B1320A	132.00	0.85	2.65	0.09	5.197	0.033	0.104	0.004	B1320A
B1400A	140.00	0.89	2.65	0.09	5.512	0.035	0.104	0.004	B1400A
B1500A	150.00	0.95	2.65	0.09	5.906	0.037	0.104	0.004	B1500A
B1600A	160.00	1.00	2.65	0.09	6.299	0.039	0.104	0.004	B1600A
B1700A	170.00	1.06	2.65	0.09	6.693	0.042	0.104	0.004	B1700A
B1800A	180.00	1.11	2.65	0.09	7.087	0.044	0.104	0.004	B1800A
B1900A	190.00	1.17	2.65	0.09	7.480	0.046	0.104	0.004	B1900A
B2000A	200.00	1.22	2.65	0.09	7.874	0.048	0.104	0.004	B2000A
B2120A	212.00	1.29	2.65	0.09	8.346	0.051	0.104	0.004	B2120A
B2240A	224.00	1.35	2.65	0.09	8.819	0.053	0.104	0.004	B2240A
B2300A	230.00	1.35	2.65	0.09	9.055	0.053	0.104	0.004	B2300A

GLOBAL O-RING SIZE REFERENCE GUIDE

ISO 3601 A SERIES SIZES

ISO 3601 A SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				ISO 3601 A SIZE
	ID	±	CS	±	ID	±	CS	±	
B2360A	236.00	1.35	2.65	0.09	9.291	0.053	0.104	0.004	B2360A
B2430A	243.00	1.35	2.65	0.09	9.567	0.053	0.104	0.004	B2430A
B2500A	250.00	1.35	2.65	0.09	9.843	0.053	0.104	0.004	B2500A
C0140A	14.00	0.18	3.55	0.10	0.551	0.007	0.140	0.004	C0140A
C0150A	15.00	0.18	3.55	0.10	0.591	0.007	0.140	0.004	C0150A
C0160A	16.00	0.19	3.55	0.10	0.630	0.007	0.140	0.004	C0160A
C0170A	17.00	0.20	3.55	0.10	0.669	0.008	0.140	0.004	C0170A
C0180A	18.00	0.20	3.55	0.10	0.709	0.008	0.140	0.004	C0180A
C0190A	19.00	0.21	3.55	0.10	0.748	0.008	0.140	0.004	C0190A
C0200A	20.00	0.21	3.55	0.10	0.787	0.008	0.140	0.004	C0200A
C0212A	21.20	0.22	3.55	0.10	0.835	0.009	0.140	0.004	C0212A
C0224A	22.40	0.23	3.55	0.10	0.882	0.009	0.140	0.004	C0224A
C0236A	23.60	0.24	3.55	0.10	0.929	0.009	0.140	0.004	C0236A
C0250A	25.00	0.24	3.55	0.10	0.984	0.009	0.140	0.004	C0250A
C0258A	25.80	0.25	3.55	0.10	1.016	0.010	0.140	0.004	C0258A
C0265A	26.50	0.25	3.55	0.10	1.043	0.010	0.140	0.004	C0265A
C0280A	28.00	0.26	3.55	0.10	1.102	0.010	0.140	0.004	C0280A
C0300A	30.00	0.27	3.55	0.10	1.181	0.011	0.140	0.004	C0300A
C0315A	31.50	0.28	3.55	0.10	1.240	0.011	0.140	0.004	C0315A
C0325A	32.50	0.29	3.55	0.10	1.280	0.011	0.140	0.004	C0325A
C0335A	33.50	0.29	3.55	0.10	1.319	0.011	0.140	0.004	C0335A
C0345A	34.50	0.30	3.55	0.10	1.358	0.012	0.140	0.004	C0345A
C0355A	35.50	0.31	3.55	0.10	1.398	0.012	0.140	0.004	C0355A
C0365A	36.50	0.31	3.55	0.10	1.437	0.012	0.140	0.004	C0365A
C0375A	37.50	0.32	3.55	0.10	1.476	0.013	0.140	0.004	C0375A
C0387A	38.70	0.32	3.55	0.10	1.524	0.013	0.140	0.004	C0387A
C0400A	40.00	0.33	3.55	0.10	1.575	0.013	0.140	0.004	C0400A
C0412A	41.20	0.34	3.55	0.10	1.622	0.013	0.140	0.004	C0412A
C0425A	42.50	0.35	3.55	0.10	1.673	0.014	0.140	0.004	C0425A
C0437A	43.70	0.35	3.55	0.10	1.720	0.014	0.140	0.004	C0437A
C0450A	45.00	0.36	3.55	0.10	1.772	0.014	0.140	0.004	C0450A
C0462A	46.20	0.37	3.55	0.10	1.819	0.015	0.140	0.004	C0462A
C0475A	47.50	0.38	3.55	0.10	1.870	0.015	0.140	0.004	C0475A
C0487A	48.70	0.38	3.55	0.10	1.917	0.015	0.140	0.004	C0487A
C0500A	50.00	0.39	3.55	0.10	1.969	0.015	0.140	0.004	C0500A
C0515A	51.50	0.40	3.55	0.10	2.028	0.016	0.140	0.004	C0515A
C0530A	53.00	0.41	3.55	0.10	2.087	0.016	0.140	0.004	C0530A
C0545A	54.50	0.42	3.55	0.10	2.146	0.017	0.140	0.004	C0545A
C0560A	56.00	0.42	3.55	0.10	2.205	0.017	0.140	0.004	C0560A

ISO 3601 A SERIES SIZES

ISO 3601 A SIZE	MEASUREMENTS IN INCHES				MEASUREMENTS IN MILLIMETERS				ISO 3601 A SIZE
	ID	±	CS	±	ID	±	CS	±	
C0580A	58.00	0.44	3.55	0.10	2.283	0.017	0.140	0.004	C0580A
C0600A	60.00	0.45	3.55	0.10	2.362	0.018	0.140	0.004	C0600A
C0615A	61.50	0.45	3.55	0.10	2.421	0.018	0.140	0.004	C0615A
C0630A	63.00	0.46	3.55	0.10	2.480	0.018	0.140	0.004	C0630A
C0650A	65.00	0.48	3.55	0.10	2.559	0.019	0.140	0.004	C0650A
C0670A	67.00	0.49	3.55	0.10	2.638	0.019	0.140	0.004	C0670A
C0690A	69.00	0.50	3.55	0.10	2.717	0.020	0.140	0.004	C0690A
C0710A	71.00	0.51	3.55	0.10	2.795	0.020	0.140	0.004	C0710A
C0730A	73.00	0.52	3.55	0.10	2.874	0.020	0.140	0.004	C0730A
C0750A	75.00	0.53	3.55	0.10	2.953	0.021	0.140	0.004	C0750A
C0775A	77.50	0.55	3.55	0.10	3.051	0.022	0.140	0.004	C0775A
C0800A	80.00	0.56	3.55	0.10	3.150	0.022	0.140	0.004	C0800A
C0825A	82.50	0.57	3.55	0.10	3.248	0.022	0.140	0.004	C0825A
C0850A	85.00	0.59	3.55	0.10	3.346	0.023	0.140	0.004	C0850A
C0875A	87.50	0.60	3.55	0.10	3.445	0.024	0.140	0.004	C0875A
C0900A	90.00	0.62	3.55	0.10	3.543	0.024	0.140	0.004	C0900A
C0925A	92.50	0.63	3.55	0.10	3.642	0.025	0.140	0.004	C0925A
C0950A	95.00	0.64	3.55	0.10	3.740	0.025	0.140	0.004	C0950A
C0975A	97.50	0.66	3.55	0.10	3.839	0.026	0.140	0.004	C0975A
C1000A	100.00	0.67	3.55	0.10	3.937	0.026	0.140	0.004	C1000A
C1030A	103.00	0.69	3.55	0.10	4.055	0.027	0.140	0.004	C1030A
C1060A	106.00	0.71	3.55	0.10	4.173	0.028	0.140	0.004	C1060A
C1090A	109.00	0.72	3.55	0.10	4.291	0.028	0.140	0.004	C1090A
C1120A	112.00	0.74	3.55	0.10	4.409	0.029	0.140	0.004	C1120A
C1150A	115.00	0.76	3.55	0.10	4.528	0.030	0.140	0.004	C1150A
C1180A	118.00	0.77	3.55	0.10	4.646	0.030	0.140	0.004	C1180A
C1220A	122.00	0.80	3.55	0.10	4.803	0.031	0.140	0.004	C1220A
C1250A	125.00	0.81	3.55	0.10	4.921	0.032	0.140	0.004	C1250A
C1280A	128.00	0.83	3.55	0.10	5.039	0.033	0.140	0.004	C1280A
C1320A	132.00	0.85	3.55	0.10	5.197	0.033	0.140	0.004	C1320A
C1360A	136.00	0.87	3.55	0.10	5.354	0.034	0.140	0.004	C1360A
C1400A	140.00	0.89	3.55	0.10	5.512	0.035	0.140	0.004	C1400A
C1450A	145.00	0.92	3.55	0.10	5.709	0.036	0.140	0.004	C1450A
C1500A	150.00	0.95	3.55	0.10	5.906	0.037	0.140	0.004	C1500A
C1550A	155.00	0.98	3.55	0.10	6.102	0.039	0.140	0.004	C1550A
C1600A	160.00	1.00	3.55	0.10	6.299	0.039	0.140	0.004	C1600A
C1650A	165.00	1.03	3.55	0.10	6.496	0.041	0.140	0.004	C1650A
C1700A	170.00	1.06	3.55	0.10	6.693	0.042	0.140	0.004	C1700A
C1750A	175.00	1.09	3.55	0.10	6.890	0.043	0.140	0.004	C1750A

GLOBAL O-RING SIZE REFERENCE GUIDE

ISO 3601 A SERIES SIZES

ISO 3601 A SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				ISO 3601 A SIZE
	ID	±	CS	±	ID	±	CS	±	
C1800A	180.00	1.11	3.55	0.10	7.087	0.044	0.140	0.004	C1800A
C1850A	185.00	1.14	3.55	0.10	7.283	0.045	0.140	0.004	C1850A
C1900A	190.00	1.17	3.55	0.10	7.480	0.046	0.140	0.004	C1900A
C1950A	195.00	1.20	3.55	0.10	7.677	0.047	0.140	0.004	C1950A
C2000A	200.00	1.22	3.55	0.10	7.874	0.048	0.140	0.004	C2000A
C2120A	212.00	1.29	3.55	0.10	8.346	0.051	0.140	0.004	C2120A
C2180A	218.00	1.32	3.55	0.10	8.583	0.052	0.140	0.004	C2180A
C2240A	224.00	1.35	3.55	0.10	8.819	0.053	0.140	0.004	C2240A
C2300A	230.00	1.35	3.55	0.10	9.055	0.053	0.140	0.004	C2300A
C2360A	236.00	1.35	3.55	0.10	9.291	0.053	0.140	0.004	C2360A
C2500A	250.00	1.35	3.55	0.10	9.843	0.053	0.140	0.004	C2500A
C2580A	258.00	1.35	3.55	0.10	10.157	0.053	0.140	0.004	C2580A
C2650A	265.00	1.35	3.55	0.10	10.433	0.053	0.140	0.004	C2650A
C2800A	280.00	1.35	3.55	0.10	11.024	0.053	0.140	0.004	C2800A
C2900A	290.00	1.35	3.55	0.10	11.417	0.053	0.140	0.004	C2900A
C3000A	300.00	1.35	3.55	0.10	11.811	0.053	0.140	0.004	C3000A
C3070A	307.00	1.35	3.55	0.10	12.087	0.053	0.140	0.004	C3070A
C3150A	315.00	1.35	3.55	0.10	12.402	0.053	0.140	0.004	C3150A
C3350A	335.00	1.35	3.55	0.10	13.189	0.053	0.140	0.004	C3350A
C3550A	355.00	1.35	3.55	0.10	13.976	0.053	0.140	0.004	C3550A
D0375A	37.50	0.32	5.30	0.13	1.476	0.013	0.209	0.005	D0375A
D0387A	38.70	0.32	5.30	0.13	1.524	0.013	0.209	0.005	D0387A
D0400A	40.00	0.33	5.30	0.13	1.575	0.013	0.209	0.005	D0400A
D0412A	41.20	0.34	5.30	0.13	1.622	0.013	0.209	0.005	D0412A
D0425A	42.50	0.35	5.30	0.13	1.673	0.014	0.209	0.005	D0425A
D0437A	43.70	0.35	5.30	0.13	1.720	0.014	0.209	0.005	D0437A
D0450G	45.00	0.36	5.30	0.13	1.772	0.014	0.209	0.005	D0450G
D0462A	46.20	0.37	5.30	0.13	1.819	0.015	0.209	0.005	D0462A
D0475A	47.50	0.38	5.30	0.13	1.870	0.015	0.209	0.005	D0475A
D0487A	48.70	0.38	5.30	0.13	1.917	0.015	0.209	0.005	D0487A
D0500A	50.00	0.39	5.30	0.13	1.969	0.015	0.209	0.005	D0500A
D0515A	51.50	0.40	5.30	0.13	2.028	0.016	0.209	0.005	D0515A
D0530A	53.00	0.41	5.30	0.13	2.087	0.016	0.209	0.005	D0530A
D0545A	54.50	0.42	5.30	0.13	2.146	0.017	0.209	0.005	D0545A
D0560A	56.00	0.42	5.30	0.13	2.205	0.017	0.209	0.005	D0560A
D0580A	58.00	0.44	5.30	0.13	2.283	0.017	0.209	0.005	D0580A
D0600A	60.00	0.45	5.30	0.13	2.362	0.018	0.209	0.005	D0600A
D0615A	61.50	0.45	5.30	0.13	2.421	0.018	0.209	0.005	D0615A
D0630A	63.00	0.46	5.30	0.13	2.480	0.018	0.209	0.005	D0630A

ISO 3601 A SERIES SIZES

ISO 3601 A SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				ISO 3601 A SIZE
	ID	±	CS	±	ID	±	CS	±	
D0650A	65.00	0.48	5.30	0.13	2.559	0.019	0.209	0.005	D0650A
D0670A	67.00	0.59	5.30	0.13	2.638	0.023	0.209	0.005	D0670A
D0690A	69.00	0.50	5.30	0.13	2.717	0.020	0.209	0.005	D0690A
D0710A	71.00	0.51	5.30	0.13	2.795	0.020	0.209	0.005	D0710A
D0730A	73.00	0.52	5.30	0.13	2.874	0.020	0.209	0.005	D0730A
D0750A	75.00	0.53	5.30	0.13	2.953	0.021	0.209	0.005	D0750A
D0775A	77.50	0.55	5.30	0.13	3.051	0.022	0.209	0.005	D0775A
D0800A	80.00	0.56	5.30	0.13	3.150	0.022	0.209	0.005	D0800A
D0825A	82.50	0.57	5.30	0.13	3.248	0.022	0.209	0.005	D0825A
D0850A	85.00	0.59	5.30	0.13	3.346	0.023	0.209	0.005	D0850A
D0875A	87.50	0.60	5.30	0.13	3.445	0.024	0.209	0.005	D0875A
D0900A	90.00	0.62	5.30	0.13	3.543	0.024	0.209	0.005	D0900A
D0925A	92.50	0.63	5.30	0.13	3.642	0.025	0.209	0.005	D0925A
D0950A	95.00	0.64	5.30	0.13	3.740	0.025	0.209	0.005	D0950A
D0975A	97.50	0.66	5.30	0.13	3.839	0.026	0.209	0.005	D0975A
D1000A	100.00	0.67	5.30	0.13	3.937	0.026	0.209	0.005	D1000A
D1030A	103.00	0.69	5.30	0.13	4.055	0.027	0.209	0.005	D1030A
D1060A	106.00	0.71	5.30	0.13	4.173	0.028	0.209	0.005	D1060A
D1090A	109.00	0.72	5.30	0.13	4.291	0.028	0.209	0.005	D1090A
D1120A	112.00	0.74	5.30	0.13	4.409	0.029	0.209	0.005	D1120A
D1150A	115.00	0.76	5.30	0.13	4.528	0.030	0.209	0.005	D1150A
D1180A	118.00	0.77	5.30	0.13	4.646	0.030	0.209	0.005	D1180A
D1220A	122.00	0.80	5.30	0.13	4.803	0.031	0.209	0.005	D1220A
D1250A	125.00	0.81	5.30	0.13	4.921	0.032	0.209	0.005	D1250A
D1280A	128.00	0.83	5.30	0.13	5.039	0.033	0.209	0.005	D1280A
D1320A	132.00	0.85	5.30	0.13	5.197	0.033	0.209	0.005	D1320A
D1360A	136.00	0.87	5.30	0.13	5.354	0.034	0.209	0.005	D1360A
D1400A	140.00	0.89	5.30	0.13	5.512	0.035	0.209	0.005	D1400A
D1450A	145.00	0.92	5.30	0.13	5.709	0.036	0.209	0.005	D1450A
D1500A	150.00	0.95	5.30	0.13	5.906	0.037	0.209	0.005	D1500A
D1550A	155.00	0.98	5.30	0.13	6.102	0.039	0.209	0.005	D1550A
D1600A	160.00	1.00	5.30	0.13	6.299	0.039	0.209	0.005	D1600A
D1650A	165.00	1.03	5.30	0.13	6.496	0.041	0.209	0.005	D1650A
D1700A	170.00	1.06	5.30	0.13	6.693	0.042	0.209	0.005	D1700A
D1750A	175.00	1.09	5.30	0.13	6.890	0.043	0.209	0.005	D1750A
D1800A	180.00	1.11	5.30	0.13	7.087	0.044	0.209	0.005	D1800A
D1850A	185.00	1.14	5.30	0.13	7.283	0.045	0.209	0.005	D1850A
D1900A	190.00	1.17	5.30	0.13	7.480	0.046	0.209	0.005	D1900A
D1950A	195.00	1.20	5.30	0.13	7.677	0.047	0.209	0.005	D1950A

GLOBAL O-RING SIZE REFERENCE GUIDE

ISO 3601 A SERIES SIZES

ISO 3601 A SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				ISO 3601 A SIZE
	ID	±	CS	±	ID	±	CS	±	
D2000A	200.00	1.22	5.30	0.13	7.874	0.048	0.209	0.005	D2000A
E1090A	109.00	0.72	7.00	0.15	4.291	0.028	0.276	0.006	E1090A
E1120A	112.00	0.74	7.00	0.15	4.409	0.029	0.276	0.006	E1120A
E1150A	115.00	0.76	7.00	0.15	4.528	0.030	0.276	0.006	E1150A
E1180A	118.00	0.77	7.00	0.15	4.646	0.030	0.276	0.006	E1180A
E1220A	122.00	0.80	7.00	0.15	4.803	0.031	0.276	0.006	E1220A
E1250A	125.00	0.81	7.00	0.15	4.921	0.032	0.276	0.006	E1250A
E1280A	128.00	0.83	7.00	0.15	5.039	0.033	0.276	0.006	E1280A
E1320A	132.00	0.85	7.00	0.15	5.197	0.033	0.276	0.006	E1320A
E1360A	136.00	0.87	7.00	0.15	5.354	0.034	0.276	0.006	E1360A
E1400A	140.00	0.89	7.00	0.15	5.512	0.035	0.276	0.006	E1400A
E1450A	145.00	0.92	7.00	0.15	5.709	0.036	0.276	0.006	E1450A
E1500A	150.00	0.95	7.00	0.15	5.906	0.037	0.276	0.006	E1500A
E1550A	155.00	0.98	7.00	0.15	6.102	0.039	0.276	0.006	E1550A
E1600A	160.00	1.00	7.00	0.15	6.299	0.039	0.276	0.006	E1600A
E1650A	165.00	1.03	7.00	0.15	6.496	0.041	0.276	0.006	E1650A
E1700A	170.00	1.06	7.00	0.15	6.693	0.042	0.276	0.006	E1700A
E1750A	175.00	1.09	7.00	0.15	6.890	0.043	0.276	0.006	E1750A
E1800A	180.00	1.11	7.00	0.15	7.087	0.044	0.276	0.006	E1800A
E1850A	185.00	1.14	7.00	0.15	7.283	0.045	0.276	0.006	E1850A
E1900A	190.00	1.17	7.00	0.15	7.480	0.046	0.276	0.006	E1900A
E1950A	195.00	1.20	7.00	0.15	7.677	0.047	0.276	0.006	E1950A
E2000A	200.00	1.22	7.00	0.15	7.874	0.048	0.276	0.006	E2000A
E2060A	206.00	1.26	7.00	0.15	8.110	0.050	0.276	0.006	E2060A
E2120A	212.00	1.29	7.00	0.15	8.346	0.051	0.276	0.006	E2120A
E2180A	218.00	1.32	7.00	0.15	8.583	0.052	0.276	0.006	E2180A
E2240A	224.00	1.35	7.00	0.15	8.819	0.053	0.276	0.006	E2240A
E2300A	230.00	1.35	7.00	0.15	9.055	0.053	0.276	0.006	E2300A
E2360A	236.00	1.35	7.00	0.15	9.291	0.053	0.276	0.006	E2360A
E2430A	243.00	1.35	7.00	0.15	9.567	0.053	0.276	0.006	E2430A
E2500A	250.00	1.35	7.00	0.15	9.843	0.053	0.276	0.006	E2500A
E2580A	258.00	1.35	7.00	0.15	10.157	0.053	0.276	0.006	E2580A
E2650A	265.00	1.35	7.00	0.15	10.433	0.053	0.276	0.006	E2650A
E2720A	272.00	1.35	7.00	0.15	10.709	0.053	0.276	0.006	E2720A
E2800A	280.00	1.35	7.00	0.15	11.024	0.053	0.276	0.006	E2800A
E2900A	290.00	1.35	7.00	0.15	11.417	0.053	0.276	0.006	E2900A
E3000A	300.00	1.35	7.00	0.15	11.811	0.053	0.276	0.006	E3000A
E3070A	307.00	1.35	7.00	0.15	12.087	0.053	0.276	0.006	E3070A
E3150A	315.00	1.35	7.00	0.15	12.402	0.053	0.276	0.006	E3150A

ISO 3601 A SERIES SIZES

ISO 3601 A SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	ISO 3601 A SIZE
E3250A	325.00	1.35	7.00	0.15	12.795	0.053	0.276	0.006	E3250A
E3350A	335.00	1.35	7.00	0.15	13.189	0.053	0.276	0.006	E3350A
E3450A	345.00	1.35	7.00	0.15	13.583	0.053	0.276	0.006	E3450A
E3550A	355.00	1.35	7.00	0.15	13.976	0.053	0.276	0.006	E3550A
E3650A	365.00	1.35	7.00	0.15	14.370	0.053	0.276	0.006	E3650A
E3750A	375.00	1.35	7.00	0.15	14.764	0.053	0.276	0.006	E3750A
E3870A	387.00	1.35	7.00	0.15	15.236	0.053	0.276	0.006	E3870A
E4000A	400.00	1.35	7.00	0.15	15.748	0.053	0.276	0.006	E4000A

GLOBAL O-RING SIZE REFERENCE GUIDE

DIN 3771 SIZES

DIN 3771 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	DIN 3771 SIZE
1,80 X 1,80	1.80	0.13	1.80	0.08	0.071	0.005	0.071	0.003	1,80 X 1,80
2,00 X 1,80	2.00	0.13	1.80	0.08	0.079	0.005	0.071	0.003	2,00 X 1,80
2,24 X 1,80	2.24	0.13	1.80	0.08	0.088	0.005	0.071	0.003	2,24 X 1,80
2,50 X 1,80	2.50	0.13	1.80	0.08	0.098	0.005	0.071	0.003	2,50 X 1,80
2,80 X 1,80	2.80	0.14	1.80	0.08	0.110	0.006	0.071	0.003	2,80 X 1,80
3,15 X 1,80	3.15	0.14	1.80	0.08	0.124	0.006	0.071	0.003	3,15 X 1,80
3,55 X 1,80	3.55	0.14	1.80	0.08	0.140	0.006	0.071	0.003	3,55 X 1,80
4,00 X 1,80	4.00	0.14	1.80	0.08	0.157	0.006	0.071	0.003	4,00 X 1,80
4,50 X 1,80	4.50	0.14	1.80	0.08	0.177	0.006	0.071	0.003	4,50 X 1,80
4,75 X 1,80	4.75	0.15	1.80	0.08	0.187	0.006	0.071	0.003	4,75 X 1,80
4,87 X 1,80	4.87	0.15	1.80	0.08	0.192	0.006	0.071	0.003	4,87 X 1,80
5,00 X 1,80	5.00	0.15	1.80	0.08	0.197	0.006	0.071	0.003	5,00 X 1,80
5,15 X 1,80	5.15	0.15	1.80	0.08	0.203	0.006	0.071	0.003	5,15 X 1,80
5,30 X 1,80	5.30	0.15	1.80	0.08	0.209	0.006	0.071	0.003	5,30 X 1,80
5,60 X 1,80	5.60	0.15	1.80	0.08	0.220	0.006	0.071	0.003	5,60 X 1,80
6,00 X 1,80	6.00	0.15	1.80	0.08	0.236	0.006	0.071	0.003	6,00 X 1,80
6,30 X 1,80	6.30	0.15	1.80	0.08	0.248	0.006	0.071	0.003	6,30 X 1,80
6,70 X 1,80	6.70	0.16	1.80	0.08	0.264	0.006	0.071	0.003	6,70 X 1,80
6,90 X 1,80	6.90	0.16	1.80	0.08	0.272	0.006	0.071	0.003	6,90 X 1,80
7,10 X 1,80	7.10	0.16	1.80	0.08	0.280	0.006	0.071	0.003	7,10 X 1,80
7,50 X 1,80	7.50	0.16	1.80	0.08	0.295	0.006	0.071	0.003	7,50 X 1,80
8,00 X 1,80	8.00	0.16	1.80	0.08	0.315	0.006	0.071	0.003	8,00 X 1,80
8,50 X 1,80	8.50	0.16	1.80	0.08	0.335	0.006	0.071	0.003	8,50 X 1,80
8,75 X 1,80	8.75	0.17	1.80	0.08	0.344	0.007	0.071	0.003	8,75 X 1,80
9,00 X 1,80	9.00	0.17	1.80	0.08	0.354	0.007	0.071	0.003	9,00 X 1,80
9,50 X 1,80	9.50	0.17	1.80	0.08	0.374	0.007	0.071	0.003	9,50 X 1,80
9,75 X 1,80	9.75	0.17	1.80	0.08	0.384	0.007	0.071	0.003	9,75 X 1,80
10,00 X 1,80	10.00	0.17	1.80	0.08	0.394	0.007	0.071	0.003	10,00 X 1,80
10,60 X 1,80	10.60	0.18	1.80	0.08	0.417	0.007	0.071	0.003	10,60 X 1,80
11,20 X 1,80	11.20	0.18	1.80	0.08	0.441	0.007	0.071	0.003	11,20 X 1,80
11,60 X 1,80	11.60	0.19	1.80	0.08	0.457	0.007	0.071	0.003	11,60 X 1,80
11,80 X 1,80	11.80	0.19	1.80	0.08	0.465	0.007	0.071	0.003	11,80 X 1,80
12,10 X 1,80	12.10	0.19	1.80	0.08	0.476	0.007	0.071	0.003	12,10 X 1,80
12,50 X 1,80	12.50	0.19	1.80	0.08	0.492	0.007	0.071	0.003	12,50 X 1,80
12,80 X 1,80	12.80	0.19	1.80	0.08	0.504	0.007	0.071	0.003	12,80 X 1,80
13,20 X 1,80	13.20	0.19	1.80	0.08	0.520	0.007	0.071	0.003	13,20 X 1,80
14,00 X 1,80	14.00	0.19	1.80	0.08	0.551	0.007	0.071	0.003	14,00 X 1,80
15,00 X 1,80	15.00	0.20	1.80	0.08	0.591	0.008	0.071	0.003	15,00 X 1,80
16,00 X 1,80	16.00	0.20	1.80	0.08	0.630	0.008	0.071	0.003	16,00 X 1,80

DIN 3771 SIZES

DIN 3771 SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				DIN 3771 SIZE
	ID	±	CS	±	ID	±	CS	±	
17,00 X 1,80	17.00	0.21	1.80	0.08	0.669	0.008	0.071	0.003	17,00 X 1,80
14,00 X 2,65	14.00	0.19	2.65	0.09	0.551	0.007	0.104	0.004	14,00 X 2,65
14,50 X 2,65	14.50	0.20	2.65	0.09	0.571	0.008	0.104	0.004	14,50 X 2,65
15,00 X 2,65	15.00	0.20	2.65	0.09	0.591	0.008	0.104	0.004	15,00 X 2,65
15,50 X 2,65	15.50	0.20	2.65	0.09	0.610	0.008	0.104	0.004	15,50 X 2,65
16,00 X 2,65	16.00	0.20	2.65	0.09	0.630	0.008	0.104	0.004	16,00 X 2,65
17,00 X 2,65	17.00	0.21	2.65	0.09	0.669	0.008	0.104	0.004	17,00 X 2,65
18,00 X 2,65	18.00	0.21	2.65	0.09	0.709	0.008	0.104	0.004	18,00 X 2,65
19,00 X 2,65	19.00	0.22	2.65	0.09	0.748	0.009	0.104	0.004	19,00 X 2,65
20,00 X 2,65	20.00	0.22	2.65	0.09	0.787	0.009	0.104	0.004	20,00 X 2,65
20,60 X 2,65	20.60	0.22	2.65	0.09	0.811	0.009	0.104	0.004	20,60 X 2,65
21,20 X 2,65	21.20	0.23	2.65	0.09	0.835	0.009	0.104	0.004	21,20 X 2,65
22,40 X 2,65	22.40	0.24	2.65	0.09	0.882	0.009	0.104	0.004	22,40 X 2,65
23,60 X 2,65	23.60	0.24	2.65	0.09	0.929	0.009	0.104	0.004	23,60 X 2,65
24,30 X 2,65	24.30	0.25	2.65	0.09	0.957	0.010	0.104	0.004	24,30 X 2,65
25,00 X 2,65	25.00	0.25	2.65	0.09	0.984	0.010	0.104	0.004	25,00 X 2,65
25,80 X 2,65	25.80	0.26	2.65	0.09	1.016	0.010	0.104	0.004	25,80 X 2,65
26,50 X 2,65	26.50	0.26	2.65	0.09	1.043	0.010	0.104	0.004	26,50 X 2,65
27,30 X 2,65	27.30	0.27	2.65	0.09	1.075	0.011	0.104	0.004	27,30 X 2,65
28,00 X 2,65	28.00	0.28	2.65	0.09	1.102	0.011	0.104	0.004	28,00 X 2,65
30,00 X 2,65	30.00	0.29	2.65	0.09	1.181	0.011	0.104	0.004	30,00 X 2,65
31,50 X 2,65	31.50	0.31	2.65	0.09	1.240	0.012	0.104	0.004	31,50 X 2,65
32,50 X 2,65	32.50	0.32	2.65	0.09	1.280	0.013	0.104	0.004	32,50 X 2,65
33,50 X 2,65	33.50	0.32	2.65	0.09	1.319	0.013	0.104	0.004	33,50 X 2,65
34,50 X 2,65	34.50	0.33	2.65	0.09	1.358	0.013	0.104	0.004	34,50 X 2,65
35,50 X 2,65	35.50	0.34	2.65	0.09	1.398	0.013	0.104	0.004	35,50 X 2,65
36,50 X 2,65	36.50	0.35	2.65	0.09	1.437	0.014	0.104	0.004	36,50 X 2,65
37,50 X 2,65	37.50	0.36	2.65	0.09	1.476	0.014	0.104	0.004	37,50 X 2,65
38,70 X 2,65	38.70	0.37	2.65	0.09	1.524	0.015	0.104	0.004	38,70 X 2,65
18,00 X 3,55	18.00	0.21	3.55	0.10	0.709	0.008	0.140	0.004	18,00 X 3,55
19,00 X 3,55	19.00	0.22	3.55	0.10	0.748	0.009	0.140	0.004	19,00 X 3,55
20,00 X 3,55	20.00	0.22	3.55	0.10	0.787	0.009	0.140	0.004	20,00 X 3,55
20,60 X 3,55	20.60	0.22	3.55	0.10	0.811	0.009	0.140	0.004	20,60 X 3,55
21,20 X 3,55	21.20	0.23	3.55	0.10	0.835	0.009	0.140	0.004	21,20 X 3,55
22,40 X 3,55	22.40	0.24	3.55	0.10	0.882	0.009	0.140	0.004	22,40 X 3,55
23,60 X 3,55	23.60	0.24	3.55	0.10	0.929	0.009	0.140	0.004	23,60 X 3,55
24,30 X 3,55	24.30	0.25	3.55	0.10	0.957	0.010	0.140	0.004	24,30 X 3,55
25,00 X 3,55	25.00	0.25	3.55	0.10	0.984	0.010	0.140	0.004	25,00 X 3,55
25,80 X 3,55	25.80	0.26	3.55	0.10	1.016	0.010	0.140	0.004	25,80 X 3,55

GLOBAL O-RING SIZE REFERENCE GUIDE

DIN 3771 SIZES

DIN 3771 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	DIN 3771 SIZE
26,50 X 3,55	26.50	0.26	3.55	0.10	1.043	0.010	0.140	0.004	26,50 X 3,55
27,30 X 3,55	27.30	0.27	3.55	0.10	1.075	0.011	0.140	0.004	27,30 X 3,55
28,00 X 3,55	28.00	0.28	3.55	0.10	1.102	0.011	0.140	0.004	28,00 X 3,55
30,00 X 3,55	30.00	0.29	3.55	0.10	1.181	0.011	0.140	0.004	30,00 X 3,55
31,50 X 3,55	31.50	0.31	3.55	0.10	1.240	0.012	0.140	0.004	31,50 X 3,55
32,50 X 3,55	32.50	0.32	3.55	0.10	1.280	0.013	0.140	0.004	32,50 X 3,55
33,50 X 3,55	33.50	0.32	3.55	0.10	1.319	0.013	0.140	0.004	33,50 X 3,55
34,50 X 3,55	34.50	0.33	3.55	0.10	1.358	0.013	0.140	0.004	34,50 X 3,55
35,50 X 3,55	35.50	0.34	3.55	0.10	1.398	0.013	0.140	0.004	35,50 X 3,55
36,50 X 3,55	36.50	0.35	3.55	0.10	1.437	0.014	0.140	0.004	36,50 X 3,55
37,50 X 3,55	37.50	0.36	3.55	0.10	1.476	0.014	0.140	0.004	37,50 X 3,55
38,70 X 3,55	38.70	0.37	3.55	0.10	1.524	0.015	0.140	0.004	38,70 X 3,55
40,00 X 3,55	40.00	0.38	3.55	0.10	1.575	0.015	0.140	0.004	40,00 X 3,55
41,20 X 3,55	41.20	0.39	3.55	0.10	1.622	0.015	0.140	0.004	41,20 X 3,55
42,50 X 3,55	42.50	0.40	3.55	0.10	1.673	0.016	0.140	0.004	42,50 X 3,55
43,70 X 3,55	43.70	0.41	3.55	0.10	1.720	0.016	0.140	0.004	43,70 X 3,55
45,00 X 3,55	45.00	0.42	3.55	0.10	1.772	0.017	0.140	0.004	45,00 X 3,55
46,20 X 3,55	46.20	0.43	3.55	0.10	1.819	0.017	0.140	0.004	46,20 X 3,55
47,50 X 3,55	47.50	0.44	3.55	0.10	1.870	0.017	0.140	0.004	47,50 X 3,55
48,70 X 3,55	48.70	0.45	3.55	0.10	1.917	0.018	0.140	0.004	48,70 X 3,55
50,00 X 3,55	50.00	0.46	3.55	0.10	1.969	0.018	0.140	0.004	50,00 X 3,55
51,50 X 3,55	51.50	0.47	3.55	0.10	2.028	0.019	0.140	0.004	51,50 X 3,55
53,00 X 3,55	53.00	0.48	3.55	0.10	2.087	0.019	0.140	0.004	53,00 X 3,55
54,50 X 3,55	54.50	0.49	3.55	0.10	2.146	0.019	0.140	0.004	54,50 X 3,55
56,00 X 3,55	56.00	0.51	3.55	0.10	2.205	0.020	0.140	0.004	56,00 X 3,55
58,00 X 3,55	58.00	0.52	3.55	0.10	2.283	0.020	0.140	0.004	58,00 X 3,55
60,00 X 3,55	60.00	0.54	3.55	0.10	2.362	0.021	0.140	0.004	60,00 X 3,55
61,50 X 3,55	61.50	0.55	3.55	0.10	2.421	0.022	0.140	0.004	61,50 X 3,55
63,00 X 3,55	63.00	0.56	3.55	0.10	2.480	0.022	0.140	0.004	63,00 X 3,55
65,00 X 3,55	65.00	0.58	3.55	0.10	2.559	0.023	0.140	0.004	65,00 X 3,55
67,00 X 3,55	67.00	0.59	3.55	0.10	2.638	0.023	0.140	0.004	67,00 X 3,55
69,00 X 3,55	69.00	0.61	3.55	0.10	2.717	0.024	0.140	0.004	69,00 X 3,55
71,00 X 3,55	71.00	0.63	3.55	0.10	2.795	0.025	0.140	0.004	71,00 X 3,55
73,00 X 3,55	73.00	0.64	3.55	0.10	2.874	0.025	0.140	0.004	73,00 X 3,55
75,00 X 3,55	75.00	0.66	3.55	0.10	2.953	0.026	0.140	0.004	75,00 X 3,55
77,50 X 3,55	77.50	0.67	3.55	0.10	3.051	0.026	0.140	0.004	77,50 X 3,55
80,00 X 3,55	80.00	0.69	3.55	0.10	3.150	0.027	0.140	0.004	80,00 X 3,55
82,50 X 3,55	82.50	0.71	3.55	0.10	3.248	0.028	0.140	0.004	82,50 X 3,55
85,00 X 3,55	85.00	0.73	3.55	0.10	3.346	0.029	0.140	0.004	85,00 X 3,55

DIN 3771 SIZES

DIN 3771 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	DIN 3771 SIZE
87,50 X 3,55	87.50	0.75	3.55	0.10	3.445	0.030	0.140	0.004	87,50 X 3,55
90,00 X 3,55	90.00	0.77	3.55	0.10	3.543	0.030	0.140	0.004	90,00 X 3,55
92,50 X 3,55	92.50	0.79	3.55	0.10	3.642	0.031	0.140	0.004	92,50 X 3,55
95,00 X 3,55	95.00	0.81	3.55	0.10	3.740	0.032	0.140	0.004	95,00 X 3,55
97,50 X 3,55	97.50	0.83	3.55	0.10	3.839	0.033	0.140	0.004	97,50 X 3,55
100,00 X 3,55	100.00	0.84	3.55	0.10	3.937	0.033	0.140	0.004	100,00 X 3,55
103,00 X 3,55	103.00	0.87	3.55	0.10	4.055	0.034	0.140	0.004	103,00 X 3,55
106,00 X 3,55	106.00	0.89	3.55	0.10	4.173	0.035	0.140	0.004	106,00 X 3,55
109,00 X 3,55	109.00	0.91	3.55	0.10	4.291	0.036	0.140	0.004	109,00 X 3,55
112,00 X 3,55	112.00	0.93	3.55	0.10	4.409	0.037	0.140	0.004	112,00 X 3,55
115,00 X 3,55	115.00	0.95	3.55	0.10	4.528	0.037	0.140	0.004	115,00 X 3,55
118,00 X 3,55	118.00	0.97	3.55	0.10	4.646	0.038	0.140	0.004	118,00 X 3,55
122,00 X 3,55	122.00	1.00	3.55	0.10	4.803	0.039	0.140	0.004	122,00 X 3,55
125,00 X 3,55	125.00	1.03	3.55	0.10	4.921	0.041	0.140	0.004	125,00 X 3,55
128,00 X 3,55	128.00	1.05	3.55	0.10	5.039	0.041	0.140	0.004	128,00 X 3,55
132,00 X 3,55	132.00	1.08	3.55	0.10	5.197	0.043	0.140	0.004	132,00 X 3,55
136,00 X 3,55	136.00	1.10	3.55	0.10	5.354	0.043	0.140	0.004	136,00 X 3,55
140,00 X 3,55	140.00	1.13	3.55	0.10	5.512	0.044	0.140	0.004	140,00 X 3,55
145,00 X 3,55	145.00	1.17	3.55	0.10	5.709	0.046	0.140	0.004	145,00 X 3,55
147,50 X 3,55	147.50	1.19	3.55	0.10	5.807	0.047	0.140	0.004	147,50 X 3,55
150,00 X 3,55	150.00	1.20	3.55	0.10	5.906	0.047	0.140	0.004	150,00 X 3,55
152,50 X 3,55	152.50	1.22	3.55	0.10	6.004	0.048	0.140	0.004	152,50 X 3,55
155,00 X 3,55	155.00	1.24	3.55	0.10	6.102	0.049	0.140	0.004	155,00 X 3,55
157,50 X 3,55	157.50	1.26	3.55	0.10	6.201	0.050	0.140	0.004	157,50 X 3,55
160,00 X 3,55	160.00	1.27	3.55	0.10	6.299	0.050	0.140	0.004	160,00 X 3,55
162,50 X 3,55	162.50	1.29	3.55	0.10	6.398	0.051	0.140	0.004	162,50 X 3,55
165,00 X 3,55	165.00	1.31	3.55	0.10	6.496	0.052	0.140	0.004	165,00 X 3,55
167,50 X 3,55	167.50	1.33	3.55	0.10	6.594	0.052	0.140	0.004	167,50 X 3,55
170,00 X 3,55	170.00	1.34	3.55	0.10	6.693	0.053	0.140	0.004	170,00 X 3,55
172,50 X 3,55	172.50	1.36	3.55	0.10	6.791	0.054	0.140	0.004	172,50 X 3,55
175,00 X 3,55	175.00	1.38	3.55	0.10	6.890	0.054	0.140	0.004	175,00 X 3,55
177,50 X 3,55	177.50	1.40	3.55	0.10	6.988	0.055	0.140	0.004	177,50 X 3,55
180,00 X 3,55	180.00	1.41	3.55	0.10	7.087	0.056	0.140	0.004	180,00 X 3,55
182,50 X 3,55	182.50	1.43	3.55	0.10	7.185	0.056	0.140	0.004	182,50 X 3,55
185,00 X 3,55	185.00	1.44	3.55	0.10	7.283	0.057	0.140	0.004	185,00 X 3,55
187,50 X 3,55	187.50	1.46	3.55	0.10	7.382	0.057	0.140	0.004	187,50 X 3,55
190,00 X 3,55	190.00	1.48	3.55	0.10	7.480	0.058	0.140	0.004	190,00 X 3,55
195,00 X 3,55	195.00	1.51	3.55	0.10	7.677	0.059	0.140	0.004	195,00 X 3,55
200,00 X 3,55	200.00	1.55	3.55	0.10	7.874	0.061	0.140	0.004	200,00 X 3,55

GLOBAL O-RING SIZE REFERENCE GUIDE

DIN 3771 SIZES

DIN 3771 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	DIN 3771 SIZE
40,00 X 5,30	40.00	0.38	5.30	0.13	1.575	0.015	0.209	0.005	40,00 X 5,30
41,20 X 5,30	41.20	0.39	5.30	0.13	1.622	0.015	0.209	0.005	41,20 X 5,30
42,50 X 5,30	42.50	0.40	5.30	0.13	1.673	0.016	0.209	0.005	42,50 X 5,30
43,70 X 5,30	43.70	0.41	5.30	0.13	1.720	0.016	0.209	0.005	43,70 X 5,30
45,00 X 5,30	45.00	0.42	5.30	0.13	1.772	0.017	0.209	0.005	45,00 X 5,30
46,20 X 5,30	46.20	0.43	5.30	0.13	1.819	0.017	0.209	0.005	46,20 X 5,30
47,50 X 5,30	47.50	0.44	5.30	0.13	1.870	0.017	0.209	0.005	47,50 X 5,30
48,70 X 5,30	48.70	0.45	5.30	0.13	1.917	0.018	0.209	0.005	48,70 X 5,30
50,00 X 5,30	50.00	0.46	5.30	0.13	1.969	0.018	0.209	0.005	50,00 X 5,30
51,50 X 5,30	51.50	0.47	5.30	0.13	2.028	0.019	0.209	0.005	51,50 X 5,30
53,00 X 5,30	53.00	0.48	5.30	0.13	2.087	0.019	0.209	0.005	53,00 X 5,30
54,50 X 5,30	54.50	0.49	5.30	0.13	2.146	0.019	0.209	0.005	54,50 X 5,30
56,00 X 5,30	56.00	0.51	5.30	0.13	2.205	0.020	0.209	0.005	56,00 X 5,30
58,00 X 5,30	58.00	0.52	5.30	0.13	2.283	0.020	0.209	0.005	58,00 X 5,30
60,00 X 5,30	60.00	0.54	5.30	0.13	2.362	0.021	0.209	0.005	60,00 X 5,30
61,50 X 5,30	61.50	0.55	5.30	0.13	2.421	0.022	0.209	0.005	61,50 X 5,30
63,00 X 5,30	63.00	0.56	5.30	0.13	2.480	0.022	0.209	0.005	63,00 X 5,30
65,00 X 5,30	65.00	0.58	5.30	0.13	2.559	0.023	0.209	0.005	65,00 X 5,30
67,00 X 5,30	67.00	0.59	5.30	0.13	2.638	0.023	0.209	0.005	67,00 X 5,30
69,00 X 5,30	69.00	0.61	5.30	0.13	2.717	0.024	0.209	0.005	69,00 X 5,30
71,00 X 5,30	71.00	0.63	5.30	0.13	2.795	0.025	0.209	0.005	71,00 X 5,30
73,00 X 5,30	73.00	0.64	5.30	0.13	2.874	0.025	0.209	0.005	73,00 X 5,30
75,00 X 5,30	75.00	0.66	5.30	0.13	2.953	0.026	0.209	0.005	75,00 X 5,30
77,50 X 5,30	77.50	0.67	5.30	0.13	3.051	0.026	0.209	0.005	77,50 X 5,30
80,00 X 5,30	80.00	0.69	5.30	0.13	3.150	0.027	0.209	0.005	80,00 X 5,30
82,50 X 5,30	82.50	0.71	5.30	0.13	3.248	0.028	0.209	0.005	82,50 X 5,30
85,00 X 5,30	85.00	0.73	5.30	0.13	3.346	0.029	0.209	0.005	85,00 X 5,30
87,50 X 5,30	87.50	0.75	5.30	0.13	3.445	0.030	0.209	0.005	87,50 X 5,30
90,00 X 5,30	90.00	0.77	5.30	0.13	3.543	0.030	0.209	0.005	90,00 X 5,30
92,50 X 5,30	92.50	0.79	5.30	0.13	3.642	0.031	0.209	0.005	92,50 X 5,30
95,00 X 5,30	95.00	0.81	5.30	0.13	3.740	0.032	0.209	0.005	95,00 X 5,30
97,50 X 5,30	97.50	0.83	5.30	0.13	3.839	0.033	0.209	0.005	97,50 X 5,30
100,00 X 5,30	100.00	0.84	5.30	0.13	3.937	0.033	0.209	0.005	100,00 X 5,30
103,00 X 5,30	103.00	0.87	5.30	0.13	4.055	0.034	0.209	0.005	103,00 X 5,30
106,00 X 5,30	106.00	0.89	5.30	0.13	4.173	0.035	0.209	0.005	106,00 X 5,30
109,00 X 5,30	109.00	0.91	5.30	0.13	4.291	0.036	0.209	0.005	109,00 X 5,30
112,00 X 5,30	112.00	0.93	5.30	0.13	4.409	0.037	0.209	0.005	112,00 X 5,30
115,00 X 5,30	115.00	0.95	5.30	0.13	4.528	0.037	0.209	0.005	115,00 X 5,30
118,00 X 5,30	118.00	0.97	5.30	0.13	4.646	0.038	0.209	0.005	118,00 X 5,30

DIN 3771 SIZES

DIN 3771 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	DIN 3771 SIZE
122,00 X 5,30	122.00	1.00	5.30	0.13	4.803	0.039	0.209	0.005	122,00 X 5,30
125,00 X 5,30	125.00	1.03	5.30	0.13	4.921	0.041	0.209	0.005	125,00 X 5,30
128,00 X 5,30	128.00	1.05	5.30	0.13	5.039	0.041	0.209	0.005	128,00 X 5,30
132,00 X 5,30	132.00	1.08	5.30	0.13	5.197	0.043	0.209	0.005	132,00 X 5,30
136,00 X 5,30	136.00	1.10	5.30	0.13	5.354	0.043	0.209	0.005	136,00 X 5,30
140,00 X 5,30	140.00	1.13	5.30	0.13	5.512	0.044	0.209	0.005	140,00 X 5,30
145,00 X 5,30	145.00	1.17	5.30	0.13	5.709	0.046	0.209	0.005	145,00 X 5,30
147,50 X 5,30	147.50	1.19	5.30	0.13	5.807	0.047	0.209	0.005	147,50 X 5,30
150,00 X 5,30	150.00	1.20	5.30	0.13	5.906	0.047	0.209	0.005	150,00 X 5,30
155,00 X 5,30	155.00	1.24	5.30	0.13	6.102	0.049	0.209	0.005	155,00 X 5,30
157,50 X 5,30	157.50	1.26	5.30	0.13	6.201	0.050	0.209	0.005	157,50 X 5,30
160,00 X 5,30	160.00	1.27	5.30	0.13	6.299	0.050	0.209	0.005	160,00 X 5,30
165,00 X 5,30	165.00	1.31	5.30	0.13	6.496	0.052	0.209	0.005	165,00 X 5,30
170,00 X 5,30	170.00	1.34	5.30	0.13	6.693	0.053	0.209	0.005	170,00 X 5,30
175,00 X 5,30	175.00	1.38	5.30	0.13	6.890	0.054	0.209	0.005	175,00 X 5,30
180,00 X 5,30	180.00	1.41	5.30	0.13	7.087	0.056	0.209	0.005	180,00 X 5,30
182,50 X 5,30	182.50	1.43	5.30	0.13	7.185	0.056	0.209	0.005	182,50 X 5,30
185,00 X 5,30	185.00	1.44	5.30	0.13	7.283	0.057	0.209	0.005	185,00 X 5,30
187,50 X 5,30	187.50	1.46	5.30	0.13	7.382	0.057	0.209	0.005	187,50 X 5,30
190,00 X 5,30	190.00	1.48	5.30	0.13	7.480	0.058	0.209	0.005	190,00 X 5,30
195,00 X 5,30	195.00	1.51	5.30	0.13	7.677	0.059	0.209	0.005	195,00 X 5,30
200,00 X 5,30	200.00	1.55	5.30	0.13	7.874	0.061	0.209	0.005	200,00 X 5,30
206,00 X 5,30	206.00	1.59	5.30	0.13	8.110	0.063	0.209	0.005	206,00 X 5,30
212,00 X 5,30	212.00	1.63	5.30	0.13	8.346	0.064	0.209	0.005	212,00 X 5,30
218,00 X 5,30	218.00	1.67	5.30	0.13	8.583	0.066	0.209	0.005	218,00 X 5,30
224,00 X 5,30	224.00	1.71	5.30	0.13	8.819	0.067	0.209	0.005	224,00 X 5,30
227,00 X 5,30	227.00	1.73	5.30	0.13	8.937	0.068	0.209	0.005	227,00 X 5,30
230,00 X 5,30	230.00	1.75	5.30	0.13	9.055	0.069	0.209	0.005	230,00 X 5,30
236,00 X 5,30	236.00	1.79	5.30	0.13	9.291	0.070	0.209	0.005	236,00 X 5,30
239,00 X 5,30	239.00	1.81	5.30	0.13	9.409	0.071	0.209	0.005	239,00 X 5,30
243,00 X 5,30	243.00	1.83	5.30	0.13	9.567	0.072	0.209	0.005	243,00 X 5,30
250,00 X 5,30	250.00	1.88	5.30	0.13	9.843	0.074	0.209	0.005	250,00 X 5,30
254,00 X 5,30	254.00	1.91	5.30	0.13	10.000	0.075	0.209	0.005	254,00 X 5,30
258,00 X 5,30	258.00	1.93	5.30	0.13	10.157	0.076	0.209	0.005	258,00 X 5,30
261,00 X 5,30	261.00	1.96	5.30	0.13	10.276	0.077	0.209	0.005	261,00 X 5,30
265,00 X 5,30	265.00	1.98	5.30	0.13	10.433	0.078	0.209	0.005	265,00 X 5,30
268,00 X 5,30	268.00	2.00	5.30	0.13	10.551	0.079	0.209	0.005	268,00 X 5,30
272,00 X 5,30	272.00	2.02	5.30	0.13	10.709	0.080	0.209	0.005	272,00 X 5,30
276,00 X 5,30	276.00	2.50	5.30	0.13	10.866	0.098	0.209	0.005	276,00 X 5,30

GLOBAL O-RING SIZE REFERENCE GUIDE

DIN 3771 SIZES

DIN 3771 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	DIN 3771 SIZE
280,00 X 5,30	280.00	2.08	5.30	0.13	11.024	0.082	0.209	0.005	280,00 X 5,30
283,00 X 5,30	283.00	2.10	5.30	0.13	11.142	0.083	0.209	0.005	283,00 X 5,30
286,00 X 5,30	286.00	2.12	5.30	0.13	11.260	0.083	0.209	0.005	286,00 X 5,30
290,00 X 5,30	290.00	2.14	5.30	0.13	11.417	0.084	0.209	0.005	290,00 X 5,30
295,00 X 5,30	295.00	2.18	5.30	0.13	11.614	0.086	0.209	0.005	295,00 X 5,30
300,00 X 5,30	300.00	2.21	5.30	0.13	11.811	0.087	0.209	0.005	300,00 X 5,30
303,00 X 5,30	303.00	2.23	5.30	0.13	11.929	0.088	0.209	0.005	303,00 X 5,30
307,00 X 5,30	307.00	2.25	5.30	0.13	12.087	0.089	0.209	0.005	307,00 X 5,30
311,00 X 5,30	311.00	2.28	5.30	0.13	12.244	0.090	0.209	0.005	311,00 X 5,30
315,00 X 5,30	315.00	2.30	5.30	0.13	12.402	0.091	0.209	0.005	315,00 X 5,30
320,00 X 5,30	320.00	2.34	5.30	0.13	12.598	0.092	0.209	0.005	320,00 X 5,30
325,00 X 5,30	325.00	2.37	5.30	0.13	12.795	0.093	0.209	0.005	325,00 X 5,30
330,00 X 5,30	330.00	2.40	5.30	0.13	12.992	0.094	0.209	0.005	330,00 X 5,30
335,00 X 5,30	335.00	2.43	5.30	0.13	13.189	0.096	0.209	0.005	335,00 X 5,30
340,00 X 5,30	340.00	2.46	5.30	0.13	13.386	0.097	0.209	0.005	340,00 X 5,30
345,00 X 5,30	345.00	2.49	5.30	0.13	13.583	0.098	0.209	0.005	345,00 X 5,30
350,00 X 5,30	350.00	2.53	5.30	0.13	13.780	0.100	0.209	0.005	350,00 X 5,30
355,00 X 5,30	355.00	2.56	5.30	0.13	13.976	0.101	0.209	0.005	355,00 X 5,30
360,00 X 5,30	360.00	2.59	5.30	0.13	14.173	0.102	0.209	0.005	360,00 X 5,30
365,00 X 5,30	365.00	2.62	5.30	0.13	14.370	0.103	0.209	0.005	365,00 X 5,30
370,00 X 5,30	370.00	2.65	5.30	0.13	14.567	0.104	0.209	0.005	370,00 X 5,30
375,00 X 5,30	375.00	2.68	5.30	0.13	14.764	0.106	0.209	0.005	375,00 X 5,30
379,00 X 5,30	379.00	2.71	5.30	0.13	14.921	0.107	0.209	0.005	379,00 X 5,30
383,00 X 5,30	383.00	2.73	5.30	0.13	15.079	0.107	0.209	0.005	383,00 X 5,30
387,00 X 5,30	387.00	2.76	5.30	0.13	15.236	0.109	0.209	0.005	387,00 X 5,30
391,00 X 5,30	391.00	2.78	5.30	0.13	15.394	0.109	0.209	0.005	391,00 X 5,30
395,00 X 5,30	395.00	2.81	5.30	0.13	15.551	0.111	0.209	0.005	395,00 X 5,30
400,00 X 5,30	400.00	2.84	5.30	0.13	15.748	0.112	0.209	0.005	400,00 X 5,30
109,00 X 7,00	109.00	0.91	7.00	0.15	4.291	0.036	0.276	0.006	109,00 X 7,00
112,00 X 7,00	112.00	0.93	7.00	0.15	4.409	0.037	0.276	0.006	112,00 X 7,00
115,00 X 7,00	115.00	0.95	7.00	0.15	4.528	0.037	0.276	0.006	115,00 X 7,00
118,00 X 7,00	118.00	0.97	7.00	0.15	4.646	0.038	0.276	0.006	118,00 X 7,00
122,00 X 7,00	122.00	1.00	7.00	0.15	4.803	0.039	0.276	0.006	122,00 X 7,00
125,00 X 7,00	125.00	1.03	7.00	0.15	4.921	0.041	0.276	0.006	125,00 X 7,00
128,00 X 7,00	128.00	1.05	7.00	0.15	5.039	0.041	0.276	0.006	128,00 X 7,00
132,00 X 7,00	132.00	1.08	7.00	0.15	5.197	0.043	0.276	0.006	132,00 X 7,00
136,00 X 7,00	136.00	1.10	7.00	0.15	5.354	0.043	0.276	0.006	136,00 X 7,00
140,00 X 7,00	140.00	1.13	7.00	0.15	5.512	0.044	0.276	0.006	140,00 X 7,00
142,50 X 7,00	142.50	1.15	7.00	0.15	5.610	0.045	0.276	0.006	142,50 X 7,00

DIN 3771 SIZES

DIN 3771 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	DIN 3771 SIZE
145,00 X 7,00	145.00	1.17	7.00	0.15	5.709	0.046	0.276	0.006	145,00 X 7,00
147,50 X 7,00	147.50	1.19	7.00	0.15	5.807	0.047	0.276	0.006	147,50 X 7,00
150,00 X 7,00	150.00	1.20	7.00	0.15	5.906	0.047	0.276	0.006	150,00 X 7,00
152,50 X 7,00	152.50	1.22	7.00	0.15	6.004	0.048	0.276	0.006	152,50 X 7,00
155,00 X 7,00	155.00	1.24	7.00	0.15	6.102	0.049	0.276	0.006	155,00 X 7,00
157,50 X 7,00	157.50	1.26	7.00	0.15	6.201	0.050	0.276	0.006	157,50 X 7,00
160,00 X 7,00	160.00	1.27	7.00	0.15	6.299	0.050	0.276	0.006	160,00 X 7,00
162,50 X 7,00	162.50	1.29	7.00	0.15	6.398	0.051	0.276	0.006	162,50 X 7,00
165,00 X 7,00	165.00	1.31	7.00	0.15	6.496	0.052	0.276	0.006	165,00 X 7,00
167,50 X 7,00	167.50	1.33	7.00	0.15	6.594	0.052	0.276	0.006	167,50 X 7,00
170,00 X 7,00	170.00	1.34	7.00	0.15	6.693	0.053	0.276	0.006	170,00 X 7,00
172,50 X 7,00	172.50	1.36	7.00	0.15	6.791	0.054	0.276	0.006	172,50 X 7,00
175,00 X 7,00	175.00	1.38	7.00	0.15	6.890	0.054	0.276	0.006	175,00 X 7,00
177,50 X 7,00	177.50	1.40	7.00	0.15	6.988	0.055	0.276	0.006	177,50 X 7,00
180,00 X 7,00	180.00	1.41	7.00	0.15	7.087	0.056	0.276	0.006	180,00 X 7,00
185,00 X 7,00	185.00	1.44	7.00	0.15	7.283	0.057	0.276	0.006	185,00 X 7,00
190,00 X 7,00	190.00	1.48	7.00	0.15	7.480	0.058	0.276	0.006	190,00 X 7,00
195,00 X 7,00	195.00	1.51	7.00	0.15	7.677	0.059	0.276	0.006	195,00 X 7,00
200,00 X 7,00	200.00	1.55	7.00	0.15	7.874	0.061	0.276	0.006	200,00 X 7,00
203,00 X 7,00	203.00	1.57	7.00	0.15	7.992	0.062	0.276	0.006	203,00 X 7,00
206,00 X 7,00	206.00	1.59	7.00	0.15	8.110	0.063	0.276	0.006	206,00 X 7,00
212,00 X 7,00	212.00	1.63	7.00	0.15	8.346	0.064	0.276	0.006	212,00 X 7,00
218,00 X 7,00	218.00	1.67	7.00	0.15	8.583	0.066	0.276	0.006	218,00 X 7,00
224,00 X 7,00	224.00	1.71	7.00	0.15	8.819	0.067	0.276	0.006	224,00 X 7,00
230,00 X 7,00	230.00	1.75	7.00	0.15	9.055	0.069	0.276	0.006	230,00 X 7,00
236,00 X 7,00	236.00	1.79	7.00	0.15	9.291	0.070	0.276	0.006	236,00 X 7,00
243,00 X 7,00	243.00	1.83	7.00	0.15	9.567	0.072	0.276	0.006	243,00 X 7,00
250,00 X 7,00	250.00	1.88	7.00	0.15	9.843	0.074	0.276	0.006	250,00 X 7,00
254,00 X 7,00	254.00	1.91	7.00	0.15	10.000	0.075	0.276	0.006	254,00 X 7,00
258,00 X 7,00	258.00	1.93	7.00	0.15	10.157	0.076	0.276	0.006	258,00 X 7,00
261,00 X 7,00	261.00	1.96	7.00	0.15	10.276	0.077	0.276	0.006	261,00 X 7,00
265,00 X 7,00	265.00	1.98	7.00	0.15	10.433	0.078	0.276	0.006	265,00 X 7,00
268,00 X 7,00	268.00	2.00	7.00	0.15	10.551	0.079	0.276	0.006	268,00 X 7,00
272,00 X 7,00	272.00	2.02	7.00	0.15	10.709	0.080	0.276	0.006	272,00 X 7,00
276,00 X 7,00	276.00	2.50	7.00	0.15	10.866	0.098	0.276	0.006	276,00 X 7,00
280,00 X 7,00	280.00	2.08	7.00	0.15	11.024	0.082	0.276	0.006	280,00 X 7,00
283,00 X 7,00	283.00	2.10	7.00	0.15	11.142	0.083	0.276	0.006	283,00 X 7,00
286,00 X 7,00	286.00	2.12	7.00	0.15	11.260	0.083	0.276	0.006	286,00 X 7,00
290,00 X 7,00	290.00	2.14	7.00	0.15	11.417	0.084	0.276	0.006	290,00 X 7,00

GLOBAL O-RING SIZE REFERENCE GUIDE

DIN 3771 SIZES

DIN 3771 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	DIN 3771 SIZE
295,00 X 7,00	295.00	2.18	7.00	0.15	11.614	0.086	0.276	0.006	295,00 X 7,00
300,00 X 7,00	300.00	2.21	7.00	0.15	11.811	0.087	0.276	0.006	300,00 X 7,00
303,00 X 7,00	303.00	2.23	7.00	0.15	11.929	0.088	0.276	0.006	303,00 X 7,00
307,00 X 7,00	307.00	2.25	7.00	0.15	12.087	0.089	0.276	0.006	307,00 X 7,00
311,00 X 7,00	311.00	2.28	7.00	0.15	12.244	0.090	0.276	0.006	311,00 X 7,00
315,00 X 7,00	315.00	2.30	7.00	0.15	12.402	0.091	0.276	0.006	315,00 X 7,00
320,00 X 7,00	320.00	2.34	7.00	0.15	12.598	0.092	0.276	0.006	320,00 X 7,00
325,00 X 7,00	325.00	2.37	7.00	0.15	12.795	0.093	0.276	0.006	325,00 X 7,00
330,00 X 7,00	330.00	2.40	7.00	0.15	12.992	0.094	0.276	0.006	330,00 X 7,00
335,00 X 7,00	335.00	2.43	7.00	0.15	13.189	0.096	0.276	0.006	335,00 X 7,00
340,00 X 7,00	340.00	2.46	7.00	0.15	13.386	0.097	0.276	0.006	340,00 X 7,00
345,00 X 7,00	345.00	2.49	7.00	0.15	13.583	0.098	0.276	0.006	345,00 X 7,00
350,00 X 7,00	350.00	2.53	7.00	0.15	13.780	0.100	0.276	0.006	350,00 X 7,00
355,00 X 7,00	355.00	2.56	7.00	0.15	13.976	0.101	0.276	0.006	355,00 X 7,00
360,00 X 7,00	360.00	2.59	7.00	0.15	14.173	0.102	0.276	0.006	360,00 X 7,00
365,00 X 7,00	365.00	2.62	7.00	0.15	14.370	0.103	0.276	0.006	365,00 X 7,00
370,00 X 7,00	370.00	2.65	7.00	0.15	14.567	0.104	0.276	0.006	370,00 X 7,00
375,00 X 7,00	375.00	2.68	7.00	0.15	14.764	0.106	0.276	0.006	375,00 X 7,00
379,00 X 7,00	379.00	2.71	7.00	0.15	14.921	0.107	0.276	0.006	379,00 X 7,00
383,00 X 7,00	383.00	2.73	7.00	0.15	15.079	0.107	0.276	0.006	383,00 X 7,00
387,00 X 7,00	387.00	2.76	7.00	0.15	15.236	0.109	0.276	0.006	387,00 X 7,00
391,00 X 7,00	391.00	2.78	7.00	0.15	15.394	0.109	0.276	0.006	391,00 X 7,00
395,00 X 7,00	395.00	2.81	7.00	0.15	15.551	0.111	0.276	0.006	395,00 X 7,00
400,00 X 7,00	400.00	2.84	7.00	0.15	15.748	0.112	0.276	0.006	400,00 X 7,00
406,00 X 7,00	406.00	2.87	7.00	0.15	15.984	0.113	0.276	0.006	406,00 X 7,00
412,00 X 7,00	412.00	2.91	7.00	0.15	16.220	0.115	0.276	0.006	412,00 X 7,00
418,00 X 7,00	418.00	2.95	7.00	0.15	16.457	0.116	0.276	0.006	418,00 X 7,00
425,00 X 7,00	425.00	2.99	7.00	0.15	16.732	0.118	0.276	0.006	425,00 X 7,00
429,00 X 7,00	429.00	3.00	7.00	0.15	16.890	0.118	0.276	0.006	429,00 X 7,00
433,00 X 7,00	433.00	3.04	7.00	0.15	17.047	0.120	0.276	0.006	433,00 X 7,00
437,00 X 7,00	437.00	3.07	7.00	0.15	17.205	0.121	0.276	0.006	437,00 X 7,00
443,00 X 7,00	443.00	3.11	7.00	0.15	17.441	0.122	0.276	0.006	443,00 X 7,00
450,00 X 7,00	450.00	3.15	7.00	0.15	17.717	0.124	0.276	0.006	450,00 X 7,00
456,00 X 7,00	456.00	3.18	7.00	0.15	17.953	0.125	0.276	0.006	456,00 X 7,00
462,00 X 7,00	462.00	3.22	7.00	0.15	18.189	0.127	0.276	0.006	462,00 X 7,00
466,00 X 7,00	466.00	3.24	7.00	0.15	18.346	0.128	0.276	0.006	466,00 X 7,00
470,00 X 7,00	470.00	3.27	7.00	0.15	18.504	0.129	0.276	0.006	470,00 X 7,00
475,00 X 7,00	475.00	3.30	7.00	0.15	18.701	0.130	0.276	0.006	475,00 X 7,00
479,00 X 7,00	479.00	3.32	7.00	0.15	18.858	0.131	0.276	0.006	479,00 X 7,00

DIN 3771 SIZES

DIN 3771 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	DIN 3771 SIZE
483,00 X 7,00	483.00	3.34	7.00	0.15	19.016	0.131	0.276	0.006	483,00 X 7,00
487,00 X 7,00	487.00	3.37	7.00	0.15	19.173	0.133	0.276	0.006	487,00 X 7,00
493,00 X 7,00	493.00	3.41	7.00	0.15	19.409	0.134	0.276	0.006	493,00 X 7,00
500,00 X 7,00	500.00	3.45	7.00	0.15	19.685	0.136	0.276	0.006	500,00 X 7,00
508,00 X 7,00	508.00	3.50	7.00	0.15	20.000	0.138	0.276	0.006	508,00 X 7,00
515,00 X 7,00	515.00	3.54	7.00	0.15	20.276	0.139	0.276	0.006	515,00 X 7,00
523,00 X 7,00	523.00	3.59	7.00	0.15	20.591	0.141	0.276	0.006	523,00 X 7,00
530,00 X 7,00	530.00	3.63	7.00	0.15	20.866	0.143	0.276	0.006	530,00 X 7,00

GLOBAL O-RING SIZE REFERENCE GUIDE

BS 4518 SIZES

BS 4518 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	BS 4518 SIZE
0031-16	3.10	0.15	1.60	0.08	0.122	0.006	0.063	0.003	0031-16
0036-16	3.60	0.15	1.60	0.08	0.142	0.006	0.063	0.003	0036-16
0041-16	4.10	0.15	1.60	0.08	0.161	0.006	0.063	0.003	0041-16
0046-16	4.60	0.15	1.60	0.08	0.181	0.006	0.063	0.003	0046-16
0051-16	5.10	0.15	1.60	0.08	0.201	0.006	0.063	0.003	0051-16
0056-16	5.60	0.15	1.60	0.08	0.220	0.006	0.063	0.003	0056-16
0061-16	6.10	0.15	1.60	0.08	0.240	0.006	0.063	0.003	0061-16
0066-16	6.60	0.15	1.60	0.08	0.260	0.006	0.063	0.003	0066-16
0071-16	7.10	0.15	1.60	0.08	0.280	0.006	0.063	0.003	0071-16
0076-16	7.60	0.15	1.60	0.08	0.299	0.006	0.063	0.003	0076-16
0081-16	8.10	0.15	1.60	0.08	0.319	0.006	0.063	0.003	0081-16
0086-16	8.60	0.15	1.60	0.08	0.339	0.006	0.063	0.003	0086-16
0091-16	9.10	0.15	1.60	0.08	0.358	0.006	0.063	0.003	0091-16
0096-16	9.60	0.15	1.60	0.08	0.378	0.006	0.063	0.003	0096-16
0101-16	10.10	0.20	1.60	0.08	0.398	0.008	0.063	0.003	0101-16
0106-16	10.60	0.20	1.60	0.08	0.417	0.008	0.063	0.003	0106-16
0111-16	11.10	0.20	1.60	0.08	0.437	0.008	0.063	0.003	0111-16
0116-16	11.60	0.20	1.60	0.08	0.457	0.008	0.063	0.003	0116-16
0121-16	12.10	0.20	1.60	0.08	0.476	0.008	0.063	0.003	0121-16
0126-16	12.60	0.20	1.60	0.08	0.496	0.008	0.063	0.003	0126-16
0131-16	13.10	0.20	1.60	0.08	0.516	0.008	0.063	0.003	0131-16
0136-16	13.60	0.20	1.60	0.08	0.535	0.008	0.063	0.003	0136-16
0141-16	14.10	0.20	1.60	0.08	0.555	0.008	0.063	0.003	0141-16
0146-16	14.60	0.20	1.60	0.08	0.575	0.008	0.063	0.003	0146-16
0151-16	15.10	0.20	1.60	0.08	0.594	0.008	0.063	0.003	0151-16
0156-16	15.60	0.20	1.60	0.08	0.614	0.008	0.063	0.003	0156-16
0161-16	16.10	0.20	1.60	0.08	0.634	0.008	0.063	0.003	0161-16
0166-16	16.60	0.20	1.60	0.08	0.654	0.008	0.063	0.003	0166-16
0171-16	17.10	0.20	1.60	0.08	0.673	0.008	0.063	0.003	0171-16
0176-16	17.60	0.20	1.60	0.08	0.693	0.008	0.063	0.003	0176-16
0181-16	18.10	0.25	1.60	0.08	0.713	0.010	0.063	0.003	0181-16
0186-16	18.60	0.25	1.60	0.08	0.732	0.010	0.063	0.003	0186-16
0191-16	19.10	0.25	1.60	0.08	0.752	0.010	0.063	0.003	0191-16
0196-16	19.60	0.25	1.60	0.08	0.772	0.010	0.063	0.003	0196-16
0206-16	20.60	0.25	1.60	0.08	0.811	0.010	0.063	0.003	0206-16
0216-16	21.60	0.25	1.60	0.08	0.850	0.010	0.063	0.003	0216-16
0221-16	22.10	0.25	1.60	0.08	0.870	0.010	0.063	0.003	0221-16
0246-16	24.60	0.25	1.60	0.08	0.969	0.010	0.063	0.003	0246-16
0251-16	25.10	0.25	1.60	0.08	0.988	0.010	0.063	0.003	0251-16

BS 4518 SIZES

BS 4518 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	BS 4518 SIZE
0271-16	27.10	0.25	1.60	0.08	1.067	0.010	0.063	0.003	0271-16
0276-16	27.60	0.25	1.60	0.08	1.087	0.010	0.063	0.003	0276-16
0291-16	29.10	0.25	1.60	0.08	1.146	0.010	0.063	0.003	0291-16
0296-16	29.60	0.25	1.60	0.08	1.165	0.010	0.063	0.003	0296-16
0316-16	31.60	0.30	1.60	0.08	1.244	0.012	0.063	0.003	0316-16
0321-16	32.10	0.30	1.60	0.08	1.264	0.012	0.063	0.003	0321-16
0346-16	34.60	0.30	1.60	0.08	1.362	0.012	0.063	0.003	0346-16
0351-16	35.10	0.30	1.60	0.08	1.382	0.012	0.063	0.003	0351-16
0371-16	37.10	0.30	1.60	0.08	1.461	0.012	0.063	0.003	0371-16
0376-16	37.60	0.30	1.60	0.08	1.480	0.012	0.063	0.003	0376-16
0396-24	39.60	0.30	2.40	0.08	1.559	0.012	0.094	0.003	0396-24
0416-24	41.60	0.30	2.40	0.08	1.638	0.012	0.094	0.003	0416-24
0446-24	44.60	0.30	2.40	0.08	1.756	0.012	0.094	0.003	0446-24
0456-24	45.60	0.30	2.40	0.08	1.795	0.012	0.094	0.003	0456-24
0476-24	47.60	0.30	2.40	0.08	1.874	0.012	0.094	0.003	0476-24
0496-24	49.60	0.30	2.40	0.08	1.953	0.012	0.094	0.003	0496-24
0516-24	51.60	0.40	2.40	0.08	2.031	0.016	0.094	0.003	0516-24
0546-24	54.60	0.40	2.40	0.08	2.150	0.016	0.094	0.003	0546-24
0556-24	55.60	0.40	2.40	0.08	2.189	0.016	0.094	0.003	0556-24
0576-24	57.60	0.40	2.40	0.08	2.268	0.016	0.094	0.003	0576-24
0586-24	58.60	0.40	2.40	0.08	2.307	0.016	0.094	0.003	0586-24
0596-24	59.60	0.40	2.40	0.08	2.346	0.016	0.094	0.003	0596-24
0616-24	61.60	0.40	2.40	0.08	2.425	0.016	0.094	0.003	0616-24
0626-24	62.60	0.40	2.40	0.08	2.465	0.016	0.094	0.003	0626-24
0646-24	64.60	0.40	2.40	0.08	2.543	0.016	0.094	0.003	0646-24
0676-24	67.60	0.40	2.40	0.08	2.661	0.016	0.094	0.003	0676-24
0696-24	69.60	0.40	2.40	0.08	2.740	0.016	0.094	0.003	0696-24
0195-30	19.50	0.25	3.00	0.10	0.768	0.010	0.118	0.004	0195-30
0215-30	21.50	0.25	3.00	0.10	0.846	0.010	0.118	0.004	0215-30
0225-30	22.50	0.25	3.00	0.10	0.886	0.010	0.118	0.004	0225-30
0245-30	24.50	0.25	3.00	0.10	0.965	0.010	0.118	0.004	0245-30
0255-30	25.50	0.25	3.00	0.10	1.004	0.010	0.118	0.004	0255-30
0265-30	26.50	0.25	3.00	0.10	1.043	0.010	0.118	0.004	0265-30
0275-30	27.50	0.25	3.00	0.10	1.083	0.010	0.118	0.004	0275-30
0295-30	29.50	0.25	3.00	0.10	1.161	0.010	0.118	0.004	0295-30
0325-30	32.50	0.30	3.00	0.10	1.280	0.012	0.118	0.004	0325-30
0325-30	32.50	0.30	3.00	0.10	1.280	0.012	0.118	0.004	0325-30
0345-30	34.50	0.30	3.00	0.10	1.358	0.012	0.118	0.004	0345-30
0355-30	35.50	0.30	3.00	0.10	1.398	0.012	0.118	0.004	0355-30

GLOBAL O-RING SIZE REFERENCE GUIDE

BS 4518 SIZES

BS 4518 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	BS 4518 SIZE
0365-30	36.50	0.30	3.00	0.10	1.437	0.012	0.118	0.004	0365-30
0375-30	37.50	0.30	3.00	0.10	1.476	0.012	0.118	0.004	0375-30
0395-30	39.50	0.30	3.00	0.10	1.555	0.012	0.118	0.004	0395-30
0415-30	41.50	0.30	3.00	0.10	1.634	0.012	0.118	0.004	0415-30
0425-30	42.50	0.30	3.00	0.10	1.673	0.012	0.118	0.004	0425-30
0445-30	44.50	0.30	3.00	0.10	1.752	0.012	0.118	0.004	0445-30
0495-30	49.50	0.30	3.00	0.10	1.949	0.012	0.118	0.004	0495-30
0545-30	54.50	0.40	3.00	0.10	2.146	0.016	0.118	0.004	0545-30
0555-30	55.50	0.40	3.00	0.10	2.185	0.016	0.118	0.004	0555-30
0575-30	57.50	0.40	3.00	0.10	2.264	0.016	0.118	0.004	0575-30
0595-30	59.50	0.40	3.00	0.10	2.343	0.016	0.118	0.004	0595-30
0625-30	62.50	0.40	3.00	0.10	2.461	0.016	0.118	0.004	0625-30
0645-30	64.50	0.40	3.00	0.10	2.539	0.016	0.118	0.004	0645-30
0695-30	69.50	0.40	3.00	0.10	2.736	0.016	0.118	0.004	0695-30
0745-30	74.50	0.40	3.00	0.10	2.933	0.016	0.118	0.004	0745-30
0795-30	79.50	0.40	3.00	0.10	3.130	0.016	0.118	0.004	0795-30
0845-30	84.50	0.50	3.00	0.10	3.327	0.020	0.118	0.004	0845-30
0895-30	89.50	0.50	3.00	0.10	3.524	0.020	0.118	0.004	0895-30
0945-30	94.50	0.50	3.00	0.10	3.720	0.020	0.118	0.004	0945-30
0995-30	99.50	0.50	3.00	0.10	3.917	0.020	0.118	0.004	0995-30
1045-30	104.50	0.50	3.00	0.10	4.114	0.020	0.118	0.004	1045-30
1095-30	109.50	0.50	3.00	0.10	4.311	0.020	0.118	0.004	1095-30
1145-30	114.50	0.50	3.00	0.10	4.508	0.020	0.118	0.004	1145-30
1195-30	119.50	0.50	3.00	0.10	4.705	0.020	0.118	0.004	1195-30
1245-30	124.50	0.60	3.00	0.10	4.902	0.024	0.118	0.004	1245-30
1295-30	129.50	0.60	3.00	0.10	5.098	0.024	0.118	0.004	1295-30
1345-30	134.50	0.60	3.00	0.10	5.295	0.024	0.118	0.004	1345-30
1395-30	139.50	0.60	3.00	0.10	5.492	0.024	0.118	0.004	1395-30
1445-30	144.50	0.60	3.00	0.10	5.689	0.024	0.118	0.004	1445-30
1495-30	149.50	0.60	3.00	0.10	5.886	0.024	0.118	0.004	1495-30
1545-30	154.50	0.60	3.00	0.10	6.083	0.024	0.118	0.004	1545-30
1595-30	159.50	0.60	3.00	0.10	6.280	0.024	0.118	0.004	1595-30
1645-30	164.50	0.60	3.00	0.10	6.476	0.024	0.118	0.004	1645-30
1695-30	169.50	0.60	3.00	0.10	6.673	0.024	0.118	0.004	1695-30
1745-30	174.50	0.60	3.00	0.10	6.870	0.024	0.118	0.004	1745-30
1795-30	179.50	0.60	3.00	0.10	7.067	0.024	0.118	0.004	1795-30
1845-30	184.50	0.80	3.00	0.10	7.264	0.031	0.118	0.004	1845-30
1895-30	189.50	0.80	3.00	0.10	7.461	0.031	0.118	0.004	1895-30
1945-30	194.50	0.80	3.00	0.10	7.657	0.031	0.118	0.004	1945-30

BS 4518 SIZES

BS 4518 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	BS 4518 SIZE
1995-30	199.50	0.80	3.00	0.10	7.854	0.031	0.118	0.004	1995-30
2095-30	209.50	0.80	3.00	0.10	8.248	0.031	0.118	0.004	2095-30
2195-30	219.50	0.80	3.00	0.10	8.642	0.031	0.118	0.004	2195-30
2295-30	229.50	0.80	3.00	0.10	9.035	0.031	0.118	0.004	2295-30
2395-30	239.50	0.80	3.00	0.10	9.429	0.031	0.118	0.004	2395-30
2445-30	244.50	0.80	3.00	0.10	9.626	0.031	0.118	0.004	2445-30
2495-30	249.50	0.80	3.00	0.10	9.823	0.031	0.118	0.004	2495-30
0443-57	44.30	0.30	5.70	0.12	1.744	0.012	0.224	0.005	0443-57
0453-57	45.30	0.30	5.70	0.12	1.783	0.012	0.224	0.005	0453-57
0493-57	49.30	0.30	5.70	0.12	1.941	0.012	0.224	0.005	0493-57
0523-57	52.30	0.40	5.70	0.12	2.059	0.016	0.224	0.005	0523-57
0543-57	54.30	0.40	5.70	0.12	2.138	0.016	0.224	0.005	0543-57
0553-57	55.30	0.40	5.70	0.12	2.177	0.016	0.224	0.005	0553-57
0593-57	59.30	0.40	5.70	0.12	2.335	0.016	0.224	0.005	0593-57
0623-57	62.30	0.40	5.70	0.12	2.453	0.016	0.224	0.005	0623-57
0643-57	64.30	0.40	5.70	0.12	2.531	0.016	0.224	0.005	0643-57
0693-57	69.30	0.40	5.70	0.12	2.728	0.016	0.224	0.005	0693-57
0743-57	74.30	0.40	5.70	0.12	2.925	0.016	0.224	0.005	0743-57
0793-57	79.30	0.40	5.70	0.12	3.122	0.016	0.224	0.005	0793-57
0843-57	84.30	0.50	5.70	0.12	3.319	0.020	0.224	0.005	0843-57
0893-57	89.30	0.50	5.70	0.12	3.516	0.020	0.224	0.005	0893-57
0943-57	94.30	0.50	5.70	0.12	3.713	0.020	0.224	0.005	0943-57
0993-57	99.30	0.50	5.70	0.12	3.909	0.020	0.224	0.005	0993-57
1043-57	104.30	0.50	5.70	0.12	4.106	0.020	0.224	0.005	1043-57
1093-57	109.30	0.50	5.70	0.12	4.303	0.020	0.224	0.005	1093-57
1143-57	114.30	0.50	5.70	0.12	4.500	0.020	0.224	0.005	1143-57
1193-57	119.30	0.50	5.70	0.12	4.697	0.020	0.224	0.005	1193-57
1243-57	124.30	0.60	5.70	0.12	4.894	0.024	0.224	0.005	1243-57
1293-57	129.30	0.60	5.70	0.12	5.091	0.024	0.224	0.005	1293-57
1343-57	134.30	0.60	5.70	0.12	5.287	0.024	0.224	0.005	1343-57
1393-57	139.30	0.60	5.70	0.12	5.484	0.024	0.224	0.005	1393-57
1443-57	144.30	0.60	5.70	0.12	5.681	0.024	0.224	0.005	1443-57
1493-57	149.30	0.60	5.70	0.12	5.878	0.024	0.224	0.005	1493-57
1543-57	154.30	0.60	5.70	0.12	6.075	0.024	0.224	0.005	1543-57
1593-57	159.30	0.60	5.70	0.12	6.272	0.024	0.224	0.005	1593-57
1643-57	164.30	0.60	5.70	0.12	6.469	0.024	0.224	0.005	1643-57
1693-57	169.30	0.60	5.70	0.12	6.665	0.024	0.224	0.005	1693-57
1743-57	174.30	0.60	5.70	0.12	6.862	0.024	0.224	0.005	1743-57
1793-57	179.30	0.60	5.70	0.12	7.059	0.024	0.224	0.005	1793-57

GLOBAL O-RING SIZE REFERENCE GUIDE

BS 4518 SIZES

BS 4518 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	BS 4518 SIZE
1843-57	184.30	0.80	5.70	0.12	7.256	0.031	0.224	0.005	1843-57
1893-57	189.30	0.80	5.70	0.12	7.453	0.031	0.224	0.005	1893-57
1943-57	194.30	0.80	5.70	0.12	7.650	0.031	0.224	0.005	1943-57
1993-57	199.30	0.80	5.70	0.12	7.846	0.031	0.224	0.005	1993-57
2093-57	209.30	0.80	5.70	0.12	8.240	0.031	0.224	0.005	2093-57
2193-57	219.30	0.80	5.70	0.12	8.634	0.031	0.224	0.005	2193-57
2293-57	229.30	0.80	5.70	0.12	9.028	0.031	0.224	0.005	2293-57
2393-57	239.30	0.80	5.70	0.12	9.421	0.031	0.224	0.005	2393-57
2493-57	249.30	0.80	5.70	0.12	9.815	0.031	0.224	0.005	2493-57
2593-57	259.30	1.00	5.70	0.12	10.209	0.039	0.224	0.005	2593-57
2693-57	269.30	1.00	5.70	0.12	10.602	0.039	0.224	0.005	2693-57
2793-57	279.30	1.00	5.70	0.12	10.996	0.039	0.224	0.005	2793-57
2893-57	289.30	1.00	5.70	0.12	11.390	0.039	0.224	0.005	2893-57
2993-57	299.30	1.00	5.70	0.12	11.783	0.039	0.224	0.005	2993-57
3093-57	309.30	1.50	5.70	0.12	12.177	0.059	0.224	0.005	3093-57
3193-57	319.30	1.50	5.70	0.12	12.571	0.059	0.224	0.005	3193-57
3393-57	339.30	1.50	5.70	0.12	13.358	0.059	0.224	0.005	3393-57
3593-57	359.30	1.50	5.70	0.12	14.146	0.059	0.224	0.005	3593-57
3793-57	379.30	1.50	5.70	0.12	14.933	0.059	0.224	0.005	3793-57
3893-57	389.30	1.50	5.70	0.12	15.327	0.059	0.224	0.005	3893-57
3993-57	399.30	1.50	5.70	0.12	15.720	0.059	0.224	0.005	3993-57
4193-57	419.30	2.00	5.70	0.12	16.508	0.079	0.224	0.005	4193-57
4393-57	439.30	2.00	5.70	0.12	17.295	0.079	0.224	0.005	4393-57
4593-57	459.30	2.00	5.70	0.12	18.083	0.079	0.224	0.005	4593-57
4793-57	479.30	2.00	5.70	0.12	18.870	0.079	0.224	0.005	4793-57
4893-57	489.30	2.00	5.70	0.12	19.264	0.079	0.224	0.005	4893-57
4993-57	499.30	2.00	5.70	0.12	19.657	0.079	0.224	0.005	4993-57
1441-84	144.10	0.60	8.40	0.15	5.673	0.024	0.331	0.006	1441-84
1491-84	149.10	0.60	8.40	0.15	5.870	0.024	0.331	0.006	1491-84
1541-84	154.10	0.60	8.40	0.15	6.067	0.024	0.331	0.006	1541-84
1591-84	159.10	0.60	8.40	0.15	6.264	0.024	0.331	0.006	1591-84
1641-84	164.10	0.60	8.40	0.15	6.461	0.024	0.331	0.006	1641-84
1691-84	169.10	0.60	8.40	0.15	6.657	0.024	0.331	0.006	1691-84
1741-84	174.10	0.60	8.40	0.15	6.854	0.024	0.331	0.006	1741-84
1791-84	179.10	0.60	8.40	0.15	7.051	0.024	0.331	0.006	1791-84
1841-84	184.10	0.80	8.40	0.15	7.248	0.031	0.331	0.006	1841-84
1891-84	189.10	0.80	8.40	0.15	7.445	0.031	0.331	0.006	1891-84
1941-84	194.10	0.80	8.40	0.15	7.642	0.031	0.331	0.006	1941-84
1991-84	199.10	0.80	8.40	0.15	7.839	0.031	0.331	0.006	1991-84

BS 4518 SIZES

BS 4518 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	BS 4518 SIZE
2041-84	204.10	0.80	8.40	0.15	8.035	0.031	0.331	0.006	2041-84
2091-84	209.10	0.80	8.40	0.15	8.232	0.031	0.331	0.006	2091-84
2191-84	219.10	0.80	8.40	0.15	8.626	0.031	0.331	0.006	2191-84
2291-84	229.10	0.80	8.40	0.15	9.020	0.031	0.331	0.006	2291-84
2341-84	234.10	0.80	8.40	0.15	9.217	0.031	0.331	0.006	2341-84
2391-84	239.10	0.80	8.40	0.15	9.413	0.031	0.331	0.006	2391-84
2491-84	249.10	0.80	8.40	0.15	9.807	0.031	0.331	0.006	2491-84

GLOBAL O-RING SIZE REFERENCE GUIDE

BS 1806 SIZES

BS 1806 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	BS 1806 SIZE
-001	0.74	0.10	1.02	0.08	0.029	0.004	0.040	0.003	-001
-606	1.78	0.10	1.02	0.08	0.070	0.004	0.040	0.003	-606
-607	2.54	0.10	1.02	0.08	0.100	0.004	0.040	0.003	-607
-002	1.07	0.10	1.27	0.08	0.042	0.004	0.050	0.003	-002
-003	1.42	0.10	1.52	0.08	0.056	0.004	0.060	0.003	-003
-004	1.78	0.13	1.78	0.08	0.070	0.005	0.070	0.003	-004
-005	2.57	0.13	1.78	0.08	0.101	0.005	0.070	0.003	-005
-006	2.90	0.13	1.78	0.08	0.114	0.005	0.070	0.003	-006
-801	3.18	0.13	1.78	0.08	0.125	0.005	0.070	0.003	-801
-007	3.68	0.13	1.78	0.08	0.145	0.005	0.070	0.003	-007
-008	4.47	0.13	1.78	0.08	0.176	0.005	0.070	0.003	-008
-802	4.75	0.13	1.78	0.08	0.187	0.005	0.070	0.003	-802
-009	5.28	0.13	1.78	0.08	0.208	0.005	0.070	0.003	-009
-010	6.07	0.13	1.78	0.08	0.239	0.005	0.070	0.003	-010
-803	6.35	0.13	1.78	0.08	0.250	0.005	0.070	0.003	-803
-610	6.76	0.13	1.78	0.08	0.266	0.005	0.070	0.003	-610
-011	7.65	0.13	1.78	0.08	0.301	0.005	0.070	0.003	-011
-804	7.92	0.13	1.78	0.08	0.312	0.005	0.070	0.003	-804
-611	8.74	0.13	1.78	0.08	0.344	0.005	0.070	0.003	-611
-012	9.25	0.13	1.78	0.08	0.364	0.005	0.070	0.003	-012
-013	10.82	0.13	1.78	0.08	0.426	0.005	0.070	0.003	-013
-806	11.10	0.13	1.78	0.08	0.437	0.005	0.070	0.003	-806
-014	12.42	0.13	1.78	0.08	0.489	0.005	0.070	0.003	-014
-015	14.00	0.18	1.78	0.08	0.551	0.007	0.070	0.003	-015
-016	15.60	0.23	1.78	0.08	0.614	0.009	0.070	0.003	-016
-017	17.17	0.23	1.78	0.08	0.676	0.009	0.070	0.003	-017
-018	18.77	0.23	1.78	0.08	0.739	0.009	0.070	0.003	-018
-019	20.35	0.23	1.78	0.08	0.801	0.009	0.070	0.003	-019
-020	21.95	0.23	1.78	0.08	0.864	0.009	0.070	0.003	-020
-021	23.52	0.23	1.78	0.08	0.926	0.009	0.070	0.003	-021
-022	25.12	0.25	1.78	0.08	0.989	0.010	0.070	0.003	-022
-023	26.70	0.25	1.78	0.08	1.051	0.010	0.070	0.003	-023
-024	28.30	0.25	1.78	0.08	1.114	0.010	0.070	0.003	-024
-025	29.87	0.28	1.78	0.08	1.176	0.011	0.070	0.003	-025
-026	31.47	0.28	1.78	0.08	1.239	0.011	0.070	0.003	-026
-027	33.05	0.28	1.78	0.08	1.301	0.011	0.070	0.003	-027
-028	34.65	0.33	1.78	0.08	1.364	0.013	0.070	0.003	-028
-517	36.27	0.38	1.78	0.08	1.428	0.015	0.070	0.003	-517
-029	37.82	0.33	1.78	0.08	1.489	0.013	0.070	0.003	-029

BS 1806 SIZES

BS 1806 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	BS 1806 SIZE
-519	39.45	0.38	1.78	0.08	1.553	0.015	0.070	0.003	-519
-030	41.00	0.33	1.78	0.08	1.614	0.013	0.070	0.003	-030
-031	44.17	0.38	1.78	0.08	1.739	0.015	0.070	0.003	-031
-032	47.35	0.38	1.78	0.08	1.864	0.015	0.070	0.003	-032
-033	50.52	0.46	1.78	0.08	1.989	0.018	0.070	0.003	-033
-034	53.70	0.46	1.78	0.08	2.114	0.018	0.070	0.003	-034
-035	56.87	0.46	1.78	0.08	2.239	0.018	0.070	0.003	-035
-036	60.05	0.46	1.78	0.08	2.364	0.018	0.070	0.003	-036
-037	63.22	0.46	1.78	0.08	2.489	0.018	0.070	0.003	-037
-038	66.40	0.51	1.78	0.08	2.614	0.020	0.070	0.003	-038
-039	69.57	0.51	1.78	0.08	2.739	0.020	0.070	0.003	-039
-040	72.75	0.51	1.78	0.08	2.864	0.020	0.070	0.003	-040
-041	75.92	0.61	1.78	0.08	2.989	0.024	0.070	0.003	-041
-532	78.99	0.51	1.78	0.08	3.110	0.020	0.070	0.003	-532
-042	82.27	0.61	1.78	0.08	3.239	0.024	0.070	0.003	-042
-534	82.27	0.51	1.78	0.08	3.239	0.020	0.070	0.003	-534
-043	88.62	0.61	1.78	0.08	3.489	0.024	0.070	0.003	-043
-536	91.69	0.51	1.78	0.08	3.610	0.020	0.070	0.003	-536
-044	94.97	0.69	1.78	0.08	3.739	0.027	0.070	0.003	-044
-538	98.04	0.51	1.78	0.08	3.860	0.020	0.070	0.003	-538
-045	101.32	0.69	1.78	0.08	3.989	0.027	0.070	0.003	-045
-540	104.39	0.51	1.78	0.08	4.110	0.020	0.070	0.003	-540
-046	107.67	0.76	1.78	0.08	4.239	0.030	0.070	0.003	-046
-542	110.74	0.51	1.78	0.08	4.360	0.020	0.070	0.003	-542
-047	114.02	0.76	1.78	0.08	4.489	0.030	0.070	0.003	-047
-544	117.09	0.51	1.78	0.08	4.610	0.020	0.070	0.003	-544
-048	120.37	0.76	1.78	0.08	4.739	0.030	0.070	0.003	-048
-546	123.44	0.51	1.78	0.08	4.860	0.020	0.070	0.003	-546
-049	126.72	0.94	1.78	0.08	4.989	0.037	0.070	0.003	-049
-548	129.41	0.71	1.78	0.08	5.095	0.028	0.070	0.003	-548
-050	133.07	0.94	1.78	0.08	5.239	0.037	0.070	0.003	-050
-550	135.76	0.71	1.78	0.08	5.345	0.028	0.070	0.003	-550
-551	138.94	0.71	1.78	0.08	5.470	0.028	0.070	0.003	-551
-552	142.11	0.71	1.78	0.08	5.595	0.028	0.070	0.003	-552
-553	145.29	0.71	1.78	0.08	5.720	0.028	0.070	0.003	-553
-554	148.46	0.71	1.78	0.08	5.845	0.028	0.070	0.003	-554
-555	151.64	0.71	1.78	0.08	5.970	0.028	0.070	0.003	-555
-556	154.81	0.71	1.78	0.08	6.095	0.028	0.070	0.003	-556
-557	157.99	0.71	1.78	0.08	6.220	0.028	0.070	0.003	-557

GLOBAL O-RING SIZE REFERENCE GUIDE

BS 1806 SIZES

BS 1806 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	BS 1806 SIZE
-558	161.16	0.71	1.78	0.08	6.345	0.028	0.070	0.003	-558
-559	164.34	0.71	1.78	0.08	6.470	0.028	0.070	0.003	-559
-560	170.05	0.71	1.78	0.08	6.695	0.028	0.070	0.003	-560
-561	170.69	0.71	1.78	0.08	6.720	0.028	0.070	0.003	-561
-562	173.86	0.71	1.78	0.08	6.845	0.028	0.070	0.003	-562
-102	1.24	0.13	2.62	0.08	0.049	0.005	0.103	0.003	-102
-103	2.06	0.13	2.62	0.08	0.081	0.005	0.103	0.003	-103
-104	2.84	0.13	2.62	0.08	0.112	0.005	0.103	0.003	-104
-105	3.63	0.13	2.62	0.08	0.143	0.005	0.103	0.003	-105
-106	4.42	0.13	2.62	0.08	0.174	0.005	0.103	0.003	-106
-107	5.23	0.13	2.62	0.08	0.206	0.005	0.103	0.003	-107
-108	6.02	0.13	2.62	0.08	0.237	0.005	0.103	0.003	-108
-109	7.59	0.13	2.62	0.08	0.299	0.005	0.103	0.003	-109
-110	9.19	0.13	2.62	0.08	0.362	0.005	0.103	0.003	-110
-613	9.93	0.13	2.62	0.08	0.391	0.005	0.103	0.003	-613
-111	10.77	0.13	2.62	0.08	0.424	0.005	0.103	0.003	-111
-614	11.91	0.13	2.62	0.08	0.469	0.005	0.103	0.003	-614
-112	12.37	0.13	2.62	0.08	0.487	0.005	0.103	0.003	-112
-807	12.70	0.13	2.62	0.08	0.500	0.005	0.103	0.003	-807
-615	13.11	0.13	2.62	0.08	0.516	0.005	0.103	0.003	-615
-113	13.94	0.18	2.62	0.08	0.549	0.007	0.103	0.003	-113
-616	15.09	0.13	2.62	0.08	0.594	0.005	0.103	0.003	-616
-114	15.54	0.23	2.62	0.08	0.612	0.009	0.103	0.003	-114
-809	15.88	0.13	2.62	0.08	0.625	0.005	0.103	0.003	-809
-115	17.12	0.23	2.62	0.08	0.674	0.009	0.103	0.003	-115
-810	17.45	0.13	2.62	0.08	0.687	0.005	0.103	0.003	-810
-617	17.86	0.13	2.62	0.08	0.703	0.005	0.103	0.003	-617
-116	18.72	0.23	2.62	0.08	0.737	0.009	0.103	0.003	-116
-117	20.29	0.25	2.62	0.08	0.799	0.010	0.103	0.003	-117
-812	20.62	0.15	2.62	0.08	0.812	0.006	0.103	0.003	-812
-118	21.89	0.25	2.62	0.08	0.862	0.010	0.103	0.003	-118
-813	22.23	0.15	2.62	0.08	0.875	0.006	0.103	0.003	-813
-119	23.47	0.25	2.62	0.08	0.924	0.010	0.103	0.003	-119
-814	23.80	0.15	2.62	0.08	0.937	0.006	0.103	0.003	-814
-120	25.07	0.25	2.62	0.08	0.987	0.010	0.103	0.003	-120
-121	26.64	0.25	2.62	0.08	1.049	0.010	0.103	0.003	-121
-122	28.24	0.25	2.62	0.08	1.112	0.010	0.103	0.003	-122
-123	29.82	0.30	2.62	0.08	1.174	0.012	0.103	0.003	-123
-124	31.42	0.30	2.62	0.08	1.237	0.012	0.103	0.003	-124

BS 1806 SIZES

BS 1806 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	BS 1806 SIZE
-125	32.99	0.30	2.62	0.08	1.299	0.012	0.103	0.003	-125
-126	34.59	0.30	2.62	0.08	1.362	0.012	0.103	0.003	-126
-127	36.17	0.30	2.62	0.08	1.424	0.012	0.103	0.003	-127
-128	37.77	0.30	2.62	0.08	1.487	0.012	0.103	0.003	-128
-129	39.34	0.38	2.62	0.08	1.549	0.015	0.103	0.003	-129
-130	40.94	0.38	2.62	0.08	1.612	0.015	0.103	0.003	-130
-131	42.52	0.38	2.62	0.08	1.674	0.015	0.103	0.003	-131
-132	44.12	0.38	2.62	0.08	1.737	0.015	0.103	0.003	-132
-133	45.69	0.38	2.62	0.08	1.799	0.015	0.103	0.003	-133
-134	47.29	0.43	2.62	0.08	1.862	0.017	0.103	0.003	-134
-135	48.90	0.43	2.62	0.08	1.925	0.017	0.103	0.003	-135
-136	50.47	0.43	2.62	0.08	1.987	0.017	0.103	0.003	-136
-137	52.07	0.43	2.62	0.08	2.050	0.017	0.103	0.003	-137
-138	53.64	0.43	2.62	0.08	2.112	0.017	0.103	0.003	-138
-139	55.25	0.43	2.62	0.08	2.175	0.017	0.103	0.003	-139
-140	56.82	0.43	2.62	0.08	2.237	0.017	0.103	0.003	-140
-141	58.42	0.51	2.62	0.08	2.300	0.020	0.103	0.003	-141
-142	59.99	0.51	2.62	0.08	2.362	0.020	0.103	0.003	-142
-143	61.60	0.51	2.62	0.08	2.425	0.020	0.103	0.003	-143
-144	63.17	0.51	2.62	0.08	2.487	0.020	0.103	0.003	-144
-145	64.77	0.51	2.62	0.08	2.550	0.020	0.103	0.003	-145
-146	66.34	0.51	2.62	0.08	2.612	0.020	0.103	0.003	-146
-147	67.95	0.56	2.62	0.08	2.675	0.022	0.103	0.003	-147
-148	69.52	0.56	2.62	0.08	2.737	0.022	0.103	0.003	-148
-149	71.12	0.56	2.62	0.08	2.800	0.022	0.103	0.003	-149
-150	72.69	0.56	2.62	0.08	2.862	0.022	0.103	0.003	-150
-640	74.27	0.38	2.62	0.08	2.924	0.015	0.103	0.003	-640
-151	75.87	0.61	2.62	0.08	2.987	0.024	0.103	0.003	-151
-641	77.44	0.38	2.62	0.08	3.049	0.015	0.103	0.003	-641
-642	80.62	0.38	2.62	0.08	3.174	0.015	0.103	0.003	-642
-152	82.22	0.61	2.62	0.08	3.237	0.024	0.103	0.003	-152
-643	83.79	0.38	2.62	0.08	3.299	0.015	0.103	0.003	-643
-153	88.57	0.61	2.62	0.08	3.487	0.024	0.103	0.003	-153
-154	94.92	0.71	2.62	0.08	3.737	0.028	0.103	0.003	-154
-155	101.27	0.71	2.62	0.08	3.987	0.028	0.103	0.003	-155
-156	107.62	0.76	2.62	0.08	4.237	0.030	0.103	0.003	-156
-157	113.97	0.76	2.62	0.08	4.487	0.030	0.103	0.003	-157
-158	120.32	0.76	2.62	0.08	4.737	0.030	0.103	0.003	-158
-159	126.67	0.89	2.62	0.08	4.987	0.035	0.103	0.003	-159

GLOBAL O-RING SIZE REFERENCE GUIDE

BS 1806 SIZES

BS 1806 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	BS 1806 SIZE
-160	133.02	0.89	2.62	0.08	5.237	0.035	0.103	0.003	-160
-161	139.37	0.89	2.62	0.08	5.487	0.035	0.103	0.003	-161
-162	145.72	0.89	2.62	0.08	5.737	0.035	0.103	0.003	-162
-163	152.07	0.89	2.62	0.08	5.987	0.035	0.103	0.003	-163
-164	158.42	1.02	2.62	0.08	6.237	0.040	0.103	0.003	-164
-165	164.77	1.02	2.62	0.08	6.487	0.040	0.103	0.003	-165
-166	171.12	1.02	2.62	0.08	6.737	0.040	0.103	0.003	-166
-167	177.47	1.02	2.62	0.08	6.987	0.040	0.103	0.003	-167
-168	183.82	1.14	2.62	0.08	7.237	0.045	0.103	0.003	-168
-169	190.17	1.14	2.62	0.08	7.487	0.045	0.103	0.003	-169
-170	196.52	1.14	2.62	0.08	7.737	0.045	0.103	0.003	-170
-171	202.87	1.14	2.62	0.08	7.987	0.045	0.103	0.003	-171
-172	209.22	1.27	2.62	0.08	8.237	0.050	0.103	0.003	-172
-173	215.57	1.27	2.62	0.08	8.487	0.050	0.103	0.003	-173
-174	221.92	1.27	2.62	0.08	8.737	0.050	0.103	0.003	-174
-175	228.27	1.27	2.62	0.08	8.987	0.050	0.103	0.003	-175
-176	234.62	1.40	2.62	0.08	9.237	0.055	0.103	0.003	-176
-177	240.97	1.40	2.62	0.08	9.487	0.055	0.103	0.003	-177
-178	247.32	1.40	2.62	0.08	9.737	0.055	0.103	0.003	-178
-201	4.34	0.13	3.53	0.10	0.171	0.005	0.139	0.004	-201
-202	5.94	0.13	3.53	0.10	0.234	0.005	0.139	0.004	-202
-203	7.52	0.13	3.53	0.10	0.296	0.005	0.139	0.004	-203
-204	9.12	0.13	3.53	0.10	0.359	0.005	0.139	0.004	-204
-205	10.69	0.13	3.53	0.10	0.421	0.005	0.139	0.004	-205
-206	12.29	0.13	3.53	0.10	0.484	0.005	0.139	0.004	-206
-207	13.87	0.18	3.53	0.10	0.546	0.007	0.139	0.004	-207
-208	15.47	0.23	3.53	0.10	0.609	0.009	0.139	0.004	-208
-209	17.04	0.23	3.53	0.10	0.671	0.009	0.139	0.004	-209
-210	18.64	0.25	3.53	0.10	0.734	0.010	0.139	0.004	-210
-211	20.22	0.25	3.53	0.10	0.796	0.010	0.139	0.004	-211
-212	21.82	0.25	3.53	0.10	0.859	0.010	0.139	0.004	-212
-213	23.39	0.25	3.53	0.10	0.921	0.010	0.139	0.004	-213
-214	24.99	0.25	3.53	0.10	0.984	0.010	0.139	0.004	-214
-618	25.81	0.15	3.53	0.10	1.016	0.006	0.139	0.004	-618
-215	26.57	0.25	3.53	0.10	1.046	0.010	0.139	0.004	-215
-216	28.17	0.30	3.53	0.10	1.109	0.012	0.139	0.004	-216
-217	29.74	0.30	3.53	0.10	1.171	0.012	0.139	0.004	-217
-218	31.34	0.30	3.53	0.10	1.234	0.012	0.139	0.004	-218
-219	32.92	0.30	3.53	0.10	1.296	0.012	0.139	0.004	-219

BS 1806 SIZES

BS 1806 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	BS 1806 SIZE
-220	34.52	0.30	3.53	0.10	1.359	0.012	0.139	0.004	-220
-221	36.09	0.30	3.53	0.10	1.421	0.012	0.139	0.004	-221
-222	37.69	0.38	3.53	0.10	1.484	0.015	0.139	0.004	-222
-824	39.70	0.25	3.53	0.10	1.563	0.010	0.139	0.004	-824
-223	40.87	0.38	3.53	0.10	1.609	0.015	0.139	0.004	-223
-825	41.28	0.25	3.53	0.10	1.625	0.010	0.139	0.004	-825
-826	42.85	0.25	3.53	0.10	1.687	0.010	0.139	0.004	-826
-224	44.04	0.38	3.53	0.10	1.734	0.015	0.139	0.004	-224
-827	44.45	0.25	3.53	0.10	1.750	0.010	0.139	0.004	-827
-828	46.02	0.25	3.53	0.10	1.812	0.010	0.139	0.004	-828
-225	47.22	0.46	3.53	0.10	1.859	0.018	0.139	0.004	-225
-829	47.63	0.25	3.53	0.10	1.875	0.010	0.139	0.004	-829
-830	49.20	0.25	3.53	0.10	1.937	0.010	0.139	0.004	-830
-226	50.39	0.46	3.53	0.10	1.984	0.018	0.139	0.004	-226
-831	50.80	0.25	3.53	0.10	2.000	0.010	0.139	0.004	-831
-832	52.37	0.25	3.53	0.10	2.062	0.010	0.139	0.004	-832
-227	53.57	0.46	3.53	0.10	2.109	0.018	0.139	0.004	-227
-833	53.98	0.25	3.53	0.10	2.125	0.010	0.139	0.004	-833
-834	55.55	0.25	3.53	0.10	2.187	0.010	0.139	0.004	-834
-228	56.74	0.51	3.53	0.10	2.234	0.020	0.139	0.004	-228
-835	57.15	0.25	3.53	0.10	2.250	0.010	0.139	0.004	-835
-836	58.72	0.25	3.53	0.10	2.312	0.010	0.139	0.004	-836
-229	59.92	0.51	3.53	0.10	2.359	0.020	0.139	0.004	-229
-837	60.33	0.25	3.53	0.10	2.375	0.010	0.139	0.004	-837
-838	61.90	0.25	3.53	0.10	2.437	0.010	0.139	0.004	-838
-230	63.09	0.51	3.53	0.10	2.484	0.020	0.139	0.004	-230
-839	63.50	0.25	3.53	0.10	2.500	0.010	0.139	0.004	-839
-840	65.10	0.25	3.53	0.10	2.563	0.010	0.139	0.004	-840
-231	66.27	0.51	3.53	0.10	2.609	0.020	0.139	0.004	-231
-841	66.68	0.38	3.53	0.10	2.625	0.015	0.139	0.004	-841
-842	68.25	0.38	3.53	0.10	2.687	0.015	0.139	0.004	-842
-232	69.44	0.61	3.53	0.10	2.734	0.024	0.139	0.004	-232
-843	69.85	0.38	3.53	0.10	2.750	0.015	0.139	0.004	-843
-844	71.42	0.38	3.53	0.10	2.812	0.015	0.139	0.004	-844
-233	72.62	0.61	3.53	0.10	2.859	0.024	0.139	0.004	-233
-845	73.03	0.38	3.53	0.10	2.875	0.015	0.139	0.004	-845
-846	74.60	0.38	3.53	0.10	2.937	0.015	0.139	0.004	-846
-234	75.79	0.61	3.53	0.10	2.984	0.024	0.139	0.004	-234
-235	78.97	0.61	3.53	0.10	3.109	0.024	0.139	0.004	-235

GLOBAL O-RING SIZE REFERENCE GUIDE

BS 1806 SIZES

BS 1806 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	BS 1806 SIZE
-236	82.14	0.61	3.53	0.10	3.234	0.024	0.139	0.004	-236
-237	85.32	0.61	3.53	0.10	3.359	0.024	0.139	0.004	-237
-238	88.49	0.61	3.53	0.10	3.484	0.024	0.139	0.004	-238
-239	91.67	0.71	3.53	0.10	3.609	0.028	0.139	0.004	-239
-240	94.84	0.71	3.53	0.10	3.734	0.028	0.139	0.004	-240
-241	98.02	0.71	3.53	0.10	3.859	0.028	0.139	0.004	-241
-242	101.19	0.71	3.53	0.10	3.984	0.028	0.139	0.004	-242
-243	104.37	0.71	3.53	0.10	4.109	0.028	0.139	0.004	-243
-244	107.54	0.76	3.53	0.10	4.234	0.030	0.139	0.004	-244
-245	110.72	0.76	3.53	0.10	4.359	0.030	0.139	0.004	-245
-246	113.89	0.76	3.53	0.10	4.484	0.030	0.139	0.004	-246
-247	117.07	0.76	3.53	0.10	4.609	0.030	0.139	0.004	-247
-248	120.24	0.76	3.53	0.10	4.734	0.030	0.139	0.004	-248
-249	123.42	0.89	3.53	0.10	4.859	0.035	0.139	0.004	-249
-250	126.59	0.89	3.53	0.10	4.984	0.035	0.139	0.004	-250
-251	129.77	0.89	3.53	0.10	5.109	0.035	0.139	0.004	-251
-252	132.94	0.89	3.53	0.10	5.234	0.035	0.139	0.004	-252
-253	136.12	0.89	3.53	0.10	5.359	0.035	0.139	0.004	-253
-254	139.29	0.89	3.53	0.10	5.484	0.035	0.139	0.004	-254
-255	142.47	0.89	3.53	0.10	5.609	0.035	0.139	0.004	-255
-256	145.64	0.89	3.53	0.10	5.734	0.035	0.139	0.004	-256
-257	148.82	0.89	3.53	0.10	5.859	0.035	0.139	0.004	-257
-258	151.99	0.89	3.53	0.10	5.984	0.035	0.139	0.004	-258
-259	158.34	1.02	3.53	0.10	6.234	0.040	0.139	0.004	-259
-260	164.69	1.02	3.53	0.10	6.484	0.040	0.139	0.004	-260
-261	171.04	1.02	3.53	0.10	6.734	0.040	0.139	0.004	-261
-262	177.39	1.02	3.53	0.10	6.984	0.040	0.139	0.004	-262
-263	183.74	1.14	3.53	0.10	7.234	0.045	0.139	0.004	-263
-264	190.09	1.14	3.53	0.10	7.484	0.045	0.139	0.004	-264
-265	196.44	1.14	3.53	0.10	7.734	0.045	0.139	0.004	-265
-266	202.79	1.14	3.53	0.10	7.984	0.045	0.139	0.004	-266
-267	209.14	1.27	3.53	0.10	8.234	0.050	0.139	0.004	-267
-268	215.49	1.27	3.53	0.10	8.484	0.050	0.139	0.004	-268
-269	221.84	1.27	3.53	0.10	8.734	0.050	0.139	0.004	-269
-270	228.19	1.27	3.53	0.10	8.984	0.050	0.139	0.004	-270
-271	234.54	1.40	3.53	0.10	9.234	0.055	0.139	0.004	-271
-272	240.89	1.40	3.53	0.10	9.484	0.055	0.139	0.004	-272
-273	247.24	1.40	3.53	0.10	9.734	0.055	0.139	0.004	-273
-274	253.59	1.40	3.53	0.10	9.984	0.055	0.139	0.004	-274

BS 1806 SIZES

BS 1806 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	BS 1806 SIZE
-275	266.29	1.40	3.53	0.10	10.484	0.055	0.139	0.004	-275
-276	278.99	1.65	3.53	0.10	10.984	0.065	0.139	0.004	-276
-277	291.69	1.65	3.53	0.10	11.484	0.065	0.139	0.004	-277
-278	304.39	1.65	3.53	0.10	11.984	0.065	0.139	0.004	-278
-279	329.79	1.65	3.53	0.10	12.984	0.065	0.139	0.004	-279
-280	355.19	1.65	3.53	0.10	13.984	0.065	0.139	0.004	-280
-281	380.59	1.65	3.53	0.10	14.984	0.065	0.139	0.004	-281
-309	10.46	0.13	5.33	0.13	0.412	0.005	0.210	0.005	-309
-310	12.07	0.13	5.33	0.13	0.475	0.005	0.210	0.005	-310
-311	13.64	0.18	5.33	0.13	0.537	0.007	0.210	0.005	-311
-312	15.24	0.23	5.33	0.13	0.600	0.009	0.210	0.005	-312
-313	16.81	0.23	5.33	0.13	0.662	0.009	0.210	0.005	-313
-314	18.42	0.25	5.33	0.13	0.725	0.010	0.210	0.005	-314
-315	19.99	0.25	5.33	0.13	0.787	0.010	0.210	0.005	-315
-316	21.59	0.25	5.33	0.13	0.850	0.010	0.210	0.005	-316
-317	23.16	0.25	5.33	0.13	0.912	0.010	0.210	0.005	-317
-318	24.77	0.25	5.33	0.13	0.975	0.010	0.210	0.005	-318
-319	26.34	0.25	5.33	0.13	1.037	0.010	0.210	0.005	-319
-320	27.94	0.30	5.33	0.13	1.100	0.012	0.210	0.005	-320
-321	29.51	0.30	5.33	0.13	1.162	0.012	0.210	0.005	-321
-322	31.12	0.30	5.33	0.13	1.225	0.012	0.210	0.005	-322
-323	32.69	0.30	5.33	0.13	1.287	0.012	0.210	0.005	-323
-324	34.29	0.30	5.33	0.13	1.350	0.012	0.210	0.005	-324
-325	37.47	0.38	5.33	0.13	1.475	0.015	0.210	0.005	-325
-326	40.64	0.38	5.33	0.13	1.600	0.015	0.210	0.005	-326
-327	43.82	0.38	5.33	0.13	1.725	0.015	0.210	0.005	-327
-328	46.99	0.38	5.33	0.13	1.850	0.015	0.210	0.005	-328
-329	50.17	0.46	5.33	0.13	1.975	0.018	0.210	0.005	-329
-330	53.34	0.46	5.33	0.13	2.100	0.018	0.210	0.005	-330
-331	56.52	0.46	5.33	0.13	2.225	0.018	0.210	0.005	-331
-332	59.69	0.46	5.33	0.13	2.350	0.018	0.210	0.005	-332
-333	62.87	0.51	5.33	0.13	2.475	0.020	0.210	0.005	-333
-334	66.04	0.51	5.33	0.13	2.600	0.020	0.210	0.005	-334
-335	69.22	0.51	5.33	0.13	2.725	0.020	0.210	0.005	-335
-336	72.39	0.51	5.33	0.13	2.850	0.020	0.210	0.005	-336
-337	75.57	0.61	5.33	0.13	2.975	0.024	0.210	0.005	-337
-338	78.74	0.61	5.33	0.13	3.100	0.024	0.210	0.005	-338
-620	79.78	0.38	5.33	0.13	3.141	0.015	0.210	0.005	-620
-339	81.92	0.61	5.33	0.13	3.225	0.024	0.210	0.005	-339

GLOBAL O-RING SIZE REFERENCE GUIDE

BS 1806 SIZES

BS 1806 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	BS 1806 SIZE
-340	85.09	0.61	5.33	0.13	3.350	0.024	0.210	0.005	-340
-341	88.27	0.61	5.33	0.13	3.475	0.024	0.210	0.005	-341
-621	89.69	0.38	5.33	0.13	3.531	0.015	0.210	0.005	-621
-342	91.44	0.71	5.33	0.13	3.600	0.028	0.210	0.005	-342
-343	94.62	0.71	5.33	0.13	3.725	0.028	0.210	0.005	-343
-344	97.79	0.71	5.33	0.13	3.850	0.028	0.210	0.005	-344
-622	100.00	0.38	5.33	0.13	3.937	0.015	0.210	0.005	-622
-345	100.97	0.71	5.33	0.13	3.975	0.028	0.210	0.005	-345
-346	104.14	0.71	5.33	0.13	4.100	0.028	0.210	0.005	-346
-347	107.32	0.76	5.33	0.13	4.225	0.030	0.210	0.005	-347
-623	109.52	0.38	5.33	0.13	4.312	0.015	0.210	0.005	-623
-348	110.49	0.76	5.33	0.13	4.350	0.030	0.210	0.005	-348
-349	113.67	0.76	5.33	0.13	4.475	0.030	0.210	0.005	-349
-350	116.84	0.76	5.33	0.13	4.600	0.030	0.210	0.005	-350
-860	117.48	0.38	5.33	0.13	4.625	0.015	0.210	0.005	-860
-351	120.02	0.76	5.33	0.13	4.725	0.030	0.210	0.005	-351
-861	120.65	0.38	5.33	0.13	4.750	0.015	0.210	0.005	-861
-352	123.19	0.76	5.33	0.13	4.850	0.030	0.210	0.005	-352
-862	123.83	0.38	5.33	0.13	4.875	0.015	0.210	0.005	-862
-353	126.37	0.94	5.33	0.13	4.975	0.037	0.210	0.005	-353
-863	127.00	0.58	5.33	0.13	5.000	0.023	0.210	0.005	-863
-354	129.54	0.94	5.33	0.13	5.100	0.037	0.210	0.005	-354
-864	130.18	0.58	5.33	0.13	5.125	0.023	0.210	0.005	-864
-355	132.72	0.94	5.33	0.13	5.225	0.037	0.210	0.005	-355
-865	133.35	0.58	5.33	0.13	5.250	0.023	0.210	0.005	-865
-356	135.89	0.94	5.33	0.13	5.350	0.037	0.210	0.005	-356
-866	136.53	0.58	5.33	0.13	5.375	0.023	0.210	0.005	-866
-357	139.07	0.94	5.33	0.13	5.475	0.037	0.210	0.005	-357
-867	139.70	0.58	5.33	0.13	5.500	0.023	0.210	0.005	-867
-358	142.24	0.94	5.33	0.13	5.600	0.037	0.210	0.005	-358
-868	142.88	0.58	5.33	0.13	5.625	0.023	0.210	0.005	-868
-359	145.42	0.94	5.33	0.13	5.725	0.037	0.210	0.005	-359
-869	146.05	0.58	5.33	0.13	5.750	0.023	0.210	0.005	-869
-360	148.59	0.94	5.33	0.13	5.850	0.037	0.210	0.005	-360
-870	149.23	0.58	5.33	0.13	5.875	0.023	0.210	0.005	-870
-361	151.77	0.94	5.33	0.13	5.975	0.037	0.210	0.005	-361
-644	154.94	0.58	5.33	0.13	6.100	0.023	0.210	0.005	-644
-362	158.12	1.02	5.33	0.13	6.225	0.040	0.210	0.005	-362
-645	161.29	0.58	5.33	0.13	6.350	0.023	0.210	0.005	-645

BS 1806 SIZES

BS 1806 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	BS 1806 SIZE
-363	164.47	1.02	5.33	0.13	6.475	0.040	0.210	0.005	-363
-646	167.64	0.58	5.33	0.13	6.600	0.023	0.210	0.005	-646
-364	170.82	1.02	5.33	0.13	6.725	0.040	0.210	0.005	-364
-647	173.99	0.58	5.33	0.13	6.850	0.023	0.210	0.005	-647
-365	177.17	1.02	5.33	0.13	6.975	0.040	0.210	0.005	-365
-366	183.52	1.14	5.33	0.13	7.225	0.045	0.210	0.005	-366
-367	189.87	1.14	5.33	0.13	7.475	0.045	0.210	0.005	-367
-368	196.22	1.14	5.33	0.13	7.725	0.045	0.210	0.005	-368
-369	202.57	1.14	5.33	0.13	7.975	0.045	0.210	0.005	-369
-370	208.92	1.27	5.33	0.13	8.225	0.050	0.210	0.005	-370
-371	215.27	1.27	5.33	0.13	8.475	0.050	0.210	0.005	-371
-372	221.62	1.27	5.33	0.13	8.725	0.050	0.210	0.005	-372
-373	227.97	1.27	5.33	0.13	8.975	0.050	0.210	0.005	-373
-374	234.32	1.40	5.33	0.13	9.225	0.055	0.210	0.005	-374
-375	240.67	1.40	5.33	0.13	9.475	0.055	0.210	0.005	-375
-376	247.02	1.40	5.33	0.13	9.725	0.055	0.210	0.005	-376
-377	253.37	1.40	5.33	0.13	9.975	0.055	0.210	0.005	-377
-378	266.07	1.52	5.33	0.13	10.475	0.060	0.210	0.005	-378
-379	278.77	1.52	5.33	0.13	10.975	0.060	0.210	0.005	-379
-380	291.47	1.65	5.33	0.13	11.475	0.065	0.210	0.005	-380
-381	304.17	1.65	5.33	0.13	11.975	0.065	0.210	0.005	-381
-382	329.57	1.65	5.33	0.13	12.975	0.065	0.210	0.005	-382
-383	354.97	1.78	5.33	0.13	13.975	0.070	0.210	0.005	-383
-384	380.37	1.78	5.33	0.13	14.975	0.070	0.210	0.005	-384
-385	405.26	1.91	5.33	0.13	15.955	0.075	0.210	0.005	-385
-386	430.66	2.03	5.33	0.13	16.955	0.080	0.210	0.005	-386
-387	456.06	2.16	5.33	0.13	17.955	0.085	0.210	0.005	-387
-388	481.46	2.29	5.33	0.13	18.955	0.090	0.210	0.005	-388
-389	506.86	2.41	5.33	0.13	19.955	0.095	0.210	0.005	-389
-390	532.26	2.41	5.33	0.13	20.955	0.095	0.210	0.005	-390
-391	557.66	2.54	5.33	0.13	21.955	0.100	0.210	0.005	-391
-392	582.68	2.67	5.33	0.13	22.940	0.105	0.210	0.005	-392
-393	608.08	2.79	5.33	0.13	23.940	0.110	0.210	0.005	-393
-394	633.48	2.92	5.33	0.13	24.940	0.115	0.210	0.005	-394
-395	658.88	3.05	5.33	0.13	25.940	0.120	0.210	0.005	-395
-425	113.67	0.84	6.99	0.15	4.475	0.033	0.275	0.006	-425
-624	114.71	0.38	6.99	0.15	4.516	0.015	0.275	0.006	-624
-426	116.84	0.84	6.99	0.15	4.600	0.033	0.275	0.006	-426
-427	120.02	0.84	6.99	0.15	4.725	0.033	0.275	0.006	-427

GLOBAL O-RING SIZE REFERENCE GUIDE

BS 1806 SIZES

BS 1806 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	BS 1806 SIZE
-428	123.19	0.84	6.99	0.15	4.850	0.033	0.275	0.006	-428
-625	124.61	0.38	6.99	0.15	4.906	0.015	0.275	0.006	-625
-429	126.37	0.94	6.99	0.15	4.975	0.037	0.275	0.006	-429
-430	129.54	0.94	6.99	0.15	5.100	0.037	0.275	0.006	-430
-431	132.72	0.94	6.99	0.15	5.225	0.037	0.275	0.006	-431
-626	134.54	0.58	6.99	0.15	5.297	0.023	0.275	0.006	-626
-432	135.89	0.94	6.99	0.15	5.350	0.037	0.275	0.006	-432
-433	139.07	0.94	6.99	0.15	5.475	0.037	0.275	0.006	-433
-434	142.24	0.94	6.99	0.15	5.600	0.037	0.275	0.006	-434
-435	145.42	0.94	6.99	0.15	5.725	0.037	0.275	0.006	-435
-436	148.59	0.94	6.99	0.15	5.850	0.037	0.275	0.006	-436
-437	151.77	0.94	6.99	0.15	5.975	0.037	0.275	0.006	-437
-872	155.58	0.58	6.99	0.15	6.125	0.023	0.275	0.006	-872
-438	158.12	1.02	6.99	0.15	6.225	0.040	0.275	0.006	-438
-627	159.54	0.58	6.99	0.15	6.281	0.023	0.275	0.006	-627
-874	161.93	0.58	6.99	0.15	6.375	0.023	0.275	0.006	-874
-439	164.47	1.02	6.99	0.15	6.475	0.040	0.275	0.006	-439
-628	166.70	0.58	6.99	0.15	6.563	0.023	0.275	0.006	-628
-876	168.28	0.58	6.99	0.15	6.625	0.023	0.275	0.006	-876
-440	170.82	1.02	6.99	0.15	6.725	0.040	0.275	0.006	-440
-878	174.63	0.58	6.99	0.15	6.875	0.023	0.275	0.006	-878
-441	177.17	1.02	6.99	0.15	6.975	0.040	0.275	0.006	-441
-880	180.98	0.58	6.99	0.15	7.125	0.023	0.275	0.006	-880
-442	183.52	1.14	6.99	0.15	7.225	0.045	0.275	0.006	-442
-882	187.33	0.58	6.99	0.15	7.375	0.023	0.275	0.006	-882
-443	189.87	1.14	6.99	0.15	7.475	0.045	0.275	0.006	-443
-884	193.68	0.58	6.99	0.15	7.625	0.023	0.275	0.006	-884
-444	196.22	1.14	6.99	0.15	7.725	0.045	0.275	0.006	-444
-886	200.03	0.76	6.99	0.15	7.875	0.030	0.275	0.006	-886
-445	202.57	1.14	6.99	0.15	7.975	0.045	0.275	0.006	-445
-445A	208.92	1.40	6.99	0.15	8.225	0.055	0.275	0.006	-445A
-446	215.27	1.40	6.99	0.15	8.475	0.055	0.275	0.006	-446
-446A	221.62	1.40	6.99	0.15	8.725	0.055	0.275	0.006	-446A
-447	227.97	1.40	6.99	0.15	8.975	0.055	0.275	0.006	-447
-447A	234.32	1.40	6.99	0.15	9.225	0.055	0.275	0.006	-447A
-448	240.67	1.40	6.99	0.15	9.475	0.055	0.275	0.006	-448
-448A	247.02	1.40	6.99	0.15	9.725	0.055	0.275	0.006	-448A
-449	253.37	1.40	6.99	0.15	9.975	0.055	0.275	0.006	-449
-449A	259.72	1.52	6.99	0.15	10.225	0.060	0.275	0.006	-449A

BS 1806 SIZES

BS 1806 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	BS 1806 SIZE
-450	266.07	1.52	6.99	0.15	10.475	0.060	0.275	0.006	-450
-450A	272.42	1.52	6.99	0.15	10.725	0.060	0.275	0.006	-450A
-451	278.77	1.52	6.99	0.15	10.975	0.060	0.275	0.006	-451
-451A	285.12	1.52	6.99	0.15	11.225	0.060	0.275	0.006	-451A
-452	291.47	1.52	6.99	0.15	11.475	0.060	0.275	0.006	-452
-452A	297.82	1.52	6.99	0.15	11.725	0.060	0.275	0.006	-452A
-453	304.17	1.52	6.99	0.15	11.975	0.060	0.275	0.006	-453
-648	310.52	0.76	6.99	0.15	12.225	0.030	0.275	0.006	-648
-454	316.87	1.52	6.99	0.15	12.475	0.060	0.275	0.006	-454
-649	323.22	0.76	6.99	0.15	12.725	0.030	0.275	0.006	-649
-455	329.57	1.52	6.99	0.15	12.975	0.060	0.275	0.006	-455
-650	335.92	0.76	6.99	0.15	13.225	0.030	0.275	0.006	-650
-456	342.27	1.78	6.99	0.15	13.475	0.070	0.275	0.006	-456
-457	354.97	1.78	6.99	0.15	13.975	0.070	0.275	0.006	-457
-458	367.67	1.78	6.99	0.15	14.475	0.070	0.275	0.006	-458
-459	380.37	1.78	6.99	0.15	14.975	0.070	0.275	0.006	-459
-460	393.07	1.78	6.99	0.15	15.475	0.070	0.275	0.006	-460
-461	405.26	1.91	6.99	0.15	15.955	0.075	0.275	0.006	-461
-462	417.96	1.91	6.99	0.15	16.455	0.075	0.275	0.006	-462
-463	430.66	2.03	6.99	0.15	16.955	0.080	0.275	0.006	-463
-464	443.36	2.16	6.99	0.15	17.455	0.085	0.275	0.006	-464
-465	456.06	2.16	6.99	0.15	17.955	0.085	0.275	0.006	-465
-466	468.76	2.16	6.99	0.15	18.455	0.085	0.275	0.006	-466
-467	481.46	2.29	6.99	0.15	18.955	0.090	0.275	0.006	-467
-468	494.16	2.29	6.99	0.15	19.455	0.090	0.275	0.006	-468
-469	506.86	2.41	6.99	0.15	19.955	0.095	0.275	0.006	-469
-470	532.26	2.41	6.99	0.15	20.955	0.095	0.275	0.006	-470
-471	557.66	2.54	6.99	0.15	21.955	0.100	0.275	0.006	-471
-472	582.68	2.67	6.99	0.15	22.940	0.105	0.275	0.006	-472
-473	608.08	2.79	6.99	0.15	23.940	0.110	0.275	0.006	-473
-474	633.48	2.92	6.99	0.15	24.940	0.115	0.275	0.006	-474
-475	658.88	3.05	6.99	0.15	25.940	0.120	0.275	0.006	-475

GLOBAL O-RING SIZE REFERENCE GUIDE

JIS B 2401 SIZES

JIS B 2401 SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				JIS B 2401 SIZE
	ID	±	CS	±	ID	±	CS	±	
P3	2.80	0.14	1.90	0.08	0.110	0.006	0.075	0.003	P3
P4	3.80	0.14	1.90	0.08	0.150	0.006	0.075	0.003	P4
P5	4.80	0.15	1.90	0.08	0.189	0.006	0.075	0.003	P5
P6	5.80	0.15	1.90	0.08	0.228	0.006	0.075	0.003	P6
P7	6.80	0.16	1.90	0.08	0.268	0.006	0.075	0.003	P7
P8	7.80	0.16	1.90	0.08	0.307	0.006	0.075	0.003	P8
P9	8.80	0.17	1.90	0.08	0.346	0.007	0.075	0.003	P9
P10	9.80	0.17	1.90	0.08	0.386	0.007	0.075	0.003	P10
P10A	9.80	0.17	2.40	0.09	0.386	0.007	0.094	0.004	P10A
P11	10.80	0.18	2.40	0.09	0.425	0.007	0.094	0.004	P11
P11.2	11.00	0.18	2.40	0.09	0.433	0.007	0.094	0.004	P11.2
P12	11.80	0.19	2.40	0.09	0.465	0.007	0.094	0.004	P12
P12.5	12.30	0.19	2.40	0.09	0.484	0.007	0.094	0.004	P12.5
P14	13.80	0.19	2.40	0.09	0.543	0.007	0.094	0.004	P14
P15	14.80	0.20	2.40	0.09	0.583	0.008	0.094	0.004	P15
P16	15.80	0.20	2.40	0.09	0.622	0.008	0.094	0.004	P16
P18	17.80	0.21	2.40	0.09	0.701	0.008	0.094	0.004	P18
P20	19.80	0.22	2.40	0.09	0.780	0.009	0.094	0.004	P20
P21	20.80	0.23	2.40	0.09	0.819	0.009	0.094	0.004	P21
P22	21.80	0.24	2.40	0.09	0.858	0.009	0.094	0.004	P22
G25	24.40	0.25	3.10	0.10	0.961	0.010	0.122	0.004	G25
G30	29.40	0.29	3.10	0.10	1.157	0.011	0.122	0.004	G30
G35	34.40	0.33	3.10	0.10	1.354	0.013	0.122	0.004	G35
G40	39.40	0.37	3.10	0.10	1.551	0.015	0.122	0.004	G40
G45	44.40	0.41	3.10	0.10	1.748	0.016	0.122	0.004	G45
G50	49.40	0.45	3.10	0.10	1.945	0.018	0.122	0.004	G50
G55	54.40	0.49	3.10	0.10	2.142	0.019	0.122	0.004	G55
G60	59.40	0.53	3.10	0.10	2.339	0.021	0.122	0.004	G60
G65	64.40	0.57	3.10	0.10	2.535	0.022	0.122	0.004	G65
G70	69.40	0.61	3.10	0.10	2.732	0.024	0.122	0.004	G70
G75	74.40	0.65	3.10	0.10	2.929	0.026	0.122	0.004	G75
G80	79.40	0.69	3.10	0.10	3.126	0.027	0.122	0.004	G80
G85	84.40	0.73	3.10	0.10	3.323	0.029	0.122	0.004	G85
G90	89.40	0.77	3.10	0.10	3.520	0.030	0.122	0.004	G90
G95	94.40	0.81	3.10	0.10	3.717	0.032	0.122	0.004	G95
G100	99.40	0.85	3.10	0.10	3.913	0.033	0.122	0.004	G100
G105	104.40	0.87	3.10	0.10	4.110	0.034	0.122	0.004	G105
G110	109.40	0.91	3.10	0.10	4.307	0.036	0.122	0.004	G110
G115	114.40	0.94	3.10	0.10	4.504	0.037	0.122	0.004	G115

JIS B 2401 SIZES

JIS B 2401 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	JIS B 2401 SIZE
G120	119.40	0.98	3.10	0.10	4.701	0.039	0.122	0.004	G120
G125	124.40	1.01	3.10	0.10	4.898	0.040	0.122	0.004	G125
G130	129.40	1.05	3.10	0.10	5.094	0.041	0.122	0.004	G130
G135	134.40	1.08	3.10	0.10	5.291	0.043	0.122	0.004	G135
G140	139.40	1.12	3.10	0.10	5.488	0.044	0.122	0.004	G140
G145	144.40	1.16	3.10	0.10	5.685	0.046	0.122	0.004	G145
P22A	21.70	0.24	3.50	0.10	0.854	0.009	0.138	0.004	P22A
P22.4	22.10	0.24	3.50	0.10	0.870	0.009	0.138	0.004	P22.4
P24	23.70	0.24	3.50	0.10	0.933	0.009	0.138	0.004	P24
P25	24.70	0.25	3.50	0.10	0.972	0.010	0.138	0.004	P25
P25.5	25.20	0.25	3.50	0.10	0.992	0.010	0.138	0.004	P25.5
P26	25.70	0.26	3.50	0.10	1.012	0.010	0.138	0.004	P26
P28	27.70	0.28	3.50	0.10	1.091	0.011	0.138	0.004	P28
P29	28.70	0.29	3.50	0.10	1.130	0.011	0.138	0.004	P29
P29.5	29.20	0.29	3.50	0.10	1.150	0.011	0.138	0.004	P29.5
P30	29.70	0.29	3.50	0.10	1.169	0.011	0.138	0.004	P30
P31	30.70	0.30	3.50	0.10	1.209	0.012	0.138	0.004	P31
P31.5	31.20	0.31	3.50	0.10	1.228	0.012	0.138	0.004	P31.5
P32	31.70	0.31	3.50	0.10	1.248	0.012	0.138	0.004	P32
P34	33.70	0.33	3.50	0.10	1.327	0.013	0.138	0.004	P34
P35	34.70	0.34	3.50	0.10	1.366	0.013	0.138	0.004	P35
P35.5	35.20	0.34	3.50	0.10	1.386	0.013	0.138	0.004	P35.5
P36	35.70	0.34	3.50	0.10	1.406	0.013	0.138	0.004	P36
P38	37.70	0.37	3.50	0.10	1.484	0.015	0.138	0.004	P38
P39	38.70	0.37	3.50	0.10	1.524	0.015	0.138	0.004	P39
P40	39.70	0.37	3.50	0.10	1.563	0.015	0.138	0.004	P40
P41	40.70	0.38	3.50	0.10	1.602	0.015	0.138	0.004	P41
P42	41.70	0.39	3.50	0.10	1.642	0.015	0.138	0.004	P42
P44	43.70	0.41	3.50	0.10	1.720	0.016	0.138	0.004	P44
P45	44.70	0.41	3.50	0.10	1.760	0.016	0.138	0.004	P45
P46	45.70	0.42	3.50	0.10	1.799	0.017	0.138	0.004	P46
P48	47.70	0.44	3.50	0.10	1.878	0.017	0.138	0.004	P48
P49	48.70	0.45	3.50	0.10	1.917	0.018	0.138	0.004	P49
P50	49.70	0.45	3.50	0.10	1.957	0.018	0.138	0.004	P50
V15	14.50	0.20	4.00	0.10	0.571	0.008	0.157	0.004	V15
V24	23.50	0.24	4.00	0.10	0.925	0.009	0.157	0.004	V24
V34	33.50	0.33	4.00	0.10	1.319	0.013	0.157	0.004	V34
V40	39.50	0.37	4.00	0.10	1.555	0.015	0.157	0.004	V40
V55	54.50	0.49	4.00	0.10	2.146	0.019	0.157	0.004	V55

GLOBAL O-RING SIZE REFERENCE GUIDE

JIS B 2401 SIZES

JIS B 2401 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	JIS B 2401 SIZE
V70	69.00	0.61	4.00	0.10	2.717	0.024	0.157	0.004	V70
V85	84.00	0.72	4.00	0.10	3.307	0.028	0.157	0.004	V85
V100	99.00	0.83	4.00	0.10	3.898	0.033	0.157	0.004	V100
V120	119.00	0.97	4.00	0.10	4.685	0.038	0.157	0.004	V120
V150	148.50	1.18	4.00	0.10	5.846	0.046	0.157	0.004	V150
V175	173.00	1.36	4.00	0.10	6.811	0.054	0.157	0.004	V175
P48A	47.60	0.44	5.70	0.13	1.874	0.017	0.224	0.005	P48A
P50A	49.60	0.45	5.70	0.13	1.953	0.018	0.224	0.005	P50A
P52	51.60	0.47	5.70	0.13	2.031	0.019	0.224	0.005	P52
P53	52.60	0.48	5.70	0.13	2.071	0.019	0.224	0.005	P53
P55	54.60	0.49	5.70	0.13	2.150	0.019	0.224	0.005	P55
P56	55.60	0.50	5.70	0.13	2.189	0.020	0.224	0.005	P56
P58	57.60	0.52	5.70	0.13	2.268	0.020	0.224	0.005	P58
P60	59.60	0.53	5.70	0.13	2.346	0.021	0.224	0.005	P60
P62	61.60	0.55	5.70	0.13	2.661	0.022	0.224	0.005	P62
P63	62.60	0.56	5.70	0.13	2.465	0.022	0.224	0.005	P63
P65	64.60	0.57	5.70	0.13	2.543	0.022	0.224	0.005	P65
P67	66.60	0.59	5.70	0.13	2.622	0.023	0.224	0.005	P67
P70	69.60	0.61	5.70	0.13	2.740	0.024	0.224	0.005	P70
P71	70.60	0.62	5.70	0.13	2.780	0.024	0.224	0.005	P71
P75	74.60	0.65	5.70	0.13	2.937	0.026	0.224	0.005	P75
P80	79.60	0.69	5.70	0.13	3.134	0.027	0.224	0.005	P80
P85	84.60	0.73	5.70	0.13	3.331	0.029	0.224	0.005	P85
P90	89.60	0.77	5.70	0.13	3.528	0.030	0.224	0.005	P90
P95	94.60	0.81	5.70	0.13	3.724	0.032	0.224	0.005	P95
P100	99.60	0.84	5.70	0.13	3.921	0.033	0.224	0.005	P100
P102	101.60	0.85	5.70	0.13	4.000	0.033	0.224	0.005	P102
P105	104.60	0.87	5.70	0.13	4.118	0.034	0.224	0.005	P105
P110	109.60	0.91	5.70	0.13	4.315	0.036	0.224	0.005	P110
P112	111.60	0.92	5.70	0.13	4.394	0.036	0.224	0.005	P112
P115	114.60	0.94	5.70	0.13	4.512	0.037	0.224	0.005	P115
P120	119.60	0.98	5.70	0.13	4.709	0.039	0.224	0.005	P120
P125	124.60	1.01	5.70	0.13	4.906	0.040	0.224	0.005	P125
P130	129.60	1.05	5.70	0.13	5.102	0.041	0.224	0.005	P130
P132	131.60	1.06	5.70	0.13	5.181	0.042	0.224	0.005	P132
P135	134.60	1.09	5.70	0.13	5.299	0.043	0.224	0.005	P135
P140	139.60	1.12	5.70	0.13	5.496	0.044	0.224	0.005	P140
P145	144.60	1.16	5.70	0.13	5.693	0.046	0.224	0.005	P145
G150	149.30	1.19	5.70	0.13	5.878	0.047	0.224	0.005	G150

JIS B 2401 SIZES

JIS B 2401 SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	JIS B 2401 SIZE
P150	149.60	1.19	5.70	0.13	5.890	0.047	0.224	0.005	P150
G155	154.30	1.23	5.70	0.13	6.075	0.048	0.224	0.005	G155
G160	159.30	1.26	5.70	0.13	6.272	0.050	0.224	0.005	G160
G165	164.30	1.30	5.70	0.13	6.469	0.051	0.224	0.005	G165
G170	169.30	1.33	5.70	0.13	6.665	0.052	0.224	0.005	G170
G175	174.30	1.37	5.70	0.13	6.862	0.054	0.224	0.005	G175
G180	179.30	1.40	5.70	0.13	7.059	0.055	0.224	0.005	G180
G185	184.30	1.44	5.70	0.13	7.256	0.057	0.224	0.005	G185
G190	189.30	1.47	5.70	0.13	7.453	0.058	0.224	0.005	G190
G195	194.30	1.51	5.70	0.13	7.650	0.059	0.224	0.005	G195
G200	199.30	1.55	5.70	0.13	7.846	0.061	0.224	0.005	G200
G210	209.30	1.61	5.70	0.13	8.240	0.063	0.224	0.005	G210
G220	219.30	1.68	5.70	0.13	8.634	0.066	0.224	0.005	G220
G230	229.30	1.73	5.70	0.13	9.028	0.068	0.224	0.005	G230
G240	239.30	1.81	5.70	0.13	9.421	0.071	0.224	0.005	G240
G250	249.30	1.88	5.70	0.13	9.815	0.074	0.224	0.005	G250
G260	259.30	1.94	5.70	0.13	10.209	0.076	0.224	0.005	G260
G270	269.30	2.01	5.70	0.13	10.602	0.079	0.224	0.005	G270
G280	279.30	2.07	5.70	0.13	10.996	0.081	0.224	0.005	G280
G290	289.30	2.14	5.70	0.13	11.390	0.084	0.224	0.005	G290
G230	299.30	2.20	5.70	0.13	11.783	0.087	0.224	0.005	G230
V225	222.50	1.70	6.00	0.15	8.760	0.067	0.236	0.006	V225
V275	272.00	2.02	6.00	0.15	10.709	0.080	0.236	0.006	V275
V325	321.50	2.34	6.00	0.15	12.657	0.092	0.236	0.006	V325
V380	376.00	2.68	6.00	0.15	14.803	0.106	0.236	0.006	V380
V430	425.50	2.99	6.00	0.15	16.752	0.118	0.236	0.006	V430
P150A	149.50	1.19	8.40	0.15	5.886	0.047	0.331	0.006	P150A
P155	154.50	1.23	8.40	0.15	6.083	0.048	0.331	0.006	P155
P160	159.50	1.26	8.40	0.15	6.280	0.050	0.331	0.006	P160
P165	164.50	1.30	8.40	0.15	6.476	0.051	0.331	0.006	P165
P170	169.50	1.33	8.40	0.15	6.673	0.052	0.331	0.006	P170
P175	174.50	1.37	8.40	0.15	6.870	0.054	0.331	0.006	P175
P180	179.50	1.40	8.40	0.15	7.067	0.055	0.331	0.006	P180
P185	184.50	1.44	8.40	0.15	7.264	0.057	0.331	0.006	P185
P190	189.50	1.48	8.40	0.15	7.461	0.058	0.331	0.006	P190
P195	194.50	1.51	8.40	0.15	7.657	0.059	0.331	0.006	P195
P200	199.50	1.55	8.40	0.15	7.854	0.061	0.331	0.006	P200
P205	204.50	1.58	8.40	0.15	8.051	0.062	0.331	0.006	P205
P209	208.50	1.61	8.40	0.15	8.209	0.063	0.331	0.006	P209

GLOBAL O-RING SIZE REFERENCE GUIDE

JIS B 2401 SIZES

JIS B 2401 SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				JIS B 2401 SIZE
	ID	±	CS	±	ID	±	CS	±	
P210	209.50	1.62	8.40	0.15	8.248	0.064	0.331	0.006	P210
P215	214.50	1.65	8.40	0.15	8.445	0.065	0.331	0.006	P215
P220	219.50	1.68	8.40	0.15	8.642	0.066	0.331	0.006	P220
P225	224.50	1.71	8.40	0.15	8.839	0.067	0.331	0.006	P225
P230	229.50	1.75	8.40	0.15	9.035	0.069	0.331	0.006	P230
P235	234.50	1.78	8.40	0.15	9.232	0.070	0.331	0.006	P235
P240	239.50	1.81	8.40	0.15	9.429	0.071	0.331	0.006	P240
P245	244.50	1.84	8.40	0.15	9.626	0.072	0.331	0.006	P245
P250	249.50	1.88	8.40	0.15	9.823	0.074	0.331	0.006	P250
P255	254.50	1.91	8.40	0.15	10.020	0.075	0.331	0.006	P255
P260	259.50	1.94	8.40	0.15	10.217	0.076	0.331	0.006	P260
P265	264.50	1.97	8.40	0.15	10.413	0.078	0.331	0.006	P265
P270	269.50	2.01	8.40	0.15	10.610	0.079	0.331	0.006	P270
P275	274.50	2.04	8.40	0.15	10.807	0.080	0.331	0.006	P275
P280	279.50	2.07	8.40	0.15	11.004	0.081	0.331	0.006	P280
P285	284.50	2.10	8.40	0.15	11.201	0.083	0.331	0.006	P285
P290	289.50	2.14	8.40	0.15	11.398	0.084	0.331	0.006	P290
P295	294.50	2.17	8.40	0.15	11.594	0.085	0.331	0.006	P295
P300	299.50	2.20	8.40	0.15	11.791	0.087	0.331	0.006	P300
P315	314.50	2.30	8.40	0.15	12.382	0.091	0.331	0.006	P315
P320	319.50	2.33	8.40	0.15	12.579	0.092	0.331	0.006	P320
P335	334.50	2.42	8.40	0.15	13.169	0.095	0.331	0.006	P335
P340	339.50	2.45	8.40	0.15	13.366	0.096	0.331	0.006	P340
P355	354.50	2.54	8.40	0.15	13.957	0.100	0.331	0.006	P355
P360	359.50	2.57	8.40	0.15	14.154	0.101	0.331	0.006	P360
P375	374.50	2.67	8.40	0.15	14.744	0.105	0.331	0.006	P375
P385	384.50	2.73	8.40	0.15	15.138	0.107	0.331	0.006	P385
P400	399.50	2.82	8.40	0.15	15.728	0.111	0.331	0.006	P400
V480	475.00	3.30	10.00	0.30	18.701	0.130	0.394	0.012	V480
V530	524.50	3.60	10.00	0.30	20.650	0.142	0.394	0.012	V530
V585	579.00	3.92	10.00	0.30	22.795	0.154	0.394	0.012	V585
V640	633.50	4.24	10.00	0.30	24.941	0.167	0.394	0.012	V640
V690	683.00	4.54	10.00	0.30	26.890	0.179	0.394	0.012	V690
V740	732.50	4.83	10.00	0.30	28.839	0.190	0.394	0.012	V740
V790	782.00	5.12	10.00	0.30	30.787	0.202	0.394	0.012	V790
V845	836.50	5.44	10.00	0.30	32.933	0.214	0.394	0.012	V845
V950	940.50	6.06	10.00	0.30	37.028	0.239	0.394	0.012	V950
V1055	1044.00	6.67	10.00	0.30	41.102	0.263	0.394	0.012	V1055

GLOBAL O-RING SIZE REFERENCE GUIDE

NF T47-501 G SERIES SIZES

NF T47-501 G SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				NF T47-501 G SIZE
	ID	±	CS	±	ID	±	CS	±	
A0018GN	1.80	0.13	1.80	0.08	0.071	0.005	0.071	0.003	A0018GN
A0020GN	2.00	0.13	1.80	0.08	0.079	0.005	0.071	0.003	A0020GN
A0022GN	2.24	0.13	1.80	0.08	0.088	0.005	0.071	0.003	A0022GN
A0025GN	2.50	0.13	1.80	0.08	0.098	0.005	0.071	0.003	A0025GN
A0028GN	2.80	0.13	1.80	0.08	0.110	0.005	0.071	0.003	A0028GN
A0032GN	3.15	0.14	1.80	0.08	0.124	0.006	0.071	0.003	A0032GN
A0036GN	3.55	0.14	1.80	0.08	0.140	0.006	0.071	0.003	A0036GN
A0038GN	3.75	0.14	1.80	0.08	0.148	0.006	0.071	0.003	A0038GN
A0040GN	4.00	0.14	1.80	0.08	0.157	0.006	0.071	0.003	A0040GN
A0045GN	4.50	0.15	1.80	0.08	0.177	0.006	0.071	0.003	A0045GN
A0049GN	4.87	0.15	1.80	0.08	0.192	0.006	0.071	0.003	A0049GN
A0050GN	5.00	0.15	1.80	0.08	0.197	0.006	0.071	0.003	A0050GN
A0052GN	5.15	0.15	1.80	0.08	0.203	0.006	0.071	0.003	A0052GN
A0053GN	5.30	0.15	1.80	0.08	0.209	0.006	0.071	0.003	A0053GN
A0056GN	5.60	0.16	1.80	0.08	0.220	0.006	0.071	0.003	A0056GN
A0060GN	6.00	0.16	1.80	0.08	0.236	0.006	0.071	0.003	A0060GN
A0063GN	6.30	0.16	1.80	0.08	0.248	0.006	0.071	0.003	A0063GN
A0067GN	6.70	0.16	1.80	0.08	0.264	0.006	0.071	0.003	A0067GN
A0069GN	6.90	0.17	1.80	0.08	0.272	0.007	0.071	0.003	A0069GN
A0071GN	7.10	0.17	1.80	0.08	0.280	0.007	0.071	0.003	A0071GN
A0075GN	7.50	0.17	1.80	0.08	0.295	0.007	0.071	0.003	A0075GN
A0080GN	8.00	0.17	1.80	0.08	0.315	0.007	0.071	0.003	A0080GN
A0085GN	8.50	0.18	1.80	0.08	0.335	0.007	0.071	0.003	A0085GN
A0088GN	8.75	0.18	1.80	0.08	0.344	0.007	0.071	0.003	A0088GN
A0090GN	9.00	0.18	1.80	0.08	0.354	0.007	0.071	0.003	A0090GN
A0095GN	9.50	0.19	1.80	0.08	0.374	0.007	0.071	0.003	A0095GN
A0100GN	10.00	0.19	1.80	0.08	0.394	0.007	0.071	0.003	A0100GN
A0106GN	10.60	0.19	1.80	0.08	0.417	0.007	0.071	0.003	A0106GN
A0112GN	11.20	0.16	1.80	0.08	0.441	0.006	0.071	0.003	A0112GN
A0116GN	11.60	0.20	1.80	0.08	0.457	0.008	0.071	0.003	A0116GN
A0118GN	11.80	0.20	1.80	0.08	0.465	0.008	0.071	0.003	A0118GN
A0121GN	12.10	0.20	1.80	0.08	0.476	0.008	0.071	0.003	A0121GN
A0125GN	12.50	0.21	1.80	0.08	0.492	0.008	0.071	0.003	A0125GN
A0128GN	12.80	0.21	1.80	0.08	0.504	0.008	0.071	0.003	A0128GN
A0132GN	13.20	0.21	1.80	0.08	0.520	0.008	0.071	0.003	A0132GN
A0140GN	14.00	0.22	1.80	0.08	0.551	0.009	0.071	0.003	A0140GN
A0145GN	14.50	0.22	1.80	0.08	0.571	0.009	0.071	0.003	A0145GN
A0150GN	15.00	0.23	1.80	0.08	0.591	0.009	0.071	0.003	A0150GN
A0155GN	15.50	0.23	1.80	0.08	0.610	0.009	0.071	0.003	A0155GN

NF T47-501 G SERIES SIZES

NF T47-501 G SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	NF T47-501 G SIZE
A0160GN	16.00	0.23	1.80	0.08	0.630	0.009	0.071	0.003	A0160GN
A0170GN	17.00	0.24	1.80	0.08	0.669	0.009	0.071	0.003	A0170GN
A0180GN	18.00	0.25	1.80	0.08	0.709	0.010	0.071	0.003	A0180GN
A0190GN	19.00	0.26	1.80	0.08	0.748	0.010	0.071	0.003	A0190GN
A0200GN	20.00	0.26	1.80	0.08	0.787	0.010	0.071	0.003	A0200GN
A0206GN	20.60	0.27	1.80	0.08	0.811	0.011	0.071	0.003	A0206GN
A0212GN	21.20	0.27	1.80	0.08	0.835	0.011	0.071	0.003	A0212GN
A0224GN	22.40	0.28	1.80	0.08	0.882	0.011	0.071	0.003	A0224GN
A0236GN	23.60	0.29	1.80	0.08	0.929	0.011	0.071	0.003	A0236GN
A0243GN	24.30	0.29	1.80	0.08	0.957	0.011	0.071	0.003	A0243GN
A0250GN	25.00	0.30	1.80	0.08	0.984	0.012	0.071	0.003	A0250GN
A0258GN	25.80	0.30	1.80	0.08	1.016	0.012	0.071	0.003	A0258GN
A0265GN	26.50	0.31	1.80	0.08	1.043	0.012	0.071	0.003	A0265GN
A0273GN	27.30	0.31	1.80	0.08	1.075	0.012	0.071	0.003	A0273GN
A0280GN	28.00	0.32	1.80	0.08	1.102	0.013	0.071	0.003	A0280GN
A0300GN	30.00	0.33	1.80	0.08	1.181	0.013	0.071	0.003	A0300GN
A0315GN	31.50	0.34	1.80	0.08	1.240	0.013	0.071	0.003	A0315GN
A0325GN	32.50	0.35	1.80	0.08	1.280	0.014	0.071	0.003	A0325GN
A0335GN	33.50	0.36	1.80	0.08	1.319	0.014	0.071	0.003	A0335GN
A0345GN	34.50	0.37	1.80	0.08	1.358	0.015	0.071	0.003	A0345GN
A0355GN	35.50	0.37	1.80	0.08	1.398	0.015	0.071	0.003	A0355GN
A0365GN	36.50	0.38	1.80	0.08	1.437	0.015	0.071	0.003	A0365GN
A0375GN	37.50	0.39	1.80	0.08	1.476	0.015	0.071	0.003	A0375GN
A0387GN	38.70	0.39	1.80	0.08	1.524	0.015	0.071	0.003	A0387GN
A0400GN	40.00	0.40	1.80	0.08	1.575	0.016	0.071	0.003	A0400GN
A0412GN	41.20	0.41	1.80	0.08	1.622	0.016	0.071	0.003	A0412GN
A0425GN	42.50	0.42	1.80	0.08	1.673	0.017	0.071	0.003	A0425GN
A0437GN	43.70	0.43	1.80	0.08	1.720	0.017	0.071	0.003	A0437GN
A0450GN	45.00	0.44	1.80	0.08	1.772	0.017	0.071	0.003	A0450GN
A0462GN	46.20	0.45	1.80	0.08	1.819	0.018	0.071	0.003	A0462GN
A0475GN	47.50	0.46	1.80	0.08	1.870	0.018	0.071	0.003	A0475GN
A0487GN	48.70	0.46	1.80	0.08	1.917	0.018	0.071	0.003	A0487GN
A0500GN	50.00	0.47	1.80	0.08	1.969	0.019	0.071	0.003	A0500GN
A0530GN	53.00	0.49	1.80	0.08	2.087	0.019	0.071	0.003	A0530GN
A0560GN	56.00	0.51	1.80	0.08	2.205	0.020	0.071	0.003	A0560GN
A0600GN	60.00	0.54	1.80	0.08	2.362	0.021	0.071	0.003	A0600GN
A0630GN	63.00	0.56	1.80	0.08	2.480	0.022	0.071	0.003	A0630GN
A0670GN	67.00	0.59	1.80	0.08	2.638	0.023	0.071	0.003	A0670GN
A0710GN	71.00	0.62	1.80	0.08	2.795	0.024	0.071	0.003	A0710GN

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NF T47-501 G SERIES SIZES

NF T47-501 G SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				NF T47-501 G SIZE
	ID	±	CS	±	ID	±	CS	±	
A0750GN	75.00	0.64	1.80	0.08	2.953	0.025	0.071	0.003	A0750GN
A0800GN	80.00	0.68	1.80	0.08	3.150	0.027	0.071	0.003	A0800GN
A0850GN	85.00	0.71	1.80	0.08	3.346	0.028	0.071	0.003	A0850GN
A0900GN	90.00	0.74	1.80	0.08	3.543	0.029	0.071	0.004	A0900GN
A0950GN	95.00	0.78	1.80	0.08	3.740	0.031	0.071	0.004	A0950GN
A1000GN	100.00	0.81	1.80	0.08	3.937	0.032	0.071	0.004	A1000GN
A1060GN	106.00	0.85	1.80	0.08	4.173	0.033	0.071	0.003	A1060GN
A1120GN	112.00	0.89	1.80	0.08	4.409	0.035	0.071	0.003	A1120GN
A1180GN	118.00	0.93	1.80	0.08	4.646	0.037	0.071	0.003	A1180GN
A1250GN	125.00	0.97	1.80	0.08	4.921	0.038	0.071	0.003	A1250GN
A0045GN	4.50	0.15	2.65	0.09	0.177	0.006	0.104	0.004	A0045GN
A0053GN	5.30	0.15	2.65	0.09	0.209	0.006	0.104	0.004	A0053GN
A0060GN	6.00	0.16	2.65	0.09	0.236	0.006	0.104	0.004	A0060GN
A0069GN	6.90	0.17	2.65	0.09	0.272	0.007	0.104	0.004	A0069GN
A0080GN	8.00	0.17	2.65	0.09	0.315	0.007	0.104	0.004	A0080GN
A0090GN	9.00	0.18	2.65	0.09	0.354	0.007	0.104	0.004	A0090GN
A0095GN	9.50	0.19	2.65	0.09	0.374	0.007	0.104	0.004	A0095GN
A0100GN	10.00	0.19	2.65	0.09	0.394	0.007	0.104	0.004	A0100GN
A0106GN	10.60	0.19	2.65	0.09	0.417	0.007	0.104	0.004	A0106GN
A0112GN	11.20	0.20	2.65	0.09	0.441	0.008	0.104	0.004	A0112GN
A0116GN	11.60	0.20	2.65	0.09	0.457	0.008	0.104	0.004	A0116GN
A0118GN	11.80	0.20	2.65	0.09	0.465	0.008	0.104	0.004	A0118GN
A0121GN	12.10	0.20	2.65	0.09	0.476	0.008	0.104	0.004	A0121GN
A0125GN	12.50	0.21	2.65	0.09	0.492	0.008	0.104	0.004	A0125GN
A0128GN	12.80	0.21	2.65	0.09	0.504	0.008	0.104	0.004	A0128GN
A0132GN	13.20	0.21	2.65	0.09	0.520	0.008	0.104	0.004	A0132GN
A0140GN	14.00	0.22	2.65	0.09	0.551	0.009	0.104	0.004	A0140GN
A0145GN	14.50	0.22	2.65	0.09	0.571	0.009	0.104	0.004	A0145GN
A0150GN	15.00	0.23	2.65	0.09	0.591	0.009	0.104	0.004	A0150GN
A0155GN	15.50	0.23	2.65	0.09	0.610	0.009	0.104	0.004	A0155GN
A0160GN	16.00	0.23	2.65	0.09	0.630	0.009	0.104	0.004	A0160GN
A0170GN	17.00	0.24	2.65	0.09	0.669	0.009	0.104	0.004	A0170GN
A0180GN	18.00	0.25	2.65	0.09	0.709	0.010	0.104	0.004	A0180GN
A0190GN	19.00	0.26	2.65	0.09	0.748	0.010	0.104	0.004	A0190GN
A0200GN	20.00	0.26	2.65	0.09	0.787	0.010	0.104	0.004	A0200GN
A0206GN	20.60	0.27	2.65	0.09	0.811	0.011	0.104	0.004	A0206GN
A0212GN	21.20	0.27	2.65	0.09	0.835	0.011	0.104	0.004	A0212GN
A0224GN	22.40	0.28	2.65	0.09	0.882	0.011	0.104	0.004	A0224GN
A0236GN	23.60	0.29	2.65	0.09	0.929	0.011	0.104	0.004	A0236GN

NF T47-501 G SERIES SIZES

NF T47-501 G SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	NF T47-501 G SIZE
A0243GN	24.30	0.29	2.65	0.09	0.957	0.011	0.104	0.004	A0243GN
A0250GN	25.00	0.30	2.65	0.09	0.984	0.012	0.104	0.004	A0250GN
A0258GN	25.80	0.30	2.65	0.09	1.016	0.012	0.104	0.004	A0258GN
A0265GN	26.50	0.31	2.65	0.09	1.043	0.012	0.104	0.004	A0265GN
A0273GN	27.30	0.31	2.65	0.09	1.075	0.012	0.104	0.004	A0273GN
A0280GN	28.00	0.32	2.65	0.09	1.102	0.013	0.104	0.004	A0280GN
A0300GN	30.00	0.33	2.65	0.09	1.181	0.013	0.104	0.004	A0300GN
A0315GN	31.50	0.34	2.65	0.09	1.240	0.013	0.104	0.004	A0315GN
A0325GN	32.50	0.35	2.65	0.09	1.280	0.014	0.104	0.004	A0325GN
A0335GN	33.50	0.36	2.65	0.09	1.319	0.014	0.104	0.004	A0335GN
A0345GN	34.50	0.37	2.65	0.09	1.358	0.015	0.104	0.004	A0345GN
A0355GN	35.50	0.37	2.65	0.09	1.398	0.015	0.104	0.004	A0355GN
A0365GN	36.50	0.38	2.65	0.09	1.437	0.015	0.104	0.004	A0365GN
A0375GN	37.50	0.39	2.65	0.09	1.476	0.015	0.104	0.004	A0375GN
A0387GN	38.70	0.39	2.65	0.09	1.524	0.015	0.104	0.004	A0387GN
A0400GN	40.00	0.40	2.65	0.09	1.575	0.016	0.104	0.004	A0400GN
A0412GN	41.20	0.41	2.65	0.09	1.622	0.016	0.104	0.004	A0412GN
A0425GN	42.50	0.42	2.65	0.09	1.673	0.017	0.104	0.004	A0425GN
A0437GN	43.70	0.43	2.65	0.09	1.720	0.017	0.104	0.004	A0437GN
A0450GN	45.00	0.44	2.65	0.09	1.772	0.017	0.104	0.004	A0450GN
A0462GN	46.20	0.45	2.65	0.09	1.819	0.018	0.104	0.004	A0462GN
A0475GN	47.50	0.46	2.65	0.09	1.870	0.018	0.104	0.004	A0475GN
A0487GN	48.70	0.46	2.65	0.09	1.917	0.018	0.104	0.004	A0487GN
A0500GN	50.00	0.47	2.65	0.09	1.969	0.019	0.104	0.004	A0500GN
A0515GN	51.50	0.48	2.65	0.09	2.028	0.019	0.104	0.004	A0515GN
A0530GN	53.00	0.49	2.65	0.09	2.087	0.019	0.104	0.004	A0530GN
A0545GN	54.50	0.50	2.65	0.09	2.146	0.020	0.104	0.004	A0545GN
A0560GN	56.00	0.51	2.65	0.09	2.205	0.020	0.104	0.004	A0560GN
A0580GN	58.00	0.53	2.65	0.09	2.283	0.021	0.104	0.004	A0580GN
A0600GN	60.00	0.54	2.65	0.09	2.362	0.021	0.104	0.004	A0600GN
A0615GN	61.50	0.55	2.65	0.09	2.421	0.022	0.104	0.004	A0615GN
A0630GN	63.00	0.56	2.65	0.09	2.480	0.022	0.104	0.004	A0630GN
A0650GN	65.00	0.57	2.65	0.09	2.559	0.022	0.104	0.004	A0650GN
A0670GN	67.00	0.59	2.65	0.09	2.638	0.023	0.104	0.004	A0670GN
A0690GN	69.00	0.60	2.65	0.09	2.717	0.024	0.104	0.004	A0690GN
A0710GN	71.00	0.62	2.65	0.09	2.795	0.024	0.104	0.004	A0710GN
A0730GN	73.00	0.63	2.65	0.09	2.874	0.025	0.104	0.004	A0730GN
A0750GN	75.00	0.64	2.65	0.09	2.953	0.025	0.104	0.004	A0750GN
A0775GN	77.50	0.66	2.65	0.09	3.051	0.026	0.104	0.004	A0775GN

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NF T47-501 G SERIES SIZES

NF T47-501 G SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				NF T47-501 G SIZE
	ID	±	CS	±	ID	±	CS	±	
A0800GN	80.00	0.68	2.65	0.09	3.150	0.027	0.104	0.004	A0800GN
A0825GN	82.50	0.69	2.65	0.09	3.248	0.027	0.104	0.004	A0825GN
A0850GN	85.00	0.71	2.65	0.09	3.346	0.028	0.104	0.004	A0850GN
A0875GN	87.50	0.73	2.65	0.09	3.445	0.029	0.104	0.004	A0875GN
A0900GN	90.00	0.74	2.65	0.09	3.543	0.029	0.104	0.004	A0900GN
A0925GN	92.50	0.76	2.65	0.09	3.642	0.030	0.104	0.004	A0925GN
A0950GN	95.00	0.78	2.65	0.09	3.740	0.031	0.104	0.004	A0950GN
A0975GN	97.50	0.79	2.65	0.09	3.839	0.031	0.104	0.004	A0975GN
A1000GN	100.00	0.81	2.65	0.09	3.937	0.032	0.104	0.004	A1000GN
A1060GN	106.00	0.85	2.65	0.09	4.173	0.033	0.104	0.004	A1060GN
A1120GN	112.00	0.89	2.65	0.09	4.409	0.035	0.104	0.004	A1120GN
A1180GN	118.00	0.93	2.65	0.09	4.646	0.037	0.104	0.004	A1180GN
A1250GN	125.00	0.97	2.65	0.09	4.921	0.038	0.104	0.004	A1250GN
A1320GN	132.00	1.02	2.65	0.09	5.197	0.040	0.104	0.004	A1320GN
A1400GN	140.00	1.07	2.65	0.08	5.512	0.042	0.104	0.003	A1400GN
A1500GN	150.00	1.13	2.65	0.09	5.906	0.044	0.104	0.004	A1500GN
A1575GN	157.50	1.18	2.65	0.09	6.201	0.046	0.104	0.004	A1575GN
A1600GN	160.00	1.20	2.65	0.09	6.299	0.047	0.104	0.004	A1600GN
A1700GN	170.00	1.26	2.65	0.09	6.693	0.050	0.104	0.004	A1700GN
A1800GN	180.00	1.33	2.65	0.09	7.087	0.052	0.104	0.004	A1800GN
A1900GN	190.00	1.39	2.65	0.09	7.480	0.055	0.104	0.004	A1900GN
A2000GN	200.00	1.45	2.65	0.09	7.874	0.057	0.104	0.004	A2000GN
A2120GN	212.00	1.53	2.65	0.09	8.346	0.060	0.104	0.004	A2120GN
A2240GN	224.00	1.61	2.65	0.09	8.819	0.063	0.104	0.004	A2240GN
A2300GN	230.00	1.64	2.65	0.09	9.055	0.065	0.104	0.004	A2300GN
A2360GN	236.00	1.68	2.65	0.09	9.291	0.066	0.104	0.004	A2360GN
A2430GN	243.00	1.73	2.65	0.09	9.567	0.068	0.104	0.004	A2430GN
A2500GN	250.00	1.77	2.65	0.09	9.843	0.070	0.104	0.004	A2500GN
A0140GN	14.00	0.22	3.55	0.10	0.551	0.009	0.140	0.004	A0140GN
A0145GN	14.50	0.22	3.55	0.10	0.571	0.009	0.140	0.004	A0145GN
A0150GN	15.00	0.23	3.55	0.10	0.591	0.009	0.140	0.004	A0150GN
A0155GN	15.50	0.23	3.55	0.10	0.610	0.009	0.140	0.004	A0155GN
A0160GN	16.00	0.23	3.55	0.10	0.630	0.009	0.140	0.004	A0160GN
A0170GN	17.00	0.24	3.55	0.10	0.669	0.009	0.140	0.004	A0170GN
A0180GN	18.00	0.25	3.55	0.10	0.709	0.010	0.140	0.004	A0180GN
A0190GN	19.00	0.26	3.55	0.10	0.748	0.010	0.140	0.004	A0190GN
A0200GN	20.00	0.26	3.55	0.10	0.787	0.010	0.140	0.004	A0200GN
A0206GN	20.60	0.27	3.55	0.10	0.811	0.011	0.140	0.004	A0206GN
A0212GN	21.20	0.27	3.55	0.10	0.835	0.011	0.140	0.004	A0212GN

NF T47-501 G SERIES SIZES

NF T47-501 G SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	NF T47-501 G SIZE
A0224GN	22.40	0.28	3.55	0.10	0.882	0.011	0.140	0.004	A0224GN
A0236GN	23.60	0.29	3.55	0.10	0.929	0.011	0.140	0.004	A0236GN
A0243GN	24.30	0.29	3.55	0.10	0.957	0.011	0.140	0.004	A0243GN
A0250GN	25.00	0.30	3.55	0.10	0.984	0.012	0.140	0.004	A0250GN
A0258GN	25.80	0.30	3.55	0.10	1.016	0.012	0.140	0.004	A0258GN
A0265GN	26.50	0.31	3.55	0.10	1.043	0.012	0.140	0.004	A0265GN
A0273GN	27.30	0.31	3.55	0.10	1.075	0.012	0.140	0.004	A0273GN
A0280GN	28.00	0.32	3.55	0.10	1.102	0.013	0.140	0.004	A0280GN
A0300GN	30.00	0.33	3.55	0.10	1.181	0.013	0.140	0.004	A0300GN
A0315GN	31.50	0.34	3.55	0.10	1.240	0.013	0.140	0.004	A0315GN
A0325GN	32.50	0.35	3.55	0.10	1.280	0.014	0.140	0.004	A0325GN
A0335GN	33.50	0.36	3.55	0.10	1.319	0.014	0.140	0.004	A0335GN
A0345GN	34.50	0.37	3.55	0.10	1.358	0.015	0.140	0.004	A0345GN
A0355GN	35.50	0.37	3.55	0.10	1.398	0.015	0.140	0.004	A0355GN
A0365GN	36.50	0.38	3.55	0.10	1.437	0.015	0.140	0.004	A0365GN
A0375GN	37.50	0.39	3.55	0.10	1.476	0.015	0.140	0.004	A0375GN
A0387GN	38.70	0.39	3.55	0.10	1.524	0.015	0.140	0.004	A0387GN
A0400GN	40.00	0.40	3.55	0.10	1.575	0.016	0.140	0.004	A0400GN
A0412GN	41.20	0.41	3.55	0.10	1.622	0.016	0.140	0.004	A0412GN
A0425GN	42.50	0.42	3.55	0.10	1.673	0.017	0.140	0.004	A0425GN
A0437GN	43.70	0.43	3.55	0.10	1.720	0.017	0.140	0.004	A0437GN
A0450GN	45.00	0.44	3.55	0.10	1.772	0.017	0.140	0.004	A0450GN
A0462GN	46.20	0.45	3.55	0.10	1.819	0.018	0.140	0.004	A0462GN
A0475GN	47.50	0.46	3.55	0.10	1.870	0.018	0.140	0.004	A0475GN
A0487GN	48.70	0.46	3.55	0.10	1.917	0.018	0.140	0.004	A0487GN
A0500GN	50.00	0.47	3.55	0.10	1.969	0.019	0.140	0.004	A0500GN
A0515GN	51.50	0.48	3.55	0.10	2.028	0.019	0.140	0.004	A0515GN
A0530GN	53.00	0.49	3.55	0.10	2.087	0.019	0.140	0.004	A0530GN
A0545GN	54.50	0.50	3.55	0.10	2.146	0.020	0.140	0.004	A0545GN
A0560GN	56.00	0.51	3.55	0.10	2.205	0.020	0.140	0.004	A0560GN
A0580GN	58.00	0.53	3.55	0.10	2.283	0.021	0.140	0.004	A0580GN
A0600GN	60.00	0.54	3.55	0.10	2.362	0.021	0.140	0.004	A0600GN
A0615GN	61.50	0.55	3.55	0.10	2.421	0.022	0.140	0.004	A0615GN
A0630GN	63.00	0.56	3.55	0.10	2.480	0.022	0.140	0.004	A0630GN
A0650GN	65.00	0.57	3.55	0.10	2.559	0.022	0.140	0.004	A0650GN
A0670GN	67.00	0.59	3.55	0.10	2.638	0.023	0.140	0.004	A0670GN
A0690GN	69.00	0.60	3.55	0.10	2.717	0.024	0.140	0.004	A0690GN
A0710GN	71.00	0.62	3.55	0.10	2.795	0.024	0.140	0.004	A0710GN
A0730GN	73.00	0.63	3.55	0.10	2.874	0.025	0.140	0.004	A0730GN

GLOBAL O-RING SIZE REFERENCE GUIDE

NF T47-501 G SERIES SIZES

NF T47-501 G SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				NF T47-501 G SIZE
	ID	±	CS	±	ID	±	CS	±	
A0750GN	75.00	0.64	3.55	0.10	2.953	0.025	0.140	0.004	A0750GN
A0775GN	77.50	0.66	3.55	0.10	3.051	0.026	0.140	0.004	A0775GN
A0800GN	80.00	0.68	3.55	0.10	3.150	0.027	0.140	0.004	A0800GN
A0825GN	82.50	0.69	3.55	0.10	3.248	0.027	0.140	0.004	A0825GN
A0850GN	85.00	0.71	3.55	0.10	3.346	0.028	0.140	0.004	A0850GN
A0875GN	87.50	0.73	3.55	0.10	3.445	0.029	0.140	0.004	A0875GN
A0900GN	90.00	0.74	3.55	0.10	3.543	0.029	0.140	0.004	A0900GN
A0925GN	92.50	0.76	3.55	0.10	3.642	0.030	0.140	0.004	A0925GN
A0950GN	95.00	0.78	3.55	0.10	3.740	0.031	0.140	0.004	A0950GN
A0975GN	97.50	0.79	3.55	0.10	3.839	0.031	0.140	0.004	A0975GN
A1000GN	100.00	0.81	3.55	0.10	3.937	0.032	0.140	0.004	A1000GN
A1030GN	103.00	0.83	3.55	0.10	4.055	0.033	0.140	0.004	A1030GN
A1060GN	106.00	0.85	3.55	0.10	4.173	0.033	0.140	0.004	A1060GN
A1090GN	109.00	0.87	3.55	0.10	4.291	0.034	0.140	0.004	A1090GN
A1120GN	112.00	0.89	3.55	0.10	4.409	0.035	0.140	0.004	A1120GN
A1150GN	115.00	0.91	3.55	0.10	4.528	0.036	0.140	0.004	A1150GN
A1180GN	118.00	0.93	3.55	0.10	4.646	0.037	0.140	0.004	A1180GN
A1220GN	122.00	0.95	3.55	0.10	4.803	0.037	0.140	0.004	A1220GN
A1250GN	125.00	0.97	3.55	0.10	4.921	0.038	0.140	0.004	A1250GN
A1280GN	128.00	0.99	3.55	0.10	5.039	0.039	0.140	0.004	A1280GN
A1320GN	132.00	1.02	3.55	0.10	5.197	0.040	0.140	0.004	A1320GN
A1360GN	136.00	1.04	3.55	0.10	5.354	0.041	0.140	0.004	A1360GN
A1400GN	140.00	1.07	3.55	0.10	5.512	0.042	0.140	0.004	A1400GN
A1425GN	142.50	1.09	3.55	0.10	5.610	0.043	0.140	0.004	A1425GN
A1450GN	145.00	1.10	3.55	0.10	5.709	0.043	0.140	0.004	A1450GN
A1475GN	147.50	1.12	3.55	0.10	5.807	0.044	0.140	0.004	A1475GN
A1500GN	150.00	1.13	3.55	0.10	5.906	0.044	0.140	0.004	A1500GN
A1525GN	152.50	1.15	3.55	0.10	6.004	0.045	0.140	0.004	A1525GN
A1550GN	155.00	1.17	3.55	0.10	6.102	0.046	0.140	0.004	A1550GN
A1575GN	157.50	1.18	3.55	0.10	6.201	0.046	0.140	0.004	A1575GN
A1600GN	160.00	1.20	3.55	0.10	6.299	0.047	0.140	0.004	A1600GN
A1625GN	162.50	1.22	3.55	0.10	6.398	0.048	0.140	0.004	A1625GN
A1650GN	165.00	1.23	3.55	0.10	6.496	0.048	0.140	0.004	A1650GN
A1675GN	167.50	1.25	3.55	0.10	6.594	0.049	0.140	0.004	A1675GN
A1700GN	170.00	1.26	3.55	0.10	6.693	0.050	0.140	0.004	A1700GN
A1725GN	172.50	1.28	3.55	0.10	6.791	0.050	0.140	0.004	A1725GN
A1750GN	175.00	1.30	3.55	0.10	6.890	0.051	0.140	0.004	A1750GN
A1775GN	177.50	1.31	3.55	0.10	6.988	0.052	0.140	0.004	A1775GN
A1800GN	180.00	1.33	3.55	0.10	7.087	0.052	0.140	0.004	A1800GN

NF T47-501 G SERIES SIZES

NF T47-501 G SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	NF T47-501 G SIZE
A1825GN	182.50	1.34	3.55	0.10	7.185	0.053	0.140	0.004	A1825GN
A1850GN	185.00	1.36	3.55	0.10	7.283	0.054	0.140	0.004	A1850GN
A1875GN	187.50	1.38	3.55	0.10	7.382	0.054	0.140	0.004	A1875GN
A1900GN	190.00	1.39	3.55	0.10	7.480	0.055	0.140	0.004	A1900GN
A1950GN	195.00	1.42	3.55	0.10	7.677	0.056	0.140	0.004	A1950GN
A2000GN	200.00	1.45	3.55	0.10	7.874	0.057	0.140	0.004	A2000GN
A2060GN	206.00	1.49	3.55	0.10	8.110	0.059	0.140	0.004	A2060GN
A2120GN	212.00	1.53	3.55	0.10	8.346	0.060	0.140	0.004	A2120GN
A2180GN	218.00	1.57	3.55	0.10	8.583	0.062	0.140	0.004	A2180GN
A2240GN	224.00	1.61	3.55	0.10	8.819	0.063	0.140	0.004	A2240GN
A2300GN	230.00	1.64	3.55	0.10	9.055	0.065	0.140	0.004	A2300GN
A2360GN	236.00	1.68	3.55	0.10	9.291	0.066	0.140	0.004	A2360GN
A2430GN	243.00	1.73	3.55	0.10	9.567	0.068	0.140	0.004	A2430GN
A2500GN	250.00	1.77	3.55	0.10	9.843	0.070	0.140	0.004	A2500GN
A2580GN	258.00	1.82	3.55	0.10	10.157	0.072	0.140	0.004	A2580GN
A2650GN	265.00	1.86	3.55	0.10	10.433	0.073	0.140	0.004	A2650GN
A2720GN	272.00	1.91	3.55	0.10	10.709	0.075	0.140	0.004	A2720GN
A2800GN	280.00	1.96	3.55	0.10	11.024	0.077	0.140	0.004	A2800GN
A2900GN	290.00	2.02	3.55	0.10	11.417	0.080	0.140	0.004	A2900GN
A3000GN	300.00	2.08	3.55	0.10	11.811	0.082	0.140	0.004	A3000GN
A3070GN	307.00	2.13	3.55	0.10	12.087	0.084	0.140	0.004	A3070GN
A3150GN	315.00	2.18	3.55	0.10	12.402	0.086	0.140	0.004	A3150GN
A3350GN	335.00	2.30	3.55	0.10	13.189	0.091	0.140	0.004	A3350GN
A3450GN	345.00	2.36	3.55	0.10	13.583	0.093	0.140	0.004	A3450GN
A3550GN	355.00	2.42	3.55	0.10	13.976	0.095	0.140	0.004	A3550GN
A0375GN	37.50	0.39	5.30	0.13	1.476	0.015	0.209	0.005	A0375GN
A0387GN	38.70	0.39	5.30	0.13	1.524	0.015	0.209	0.005	A0387GN
A0400GN	40.00	0.40	5.30	0.13	1.575	0.016	0.209	0.005	A0400GN
A0412GN	41.20	0.41	5.30	0.13	1.622	0.016	0.209	0.005	A0412GN
A0425GN	42.50	0.42	5.30	0.13	1.673	0.017	0.209	0.005	A0425GN
A0437GN	43.70	0.43	5.30	0.13	1.720	0.017	0.209	0.005	A0437GN
A0450GN	45.00	0.44	5.30	0.13	1.772	0.017	0.209	0.005	A0450GN
A0462GN	46.20	0.45	5.30	0.13	1.819	0.018	0.209	0.005	A0462GN
A0475GN	47.50	0.46	5.30	0.13	1.870	0.018	0.209	0.005	A0475GN
A0487GN	48.70	0.46	5.30	0.13	1.917	0.018	0.209	0.005	A0487GN
A0500GN	50.00	0.47	5.30	0.13	1.969	0.019	0.209	0.005	A0500GN
A0515GN	51.50	0.48	5.30	0.13	2.028	0.019	0.209	0.005	A0515GN
A0530GN	53.00	0.49	5.30	0.13	2.087	0.019	0.209	0.005	A0530GN
A0545GN	54.50	0.50	5.30	0.13	2.146	0.020	0.209	0.005	A0545GN

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NF T47-501 G SERIES SIZES

NF T47-501 G SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	NF T47-501 G SIZE
A0560GN	56.00	0.51	5.30	0.13	2.205	0.020	0.209	0.005	A0560GN
A0580GN	58.00	0.53	5.30	0.13	2.283	0.021	0.209	0.005	A0580GN
A0600GN	60.00	0.54	5.30	0.13	2.362	0.021	0.209	0.005	A0600GN
A0615GN	61.50	0.55	5.30	0.13	2.421	0.022	0.209	0.005	A0615GN
A0630GN	63.00	0.56	5.30	0.13	2.480	0.022	0.209	0.005	A0630GN
A0650GN	65.00	0.57	5.30	0.13	2.559	0.022	0.209	0.005	A0650GN
A0670GN	67.00	0.59	5.30	0.13	2.638	0.023	0.209	0.005	A0670GN
A0690GN	69.00	0.60	5.30	0.13	2.717	0.024	0.209	0.005	A0690GN
A0710GN	71.00	0.62	5.30	0.13	2.795	0.024	0.209	0.005	A0710GN
A0730GN	73.00	0.63	5.30	0.13	2.874	0.025	0.209	0.005	A0730GN
A0750GN	75.00	0.64	5.30	0.13	2.953	0.025	0.209	0.005	A0750GN
A0775GN	77.50	0.66	5.30	0.13	3.051	0.026	0.209	0.005	A0775GN
A0800GN	80.00	0.68	5.30	0.13	3.150	0.027	0.209	0.005	A0800GN
A0825GN	82.50	0.69	5.30	0.13	3.248	0.027	0.209	0.005	A0825GN
A0850GN	85.00	0.71	5.30	0.13	3.346	0.028	0.209	0.005	A0850GN
A0875GN	87.50	0.73	5.30	0.13	3.445	0.029	0.209	0.005	A0875GN
A0900GN	90.00	0.74	5.30	0.13	3.543	0.029	0.209	0.005	A0900GN
A0925GN	92.50	0.76	5.30	0.13	3.642	0.030	0.209	0.005	A0925GN
A0950GN	95.00	0.78	5.30	0.13	3.740	0.031	0.209	0.005	A0950GN
A0975GN	97.50	0.79	5.30	0.13	3.839	0.031	0.209	0.005	A0975GN
A1000GN	100.00	0.81	5.30	0.13	3.937	0.032	0.209	0.005	A1000GN
A1030GN	103.00	0.83	5.30	0.13	4.055	0.033	0.209	0.005	A1030GN
A1060GN	106.00	0.85	5.30	0.13	4.173	0.033	0.209	0.005	A1060GN
A1090GN	109.00	0.87	5.30	0.13	4.291	0.034	0.209	0.005	A1090GN
A1120GN	112.00	0.89	5.30	0.13	4.409	0.035	0.209	0.005	A1120GN
A1150GN	115.00	0.91	5.30	0.13	4.528	0.036	0.209	0.005	A1150GN
A1180GN	118.00	0.93	5.30	0.13	4.646	0.037	0.209	0.005	A1180GN
A1220GN	122.00	0.95	5.30	0.13	4.803	0.037	0.209	0.005	A1220GN
A1250GN	125.00	0.97	5.30	0.13	4.921	0.038	0.209	0.005	A1250GN
A1280GN	128.00	0.99	5.30	0.13	5.039	0.039	0.209	0.005	A1280GN
A1320GN	132.00	1.02	5.30	0.13	5.197	0.040	0.209	0.005	A1320GN
A1360GN	136.00	1.04	5.30	0.13	5.354	0.041	0.209	0.005	A1360GN
A1400GN	140.00	1.07	5.30	0.13	5.512	0.042	0.209	0.005	A1400GN
A1425GN	142.50	1.09	5.30	0.13	5.610	0.043	0.209	0.005	A1425GN
A1450GN	145.00	1.10	5.30	0.13	5.709	0.043	0.209	0.005	A1450GN
A1475GN	147.50	1.12	5.30	0.13	5.807	0.044	0.209	0.005	A1475GN
A1500GN	150.00	1.13	5.30	0.13	5.906	0.044	0.209	0.005	A1500GN
A1525GN	152.50	1.15	5.30	0.13	6.004	0.045	0.209	0.005	A1525GN
A1550GN	155.00	1.17	5.30	0.13	6.102	0.046	0.209	0.005	A1550GN

NF T47-501 G SERIES SIZES

NF T47-501 G SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	NF T47-501 G SIZE
A1600GN	160.00	1.20	5.30	0.13	6.299	0.047	0.209	0.005	A1600GN
A1625GN	162.50	1.22	5.30	0.13	6.398	0.048	0.209	0.005	A1625GN
A1650GN	165.00	1.23	5.30	0.13	6.496	0.048	0.209	0.005	A1650GN
A1675GN	167.50	1.25	5.30	0.13	6.594	0.049	0.209	0.005	A1675GN
A1700GN	170.00	1.26	5.30	0.13	6.693	0.050	0.209	0.005	A1700GN
A1725GN	172.50	1.28	5.30	0.13	6.791	0.050	0.209	0.005	A1725GN
A1750GN	175.00	1.30	5.30	0.13	6.890	0.051	0.209	0.005	A1750GN
A1775GN	177.50	1.31	5.30	0.13	6.988	0.052	0.209	0.005	A1775GN
A1800GN	180.00	1.33	5.30	0.13	7.087	0.052	0.209	0.005	A1800GN
A1825GN	182.50	1.34	5.30	0.13	7.185	0.053	0.209	0.005	A1825GN
A1850GN	185.00	1.36	5.30	0.13	7.283	0.054	0.209	0.005	A1850GN
A1875GN	187.50	1.38	5.30	0.13	7.382	0.054	0.209	0.005	A1875GN
A1900GN	190.00	1.39	5.30	0.13	7.480	0.055	0.209	0.005	A1900GN
A1950GN	195.00	1.42	5.30	0.13	7.677	0.056	0.209	0.005	A1950GN
A2000GN	200.00	1.45	5.30	0.13	7.874	0.057	0.209	0.005	A2000GN
A2030GN	203.00	1.47	5.30	0.13	7.992	0.058	0.209	0.005	A2030GN
A2060GN	206.00	1.49	5.30	0.13	8.110	0.059	0.209	0.005	A2060GN
A2120GN	212.00	1.53	5.30	0.13	8.346	0.060	0.209	0.005	A2120GN
A2180GN	218.00	1.57	5.30	0.13	8.583	0.062	0.209	0.005	A2180GN
A2240GN	224.00	1.61	5.30	0.13	8.819	0.063	0.209	0.005	A2240GN
A2270GN	227.00	1.63	5.30	0.13	8.937	0.064	0.209	0.005	A2270GN
A2300GN	230.00	1.64	5.30	0.13	9.055	0.065	0.209	0.005	A2300GN
A2360GN	236.00	1.68	5.30	0.13	9.291	0.066	0.209	0.005	A2360GN
A2390GN	239.00	1.70	5.30	0.13	9.409	0.067	0.209	0.005	A2390GN
A2430GN	243.00	1.73	5.30	0.13	9.567	0.068	0.209	0.005	A2430GN
A2500GN	250.00	1.77	5.30	0.13	9.843	0.070	0.209	0.005	A2500GN
A2540GN	254.00	1.80	5.30	0.13	10.000	0.071	0.209	0.005	A2540GN
A2580GN	258.00	1.82	5.30	0.13	10.157	0.072	0.209	0.005	A2580GN
A2610GN	261.00	1.84	5.30	0.13	10.276	0.072	0.209	0.005	A2610GN
A2650GN	265.00	1.86	5.30	0.13	10.433	0.073	0.209	0.005	A2650GN
A2680GN	268.00	1.88	5.30	0.13	10.551	0.074	0.209	0.005	A2680GN
A2720GN	272.00	1.91	5.30	0.13	10.709	0.075	0.209	0.005	A2720GN
A2760GN	276.00	1.93	5.30	0.13	10.866	0.076	0.209	0.005	A2760GN
A2800GN	280.00	1.96	5.30	0.13	11.024	0.077	0.209	0.005	A2800GN
A2830GN	283.00	1.98	5.30	0.13	11.142	0.078	0.209	0.005	A2830GN
A2860GN	286.00	2.00	5.30	0.13	11.260	0.079	0.209	0.005	A2860GN
A2900GN	290.00	2.02	5.30	0.13	11.417	0.080	0.209	0.005	A2900GN
A2950GN	295.00	2.05	5.30	0.13	11.614	0.081	0.209	0.005	A2950GN
A3000GN	300.00	2.08	5.30	0.13	11.811	0.082	0.209	0.005	A3000GN

GLOBAL O-RING SIZE REFERENCE GUIDE

NF T47-501 G SERIES SIZES

NF T47-501 G SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				NF T47-501 G SIZE
	ID	±	CS	±	ID	±	CS	±	
A3030GN	303.00	2.10	5.30	0.13	11.929	0.083	0.209	0.005	A3030GN
A3070GN	307.00	2.13	5.30	0.13	12.087	0.084	0.209	0.005	A3070GN
A3110GN	311.00	2.15	5.30	0.13	12.244	0.085	0.209	0.005	A3110GN
A3150GN	315.00	2.18	5.30	0.13	12.402	0.086	0.209	0.005	A3150GN
A3200GN	320.00	2.21	5.30	0.13	12.598	0.087	0.209	0.005	A3200GN
A3250GN	325.00	2.24	5.30	0.13	12.795	0.088	0.209	0.005	A3250GN
A3300GN	330.00	2.27	5.30	0.13	12.992	0.089	0.209	0.005	A3300GN
A3350GN	335.00	2.30	5.30	0.13	13.189	0.091	0.209	0.005	A3350GN
A3400GN	340.00	2.33	5.30	0.13	13.386	0.092	0.209	0.005	A3400GN
A3450GN	345.00	2.36	5.30	0.13	13.583	0.093	0.209	0.005	A3450GN
A3500GN	350.00	2.39	5.30	0.13	13.780	0.094	0.209	0.005	A3500GN
A3550GN	355.00	2.42	5.30	0.13	13.976	0.095	0.209	0.005	A3550GN
A3600GN	360.00	2.45	5.30	0.13	14.173	0.096	0.209	0.005	A3600GN
A3650GN	365.00	2.48	5.30	0.13	14.370	0.098	0.209	0.005	A3650GN
A3700GN	370.00	2.52	5.30	0.13	14.567	0.099	0.209	0.005	A3700GN
A3750GN	375.00	2.55	5.30	0.13	14.764	0.100	0.209	0.005	A3750GN
A3790GN	379.00	2.57	5.30	0.13	14.921	0.101	0.209	0.005	A3790GN
A3830GN	383.00	2.60	5.30	0.13	15.079	0.102	0.209	0.005	A3830GN
A3870GN	387.00	2.62	5.30	0.13	15.236	0.103	0.209	0.005	A3870GN
A3910GN	391.00	2.64	5.30	0.13	15.394	0.104	0.209	0.005	A3910GN
A3950GN	395.00	2.67	5.30	0.13	15.551	0.105	0.209	0.005	A3950GN
A4000GN	400.00	2.70	5.30	0.13	15.748	0.106	0.209	0.005	A4000GN
A1090GN	109.00	0.87	7.00	0.15	4.291	0.034	0.276	0.006	A1090GN
A1120GN	112.00	0.89	7.00	0.15	4.409	0.035	0.276	0.006	A1120GN
A1150GN	115.00	0.91	7.00	0.15	4.528	0.036	0.276	0.006	A1150GN
A1180GN	118.00	0.93	7.00	0.15	4.646	0.037	0.276	0.006	A1180GN
A1220GN	122.00	0.95	7.00	0.15	4.803	0.037	0.276	0.006	A1220GN
A1250GN	125.00	0.97	7.00	0.15	4.921	0.038	0.276	0.006	A1250GN
A1280GN	128.00	0.99	7.00	0.15	5.039	0.039	0.276	0.006	A1280GN
A1320GN	132.00	1.02	7.00	0.15	5.197	0.040	0.276	0.006	A1320GN
A1360GN	136.00	1.04	7.00	0.15	5.354	0.041	0.276	0.006	A1360GN
A1400GN	140.00	1.07	7.00	0.15	5.512	0.042	0.276	0.006	A1400GN
A1450GN	145.00	1.10	7.00	0.15	5.709	0.043	0.276	0.006	A1450GN
A1500GN	150.00	1.13	7.00	0.15	5.906	0.044	0.276	0.006	A1500GN
A1550GN	155.00	1.17	7.00	0.15	6.102	0.046	0.276	0.006	A1550GN
A1600GN	160.00	1.20	7.00	0.15	6.299	0.047	0.276	0.006	A1600GN
A1650GN	165.00	1.23	7.00	0.15	6.496	0.048	0.276	0.006	A1650GN
A1700GN	170.00	1.26	7.00	0.15	6.693	0.050	0.276	0.006	A1700GN
A1750GN	175.00	1.30	7.00	0.15	6.890	0.051	0.276	0.006	A1750GN

NF T47-501 G SERIES SIZES

NF T47-501 G SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	NF T47-501 G SIZE
A1800GN	180.00	1.33	7.00	0.15	7.087	0.052	0.276	0.006	A1800GN
A1850GN	185.00	1.36	7.00	0.15	7.283	0.054	0.276	0.006	A1850GN
A1900GN	190.00	1.39	7.00	0.15	7.480	0.055	0.276	0.006	A1900GN
A1950GN	195.00	1.42	7.00	0.15	7.677	0.056	0.276	0.006	A1950GN
A2000GN	200.00	1.45	7.00	0.15	7.874	0.057	0.276	0.006	A2000GN
A2030GN	203.00	1.47	7.00	0.15	7.992	0.058	0.276	0.006	A2030GN
A2060GN	206.00	1.49	7.00	0.15	8.110	0.059	0.276	0.006	A2060GN
A2120GN	212.00	1.53	7.00	0.15	8.346	0.060	0.276	0.006	A2120GN
A2180GN	218.00	1.57	7.00	0.15	8.583	0.062	0.276	0.006	A2180GN
A2240GN	224.00	1.61	7.00	0.15	8.819	0.063	0.276	0.006	A2240GN
A2270GN	227.00	1.63	7.00	0.15	8.937	0.064	0.276	0.006	A2270GN
A2300GN	230.00	1.64	7.00	0.15	9.055	0.065	0.276	0.006	A2300GN
A2360GN	236.00	1.68	7.00	0.15	9.291	0.066	0.276	0.006	A2360GN
A2390GN	239.00	1.70	7.00	0.15	9.409	0.067	0.276	0.006	A2390GN
A2430GN	243.00	1.73	7.00	0.15	9.567	0.068	0.276	0.006	A2430GN
A2500GN	250.00	1.77	7.00	0.15	9.843	0.070	0.276	0.006	A2500GN
A2540GN	254.00	1.80	7.00	0.15	10.000	0.071	0.276	0.006	A2540GN
A2580GN	258.00	1.82	7.00	0.15	10.157	0.072	0.276	0.006	A2580GN
A2610GN	261.00	1.84	7.00	0.15	10.276	0.072	0.276	0.006	A2610GN
A2650GN	265.00	1.86	7.00	0.15	10.433	0.073	0.276	0.006	A2650GN
A2680GN	268.00	1.88	7.00	0.15	10.551	0.074	0.276	0.006	A2680GN
A2720GN	272.00	1.91	7.00	0.15	10.709	0.075	0.276	0.006	A2720GN
A2760GN	276.00	1.93	7.00	0.15	10.866	0.076	0.276	0.006	A2760GN
A2800GN	280.00	1.96	7.00	0.15	11.024	0.077	0.276	0.006	A2800GN
A2830GN	283.00	1.98	7.00	0.15	11.142	0.078	0.276	0.006	A2830GN
A2860GN	286.00	2.00	7.00	0.15	11.260	0.079	0.276	0.006	A2860GN
A2900GN	290.00	2.02	7.00	0.15	11.417	0.080	0.276	0.006	A2900GN
A2950GN	295.00	2.05	7.00	0.15	11.614	0.081	0.276	0.006	A2950GN
A3000GN	300.00	2.08	7.00	0.15	11.811	0.082	0.276	0.006	A3000GN
A3030GN	303.00	2.10	7.00	0.15	11.929	0.083	0.276	0.006	A3030GN
A3070GN	307.00	2.13	7.00	0.15	12.087	0.084	0.276	0.006	A3070GN
A3110GN	311.00	2.15	7.00	0.15	12.244	0.085	0.276	0.006	A3110GN
A3150GN	315.00	2.18	7.00	0.15	12.402	0.086	0.276	0.006	A3150GN
A3200GN	320.00	2.21	7.00	0.15	12.598	0.087	0.276	0.006	A3200GN
A3250GN	325.00	2.24	7.00	0.15	12.795	0.088	0.276	0.006	A3250GN
A3300GN	330.00	2.27	7.00	0.15	12.992	0.089	0.276	0.006	A3300GN
A3350GN	335.00	2.30	7.00	0.15	13.189	0.091	0.276	0.006	A3350GN
A3400GN	340.00	2.33	7.00	0.15	13.386	0.092	0.276	0.006	A3400GN
A3450GN	345.00	2.36	7.00	0.15	13.583	0.093	0.276	0.006	A3450GN

GLOBAL O-RING SIZE REFERENCE GUIDE

NF T47-501 G SERIES SIZES

NF T47-501 G SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				NF T47-501 G SIZE
	ID	±	CS	±	ID	±	CS	±	
A3500GN	350.00	2.39	7.00	0.15	13.780	0.094	0.276	0.006	A3500GN
A3550GN	355.00	2.42	7.00	0.15	13.976	0.095	0.276	0.006	A3550GN
A3600GN	360.00	2.45	7.00	0.15	14.173	0.096	0.276	0.006	A3600GN
A3650GN	365.00	2.48	7.00	0.15	14.370	0.098	0.276	0.006	A3650GN
A3700GN	370.00	2.52	7.00	0.15	14.567	0.099	0.276	0.006	A3700GN
A3750GN	375.00	2.55	7.00	0.15	14.764	0.100	0.276	0.006	A3750GN
A3790GN	379.00	2.57	7.00	0.15	14.921	0.101	0.276	0.006	A3790GN
A3830GN	383.00	2.60	7.00	0.15	15.079	0.102	0.276	0.006	A3830GN
A3870GN	387.00	2.62	7.00	0.15	15.236	0.103	0.276	0.006	A3870GN
A3910GN	391.00	2.64	7.00	0.15	15.394	0.104	0.276	0.006	A3910GN
A3950GN	395.00	2.67	7.00	0.15	15.551	0.105	0.276	0.006	A3950GN
A4000GN	400.00	2.70	7.00	0.15	15.748	0.106	0.276	0.006	A4000GN
A4060GN	406.00	2.74	7.00	0.15	15.984	0.108	0.276	0.006	A4060GN
A4120GN	412.00	2.77	7.00	0.15	16.220	0.109	0.276	0.006	A4120GN
A4180GN	418.00	2.81	7.00	0.15	16.457	0.111	0.276	0.006	A4180GN
A4250GN	425.00	2.85	7.00	0.15	16.732	0.112	0.276	0.006	A4250GN
A4290GN	429.00	2.88	7.00	0.15	16.890	0.113	0.276	0.006	A4290GN
A4330GN	433.00	2.90	7.00	0.15	17.047	0.114	0.276	0.006	A4330GN
A4370GN	437.00	2.93	7.00	0.15	17.205	0.115	0.276	0.006	A4370GN
A4430GN	443.00	2.96	7.00	0.15	17.441	0.117	0.276	0.006	A4430GN
A4500GN	450.00	3.00	7.00	0.15	17.717	0.118	0.276	0.006	A4500GN
A4560GN	456.00	3.04	7.00	0.15	17.953	0.120	0.276	0.006	A4560GN
A4620GN	462.00	3.08	7.00	0.15	18.189	0.121	0.276	0.006	A4620GN
A4660GN	466.00	3.10	7.00	0.15	18.346	0.122	0.276	0.006	A4660GN
A4700GN	470.00	3.13	7.00	0.15	18.504	0.123	0.276	0.006	A4700GN
A4750GN	475.00	3.16	7.00	0.15	18.701	0.124	0.276	0.006	A4750GN
A4790GN	479.00	3.18	7.00	0.15	18.858	0.125	0.276	0.006	A4790GN
A4830GN	483.00	3.20	7.00	0.15	19.016	0.126	0.276	0.006	A4830GN
A4870GN	487.00	3.23	7.00	0.15	19.173	0.127	0.276	0.006	A4870GN
A4930GN	493.00	3.26	7.00	0.15	19.409	0.128	0.276	0.006	A4930GN
A5000GN	500.00	3.31	7.00	0.15	19.685	0.130	0.276	0.006	A5000GN
A5080GN	508.00	3.36	7.00	0.15	20.000	0.132	0.276	0.006	A5080GN
A5150GN	515.00	3.40	7.00	0.15	20.276	0.134	0.276	0.006	A5150GN
A5230GN	523.00	3.45	7.00	0.15	20.591	0.136	0.276	0.006	A5230GN
A5300GN	530.00	3.49	7.00	0.15	20.866	0.137	0.276	0.006	A5300GN
A5380GN	538.00	3.54	7.00	0.15	21.181	0.139	0.276	0.006	A5380GN
A5450GN	545.00	3.58	7.00	0.15	21.457	0.141	0.276	0.006	A5450GN
A5530GN	553.00	3.63	7.00	0.15	21.772	0.143	0.276	0.006	A5530GN
A5600GN	560.00	3.67	7.00	0.15	22.047	0.144	0.276	0.006	A5600GN

NF T47-501 G SERIES SIZES

NF T47-501 G SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	NF T47-501 G SIZE
A5700GN	570.00	3.73	7.00	0.15	22.441	0.147	0.276	0.006	A5700GN
A5800GN	580.00	3.79	7.00	0.15	22.835	0.149	0.276	0.006	A5800GN
A5900GN	590.00	3.85	7.00	0.15	23.228	0.152	0.276	0.006	A5900GN
A6000GN	600.00	3.91	7.00	0.15	23.622	0.154	0.276	0.006	A6000GN
A6080GN	608.00	3.96	7.00	0.15	23.937	0.156	0.276	0.006	A6080GN
A6150GN	615.00	4.00	7.00	0.15	24.213	0.157	0.276	0.006	A6150GN
A6230GN	623.00	4.05	7.00	0.15	24.528	0.159	0.276	0.006	A6230GN
A6300GN	630.00	4.09	7.00	0.15	24.803	0.161	0.276	0.006	A6300GN
A6400GN	640.00	4.15	7.00	0.15	25.197	0.163	0.276	0.006	A6400GN
A6500GN	650.00	4.21	7.00	0.15	25.591	0.166	0.276	0.006	A6500GN
A6600GN	660.00	4.27	7.00	0.15	25.984	0.168	0.276	0.006	A6600GN
A6700GN	670.00	4.33	7.00	0.15	26.378	0.170	0.276	0.006	A6700GN

GLOBAL O-RING SIZE REFERENCE GUIDE

NF T47-501 A SERIES SIZES

NF T47-501 A SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				NF T47-501 A SIZE
	ID	±	CS	±	ID	±	CS	±	
A0018AN	1.80	0.10	1.80	0.08	0.071	0.004	0.071	0.003	A0018AN
A0020AN	2.00	0.10	1.80	0.08	0.079	0.004	0.071	0.003	A0020AN
A0022AN	2.24	0.10	1.80	0.08	0.088	0.004	0.071	0.003	A0022AN
A0025AN	2.50	0.11	1.80	0.08	0.098	0.004	0.071	0.003	A0025AN
A0028AN	2.80	0.11	1.80	0.08	0.110	0.004	0.071	0.003	A0028AN
A0032AN	3.15	0.11	1.80	0.08	0.124	0.004	0.071	0.003	A0032AN
A0036AN	3.55	0.11	1.80	0.08	0.140	0.004	0.071	0.003	A0036AN
A0038AN	3.75	0.11	1.80	0.08	0.148	0.004	0.071	0.003	A0038AN
A0040AN	4.00	0.12	1.80	0.08	0.157	0.005	0.071	0.003	A0040AN
A0045AN	4.50	0.12	1.80	0.08	0.177	0.005	0.071	0.003	A0045AN
A0049AN	4.87	0.12	1.80	0.08	0.192	0.005	0.071	0.003	A0049AN
A0050AN	5.00	0.12	1.80	0.08	0.197	0.005	0.071	0.003	A0050AN
A0052AN	5.15	0.12	1.80	0.08	0.203	0.005	0.071	0.003	A0052AN
A0053AN	5.30	0.12	1.80	0.08	0.209	0.005	0.071	0.003	A0053AN
A0056AN	5.60	0.13	1.80	0.08	0.220	0.005	0.071	0.003	A0056AN
A0060AN	6.00	0.13	1.80	0.08	0.236	0.005	0.071	0.003	A0060AN
A0063AN	6.30	0.13	1.80	0.08	0.248	0.005	0.071	0.003	A0063AN
A0067AN	6.70	0.13	1.80	0.08	0.264	0.005	0.071	0.003	A0067AN
A0069AN	6.90	0.13	1.80	0.08	0.272	0.005	0.071	0.003	A0069AN
A0071AN	7.10	0.13	1.80	0.08	0.280	0.005	0.071	0.003	A0071AN
A0075AN	7.50	0.14	1.80	0.08	0.295	0.006	0.071	0.003	A0075AN
A0080AN	8.00	0.14	1.80	0.08	0.315	0.006	0.071	0.003	A0080AN
A0085AN	8.50	0.14	1.80	0.08	0.335	0.006	0.071	0.003	A0085AN
A0088AN	8.75	0.14	1.80	0.08	0.344	0.006	0.071	0.003	A0088AN
A0090AN	9.00	0.15	1.80	0.08	0.354	0.006	0.071	0.003	A0090AN
A0095AN	9.50	0.15	1.80	0.08	0.374	0.006	0.071	0.003	A0095AN
A0100AN	10.00	0.15	1.80	0.08	0.394	0.006	0.071	0.003	A0100AN
A0106AN	10.60	0.16	1.80	0.08	0.417	0.006	0.071	0.003	A0106AN
A0112AN	11.20	0.16	1.80	0.08	0.441	0.006	0.071	0.003	A0112AN
A0116AN	11.60	0.16	1.80	0.08	0.457	0.006	0.071	0.003	A0116AN
A0118AN	11.80	0.16	1.80	0.08	0.465	0.006	0.071	0.003	A0118AN
A0121AN	12.10	0.16	1.80	0.08	0.476	0.006	0.071	0.003	A0121AN
A0125AN	12.50	0.17	1.80	0.08	0.492	0.007	0.071	0.003	A0125AN
A0128AN	12.80	0.17	1.80	0.08	0.504	0.007	0.071	0.003	A0128AN
A0132AN	13.20	0.17	1.80	0.08	0.520	0.007	0.071	0.003	A0132AN
A0140AN	14.00	0.17	1.80	0.08	0.551	0.007	0.071	0.003	A0140AN
A0145AN	14.50	0.18	1.80	0.08	0.571	0.007	0.071	0.003	A0145AN
A0150AN	15.00	0.18	1.80	0.08	0.591	0.007	0.071	0.003	A0150AN
A0155AN	15.50	0.18	1.80	0.08	0.610	0.007	0.071	0.003	A0155AN

NF T47-501 A SERIES SIZES

NF T47-501 A SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				NF T47-501 A SIZE
	ID	±	CS	±	ID	±	CS	±	
A0160AN	16.00	0.19	1.80	0.08	0.630	0.007	0.071	0.003	A0160AN
A0170AN	17.00	0.19	1.80	0.08	0.669	0.007	0.071	0.003	A0170AN
A0180AN	18.00	0.20	1.80	0.08	0.709	0.008	0.071	0.003	A0180AN
A0190AN	19.00	0.20	1.80	0.08	0.748	0.008	0.071	0.003	A0190AN
A0200AN	20.00	0.21	1.80	0.08	0.787	0.008	0.071	0.003	A0200AN
A0206AN	20.60	0.21	1.80	0.08	0.811	0.008	0.071	0.003	A0206AN
A0212AN	21.20	0.22	1.80	0.08	0.835	0.009	0.071	0.003	A0212AN
A0224AN	22.40	0.22	1.80	0.08	0.882	0.009	0.071	0.003	A0224AN
A0236AN	23.60	0.23	1.80	0.08	0.929	0.009	0.071	0.003	A0236AN
A0243AN	24.30	0.23	1.80	0.08	0.957	0.009	0.071	0.003	A0243AN
A0250AN	25.00	0.24	1.80	0.08	0.984	0.009	0.071	0.003	A0250AN
A0258AN	25.80	0.24	1.80	0.08	1.016	0.009	0.071	0.003	A0258AN
A0265AN	26.50	0.24	1.80	0.08	1.043	0.009	0.071	0.003	A0265AN
A0273AN	27.30	0.25	1.80	0.08	1.075	0.010	0.071	0.003	A0273AN
A0280AN	28.00	0.25	1.80	0.08	1.102	0.010	0.071	0.003	A0280AN
A0300AN	30.00	0.26	1.80	0.08	1.181	0.010	0.071	0.003	A0300AN
A0315AN	31.50	0.27	1.80	0.08	1.240	0.011	0.071	0.003	A0315AN
A0325AN	32.50	0.28	1.80	0.08	1.280	0.011	0.071	0.003	A0325AN
A0335AN	33.50	0.28	1.80	0.08	1.319	0.011	0.071	0.003	A0335AN
A0345AN	34.50	0.29	1.80	0.08	1.358	0.011	0.071	0.003	A0345AN
A0355AN	35.50	0.29	1.80	0.08	1.398	0.011	0.071	0.003	A0355AN
A0365AN	36.50	0.30	1.80	0.08	1.437	0.012	0.071	0.003	A0365AN
A0375AN	37.50	0.31	1.80	0.08	1.476	0.012	0.071	0.003	A0375AN
A0387AN	38.70	0.31	1.80	0.08	1.524	0.012	0.071	0.003	A0387AN
A0400AN	40.00	0.32	1.80	0.08	1.575	0.013	0.071	0.003	A0400AN
A0412AN	41.20	0.33	1.80	0.08	1.622	0.013	0.071	0.003	A0412AN
A0425AN	42.50	0.33	1.80	0.08	1.673	0.013	0.071	0.003	A0425AN
A0437AN	43.70	0.34	1.80	0.08	1.720	0.013	0.071	0.003	A0437AN
A0450AN	45.00	0.35	1.80	0.08	1.772	0.014	0.071	0.003	A0450AN
A0462AN	46.20	0.35	1.80	0.08	1.819	0.014	0.071	0.003	A0462AN
A0475AN	47.50	0.36	1.80	0.08	1.870	0.014	0.071	0.003	A0475AN
A0487AN	48.70	0.37	1.80	0.08	1.917	0.015	0.071	0.003	A0487AN
A0500AN	50.00	0.37	1.80	0.08	1.969	0.015	0.071	0.003	A0500AN
A0530AN	53.00	0.39	1.80	0.08	2.087	0.015	0.071	0.003	A0530AN
A0560AN	56.00	0.40	1.80	0.08	2.205	0.016	0.071	0.003	A0560AN
A0600AN	60.00	0.43	1.80	0.08	2.362	0.017	0.071	0.003	A0600AN
A0630AN	63.00	0.44	1.80	0.08	2.480	0.017	0.071	0.003	A0630AN
A0670AN	67.00	0.46	1.80	0.08	2.638	0.018	0.071	0.003	A0670AN
A0710AN	71.00	0.48	1.80	0.08	2.795	0.019	0.071	0.003	A0710AN

GLOBAL O-RING SIZE REFERENCE GUIDE

NF T47-501 A SERIES SIZES

NF T47-501 A SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				NF T47-501 A SIZE
	ID	±	CS	±	ID	±	CS	±	
A0750AN	75.00	0.50	1.80	0.08	2.953	0.020	0.071	0.003	A0750AN
A0045AN	4.50	0.12	2.65	0.09	0.177	0.005	0.104	0.004	A0045AN
A0053AN	5.30	0.12	2.65	0.09	0.209	0.005	0.104	0.004	A0053AN
A0060AN	6.00	0.13	2.65	0.09	0.236	0.005	0.104	0.004	A0060AN
A0069AN	6.90	0.13	2.65	0.09	0.272	0.005	0.104	0.004	A0069AN
A0080AN	8.00	0.14	2.65	0.09	0.315	0.006	0.104	0.004	A0080AN
A0090AN	9.00	0.15	2.65	0.09	0.354	0.006	0.104	0.004	A0090AN
A0095AN	9.50	0.15	2.65	0.09	0.374	0.006	0.104	0.004	A0095AN
A0100AN	10.00	0.15	2.65	0.09	0.394	0.006	0.104	0.004	A0100AN
A0106AN	10.60	0.16	2.65	0.09	0.417	0.006	0.104	0.004	A0106AN
A0112AN	11.20	0.16	2.65	0.09	0.441	0.006	0.104	0.004	A0112AN
A0116AN	11.60	0.16	2.65	0.09	0.457	0.006	0.104	0.004	A0116AN
A0118AN	11.80	0.16	2.65	0.09	0.465	0.006	0.104	0.004	A0118AN
A0121AN	12.10	0.16	2.65	0.09	0.476	0.006	0.104	0.004	A0121AN
A0125AN	12.50	0.17	2.65	0.09	0.492	0.007	0.104	0.004	A0125AN
A0128AN	12.80	0.17	2.65	0.09	0.504	0.007	0.104	0.004	A0128AN
A0132AN	13.20	0.17	2.65	0.09	0.520	0.007	0.104	0.004	A0132AN
A0140AN	14.00	0.17	2.65	0.09	0.551	0.007	0.104	0.004	A0140AN
A0145AN	14.50	0.18	2.65	0.09	0.571	0.007	0.104	0.004	A0145AN
A0150AN	15.00	0.18	2.65	0.09	0.591	0.007	0.104	0.004	A0150AN
A0155AN	15.50	0.18	2.65	0.09	0.610	0.007	0.104	0.004	A0155AN
A0160AN	16.00	0.19	2.65	0.09	0.630	0.007	0.104	0.004	A0160AN
A0170AN	17.00	0.19	2.65	0.09	0.669	0.007	0.104	0.004	A0170AN
A0180AN	18.00	0.20	2.65	0.09	0.709	0.008	0.104	0.004	A0180AN
A0190AN	19.00	0.20	2.65	0.09	0.748	0.008	0.104	0.004	A0190AN
A0200AN	20.00	0.21	2.65	0.09	0.787	0.008	0.104	0.004	A0200AN
A0206AN	20.60	0.21	2.65	0.09	0.811	0.008	0.104	0.004	A0206AN
A0212AN	21.20	0.22	2.65	0.09	0.835	0.009	0.104	0.004	A0212AN
A0224AN	22.40	0.22	2.65	0.09	0.882	0.009	0.104	0.004	A0224AN
A0236AN	23.60	0.23	2.65	0.09	0.929	0.009	0.104	0.004	A0236AN
A0243AN	24.30	0.23	2.65	0.09	0.957	0.009	0.104	0.004	A0243AN
A0250AN	25.00	0.24	2.65	0.09	0.984	0.009	0.104	0.004	A0250AN
A0258AN	25.80	0.24	2.65	0.09	1.016	0.009	0.104	0.004	A0258AN
A0265AN	26.50	0.24	2.65	0.09	1.043	0.009	0.104	0.004	A0265AN
A0273AN	27.30	0.25	2.65	0.09	1.075	0.010	0.104	0.004	A0273AN
A0280AN	28.00	0.25	2.65	0.09	1.102	0.010	0.104	0.004	A0280AN
A0300AN	30.00	0.26	2.65	0.09	1.181	0.010	0.104	0.004	A0300AN
A0315AN	31.50	0.27	2.65	0.09	1.240	0.011	0.104	0.004	A0315AN
A0325AN	32.50	0.28	2.65	0.09	1.280	0.011	0.104	0.004	A0325AN

NF T47-501 A SERIES SIZES

NF T47-501 A SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	NF T47-501 A SIZE
A0335AN	33.50	0.28	2.65	0.09	1.319	0.011	0.104	0.004	A0335AN
A0345AN	34.50	0.29	2.65	0.09	1.358	0.011	0.104	0.004	A0345AN
A0355AN	35.50	0.29	2.65	0.09	1.398	0.011	0.104	0.004	A0355AN
A0365AN	36.50	0.30	2.65	0.09	1.437	0.012	0.104	0.004	A0365AN
A0375AN	37.50	0.31	2.65	0.09	1.476	0.012	0.104	0.004	A0375AN
A0387AN	38.70	0.31	2.65	0.09	1.524	0.012	0.104	0.004	A0387AN
A0400AN	40.00	0.32	2.65	0.09	1.575	0.013	0.104	0.004	A0400AN
A0412AN	41.20	0.33	2.65	0.09	1.622	0.013	0.104	0.004	A0412AN
A0425AN	42.50	0.33	2.65	0.09	1.673	0.013	0.104	0.004	A0425AN
A0437AN	43.70	0.34	2.65	0.09	1.720	0.013	0.104	0.004	A0437AN
A0450AN	45.00	0.35	2.65	0.09	1.772	0.014	0.104	0.004	A0450AN
A0462AN	46.20	0.35	2.65	0.09	1.819	0.014	0.104	0.004	A0462AN
A0475AN	47.50	0.36	2.65	0.09	1.870	0.014	0.104	0.004	A0475AN
A0487AN	48.70	0.37	2.65	0.09	1.917	0.015	0.104	0.004	A0487AN
A0500AN	50.00	0.37	2.65	0.09	1.969	0.015	0.104	0.004	A0500AN
A0515AN	51.50	0.38	2.65	0.09	2.028	0.015	0.104	0.004	A0515AN
A0530AN	53.00	0.39	2.65	0.09	2.087	0.015	0.104	0.004	A0530AN
A0545AN	54.50	0.40	2.65	0.09	2.146	0.016	0.104	0.004	A0545AN
A0560AN	56.00	0.40	2.65	0.09	2.205	0.016	0.104	0.004	A0560AN
A0580AN	58.00	0.41	2.65	0.09	2.283	0.016	0.104	0.004	A0580AN
A0600AN	60.00	0.43	2.65	0.09	2.362	0.017	0.104	0.004	A0600AN
A0615AN	61.50	0.43	2.65	0.09	2.421	0.017	0.104	0.004	A0615AN
A0630AN	63.00	0.44	2.65	0.09	2.480	0.017	0.104	0.004	A0630AN
A0650AN	65.00	0.45	2.65	0.09	2.559	0.018	0.104	0.004	A0650AN
A0670AN	67.00	0.46	2.65	0.09	2.638	0.018	0.104	0.004	A0670AN
A0690AN	69.00	0.47	2.65	0.09	2.717	0.019	0.104	0.004	A0690AN
A0710AN	71.00	0.48	2.65	0.09	2.795	0.019	0.104	0.004	A0710AN
A0730AN	73.00	0.49	2.65	0.09	2.874	0.019	0.104	0.004	A0730AN
A0750AN	75.00	0.50	2.65	0.09	2.953	0.020	0.104	0.004	A0750AN
A0775AN	77.50	0.52	2.65	0.09	3.051	0.020	0.104	0.004	A0775AN
A0800AN	80.00	0.53	2.65	0.09	3.150	0.021	0.104	0.004	A0800AN
A0825AN	82.50	0.54	2.65	0.09	3.248	0.021	0.104	0.004	A0825AN
A0850AN	85.00	0.56	2.65	0.09	3.346	0.022	0.104	0.004	A0850AN
A0875AN	87.50	0.57	2.65	0.09	3.445	0.022	0.104	0.004	A0875AN
A0900AN	90.00	0.58	2.65	0.09	3.543	0.023	0.104	0.004	A0900AN
A0925AN	92.50	0.59	2.65	0.09	3.642	0.023	0.104	0.004	A0925AN
A0950AN	95.00	0.61	2.65	0.09	3.740	0.024	0.104	0.004	A0950AN
A0975AN	97.50	0.62	2.65	0.09	3.839	0.024	0.104	0.004	A0975AN
A1000AN	100.00	0.63	2.65	0.09	3.937	0.025	0.104	0.004	A1000AN

GLOBAL O-RING SIZE REFERENCE GUIDE

NF T47-501 A SERIES SIZES

NF T47-501 A SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				NF T47-501 A SIZE
	ID	±	CS	±	ID	±	CS	±	
A1060AN	106.00	0.66	2.65	0.09	4.173	0.026	0.104	0.004	A1060AN
A1120AN	112.00	0.69	2.65	0.09	4.409	0.027	0.104	0.004	A1120AN
A1180AN	118.00	0.73	2.65	0.09	4.646	0.029	0.104	0.004	A1180AN
A1250AN	125.00	0.76	2.65	0.09	4.921	0.030	0.104	0.004	A1250AN
A1575AN	157.50	0.92	2.65	0.09	6.201	0.036	0.104	0.004	A1575AN
A0140AN	14.00	0.17	3.55	0.10	0.551	0.007	0.140	0.004	A0140AN
A0145AN	14.50	0.18	3.55	0.10	0.571	0.007	0.140	0.004	A0145AN
A0150AN	15.00	0.18	3.55	0.10	0.591	0.007	0.140	0.004	A0150AN
A0155AN	15.50	0.18	3.55	0.10	0.610	0.007	0.140	0.004	A0155AN
A0160AN	16.00	0.19	3.55	0.10	0.630	0.007	0.140	0.004	A0160AN
A0170AN	17.00	0.19	3.55	0.10	0.669	0.007	0.140	0.004	A0170AN
A0180AN	18.00	0.20	3.55	0.10	0.709	0.008	0.140	0.004	A0180AN
A0190AN	19.00	0.20	3.55	0.10	0.748	0.008	0.140	0.004	A0190AN
A0200AN	20.00	0.21	3.55	0.10	0.787	0.008	0.140	0.004	A0200AN
A0206AN	20.60	0.21	3.55	0.10	0.811	0.008	0.140	0.004	A0206AN
A0212AN	21.20	0.22	3.55	0.10	0.835	0.009	0.140	0.004	A0212AN
A0224AN	22.40	0.22	3.55	0.10	0.882	0.009	0.140	0.004	A0224AN
A0236AN	23.60	0.23	3.55	0.10	0.929	0.009	0.140	0.004	A0236AN
A0243AN	24.30	0.23	3.55	0.10	0.957	0.009	0.140	0.004	A0243AN
A0250AN	25.00	0.24	3.55	0.10	0.984	0.009	0.140	0.004	A0250AN
A0258AN	25.80	0.24	3.55	0.10	1.016	0.009	0.140	0.004	A0258AN
A0265AN	26.50	0.24	3.55	0.10	1.043	0.009	0.140	0.004	A0265AN
A0273AN	27.30	0.25	3.55	0.10	1.075	0.010	0.140	0.004	A0273AN
A0280AN	28.00	0.25	3.55	0.10	1.102	0.010	0.140	0.004	A0280AN
A0300AN	30.00	0.26	3.55	0.10	1.181	0.010	0.140	0.004	A0300AN
A0315AN	31.50	0.27	3.55	0.10	1.240	0.011	0.140	0.004	A0315AN
A0325AN	32.50	0.28	3.55	0.10	1.280	0.011	0.140	0.004	A0325AN
A0335AN	33.50	0.28	3.55	0.10	1.319	0.011	0.140	0.004	A0335AN
A0345AN	34.50	0.29	3.55	0.10	1.358	0.011	0.140	0.004	A0345AN
A0355AN	35.50	0.29	3.55	0.10	1.398	0.011	0.140	0.004	A0355AN
A0365AN	36.50	0.30	3.55	0.10	1.437	0.012	0.140	0.004	A0365AN
A0375AN	37.50	0.31	3.55	0.10	1.476	0.012	0.140	0.004	A0375AN
A0387AN	38.70	0.31	3.55	0.10	1.524	0.012	0.140	0.004	A0387AN
A0400AN	40.00	0.32	3.55	0.10	1.575	0.013	0.140	0.004	A0400AN
A0412AN	41.20	0.33	3.55	0.10	1.622	0.013	0.140	0.004	A0412AN
A0425AN	42.50	0.33	3.55	0.10	1.673	0.013	0.140	0.004	A0425AN
A0437AN	43.70	0.34	3.55	0.10	1.720	0.013	0.140	0.004	A0437AN
A0450AN	45.00	0.35	3.55	0.10	1.772	0.014	0.140	0.004	A0450AN
A0462AN	46.20	0.35	3.55	0.10	1.819	0.014	0.140	0.004	A0462AN

NF T47-501 A SERIES SIZES

NF T47-501 A SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	NF T47-501 A SIZE
A0475AN	47.50	0.36	3.55	0.10	1.870	0.014	0.140	0.004	A0475AN
A0487AN	48.70	0.37	3.55	0.10	1.917	0.015	0.140	0.004	A0487AN
A0500AN	50.00	0.37	3.55	0.10	1.969	0.015	0.140	0.004	A0500AN
A0515AN	51.50	0.38	3.55	0.10	2.028	0.015	0.140	0.004	A0515AN
A0530AN	53.00	0.39	3.55	0.10	2.087	0.015	0.140	0.004	A0530AN
A0545AN	54.50	0.40	3.55	0.10	2.146	0.016	0.140	0.004	A0545AN
A0560AN	56.00	0.40	3.55	0.10	2.205	0.016	0.140	0.004	A0560AN
A0580AN	58.00	0.41	3.55	0.10	2.283	0.016	0.140	0.004	A0580AN
A0600AN	60.00	0.43	3.55	0.10	2.362	0.017	0.140	0.004	A0600AN
A0615AN	61.50	0.43	3.55	0.10	2.421	0.017	0.140	0.004	A0615AN
A0630AN	63.00	0.44	3.55	0.10	2.480	0.017	0.140	0.004	A0630AN
A0650AN	65.00	0.45	3.55	0.10	2.559	0.018	0.140	0.004	A0650AN
A0670AN	67.00	0.46	3.55	0.10	2.638	0.018	0.140	0.004	A0670AN
A0690AN	69.00	0.47	3.55	0.10	2.717	0.019	0.140	0.004	A0690AN
A0710AN	71.00	0.48	3.55	0.10	2.795	0.019	0.140	0.004	A0710AN
A0730AN	73.00	0.49	3.55	0.10	2.874	0.019	0.140	0.004	A0730AN
A0750AN	75.00	0.50	3.55	0.10	2.953	0.020	0.140	0.004	A0750AN
A0775AN	77.50	0.52	3.55	0.10	3.051	0.020	0.140	0.004	A0775AN
A0800AN	80.00	0.53	3.55	0.10	3.150	0.021	0.140	0.004	A0800AN
A0825AN	82.50	0.54	3.55	0.10	3.248	0.021	0.140	0.004	A0825AN
A0850AN	85.00	0.56	3.55	0.10	3.346	0.022	0.140	0.004	A0850AN
A0875AN	87.50	0.57	3.55	0.10	3.445	0.022	0.140	0.004	A0875AN
A0900AN	90.00	0.58	3.55	0.10	3.543	0.023	0.140	0.004	A0900AN
A0925AN	92.50	0.59	3.55	0.10	3.642	0.023	0.140	0.004	A0925AN
A0950AN	95.00	0.61	3.55	0.10	3.740	0.024	0.140	0.004	A0950AN
A0975AN	97.50	0.62	3.55	0.10	3.839	0.024	0.140	0.004	A0975AN
A1000AN	100.00	0.63	3.55	0.10	3.937	0.025	0.140	0.004	A1000AN
A1030AN	103.00	0.65	3.55	0.10	4.055	0.026	0.140	0.004	A1030AN
A1060AN	106.00	0.66	3.55	0.10	4.173	0.026	0.140	0.004	A1060AN
A1090AN	109.00	0.68	3.55	0.10	4.291	0.027	0.140	0.004	A1090AN
A1120AN	112.00	0.69	3.55	0.10	4.409	0.027	0.140	0.004	A1120AN
A1150AN	115.00	0.71	3.55	0.10	4.528	0.028	0.140	0.004	A1150AN
A1180AN	118.00	0.73	3.55	0.10	4.646	0.029	0.140	0.004	A1180AN
A1220AN	122.00	0.75	3.55	0.10	4.803	0.030	0.140	0.004	A1220AN
A1250AN	125.00	0.76	3.55	0.10	4.921	0.030	0.140	0.004	A1250AN
A1280AN	128.00	0.78	3.55	0.10	5.039	0.031	0.140	0.004	A1280AN
A1320AN	132.00	0.80	3.55	0.10	5.197	0.031	0.140	0.004	A1320AN
A1360AN	136.00	0.82	3.55	0.10	5.354	0.032	0.140	0.004	A1360AN
A1400AN	140.00	0.84	3.55	0.10	5.512	0.033	0.140	0.004	A1400AN

GLOBAL O-RING SIZE REFERENCE GUIDE

NF T47-501 A SERIES SIZES

NF T47-501 A SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				NF T47-501 A SIZE
	ID	±	CS	±	ID	±	CS	±	
A1425AN	142.50	0.85	3.55	0.10	5.610	0.033	0.140	0.004	A1425AN
A1450AN	145.00	0.86	3.55	0.10	5.709	0.034	0.140	0.004	A1450AN
A1475AN	147.50	0.87	3.55	0.10	5.807	0.034	0.140	0.004	A1475AN
A1500AN	150.00	0.89	3.55	0.10	5.906	0.035	0.140	0.004	A1500AN
A1525AN	152.50	0.90	3.55	0.10	6.004	0.035	0.140	0.004	A1525AN
A1550AN	155.00	0.91	3.55	0.10	6.102	0.036	0.140	0.004	A1550AN
A1575AN	157.50	0.92	3.55	0.10	6.201	0.036	0.140	0.004	A1575AN
A1600AN	160.00	0.94	3.55	0.10	6.299	0.037	0.140	0.004	A1600AN
A1625AN	162.50	0.95	3.55	0.10	6.398	0.037	0.140	0.004	A1625AN
A1650AN	165.00	0.96	3.55	0.10	6.496	0.038	0.140	0.004	A1650AN
A1675AN	167.50	0.97	3.55	0.10	6.594	0.038	0.140	0.004	A1675AN
A1700AN	170.00	0.99	3.55	0.10	6.693	0.039	0.140	0.004	A1700AN
A1725AN	172.50	1.00	3.55	0.10	6.791	0.039	0.140	0.004	A1725AN
A1750AN	175.00	1.01	3.55	0.10	6.890	0.040	0.140	0.004	A1750AN
A1775AN	177.50	1.02	3.55	0.10	6.988	0.040	0.140	0.004	A1775AN
A1800AN	180.00	1.04	3.55	0.10	7.087	0.041	0.140	0.004	A1800AN
A1825AN	182.50	1.05	3.55	0.10	7.185	0.041	0.140	0.004	A1825AN
A1850AN	185.00	1.06	3.55	0.10	7.283	0.042	0.140	0.004	A1850AN
A1875AN	187.50	1.07	3.55	0.10	7.382	0.042	0.140	0.004	A1875AN
A1900AN	190.00	1.09	3.55	0.10	7.480	0.043	0.140	0.004	A1900AN
A1950AN	195.00	1.11	3.55	0.10	7.677	0.044	0.140	0.004	A1950AN
A2000AN	200.00	1.14	3.55	0.10	7.874	0.045	0.140	0.004	A2000AN
A2060AN	206.00	1.17	3.55	0.10	8.110	0.046	0.140	0.004	A2060AN
A2120AN	212.00	1.20	3.55	0.10	8.346	0.047	0.140	0.004	A2120AN
A2180AN	218.00	1.22	3.55	0.10	8.583	0.048	0.140	0.004	A2180AN
A2240AN	224.00	1.25	3.55	0.10	8.819	0.049	0.140	0.004	A2240AN
A0375AN	37.50	0.31	5.30	0.13	1.476	0.012	0.209	0.005	A0375AN
A0387AN	38.70	0.31	5.30	0.13	1.524	0.012	0.209	0.005	A0387AN
A0400AN	40.00	0.32	5.30	0.13	1.575	0.013	0.209	0.005	A0400AN
A0412AN	41.20	0.33	5.30	0.13	1.622	0.013	0.209	0.005	A0412AN
A0425AN	42.50	0.33	5.30	0.13	1.673	0.013	0.209	0.005	A0425AN
A0437AN	43.70	0.34	5.30	0.13	1.720	0.013	0.209	0.005	A0437AN
A0450AN	45.00	0.35	5.30	0.13	1.772	0.014	0.209	0.005	A0450AN
A0462AN	46.20	0.35	5.30	0.13	1.819	0.014	0.209	0.005	A0462AN
A0475AN	47.50	0.36	5.30	0.13	1.870	0.014	0.209	0.005	A0475AN
A0487AN	48.70	0.37	5.30	0.13	1.917	0.015	0.209	0.005	A0487AN
A0500AN	50.00	0.37	5.30	0.13	1.969	0.015	0.209	0.005	A0500AN
A0515AN	51.50	0.38	5.30	0.13	2.028	0.015	0.209	0.005	A0515AN
A0530AN	53.00	0.39	5.30	0.13	2.087	0.015	0.209	0.005	A0530AN

NF T47-501 A SERIES SIZES

NF T47-501 A SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	NF T47-501 A SIZE
A0545AN	54.50	0.40	5.30	0.13	2.146	0.016	0.209	0.005	A0545AN
A0560AN	56.00	0.40	5.30	0.13	2.205	0.016	0.209	0.005	A0560AN
A0580AN	58.00	0.41	5.30	0.13	2.283	0.016	0.209	0.005	A0580AN
A0600AN	60.00	0.43	5.30	0.13	2.362	0.017	0.209	0.005	A0600AN
A0615AN	61.50	0.43	5.30	0.13	2.421	0.017	0.209	0.005	A0615AN
A0630AN	63.00	0.44	5.30	0.13	2.480	0.017	0.209	0.005	A0630AN
A0650AN	65.00	0.45	5.30	0.13	2.559	0.018	0.209	0.005	A0650AN
A0670AN	67.00	0.46	5.30	0.13	2.638	0.018	0.209	0.005	A0670AN
A0690AN	69.00	0.47	5.30	0.13	2.717	0.019	0.209	0.005	A0690AN
A0710AN	71.00	0.48	5.30	0.13	2.795	0.019	0.209	0.005	A0710AN
A0730AN	73.00	0.49	5.30	0.13	2.874	0.019	0.209	0.005	A0730AN
A0750AN	75.00	0.50	5.30	0.13	2.953	0.020	0.209	0.005	A0750AN
A0775AN	77.50	0.52	5.30	0.13	3.051	0.020	0.209	0.005	A0775AN
A0800AN	80.00	0.53	5.30	0.13	3.150	0.021	0.209	0.005	A0800AN
A0825AN	82.50	0.54	5.30	0.13	3.248	0.021	0.209	0.005	A0825AN
A0850AN	85.00	0.56	5.30	0.13	3.346	0.022	0.209	0.005	A0850AN
A0875AN	87.50	0.57	5.30	0.13	3.445	0.022	0.209	0.005	A0875AN
A0900AN	90.00	0.58	5.30	0.13	3.543	0.023	0.209	0.005	A0900AN
A0925AN	92.50	0.59	5.30	0.13	3.642	0.023	0.209	0.005	A0925AN
A0950AN	95.00	0.61	5.30	0.13	3.740	0.024	0.209	0.005	A0950AN
A0975AN	97.50	0.62	5.30	0.13	3.839	0.024	0.209	0.005	A0975AN
A1000AN	100.00	0.63	5.30	0.13	3.937	0.025	0.209	0.005	A1000AN
A1030AN	103.00	0.65	5.30	0.13	4.055	0.026	0.209	0.005	A1030AN
A1060AN	106.00	0.66	5.30	0.13	4.173	0.026	0.209	0.005	A1060AN
A1090AN	109.00	0.68	5.30	0.13	4.291	0.027	0.209	0.005	A1090AN
A1120AN	112.00	0.69	5.30	0.13	4.409	0.027	0.209	0.005	A1120AN
A1150AN	115.00	0.71	5.30	0.13	4.528	0.028	0.209	0.005	A1150AN
A1180AN	118.00	0.73	5.30	0.13	4.646	0.029	0.209	0.005	A1180AN
A1220AN	122.00	0.75	5.30	0.13	4.803	0.030	0.209	0.005	A1220AN
A1250AN	125.00	0.76	5.30	0.13	4.921	0.030	0.209	0.005	A1250AN
A1280AN	128.00	0.78	5.30	0.13	5.039	0.031	0.209	0.005	A1280AN
A1320AN	132.00	0.80	5.30	0.13	5.197	0.031	0.209	0.005	A1320AN
A1360AN	136.00	0.82	5.30	0.13	5.354	0.032	0.209	0.005	A1360AN
A1400AN	140.00	0.84	5.30	0.13	5.512	0.033	0.209	0.005	A1400AN
A1425AN	142.50	0.85	5.30	0.13	5.610	0.033	0.209	0.005	A1425AN
A1450AN	145.00	0.86	5.30	0.13	5.709	0.034	0.209	0.005	A1450AN
A1475AN	147.50	0.87	5.30	0.13	5.807	0.034	0.209	0.005	A1475AN
A1500AN	150.00	0.89	5.30	0.13	5.906	0.035	0.209	0.005	A1500AN
A1525AN	152.50	0.90	5.30	0.13	6.004	0.035	0.209	0.005	A1525AN

GLOBAL O-RING SIZE REFERENCE GUIDE

NF T47-501 A SERIES SIZES

NF T47-501 A SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				NF T47-501 A SIZE
	ID	±	CS	±	ID	±	CS	±	
A1550AN	155.00	0.91	5.30	0.13	6.102	0.036	0.209	0.005	A1550AN
A1600AN	160.00	0.94	5.30	0.13	6.299	0.037	0.209	0.005	A1600AN
A1625AN	162.50	0.95	5.30	0.13	6.398	0.037	0.209	0.005	A1625AN
A1650AN	165.00	0.96	5.30	0.13	6.496	0.038	0.209	0.005	A1650AN
A1675AN	167.50	0.97	5.30	0.13	6.594	0.038	0.209	0.005	A1675AN
A1700AN	170.00	0.99	5.30	0.13	6.693	0.039	0.209	0.005	A1700AN
A1725AN	172.50	1.00	5.30	0.13	6.791	0.039	0.209	0.005	A1725AN
A1750AN	175.00	1.01	5.30	0.13	6.890	0.040	0.209	0.005	A1750AN
A1775AN	177.50	1.02	5.30	0.13	6.988	0.040	0.209	0.005	A1775AN
A1800AN	180.00	1.04	5.30	0.13	7.087	0.041	0.209	0.005	A1800AN
A1825AN	182.50	1.05	5.30	0.13	7.185	0.041	0.209	0.005	A1825AN
A1850AN	185.00	1.06	5.30	0.13	7.283	0.042	0.209	0.005	A1850AN
A1875AN	187.50	1.07	5.30	0.13	7.382	0.042	0.209	0.005	A1875AN
A1900AN	190.00	1.09	5.30	0.13	7.480	0.043	0.209	0.005	A1900AN
A1950AN	195.00	1.11	5.30	0.13	7.677	0.044	0.209	0.005	A1950AN
A2000AN	200.00	1.14	5.30	0.13	7.874	0.045	0.209	0.005	A2000AN
A2030AN	203.00	1.15	5.30	0.13	7.992	0.045	0.209	0.005	A2030AN
A2060AN	206.00	1.17	5.30	0.13	8.110	0.046	0.209	0.005	A2060AN
A2120AN	212.00	1.20	5.30	0.13	8.346	0.047	0.209	0.005	A2120AN
A2180AN	218.00	1.22	5.30	0.13	8.583	0.048	0.209	0.005	A2180AN
A2240AN	224.00	1.25	5.30	0.13	8.819	0.049	0.209	0.005	A2240AN
A2270AN	227.00	1.27	5.30	0.13	8.937	0.050	0.209	0.005	A2270AN
A2300AN	230.00	1.28	5.30	0.13	9.055	0.050	0.209	0.005	A2300AN
A2360AN	236.00	1.31	5.30	0.13	9.291	0.052	0.209	0.005	A2360AN
A2390AN	239.00	1.33	5.30	0.13	9.409	0.052	0.209	0.005	A2390AN
A2430AN	243.00	1.35	5.30	0.13	9.567	0.053	0.209	0.005	A2430AN
A2500AN	250.00	1.38	5.30	0.13	9.843	0.054	0.209	0.005	A2500AN
A2540AN	254.00	1.40	5.30	0.13	10.000	0.055	0.209	0.005	A2540AN
A2580AN	258.00	1.42	5.30	0.13	10.157	0.056	0.209	0.005	A2580AN
A2610AN	261.00	1.44	5.30	0.13	10.276	0.057	0.209	0.005	A2610AN
A2650AN	265.00	1.45	5.30	0.13	10.433	0.057	0.209	0.005	A2650AN
A2680AN	268.00	1.47	5.30	0.13	10.551	0.058	0.209	0.005	A2680AN
A2720AN	272.00	1.49	5.30	0.13	10.709	0.059	0.209	0.005	A2720AN
A2760AN	276.00	1.51	5.30	0.13	10.866	0.059	0.209	0.005	A2760AN
A2800AN	280.00	1.53	5.30	0.13	11.024	0.060	0.209	0.005	A2800AN
A2830AN	283.00	1.54	5.30	0.13	11.142	0.061	0.209	0.005	A2830AN
A2860AN	286.00	1.56	5.30	0.13	11.260	0.061	0.209	0.005	A2860AN
A2900AN	290.00	1.58	5.30	0.13	11.417	0.062	0.209	0.005	A2900AN
A2950AN	295.00	1.60	5.30	0.13	11.614	0.063	0.209	0.005	A2950AN

NF T47-501 A SERIES SIZES

NF T47-501 A SIZE	MEASUREMENTS IN MILLIMETERS ID	±	CS	±	MEASUREMENTS IN INCHES ID	±	CS	±	NF T47-501 A SIZE
A3000AN	300.00	1.62	5.30	0.13	11.811	0.064	0.209	0.005	A3000AN
A1090AN	109.00	0.68	7.00	0.15	4.291	0.027	0.276	0.006	A1090AN
A1120AN	112.00	0.69	7.00	0.15	4.409	0.027	0.276	0.006	A1120AN
A1150AN	115.00	0.71	7.00	0.15	4.528	0.028	0.276	0.006	A1150AN
A1180AN	118.00	0.73	7.00	0.15	4.646	0.029	0.276	0.006	A1180AN
A1220AN	122.00	0.75	7.00	0.15	4.803	0.030	0.276	0.006	A1220AN
A1250AN	125.00	0.76	7.00	0.15	4.921	0.030	0.276	0.006	A1250AN
A1280AN	128.00	0.78	7.00	0.15	5.039	0.031	0.276	0.006	A1280AN
A1320AN	132.00	0.80	7.00	0.15	5.197	0.031	0.276	0.006	A1320AN
A1360AN	136.00	0.82	7.00	0.15	5.354	0.032	0.276	0.006	A1360AN
A1400AN	140.00	0.84	7.00	0.15	5.512	0.033	0.276	0.006	A1400AN
A1450AN	145.00	0.86	7.00	0.15	5.709	0.034	0.276	0.006	A1450AN
A1500AN	150.00	0.89	7.00	0.15	5.906	0.035	0.276	0.006	A1500AN
A1550AN	155.00	0.91	7.00	0.15	6.102	0.036	0.276	0.006	A1550AN
A1600AN	160.00	0.94	7.00	0.15	6.299	0.037	0.276	0.006	A1600AN
A1650AN	165.00	0.96	7.00	0.15	6.496	0.038	0.276	0.006	A1650AN
A1700AN	170.00	0.99	7.00	0.15	6.693	0.039	0.276	0.006	A1700AN
A1750AN	175.00	1.01	7.00	0.15	6.890	0.040	0.276	0.006	A1750AN
A1800AN	180.00	1.04	7.00	0.15	7.087	0.041	0.276	0.006	A1800AN
A1850AN	185.00	1.06	7.00	0.15	7.283	0.042	0.276	0.006	A1850AN
A1900AN	190.00	1.09	7.00	0.15	7.480	0.043	0.276	0.006	A1900AN
A1950AN	195.00	1.11	7.00	0.15	7.677	0.044	0.276	0.006	A1950AN
A2000AN	200.00	1.14	7.00	0.15	7.874	0.045	0.276	0.006	A2000AN
A2030AN	203.00	1.15	7.00	0.15	7.992	0.045	0.276	0.006	A2030AN
A2060AN	206.00	1.17	7.00	0.15	8.110	0.046	0.276	0.006	A2060AN
A2120AN	212.00	1.20	7.00	0.15	8.346	0.047	0.276	0.006	A2120AN
A2180AN	218.00	1.22	7.00	0.15	8.583	0.048	0.276	0.006	A2180AN
A2240AN	224.00	1.25	7.00	0.15	8.819	0.049	0.276	0.006	A2240AN
A2270AN	227.00	1.27	7.00	0.15	8.937	0.050	0.276	0.006	A2270AN
A2300AN	230.00	1.31	7.00	0.15	9.055	0.052	0.276	0.006	A2300AN
A2360AN	236.00	1.31	7.00	0.15	9.291	0.052	0.276	0.006	A2360AN
A2390AN	239.00	1.33	7.00	0.15	9.409	0.052	0.276	0.006	A2390AN
A2430AN	243.00	1.35	7.00	0.15	9.567	0.053	0.276	0.006	A2430AN
A2500AN	250.00	1.38	7.00	0.15	9.843	0.054	0.276	0.006	A2500AN
A2540AN	254.00	1.40	7.00	0.15	10.000	0.055	0.276	0.006	A2540AN
A2580AN	258.00	1.42	7.00	0.15	10.157	0.056	0.276	0.006	A2580AN
A2610AN	261.00	1.44	7.00	0.15	10.276	0.057	0.276	0.006	A2610AN
A2650AN	265.00	1.45	7.00	0.15	10.433	0.057	0.276	0.006	A2650AN
A2680AN	268.00	1.47	7.00	0.15	10.551	0.058	0.276	0.006	A2680AN

GLOBAL O-RING SIZE REFERENCE GUIDE

NF T47-501 A SERIES SIZES

NF T47-501 A SIZE	MEASUREMENTS IN MILLIMETERS				MEASUREMENTS IN INCHES				NF T47-501 A SIZE
	ID	±	CS	±	ID	±	CS	±	
A2720AN	272.00	1.49	7.00	0.15	10.709	0.059	0.276	0.006	A2720AN
A2760AN	276.00	1.51	7.00	0.15	10.866	0.059	0.276	0.006	A2760AN
A2800AN	280.00	1.53	7.00	0.15	11.024	0.060	0.276	0.006	A2800AN
A2830AN	283.00	1.54	7.00	0.15	11.142	0.061	0.276	0.006	A2830AN
A2860AN	286.00	1.56	7.00	0.15	11.260	0.061	0.276	0.006	A2860AN
A2900AN	290.00	1.58	7.00	0.15	11.417	0.062	0.276	0.006	A2900AN
A2950AN	295.00	1.60	7.00	0.15	11.614	0.063	0.276	0.006	A2950AN
A3000AN	300.00	1.62	7.00	0.15	11.811	0.064	0.276	0.006	A3000AN
A3030AN	303.00	1.64	7.00	0.15	11.929	0.065	0.276	0.006	A3030AN
A3070AN	307.00	1.66	7.00	0.15	12.087	0.065	0.276	0.006	A3070AN
A3110AN	311.00	1.68	7.00	0.15	12.244	0.066	0.276	0.006	A3110AN
A3150AN	315.00	1.70	7.00	0.15	12.402	0.067	0.276	0.006	A3150AN
A3200AN	320.00	1.72	7.00	0.15	12.598	0.068	0.276	0.006	A3200AN
A3250AN	325.00	1.75	7.00	0.15	12.795	0.069	0.276	0.006	A3250AN
A3300AN	330.00	1.77	7.00	0.15	12.992	0.070	0.276	0.006	A3300AN
A3350AN	335.00	1.79	7.00	0.15	13.189	0.070	0.276	0.006	A3350AN
A3400AN	340.00	1.82	7.00	0.15	13.386	0.072	0.276	0.006	A3400AN
A3450AN	345.00	1.84	7.00	0.15	13.583	0.072	0.276	0.006	A3450AN
A3500AN	350.00	1.87	7.00	0.15	13.780	0.074	0.276	0.006	A3500AN
A3550AN	355.00	1.89	7.00	0.15	13.976	0.074	0.276	0.006	A3550AN
A3600AN	360.00	1.91	7.00	0.15	14.173	0.075	0.276	0.006	A3600AN
A3650AN	365.00	1.94	7.00	0.15	14.370	0.076	0.276	0.006	A3650AN
A3700AN	370.00	1.96	7.00	0.15	14.567	0.077	0.276	0.006	A3700AN
A3750AN	375.00	1.98	7.00	0.15	14.764	0.078	0.276	0.006	A3750AN
A3790AN	379.00	2.00	7.00	0.15	14.921	0.079	0.276	0.006	A3790AN
A3830AN	383.00	2.02	7.00	0.15	15.079	0.080	0.276	0.006	A3830AN
A3870AN	387.00	2.04	7.00	0.15	15.236	0.080	0.276	0.006	A3870AN
A3910AN	391.00	2.06	7.00	0.15	15.394	0.081	0.276	0.006	A3910AN
A3950AN	395.00	2.08	7.00	0.15	15.551	0.082	0.276	0.006	A3950AN
A4000AN	400.00	2.10	7.00	0.15	15.748	0.083	0.276	0.006	A4000AN

GLOBAL O-RING SIZE REFERENCE GUIDE

STANDARD SIZE MASTER LIST

Availability of sizes in each standard is indicated by a ◆ in that standard column.

ID (mm)	CS (mm)	ID (inch)	CS (inch)	AS568	ISO 3601 G	ISO 3601 A	DIN 377-1	BS 4518	BS 1806	JIS B 2401	NF T47-501 G	NF T47-501 A
0.74	1.02	0.029	0.040	◆					◆			
1.78	1.02	0.070	0.040						◆			
2.54	1.02	0.100	0.040						◆			
1.07	1.27	0.042	0.050	◆					◆			
4.70	1.42	0.185	0.056	◆								
1.42	1.52	0.056	0.060	◆					◆			
3.10	1.60	0.122	0.063					◆				
3.60	1.60	0.142	0.063					◆				
4.10	1.60	0.161	0.063					◆				
4.60	1.60	0.181	0.063					◆				
5.10	1.60	0.201	0.063					◆				
5.60	1.60	0.220	0.063					◆				
6.10	1.60	0.240	0.063					◆				
6.60	1.60	0.260	0.063					◆				
7.10	1.60	0.280	0.063					◆				
7.60	1.60	0.299	0.063					◆				
8.10	1.60	0.319	0.063					◆				
8.60	1.60	0.339	0.063					◆				
9.10	1.60	0.358	0.063					◆				
9.60	1.60	0.378	0.063					◆				
10.10	1.60	0.398	0.063					◆				
10.60	1.60	0.417	0.063					◆				
11.10	1.60	0.437	0.063					◆				
11.60	1.60	0.457	0.063					◆				
12.10	1.60	0.476	0.063					◆				
12.60	1.60	0.496	0.063					◆				
13.10	1.60	0.516	0.063					◆				
13.60	1.60	0.535	0.063					◆				
14.10	1.60	0.555	0.063					◆				
14.60	1.60	0.575	0.063					◆				
15.10	1.60	0.594	0.063					◆				
15.60	1.60	0.614	0.063					◆				
16.10	1.60	0.634	0.063					◆				
16.60	1.60	0.654	0.063					◆				
17.10	1.60	0.673	0.063					◆				
17.60	1.60	0.693	0.063					◆				
18.10	1.60	0.713	0.063					◆				
18.60	1.60	0.732	0.063					◆				
19.10	1.60	0.752	0.063					◆				
19.60	1.60	0.772	0.063					◆				
20.60	1.60	0.811	0.063					◆				
21.60	1.60	0.850	0.063					◆				
22.10	1.60	0.870	0.063					◆				
24.60	1.60	0.969	0.063					◆				
25.10	1.60	0.988	0.063					◆				
27.10	1.60	1.067	0.063					◆				
27.60	1.60	1.087	0.063					◆				
29.10	1.60	1.146	0.063					◆				
29.60	1.60	1.165	0.063					◆				
31.60	1.60	1.244	0.063					◆				
32.10	1.60	1.264	0.063					◆				
34.60	1.60	1.362	0.063					◆				
35.10	1.60	1.382	0.063					◆				
37.10	1.60	1.461	0.063					◆				
37.60	1.60	1.480	0.063					◆				
6.07	1.63	0.239	0.064	◆								
7.65	1.63	0.301	0.064	◆								
1.78	1.78	0.070	0.070	◆					◆			
2.57	1.78	0.101	0.070	◆					◆			
2.90	1.78	0.114	0.070	◆					◆			
3.18	1.78	0.125	0.070						◆			
3.68	1.78	0.145	0.070	◆					◆			
4.47	1.78	0.176	0.070	◆					◆			
4.75	1.78	0.187	0.070						◆			
5.28	1.78	0.208	0.070	◆					◆			
6.07	1.78	0.239	0.070	◆					◆			
6.35	1.78	0.250	0.070						◆			
6.76	1.78	0.266	0.070						◆			
7.65	1.78	0.301	0.070	◆					◆			
7.92	1.78	0.312	0.070						◆			
8.74	1.78	0.344	0.070						◆			
9.25	1.78	0.364	0.070	◆					◆			
10.82	1.78	0.426	0.070	◆					◆			
11.10	1.78	0.437	0.070						◆			
12.42	1.78	0.489	0.070	◆					◆			
14.00	1.78	0.551	0.070	◆					◆			
15.60	1.78	0.614	0.070	◆					◆			
17.17	1.78	0.676	0.070	◆					◆			
18.77	1.78	0.739	0.070	◆					◆			
20.35	1.78	0.801	0.070	◆					◆			
21.95	1.78	0.864	0.070	◆					◆			
23.52	1.78	0.926	0.070	◆					◆			
25.12	1.78	0.989	0.070	◆					◆			
26.70	1.78	1.051	0.070	◆					◆			
28.30	1.78	1.114	0.070	◆					◆			
29.87	1.78	1.176	0.070	◆					◆			
31.47	1.78	1.239	0.070	◆					◆			
33.05	1.78	1.301	0.070	◆					◆			
34.65	1.78	1.364	0.070	◆					◆			
36.27	1.78	1.428	0.070						◆			
37.82	1.78	1.489	0.070	◆					◆			
39.45	1.78	1.553	0.070						◆			
41.00	1.78	1.614	0.070	◆					◆			
44.17	1.78	1.739	0.070	◆					◆			
47.35	1.78	1.864	0.070	◆					◆			
50.52	1.78	1.989	0.070	◆					◆			
53.70	1.78	2.114	0.070	◆					◆			
56.87	1.78	2.239	0.070	◆					◆			

STANDARD SIZE MASTER LIST

Availability of sizes in each standard is indicated by a ◆ in that standard column.

ID (mm)	CS (mm)	ID (inch)	CS (inch)	AS568	ISO 3601 G	ISO 3601 A	DIN 377-1	BS 4518	BS 1806	JIS B 2401	NF T47-501 G	NF T47-501 A
60.05	1.78	2.364	0.070	◆					◆			
63.22	1.78	2.489	0.070	◆					◆			
66.40	1.78	2.614	0.070	◆					◆			
69.57	1.78	2.739	0.070	◆					◆			
72.75	1.78	2.864	0.070	◆					◆			
75.92	1.78	2.989	0.070	◆					◆			
78.99	1.78	3.110	0.070						◆			
82.27	1.78	3.239	0.070	◆					◆			
88.62	1.78	3.489	0.070	◆					◆			
91.69	1.78	3.610	0.070						◆			
94.97	1.78	3.739	0.070	◆					◆			
98.04	1.78	3.860	0.070						◆			
101.32	1.78	3.989	0.070	◆					◆			
104.39	1.78	4.110	0.070						◆			
107.67	1.78	4.239	0.070	◆					◆			
110.74	1.78	4.360	0.070						◆			
114.02	1.78	4.489	0.070	◆					◆			
117.09	1.78	4.610	0.070						◆			
120.37	1.78	4.739	0.070	◆					◆			
123.44	1.78	4.860	0.070						◆			
126.72	1.78	4.989	0.070	◆					◆			
129.41	1.78	5.095	0.070						◆			
133.07	1.78	5.239	0.070	◆					◆			
135.76	1.78	5.345	0.070						◆			
138.94	1.78	5.470	0.070						◆			
142.11	1.78	5.595	0.070						◆			
145.29	1.78	5.720	0.070						◆			
148.46	1.78	5.845	0.070						◆			
151.64	1.78	5.970	0.070						◆			
154.81	1.78	6.095	0.070						◆			
157.99	1.78	6.220	0.070						◆			
161.16	1.78	6.345	0.070						◆			
164.34	1.78	6.470	0.070						◆			
170.05	1.78	6.695	0.070						◆			
170.69	1.78	6.720	0.070						◆			
173.86	1.78	6.845	0.070						◆			
1.80	1.80	0.071	0.071		◆	◆	◆				◆	◆
2.00	1.80	0.079	0.071		◆	◆	◆				◆	◆
2.24	1.80	0.088	0.071		◆	◆	◆				◆	◆
2.50	1.80	0.098	0.071		◆	◆	◆				◆	◆
2.80	1.80	0.110	0.071		◆	◆	◆				◆	◆
3.15	1.80	0.124	0.071		◆	◆	◆				◆	◆
3.55	1.80	0.140	0.071		◆	◆	◆				◆	◆
3.75	1.80	0.148	0.071								◆	◆
4.00	1.80	0.157	0.071		◆	◆	◆				◆	◆
4.50	1.80	0.177	0.071		◆	◆	◆				◆	◆
4.75	1.80	0.187	0.071				◆					
4.87	1.80	0.192	0.071		◆	◆	◆				◆	◆
5.00	1.80	0.197	0.071		◆	◆	◆				◆	◆

ID (mm)	CS (mm)	ID (inch)	CS (inch)	AS568	ISO 3601 G	ISO 3601 A	DIN 377-1	BS 4518	BS 1806	JIS B 2401	NF T47-501 G	NF T47-501 A
5.15	1.80	0.203	0.071		◆	◆	◆				◆	◆
5.30	1.80	0.209	0.071		◆	◆	◆				◆	◆
5.60	1.80	0.220	0.071		◆	◆	◆				◆	◆
6.00	1.80	0.236	0.071		◆	◆	◆				◆	◆
6.30	1.80	0.248	0.071		◆	◆	◆				◆	◆
6.70	1.80	0.264	0.071		◆	◆	◆				◆	◆
6.90	1.80	0.272	0.071		◆	◆	◆				◆	◆
7.10	1.80	0.280	0.071		◆	◆	◆				◆	◆
7.50	1.80	0.295	0.071		◆	◆	◆				◆	◆
8.00	1.80	0.315	0.071		◆	◆	◆				◆	◆
8.50	1.80	0.335	0.071		◆	◆	◆				◆	◆
8.75	1.80	0.344	0.071		◆	◆	◆				◆	◆
9.00	1.80	0.354	0.071		◆	◆	◆				◆	◆
9.50	1.80	0.374	0.071		◆	◆	◆				◆	◆
9.75	1.80	0.384	0.071				◆					
10.00	1.80	0.394	0.071		◆	◆	◆				◆	◆
10.60	1.80	0.417	0.071		◆	◆	◆				◆	◆
11.20	1.80	0.441	0.071		◆	◆	◆				◆	◆
11.60	1.80	0.457	0.071				◆				◆	◆
11.80	1.80	0.465	0.071		◆	◆	◆				◆	◆
12.10	1.80	0.476	0.071				◆				◆	◆
12.50	1.80	0.492	0.071		◆	◆	◆				◆	◆
12.80	1.80	0.504	0.071				◆				◆	◆
13.20	1.80	0.520	0.071		◆	◆	◆				◆	◆
14.00	1.80	0.551	0.071		◆	◆	◆				◆	◆
14.50	1.80	0.571	0.071								◆	◆
15.00	1.80	0.591	0.071		◆	◆	◆				◆	◆
15.50	1.80	0.610	0.071								◆	◆
16.00	1.80	0.630	0.071		◆	◆	◆				◆	◆
17.00	1.80	0.669	0.071		◆	◆	◆				◆	◆
18.00	1.80	0.709	0.071			◆					◆	◆
19.00	1.80	0.748	0.071			◆					◆	◆
20.00	1.80	0.787	0.071			◆					◆	◆
20.60	1.80	0.811	0.071								◆	◆
21.20	1.80	0.835	0.071			◆					◆	◆
22.40	1.80	0.882	0.071			◆					◆	◆
23.60	1.80	0.929	0.071			◆					◆	◆
24.30	1.80	0.957	0.071								◆	◆
25.00	1.80	0.984	0.071			◆					◆	◆
25.80	1.80	1.016	0.071			◆					◆	◆
26.50	1.80	1.043	0.071			◆					◆	◆
27.30	1.80	1.075	0.071								◆	◆
28.00	1.80	1.102	0.071			◆					◆	◆
30.00	1.80	1.181	0.071			◆					◆	◆
31.50	1.80	1.240	0.071			◆					◆	◆
32.50	1.80	1.280	0.071			◆					◆	◆
33.50	1.80	1.319	0.071			◆					◆	◆
34.50	1.80	1.358	0.071			◆					◆	◆
35.50	1.80	1.398	0.071			◆					◆	◆

GLOBAL O-RING SIZE REFERENCE GUIDE

STANDARD SIZE MASTER LIST

Availability of sizes in each standard is indicated by a ◆ in the appropriate column.

ID (mm)	CS (mm)	ID (inch)	CS (inch)	AS568	ISO 3601 G	ISO 3601 A	DIN 377-1	BS 4518	BS 1806	JIS B 2401	NF T47-501 G	NF T47-501 A
36.50	1.80	1.437	0.071			◆					◆	◆
37.50	1.80	1.476	0.071			◆					◆	◆
38.70	1.80	1.524	0.071			◆					◆	◆
40.00	1.80	1.575	0.071			◆					◆	◆
41.20	1.80	1.622	0.071			◆					◆	◆
42.50	1.80	1.673	0.071			◆					◆	◆
43.70	1.80	1.720	0.071			◆					◆	◆
45.00	1.80	1.772	0.071			◆					◆	◆
46.20	1.80	1.819	0.071								◆	◆
47.50	1.80	1.870	0.071			◆					◆	◆
48.70	1.80	1.917	0.071								◆	◆
50.00	1.80	1.969	0.071			◆					◆	◆
53.00	1.80	2.087	0.071			◆					◆	◆
56.00	1.80	2.205	0.071			◆					◆	◆
60.00	1.80	2.362	0.071			◆					◆	◆
63.00	1.80	2.480	0.071			◆					◆	◆
67.00	1.80	2.638	0.071			◆					◆	◆
71.00	1.80	2.795	0.071			◆					◆	◆
75.00	1.80	2.953	0.071			◆					◆	◆
80.00	1.80	3.150	0.071			◆					◆	
85.00	1.80	3.346	0.071			◆					◆	
90.00	1.80	3.543	0.071			◆					◆	
95.00	1.80	3.740	0.071			◆					◆	
100.00	1.80	3.937	0.071			◆					◆	
106.00	1.80	4.173	0.071			◆					◆	
112.00	1.80	4.409	0.071			◆					◆	
118.00	1.80	4.646	0.071			◆					◆	
125.00	1.80	4.921	0.071			◆					◆	
8.92	1.83	0.351	0.072	◆								
10.52	1.83	0.414	0.072	◆								
2.80	1.90	0.110	0.075							◆		
3.80	1.90	0.150	0.075							◆		
4.80	1.90	0.189	0.075							◆		
5.80	1.90	0.228	0.075							◆		
6.80	1.90	0.268	0.075							◆		
7.80	1.90	0.307	0.075							◆		
8.80	1.90	0.346	0.075							◆		
9.80	1.90	0.386	0.075							◆		
11.89	1.98	0.468	0.078	◆								
13.46	2.08	0.530	0.082	◆								
16.36	2.21	0.644	0.087	◆								
9.80	2.40	0.386	0.094							◆		
10.80	2.40	0.425	0.094							◆		
11.00	2.40	0.433	0.094							◆		
11.80	2.40	0.465	0.094							◆		
12.30	2.40	0.484	0.094							◆		
13.80	2.40	0.543	0.094							◆		
14.80	2.40	0.583	0.094							◆		
15.80	2.40	0.622	0.094							◆		

ID (mm)	CS (mm)	ID (inch)	CS (inch)	AS568	ISO 3601 G	ISO 3601 A	DIN 377-1	BS 4518	BS 1806	JIS B 2401	NF T47-501 G	NF T47-501 A
17.80	2.40	0.701	0.094							◆		
19.80	2.40	0.780	0.094							◆		
20.80	2.40	0.819	0.094							◆		
21.80	2.40	0.858	0.094							◆		
39.60	2.40	1.559	0.094					◆				
41.60	2.40	1.638	0.094					◆				
44.60	2.40	1.756	0.094					◆				
45.60	2.40	1.795	0.094					◆				
47.60	2.40	1.874	0.094					◆				
49.60	2.40	1.953	0.094					◆				
51.60	2.40	2.031	0.094					◆				
54.60	2.40	2.150	0.094					◆				
55.60	2.40	2.189	0.094					◆				
57.60	2.40	2.268	0.094					◆				
58.60	2.40	2.307	0.094					◆				
59.60	2.40	2.346	0.094					◆				
61.60	2.40	2.425	0.094					◆				
62.60	2.40	2.465	0.094					◆				
64.60	2.40	2.543	0.094					◆				
67.60	2.40	2.661	0.094					◆				
69.60	2.40	2.740	0.094					◆				
17.93	2.46	0.706	0.097	◆								
19.18	2.46	0.755	0.097	◆								
1.24	2.62	0.049	0.103	◆					◆			
2.06	2.62	0.081	0.103	◆					◆			
2.84	2.62	0.112	0.103	◆					◆			
3.63	2.62	0.143	0.103	◆					◆			
4.42	2.62	0.174	0.103	◆					◆			
5.23	2.62	0.206	0.103	◆					◆			
6.02	2.62	0.237	0.103	◆					◆			
7.59	2.62	0.299	0.103	◆					◆			
9.19	2.62	0.362	0.103	◆					◆			
9.93	2.62	0.391	0.103						◆			
10.77	2.62	0.424	0.103	◆					◆			
11.91	2.62	0.469	0.103						◆			
12.37	2.62	0.487	0.103	◆					◆			
12.70	2.62	0.500	0.103						◆			
13.11	2.62	0.516	0.103						◆			
13.94	2.62	0.549	0.103	◆					◆			
15.09	2.62	0.594	0.103						◆			
15.54	2.62	0.612	0.103	◆					◆			
15.88	2.62	0.625	0.103						◆			
17.12	2.62	0.674	0.103	◆					◆			
17.45	2.62	0.687	0.103						◆			
17.86	2.62	0.703	0.103						◆			
18.72	2.62	0.737	0.103	◆					◆			
20.29	2.62	0.799	0.103	◆					◆			
20.62	2.62	0.812	0.103						◆			
21.89	2.62	0.862	0.103	◆					◆			

STANDARD SIZE MASTER LIST

Availability of sizes in each standard is indicated by a ◆ in the appropriate column.

ID (mm)	CS (mm)	ID (inch)	CS (inch)	AS568	ISO 3601 G	ISO 3601 A	DIN 377-1	BS 4518	BS 1806	JIS B 2401	NF T47-501 G	NF T47-501 A
22.23	2.62	0.875	0.103						◆			
23.47	2.62	0.924	0.103	◆					◆			
23.80	2.62	0.937	0.103						◆			
25.07	2.62	0.987	0.103	◆					◆			
26.64	2.62	1.049	0.103	◆					◆			
28.24	2.62	1.112	0.103	◆					◆			
29.82	2.62	1.174	0.103	◆					◆			
31.42	2.62	1.237	0.103	◆					◆			
32.99	2.62	1.299	0.103	◆					◆			
34.59	2.62	1.362	0.103	◆					◆			
36.17	2.62	1.424	0.103	◆					◆			
37.77	2.62	1.487	0.103	◆					◆			
39.34	2.62	1.549	0.103	◆					◆			
40.94	2.62	1.612	0.103	◆					◆			
42.52	2.62	1.674	0.103	◆					◆			
44.12	2.62	1.737	0.103	◆					◆			
45.69	2.62	1.799	0.103	◆					◆			
47.29	2.62	1.862	0.103	◆					◆			
48.90	2.62	1.925	0.103	◆					◆			
50.47	2.62	1.987	0.103	◆					◆			
52.07	2.62	2.050	0.103	◆					◆			
53.64	2.62	2.112	0.103	◆					◆			
55.25	2.62	2.175	0.103	◆					◆			
56.82	2.62	2.237	0.103	◆					◆			
58.42	2.62	2.300	0.103	◆					◆			
59.99	2.62	2.362	0.103	◆					◆			
61.60	2.62	2.425	0.103	◆					◆			
63.17	2.62	2.487	0.103	◆					◆			
64.77	2.62	2.550	0.103	◆					◆			
66.34	2.62	2.612	0.103	◆					◆			
67.95	2.62	2.675	0.103	◆					◆			
69.52	2.62	2.737	0.103	◆					◆			
71.12	2.62	2.800	0.103	◆					◆			
72.69	2.62	2.862	0.103	◆					◆			
74.27	2.62	2.924	0.103						◆			
75.87	2.62	2.987	0.103	◆					◆			
77.44	2.62	3.049	0.103						◆			
80.62	2.62	3.174	0.103						◆			
82.22	2.62	3.237	0.103	◆					◆			
83.79	2.62	3.299	0.103						◆			
88.57	2.62	3.487	0.103	◆					◆			
94.92	2.62	3.737	0.103	◆					◆			
101.27	2.62	3.987	0.103	◆					◆			
107.62	2.62	4.237	0.103	◆					◆			
113.97	2.62	4.487	0.103	◆					◆			
120.32	2.62	4.737	0.103	◆					◆			
126.67	2.62	4.987	0.103	◆					◆			
133.02	2.62	5.237	0.103	◆					◆			
139.37	2.62	5.487	0.103	◆					◆			

ID (mm)	CS (mm)	ID (inch)	CS (inch)	AS568	ISO 3601 G	ISO 3601 A	DIN 377-1	BS 4518	BS 1806	JIS B 2401	NF T47-501 G	NF T47-501 A
145.72	2.62	5.737	0.103	◆					◆			
152.07	2.62	5.987	0.103	◆					◆			
158.42	2.62	6.237	0.103	◆					◆			
164.77	2.62	6.487	0.103	◆					◆			
171.12	2.62	6.737	0.103	◆					◆			
177.47	2.62	6.987	0.103	◆					◆			
183.82	2.62	7.237	0.103	◆					◆			
190.17	2.62	7.487	0.103	◆					◆			
196.52	2.62	7.737	0.103	◆					◆			
202.87	2.62	7.987	0.103	◆					◆			
209.22	2.62	8.237	0.103	◆					◆			
215.57	2.62	8.487	0.103	◆					◆			
221.92	2.62	8.737	0.103	◆					◆			
228.27	2.62	8.987	0.103	◆					◆			
234.62	2.62	9.237	0.103	◆					◆			
240.97	2.62	9.487	0.103	◆					◆			
247.32	2.62	9.737	0.103	◆					◆			
4.50	2.65	0.177	0.104			◆					◆	◆
5.30	2.65	0.209	0.104			◆					◆	◆
6.00	2.65	0.236	0.104			◆					◆	◆
6.90	2.65	0.272	0.104			◆					◆	◆
8.00	2.65	0.315	0.104			◆					◆	◆
9.00	2.65	0.354	0.104			◆					◆	◆
9.50	2.65	0.374	0.104			◆					◆	◆
10.00	2.65	0.394	0.104			◆					◆	◆
10.60	2.65	0.417	0.104			◆					◆	◆
11.20	2.65	0.441	0.104			◆					◆	◆
11.60	2.65	0.457	0.104								◆	◆
11.80	2.65	0.465	0.104			◆					◆	◆
12.10	2.65	0.476	0.104								◆	◆
12.50	2.65	0.492	0.104			◆					◆	◆
12.80	2.65	0.504	0.104								◆	◆
13.20	2.65	0.520	0.104			◆					◆	◆
14.00	2.65	0.551	0.104		◆	◆	◆				◆	◆
14.50	2.65	0.571	0.104				◆				◆	◆
15.00	2.65	0.591	0.104		◆	◆	◆				◆	◆
15.50	2.65	0.610	0.104				◆				◆	◆
16.00	2.65	0.630	0.104		◆	◆	◆				◆	◆
17.00	2.65	0.669	0.104		◆	◆	◆				◆	◆
18.00	2.65	0.709	0.104		◆	◆	◆				◆	◆
19.00	2.65	0.748	0.104		◆	◆	◆				◆	◆
20.00	2.65	0.787	0.104		◆	◆	◆				◆	◆
20.60	2.65	0.811	0.104				◆				◆	◆
21.20	2.65	0.835	0.104		◆	◆	◆				◆	◆
22.40	2.65	0.882	0.104		◆	◆	◆				◆	◆
23.60	2.65	0.929	0.104		◆	◆	◆				◆	◆
24.30	2.65	0.957	0.104				◆				◆	◆
25.00	2.65	0.984	0.104		◆	◆	◆				◆	◆
25.80	2.65	1.016	0.104		◆	◆	◆				◆	◆

GLOBAL O-RING SIZE REFERENCE GUIDE

STANDARD SIZE MASTER LIST

Availability of sizes in each standard is indicated by a ◆ in the appropriate column.

ID (mm)	CS (mm)	ID (inch)	CS (inch)	AS568	ISO 3601 G	ISO 3601 A	DIN 377-1	BS 4518	BS 1806	JIS B 2401	NF T47-501 G	NF T47-501 A
26.50	2.65	1.043	0.104		◆	◆	◆				◆	◆
27.30	2.65	1.075	0.104				◆				◆	◆
28.00	2.65	1.102	0.104		◆	◆	◆				◆	◆
30.00	2.65	1.181	0.104		◆	◆	◆				◆	◆
31.50	2.65	1.240	0.104		◆	◆	◆				◆	◆
32.50	2.65	1.280	0.104		◆	◆	◆				◆	◆
33.50	2.65	1.319	0.104		◆	◆	◆				◆	◆
34.50	2.65	1.358	0.104		◆	◆	◆				◆	◆
35.50	2.65	1.398	0.104		◆	◆	◆				◆	◆
36.50	2.65	1.437	0.104		◆	◆	◆				◆	◆
37.50	2.65	1.476	0.104		◆	◆	◆				◆	◆
38.70	2.65	1.524	0.104		◆	◆	◆				◆	◆
40.00	2.65	1.575	0.104			◆					◆	◆
41.20	2.65	1.622	0.104			◆					◆	◆
42.50	2.65	1.673	0.104			◆					◆	◆
43.70	2.65	1.720	0.104			◆					◆	◆
45.00	2.65	1.772	0.104			◆					◆	◆
46.20	2.65	1.819	0.104			◆					◆	◆
47.50	2.65	1.870	0.104			◆					◆	◆
48.70	2.65	1.917	0.104			◆					◆	◆
50.00	2.65	1.969	0.104			◆					◆	◆
51.50	2.65	2.028	0.104			◆					◆	◆
53.00	2.65	2.087	0.104			◆					◆	◆
54.50	2.65	2.146	0.104			◆					◆	◆
56.00	2.65	2.205	0.104			◆					◆	◆
58.00	2.65	2.283	0.104			◆					◆	◆
60.00	2.65	2.362	0.104			◆					◆	◆
61.50	2.65	2.421	0.104			◆					◆	◆
63.00	2.65	2.480	0.104			◆					◆	◆
65.00	2.65	2.559	0.104			◆					◆	◆
67.00	2.65	2.638	0.104			◆					◆	◆
69.00	2.65	2.717	0.104			◆					◆	◆
71.00	2.65	2.795	0.104			◆					◆	◆
73.00	2.65	2.874	0.104			◆					◆	◆
75.00	2.65	2.953	0.104			◆					◆	◆
77.50	2.65	3.051	0.104								◆	◆
80.00	2.65	3.150	0.104			◆					◆	◆
82.50	2.65	3.248	0.104								◆	◆
85.00	2.65	3.346	0.104			◆					◆	◆
87.50	2.65	3.445	0.104								◆	◆
90.00	2.65	3.543	0.104			◆					◆	◆
92.50	2.65	3.642	0.104								◆	◆
95.00	2.65	3.740	0.104			◆					◆	◆
97.50	2.65	3.839	0.104								◆	◆
100.00	2.65	3.937	0.104			◆					◆	◆
106.00	2.65	4.173	0.104			◆					◆	◆
112.00	2.65	4.409	0.104			◆					◆	◆
118.00	2.65	4.646	0.104			◆					◆	◆
125.00	2.65	4.921	0.104			◆					◆	◆

ID (mm)	CS (mm)	ID (inch)	CS (inch)	AS568	ISO 3601 G	ISO 3601 A	DIN 377-1	BS 4518	BS 1806	JIS B 2401	NF T47-501 G	NF T47-501 A
132.00	2.65	5.197	0.104			◆					◆	
140.00	2.65	5.512	0.104			◆					◆	
150.00	2.65	5.906	0.104			◆					◆	
157.50	2.65	6.201	0.104								◆	◆
160.00	2.65	6.299	0.104			◆					◆	
170.00	2.65	6.693	0.104			◆					◆	
180.00	2.65	7.087	0.104			◆					◆	
190.00	2.65	7.480	0.104			◆					◆	
200.00	2.65	7.874	0.104			◆					◆	
212.00	2.65	8.346	0.104			◆					◆	
224.00	2.65	8.819	0.104			◆					◆	
230.00	2.65	9.055	0.104			◆					◆	
236.00	2.65	9.291	0.104			◆					◆	
243.00	2.65	9.567	0.104			◆					◆	
250.00	2.65	9.843	0.104			◆					◆	
21.92	2.95	0.863	0.116	◆								
23.47	2.95	0.924	0.116	◆								
25.04	2.95	0.986	0.116	◆								
26.59	2.95	1.047	0.116	◆								
29.74	2.95	1.171	0.116	◆								
34.42	2.95	1.355	0.116	◆								
19.50	3.00	0.768	0.118					◆				
21.50	3.00	0.846	0.118					◆				
22.50	3.00	0.886	0.118					◆				
24.50	3.00	0.965	0.118					◆				
25.50	3.00	1.004	0.118					◆				
26.50	3.00	1.043	0.118					◆				
27.50	3.00	1.083	0.118					◆				
29.50	3.00	1.161	0.118					◆				
32.50	3.00	1.280	0.118					◆				
34.50	3.00	1.358	0.118					◆				
35.50	3.00	1.398	0.118					◆				
36.50	3.00	1.437	0.118					◆				
37.47	3.00	1.475	0.118	◆								
37.50	3.00	1.476	0.118					◆				
39.50	3.00	1.555	0.118					◆				
41.50	3.00	1.634	0.118					◆				
42.50	3.00	1.673	0.118					◆				
43.69	3.00	1.720	0.118	◆								
44.50	3.00	1.752	0.118					◆				
49.50	3.00	1.949	0.118					◆				
53.09	3.00	2.090	0.118	◆								
54.50	3.00	2.146	0.118					◆				
55.50	3.00	2.185	0.118					◆				
57.50	3.00	2.264	0.118					◆				
59.36	3.00	2.337	0.118	◆								
59.50	3.00	2.343	0.118					◆				
62.50	3.00	2.461	0.118					◆				
64.50	3.00	2.539	0.118					◆				

STANDARD SIZE MASTER LIST

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ID (mm)	CS (mm)	ID (inch)	CS (inch)	AS568	ISO 3601 G	ISO 3601 A	DIN 377-1	BS 4518	BS 1806	JIS B 2401	NF T47-501 G	NF T47-501 A
69.50	3.00	2.736	0.118					◆				
74.50	3.00	2.933	0.118					◆				
79.50	3.00	3.130	0.118					◆				
84.50	3.00	3.327	0.118					◆				
89.50	3.00	3.524	0.118					◆				
94.50	3.00	3.720	0.118					◆				
99.50	3.00	3.917	0.118					◆				
104.50	3.00	4.114	0.118					◆				
109.50	3.00	4.311	0.118					◆				
114.50	3.00	4.508	0.118					◆				
119.50	3.00	4.705	0.118					◆				
124.50	3.00	4.902	0.118					◆				
129.50	3.00	5.098	0.118					◆				
134.50	3.00	5.295	0.118					◆				
139.50	3.00	5.492	0.118					◆				
144.50	3.00	5.689	0.118					◆				
149.50	3.00	5.886	0.118					◆				
154.50	3.00	6.083	0.118					◆				
159.50	3.00	6.280	0.118					◆				
164.50	3.00	6.476	0.118					◆				
169.50	3.00	6.673	0.118					◆				
174.50	3.00	6.870	0.118					◆				
179.50	3.00	7.067	0.118					◆				
184.50	3.00	7.264	0.118					◆				
189.50	3.00	7.461	0.118					◆				
194.50	3.00	7.657	0.118					◆				
199.50	3.00	7.854	0.118					◆				
209.50	3.00	8.248	0.118					◆				
219.50	3.00	8.642	0.118					◆				
229.50	3.00	9.035	0.118					◆				
239.50	3.00	9.429	0.118					◆				
244.50	3.00	9.626	0.118					◆				
249.50	3.00	9.823	0.118					◆				
24.40	3.10	0.961	0.122							◆		
29.40	3.10	1.157	0.122							◆		
34.40	3.10	1.354	0.122							◆		
39.40	3.10	1.551	0.122							◆		
44.40	3.10	1.748	0.122							◆		
49.40	3.10	1.945	0.122							◆		
54.40	3.10	2.142	0.122							◆		
59.40	3.10	2.339	0.122							◆		
64.40	3.10	2.535	0.122							◆		
69.40	3.10	2.732	0.122							◆		
74.40	3.10	2.929	0.122							◆		
79.40	3.10	3.126	0.122							◆		
84.40	3.10	3.323	0.122							◆		
89.40	3.10	3.520	0.122							◆		
94.40	3.10	3.717	0.122							◆		
99.40	3.10	3.913	0.122							◆		

ID (mm)	CS (mm)	ID (inch)	CS (inch)	AS568	ISO 3601 G	ISO 3601 A	DIN 377-1	BS 4518	BS 1806	JIS B 2401	NF T47-501 G	NF T47-501 A
104.40	3.10	4.110	0.122							◆		
109.40	3.10	4.307	0.122							◆		
114.40	3.10	4.504	0.122							◆		
119.40	3.10	4.701	0.122							◆		
124.40	3.10	4.898	0.122							◆		
129.40	3.10	5.094	0.122							◆		
134.40	3.10	5.291	0.122							◆		
139.40	3.10	5.488	0.122							◆		
144.40	3.10	5.685	0.122							◆		
21.70	3.50	0.854	0.138							◆		
22.10	3.50	0.870	0.138							◆		
23.70	3.50	0.933	0.138							◆		
24.70	3.50	0.972	0.138							◆		
25.20	3.50	0.992	0.138							◆		
25.70	3.50	1.012	0.138							◆		
27.70	3.50	1.091	0.138							◆		
28.70	3.50	1.130	0.138							◆		
29.20	3.50	1.150	0.138							◆		
29.70	3.50	1.169	0.138							◆		
30.70	3.50	1.209	0.138							◆		
31.20	3.50	1.228	0.138							◆		
31.70	3.50	1.248	0.138							◆		
33.70	3.50	1.327	0.138							◆		
34.70	3.50	1.366	0.138							◆		
35.20	3.50	1.386	0.138							◆		
35.70	3.50	1.406	0.138							◆		
37.70	3.50	1.484	0.138							◆		
38.70	3.50	1.524	0.138							◆		
39.70	3.50	1.563	0.138							◆		
40.70	3.50	1.602	0.138							◆		
41.70	3.50	1.642	0.138							◆		
43.70	3.50	1.720	0.138							◆		
44.70	3.50	1.760	0.138							◆		
45.70	3.50	1.799	0.138							◆		
47.70	3.50	1.878	0.138							◆		
48.70	3.50	1.917	0.138							◆		
49.70	3.50	1.957	0.138							◆		
4.34	3.53	0.171	0.139	◆					◆			
5.94	3.53	0.234	0.139	◆					◆			
7.52	3.53	0.296	0.139	◆					◆			
9.12	3.53	0.359	0.139	◆					◆			
10.69	3.53	0.421	0.139	◆					◆			
12.29	3.53	0.484	0.139	◆					◆			
13.87	3.53	0.546	0.139	◆					◆			
15.47	3.53	0.609	0.139	◆					◆			
17.04	3.53	0.671	0.139	◆					◆			
18.64	3.53	0.734	0.139	◆					◆			
20.22	3.53	0.796	0.139	◆					◆			
21.82	3.53	0.859	0.139	◆					◆			

GLOBAL O-RING SIZE REFERENCE GUIDE

STANDARD SIZE MASTER LIST

Availability of sizes in each standard is indicated by a ◆ in the appropriate column.

ID (mm)	CS (mm)	ID (inch)	CS (inch)	AS568	ISO 3601 G	ISO 3601 A	DIN 377-1	BS 4518	BS 1806	JIS B 2401	NF T47-501 G	NF T47-501 A
23.39	3.53	0.921	0.139	◆					◆			
24.99	3.53	0.984	0.139	◆					◆			
25.81	3.53	1.016	0.139						◆			
26.57	3.53	1.046	0.139	◆					◆			
28.17	3.53	1.109	0.139	◆					◆			
29.74	3.53	1.171	0.139	◆					◆			
31.34	3.53	1.234	0.139	◆					◆			
32.92	3.53	1.296	0.139	◆					◆			
34.52	3.53	1.359	0.139	◆					◆			
36.09	3.53	1.421	0.139	◆					◆			
37.69	3.53	1.484	0.139	◆					◆			
39.70	3.53	1.563	0.139						◆			
40.87	3.53	1.609	0.139	◆					◆			
41.28	3.53	1.625	0.139						◆			
42.85	3.53	1.687	0.139						◆			
44.04	3.53	1.734	0.139	◆					◆			
44.45	3.53	1.750	0.139						◆			
46.02	3.53	1.812	0.139						◆			
47.22	3.53	1.859	0.139	◆					◆			
47.63	3.53	1.875	0.139						◆			
49.20	3.53	1.937	0.139						◆			
50.39	3.53	1.984	0.139	◆					◆			
50.80	3.53	2.000	0.139						◆			
52.37	3.53	2.062	0.139						◆			
53.57	3.53	2.109	0.139	◆					◆			
53.98	3.53	2.125	0.139						◆			
55.55	3.53	2.187	0.139						◆			
56.74	3.53	2.234	0.139	◆					◆			
57.15	3.53	2.250	0.139						◆			
58.72	3.53	2.312	0.139						◆			
59.92	3.53	2.359	0.139	◆					◆			
60.33	3.53	2.375	0.139						◆			
61.90	3.53	2.437	0.139						◆			
63.09	3.53	2.484	0.139	◆					◆			
63.50	3.53	2.500	0.139						◆			
65.10	3.53	2.563	0.139						◆			
66.27	3.53	2.609	0.139	◆					◆			
66.68	3.53	2.625	0.139						◆			
68.25	3.53	2.687	0.139						◆			
69.44	3.53	2.734	0.139	◆					◆			
69.85	3.53	2.750	0.139						◆			
71.42	3.53	2.812	0.139						◆			
72.62	3.53	2.859	0.139	◆					◆			
73.03	3.53	2.875	0.139						◆			
74.60	3.53	2.937	0.139						◆			
75.79	3.53	2.984	0.139	◆					◆			
78.97	3.53	3.109	0.139	◆					◆			
82.14	3.53	3.234	0.139	◆					◆			
85.32	3.53	3.359	0.139	◆					◆			
88.49	3.53	3.484	0.139	◆					◆			
91.67	3.53	3.609	0.139	◆					◆			
94.84	3.53	3.734	0.139	◆					◆			
98.02	3.53	3.859	0.139	◆					◆			
101.19	3.53	3.984	0.139	◆					◆			
104.37	3.53	4.109	0.139	◆					◆			
107.54	3.53	4.234	0.139	◆					◆			
110.72	3.53	4.359	0.139	◆					◆			
113.89	3.53	4.484	0.139	◆					◆			
117.07	3.53	4.609	0.139	◆					◆			
120.24	3.53	4.734	0.139	◆					◆			
123.42	3.53	4.859	0.139	◆					◆			
126.59	3.53	4.984	0.139	◆					◆			
129.77	3.53	5.109	0.139	◆					◆			
132.94	3.53	5.234	0.139	◆					◆			
136.12	3.53	5.359	0.139	◆					◆			
139.29	3.53	5.484	0.139	◆					◆			
142.47	3.53	5.609	0.139	◆					◆			
145.64	3.53	5.734	0.139	◆					◆			
148.82	3.53	5.859	0.139	◆					◆			
151.99	3.53	5.984	0.139	◆					◆			
158.34	3.53	6.234	0.139	◆					◆			
164.69	3.53	6.484	0.139	◆					◆			
171.04	3.53	6.734	0.139	◆					◆			
177.39	3.53	6.984	0.139	◆					◆			
183.74	3.53	7.234	0.139	◆					◆			
190.09	3.53	7.484	0.139	◆					◆			
196.44	3.53	7.734	0.139	◆					◆			
202.79	3.53	7.984	0.139	◆					◆			
209.14	3.53	8.234	0.139	◆					◆			
215.49	3.53	8.484	0.139	◆					◆			
221.84	3.53	8.734	0.139	◆					◆			
228.19	3.53	8.984	0.139	◆					◆			
234.54	3.53	9.234	0.139	◆					◆			
240.89	3.53	9.484	0.139	◆					◆			
247.24	3.53	9.734	0.139	◆					◆			
253.59	3.53	9.984	0.139	◆					◆			
266.29	3.53	10.484	0.139	◆					◆			
278.99	3.53	10.984	0.139	◆					◆			
291.69	3.53	11.484	0.139	◆					◆			
304.39	3.53	11.984	0.139	◆					◆			
329.79	3.53	12.984	0.139	◆					◆			
355.19	3.53	13.984	0.139	◆					◆			
380.59	3.53	14.984	0.139	◆					◆			
405.26	3.53	15.955	0.139	◆								
430.66	3.53	16.955	0.139	◆								
456.06	3.53	17.955	0.139	◆								
14.00	3.55	0.551	0.140			◆					◆	◆
14.50	3.55	0.571	0.140								◆	◆

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ID (mm)	CS (mm)	ID (inch)	CS (inch)	AS568	ISO 3601 G	ISO 3601 A	DIN 377-1	BS 4518	BS 1806	JIS B 2401	NF T47-501 G	NF T47-501 A
15.00	3.55	0.591	0.140			◆					◆	◆
15.50	3.55	0.610	0.140								◆	◆
16.00	3.55	0.630	0.140			◆					◆	◆
17.00	3.55	0.669	0.140			◆					◆	◆
18.00	3.55	0.709	0.140		◆	◆	◆				◆	◆
19.00	3.55	0.748	0.140		◆	◆	◆				◆	◆
20.00	3.55	0.787	0.140		◆	◆	◆				◆	◆
20.60	3.55	0.811	0.140				◆				◆	◆
21.20	3.55	0.835	0.140		◆	◆	◆				◆	◆
22.40	3.55	0.882	0.140		◆	◆	◆				◆	◆
23.60	3.55	0.929	0.140		◆	◆	◆				◆	◆
24.30	3.55	0.957	0.140				◆				◆	◆
25.00	3.55	0.984	0.140		◆	◆	◆				◆	◆
25.80	3.55	1.016	0.140		◆	◆	◆				◆	◆
26.50	3.55	1.043	0.140		◆	◆	◆				◆	◆
27.30	3.55	1.075	0.140				◆				◆	◆
28.00	3.55	1.102	0.140		◆	◆	◆				◆	◆
30.00	3.55	1.181	0.140		◆	◆	◆				◆	◆
31.50	3.55	1.240	0.140		◆	◆	◆				◆	◆
32.50	3.55	1.280	0.140		◆	◆	◆				◆	◆
33.50	3.55	1.319	0.140		◆	◆	◆				◆	◆
34.50	3.55	1.358	0.140		◆	◆	◆				◆	◆
35.50	3.55	1.398	0.140		◆	◆	◆				◆	◆
36.50	3.55	1.437	0.140		◆	◆	◆				◆	◆
37.50	3.55	1.476	0.140		◆	◆	◆				◆	◆
38.70	3.55	1.524	0.140		◆	◆	◆				◆	◆
40.00	3.55	1.575	0.140		◆	◆	◆				◆	◆
41.20	3.55	1.622	0.140		◆	◆	◆				◆	◆
42.50	3.55	1.673	0.140		◆	◆	◆				◆	◆
43.70	3.55	1.720	0.140		◆	◆	◆				◆	◆
45.00	3.55	1.772	0.140		◆	◆	◆				◆	◆
46.20	3.55	1.819	0.140		◆	◆	◆				◆	◆
47.50	3.55	1.870	0.140		◆	◆	◆				◆	◆
48.70	3.55	1.917	0.140		◆	◆	◆				◆	◆
50.00	3.55	1.969	0.140		◆	◆	◆				◆	◆
51.50	3.55	2.028	0.140		◆	◆	◆				◆	◆
53.00	3.55	2.087	0.140		◆	◆	◆				◆	◆
54.50	3.55	2.146	0.140		◆	◆	◆				◆	◆
56.00	3.55	2.205	0.140		◆	◆	◆				◆	◆
58.00	3.55	2.283	0.140		◆	◆	◆				◆	◆
60.00	3.55	2.362	0.140		◆	◆	◆				◆	◆
61.50	3.55	2.421	0.140		◆	◆	◆				◆	◆
63.00	3.55	2.480	0.140		◆	◆	◆				◆	◆
65.00	3.55	2.559	0.140		◆	◆	◆				◆	◆
67.00	3.55	2.638	0.140		◆	◆	◆				◆	◆
69.00	3.55	2.717	0.140		◆	◆	◆				◆	◆
71.00	3.55	2.795	0.140		◆	◆	◆				◆	◆
73.00	3.55	2.874	0.140		◆	◆	◆				◆	◆
75.00	3.55	2.953	0.140		◆	◆	◆				◆	◆
77.50	3.55	3.051	0.140		◆	◆	◆				◆	◆
80.00	3.55	3.150	0.140		◆	◆	◆				◆	◆
82.50	3.55	3.248	0.140		◆	◆	◆				◆	◆
85.00	3.55	3.346	0.140		◆	◆	◆				◆	◆
87.50	3.55	3.445	0.140		◆	◆	◆				◆	◆
90.00	3.55	3.543	0.140		◆	◆	◆				◆	◆
92.50	3.55	3.642	0.140		◆	◆	◆				◆	◆
95.00	3.55	3.740	0.140		◆	◆	◆				◆	◆
97.50	3.55	3.839	0.140		◆	◆	◆				◆	◆
100.00	3.55	3.937	0.140		◆	◆	◆				◆	◆
103.00	3.55	4.055	0.140		◆	◆	◆				◆	◆
106.00	3.55	4.173	0.140		◆	◆	◆				◆	◆
109.00	3.55	4.291	0.140		◆	◆	◆				◆	◆
112.00	3.55	4.409	0.140		◆	◆	◆				◆	◆
115.00	3.55	4.528	0.140		◆	◆	◆				◆	◆
118.00	3.55	4.646	0.140		◆	◆	◆				◆	◆
122.00	3.55	4.803	0.140		◆	◆	◆				◆	◆
125.00	3.55	4.921	0.140		◆	◆	◆				◆	◆
128.00	3.55	5.039	0.140		◆	◆	◆				◆	◆
132.00	3.55	5.197	0.140		◆	◆	◆				◆	◆
136.00	3.55	5.354	0.140		◆	◆	◆				◆	◆
140.00	3.55	5.512	0.140		◆	◆	◆				◆	◆
142.50	3.55	5.610	0.140								◆	◆
145.00	3.55	5.709	0.140		◆	◆	◆				◆	◆
147.50	3.55	5.807	0.140				◆				◆	◆
150.00	3.55	5.906	0.140		◆	◆	◆				◆	◆
152.50	3.55	6.004	0.140				◆				◆	◆
155.00	3.55	6.102	0.140		◆	◆	◆				◆	◆
157.50	3.55	6.201	0.140				◆				◆	◆
160.00	3.55	6.299	0.140		◆	◆	◆				◆	◆
162.50	3.55	6.398	0.140				◆				◆	◆
165.00	3.55	6.496	0.140		◆	◆	◆				◆	◆
167.50	3.55	6.594	0.140				◆				◆	◆
170.00	3.55	6.693	0.140		◆	◆	◆				◆	◆
172.50	3.55	6.791	0.140				◆				◆	◆
175.00	3.55	6.890	0.140		◆	◆	◆				◆	◆
177.50	3.55	6.988	0.140				◆				◆	◆
180.00	3.55	7.087	0.140		◆	◆	◆				◆	◆
182.50	3.55	7.185	0.140				◆				◆	◆
185.00	3.55	7.283	0.140		◆	◆	◆				◆	◆
187.50	3.55	7.382	0.140				◆				◆	◆
190.00	3.55	7.480	0.140		◆	◆	◆				◆	◆
195.00	3.55	7.677	0.140		◆	◆	◆				◆	◆
200.00	3.55	7.874	0.140		◆	◆	◆				◆	◆
206.00	3.55	8.110	0.140								◆	◆
212.00	3.55	8.346	0.140			◆					◆	◆
218.00	3.55	8.583	0.140			◆					◆	◆
224.00	3.55	8.819	0.140			◆					◆	◆
230.00	3.55	9.055	0.140			◆					◆	

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236.00	3.55	9.291	0.140			◆					◆	
243.00	3.55	9.567	0.140								◆	
250.00	3.55	9.843	0.140			◆					◆	
258.00	3.55	10.157	0.140			◆					◆	
265.00	3.55	10.433	0.140			◆					◆	
272.00	3.55	10.709	0.140								◆	
280.00	3.55	11.024	0.140			◆					◆	
290.00	3.55	11.417	0.140			◆					◆	
300.00	3.55	11.811	0.140			◆					◆	
307.00	3.55	12.087	0.140			◆					◆	
315.00	3.55	12.402	0.140			◆					◆	
335.00	3.55	13.189	0.140			◆					◆	
345.00	3.55	13.583	0.140								◆	
355.00	3.55	13.976	0.140			◆					◆	
14.50	4.00	0.571	0.157							◆		
23.50	4.00	0.925	0.157							◆		
33.50	4.00	1.319	0.157							◆		
39.50	4.00	1.555	0.157							◆		
54.50	4.00	2.146	0.157							◆		
69.00	4.00	2.717	0.157							◆		
84.00	4.00	3.307	0.157							◆		
99.00	4.00	3.898	0.157							◆		
119.00	4.00	4.685	0.157							◆		
148.50	4.00	5.846	0.157							◆		
173.00	4.00	6.811	0.157							◆		
37.50	5.30	1.476	0.209			◆					◆	◆
38.70	5.30	1.524	0.209			◆					◆	◆
40.00	5.30	1.575	0.209		◆	◆	◆				◆	◆
41.20	5.30	1.622	0.209		◆	◆	◆				◆	◆
42.50	5.30	1.673	0.209		◆	◆	◆				◆	◆
43.70	5.30	1.720	0.209		◆	◆	◆				◆	◆
45.00	5.30	1.772	0.209		◆	◆	◆				◆	◆
46.20	5.30	1.819	0.209		◆	◆	◆				◆	◆
47.50	5.30	1.870	0.209		◆	◆	◆				◆	◆
48.70	5.30	1.917	0.209		◆	◆	◆				◆	◆
50.00	5.30	1.969	0.209		◆	◆	◆				◆	◆
51.50	5.30	2.028	0.209		◆	◆	◆				◆	◆
53.00	5.30	2.087	0.209		◆	◆	◆				◆	◆
54.50	5.30	2.146	0.209		◆	◆	◆				◆	◆
56.00	5.30	2.205	0.209		◆	◆	◆				◆	◆
58.00	5.30	2.283	0.209		◆	◆	◆				◆	◆
60.00	5.30	2.362	0.209		◆	◆	◆				◆	◆
61.50	5.30	2.421	0.209		◆	◆	◆				◆	◆
63.00	5.30	2.480	0.209		◆	◆	◆				◆	◆
65.00	5.30	2.559	0.209		◆	◆	◆				◆	◆
67.00	5.30	2.638	0.209		◆	◆	◆				◆	◆
69.00	5.30	2.717	0.209		◆	◆	◆				◆	◆
71.00	5.30	2.795	0.209		◆	◆	◆				◆	◆
73.00	5.30	2.874	0.209		◆	◆	◆				◆	◆

ID (mm)	CS (mm)	ID (inch)	CS (inch)	AS568	ISO 3601 G	ISO 3601 A	DIN 377-1	BS 4518	BS 1806	JIS B 2401	NF T47-501 G	NF T47-501 A
75.00	5.30	2.953	0.209		◆	◆	◆				◆	◆
77.50	5.30	3.051	0.209		◆	◆	◆				◆	◆
80.00	5.30	3.150	0.209		◆	◆	◆				◆	◆
82.50	5.30	3.248	0.209		◆	◆	◆				◆	◆
85.00	5.30	3.346	0.209		◆	◆	◆				◆	◆
87.50	5.30	3.445	0.209		◆	◆	◆				◆	◆
90.00	5.30	3.543	0.209		◆	◆	◆				◆	◆
92.50	5.30	3.642	0.209		◆	◆	◆				◆	◆
95.00	5.30	3.740	0.209		◆	◆	◆				◆	◆
97.50	5.30	3.839	0.209		◆	◆	◆				◆	◆
100.00	5.30	3.937	0.209		◆	◆	◆				◆	◆
103.00	5.30	4.055	0.209		◆	◆	◆				◆	◆
106.00	5.30	4.173	0.209		◆	◆	◆				◆	◆
109.00	5.30	4.291	0.209		◆	◆	◆				◆	◆
112.00	5.30	4.409	0.209		◆	◆	◆				◆	◆
115.00	5.30	4.528	0.209		◆	◆	◆				◆	◆
118.00	5.30	4.646	0.209		◆	◆	◆				◆	◆
122.00	5.30	4.803	0.209		◆	◆	◆				◆	◆
125.00	5.30	4.921	0.209		◆	◆	◆				◆	◆
128.00	5.30	5.039	0.209		◆	◆	◆				◆	◆
132.00	5.30	5.197	0.209		◆	◆	◆				◆	◆
136.00	5.30	5.354	0.209		◆	◆	◆				◆	◆
140.00	5.30	5.512	0.209		◆	◆	◆				◆	◆
142.50	5.30	5.610	0.209								◆	◆
145.00	5.30	5.709	0.209		◆	◆	◆				◆	◆
147.50	5.30	5.807	0.209				◆				◆	◆
150.00	5.30	5.906	0.209		◆	◆	◆				◆	◆
152.50	5.30	6.004	0.209								◆	◆
155.00	5.30	6.102	0.209		◆	◆	◆				◆	◆
157.50	5.30	6.201	0.209				◆					
160.00	5.30	6.299	0.209		◆	◆	◆				◆	◆
162.50	5.30	6.398	0.209								◆	◆
165.00	5.30	6.496	0.209		◆	◆	◆				◆	◆
167.50	5.30	6.594	0.209								◆	◆
170.00	5.30	6.693	0.209		◆	◆	◆				◆	◆
172.50	5.30	6.791	0.209								◆	◆
175.00	5.30	6.890	0.209		◆	◆	◆				◆	◆
177.50	5.30	6.988	0.209								◆	◆
180.00	5.30	7.087	0.209		◆	◆	◆				◆	◆
182.50	5.30	7.185	0.209				◆				◆	◆
185.00	5.30	7.283	0.209		◆	◆	◆				◆	◆
187.50	5.30	7.382	0.209				◆				◆	◆
190.00	5.30	7.480	0.209		◆	◆	◆				◆	◆
195.00	5.30	7.677	0.209		◆	◆	◆				◆	◆
200.00	5.30	7.874	0.209		◆	◆	◆				◆	◆
203.00	5.30	7.992	0.209								◆	◆
206.00	5.30	8.110	0.209		◆		◆				◆	◆
212.00	5.30	8.346	0.209		◆		◆				◆	◆
218.00	5.30	8.583	0.209		◆		◆				◆	◆

STANDARD SIZE MASTER LIST

Availability of sizes in each standard is indicated by a ◆ in the appropriate column.

ID (mm)	CS (mm)	ID (inch)	CS (inch)	AS568	ISO 3601 G	ISO 3601 A	DIN 377-1	BS 4518	BS 1806	JIS B 2401	NF T47-501 G	NF T47-501 A
224.00	5.30	8.819	0.209		◆		◆				◆	◆
227.00	5.30	8.937	0.209				◆				◆	◆
230.00	5.30	9.055	0.209		◆		◆				◆	◆
236.00	5.30	9.291	0.209		◆		◆				◆	◆
239.00	5.30	9.409	0.209				◆				◆	◆
243.00	5.30	9.567	0.209		◆		◆				◆	◆
250.00	5.30	9.843	0.209		◆		◆				◆	◆
254.00	5.30	10.000	0.209				◆				◆	◆
258.00	5.30	10.157	0.209		◆		◆				◆	◆
261.00	5.30	10.276	0.209				◆				◆	◆
265.00	5.30	10.433	0.209		◆		◆				◆	◆
268.00	5.30	10.551	0.209				◆				◆	◆
272.00	5.30	10.709	0.209		◆		◆				◆	◆
276.00	5.30	10.866	0.209				◆				◆	◆
280.00	5.30	11.024	0.209		◆		◆				◆	◆
283.00	5.30	11.142	0.209				◆				◆	◆
286.00	5.30	11.260	0.209				◆				◆	◆
290.00	5.30	11.417	0.209		◆		◆				◆	◆
295.00	5.30	11.614	0.209				◆				◆	◆
300.00	5.30	11.811	0.209		◆		◆				◆	◆
303.00	5.30	11.929	0.209				◆				◆	
307.00	5.30	12.087	0.209		◆		◆				◆	
311.00	5.30	12.244	0.209				◆				◆	
315.00	5.30	12.402	0.209		◆		◆				◆	
320.00	5.30	12.598	0.209				◆				◆	
325.00	5.30	12.795	0.209		◆		◆				◆	
330.00	5.30	12.992	0.209				◆				◆	
335.00	5.30	13.189	0.209		◆		◆				◆	
340.00	5.30	13.386	0.209				◆				◆	
345.00	5.30	13.583	0.209		◆		◆				◆	
350.00	5.30	13.780	0.209				◆				◆	
355.00	5.30	13.976	0.209		◆		◆				◆	
360.00	5.30	14.173	0.209				◆				◆	
365.00	5.30	14.370	0.209		◆		◆				◆	
370.00	5.30	14.567	0.209				◆				◆	
375.00	5.30	14.764	0.209		◆		◆				◆	
379.00	5.30	14.921	0.209				◆				◆	
383.00	5.30	15.079	0.209				◆				◆	
387.00	5.30	15.236	0.209		◆		◆				◆	
391.00	5.30	15.394	0.209				◆				◆	
395.00	5.30	15.551	0.209				◆				◆	
400.00	5.30	15.748	0.209		◆		◆				◆	
10.46	5.33	0.412	0.210	◆					◆			
12.07	5.33	0.475	0.210	◆					◆			
13.64	5.33	0.537	0.210	◆					◆			
15.24	5.33	0.600	0.210	◆					◆			
16.81	5.33	0.662	0.210	◆					◆			
18.42	5.33	0.725	0.210	◆					◆			
19.99	5.33	0.787	0.210	◆					◆			

ID (mm)	CS (mm)	ID (inch)	CS (inch)	AS568	ISO 3601 G	ISO 3601 A	DIN 377-1	BS 4518	BS 1806	JIS B 2401	NF T47-501 G	NF T47-501 A
21.59	5.33	0.850	0.210	◆					◆			
23.16	5.33	0.912	0.210	◆					◆			
24.77	5.33	0.975	0.210	◆					◆			
26.34	5.33	1.037	0.210	◆					◆			
27.94	5.33	1.100	0.210	◆					◆			
29.51	5.33	1.162	0.210	◆					◆			
31.12	5.33	1.225	0.210	◆					◆			
32.69	5.33	1.287	0.210	◆					◆			
34.29	5.33	1.350	0.210	◆					◆			
37.47	5.33	1.475	0.210	◆					◆			
40.64	5.33	1.600	0.210	◆					◆			
43.82	5.33	1.725	0.210	◆					◆			
46.99	5.33	1.850	0.210	◆					◆			
50.17	5.33	1.975	0.210	◆					◆			
53.34	5.33	2.100	0.210	◆					◆			
56.52	5.33	2.225	0.210	◆					◆			
59.69	5.33	2.350	0.210	◆					◆			
62.87	5.33	2.475	0.210	◆					◆			
66.04	5.33	2.600	0.210	◆					◆			
69.22	5.33	2.725	0.210	◆					◆			
72.39	5.33	2.850	0.210	◆					◆			
75.57	5.33	2.975	0.210	◆					◆			
78.74	5.33	3.100	0.210	◆					◆			
79.78	5.33	3.141	0.210						◆			
81.92	5.33	3.225	0.210	◆					◆			
85.09	5.33	3.350	0.210	◆					◆			
88.27	5.33	3.475	0.210	◆					◆			
89.69	5.33	3.531	0.210						◆			
91.44	5.33	3.600	0.210	◆					◆			
94.62	5.33	3.725	0.210	◆					◆			
97.79	5.33	3.850	0.210	◆					◆			
100.00	5.33	3.937	0.210						◆			
100.97	5.33	3.975	0.210	◆					◆			
104.14	5.33	4.100	0.210	◆					◆			
107.32	5.33	4.225	0.210	◆					◆			
109.52	5.33	4.312	0.210						◆			
110.49	5.33	4.350	0.210	◆					◆			
113.67	5.33	4.475	0.210	◆					◆			
116.84	5.33	4.600	0.210	◆					◆			
117.48	5.33	4.625	0.210						◆			
120.02	5.33	4.725	0.210	◆					◆			
120.65	5.33	4.750	0.210						◆			
123.19	5.33	4.850	0.210	◆					◆			
123.83	5.33	4.875	0.210						◆			
126.37	5.33	4.975	0.210	◆					◆			
127.00	5.33	5.000	0.210						◆			
129.54	5.33	5.100	0.210	◆					◆			
130.18	5.33	5.125	0.210						◆			
132.72	5.33	5.225	0.210	◆					◆			

GLOBAL O-RING SIZE REFERENCE GUIDE

STANDARD SIZE MASTER LIST

Availability of sizes in each standard is indicated by a ◆ in the appropriate column.

ID (mm)	CS (mm)	ID (inch)	CS (inch)	AS568	ISO 3601 G	ISO 3601 A	DIN 377-1	BS 4518	BS 1806	JIS B 2401	NF T47-501 G	NF T47-501 A
133.35	5.33	5.250	0.210						◆			
135.89	5.33	5.350	0.210	◆					◆			
136.53	5.33	5.375	0.210						◆			
139.07	5.33	5.475	0.210	◆					◆			
139.70	5.33	5.500	0.210						◆			
142.24	5.33	5.600	0.210	◆					◆			
142.88	5.33	5.625	0.210						◆			
145.42	5.33	5.725	0.210	◆					◆			
146.05	5.33	5.750	0.210						◆			
148.59	5.33	5.850	0.210	◆					◆			
149.23	5.33	5.875	0.210						◆			
151.77	5.33	5.975	0.210	◆					◆			
154.94	5.33	6.100	0.210						◆			
158.12	5.33	6.225	0.210	◆					◆			
161.29	5.33	6.350	0.210						◆			
164.47	5.33	6.475	0.210	◆					◆			
167.64	5.33	6.600	0.210						◆			
170.82	5.33	6.725	0.210	◆					◆			
173.99	5.33	6.850	0.210						◆			
177.17	5.33	6.975	0.210	◆					◆			
183.52	5.33	7.225	0.210	◆					◆			
189.87	5.33	7.475	0.210	◆					◆			
196.22	5.33	7.725	0.210	◆					◆			
202.57	5.33	7.975	0.210	◆					◆			
208.92	5.33	8.225	0.210	◆					◆			
215.27	5.33	8.475	0.210	◆					◆			
221.62	5.33	8.725	0.210	◆					◆			
227.97	5.33	8.975	0.210	◆					◆			
234.32	5.33	9.225	0.210	◆					◆			
240.67	5.33	9.475	0.210	◆					◆			
247.02	5.33	9.725	0.210	◆					◆			
253.37	5.33	9.975	0.210	◆					◆			
266.07	5.33	10.475	0.210	◆					◆			
278.77	5.33	10.975	0.210	◆					◆			
291.47	5.33	11.475	0.210	◆					◆			
304.17	5.33	11.975	0.210	◆					◆			
329.57	5.33	12.975	0.210	◆					◆			
354.97	5.33	13.975	0.210	◆					◆			
380.37	5.33	14.975	0.210	◆					◆			
405.26	5.33	15.955	0.210	◆					◆			
430.66	5.33	16.955	0.210	◆					◆			
456.06	5.33	17.955	0.210	◆					◆			
481.45	5.33	18.955	0.210	◆								
481.46	5.33	18.955	0.210						◆			
506.85	5.33	19.955	0.210	◆								
506.86	5.33	19.955	0.210						◆			
532.25	5.33	20.955	0.210	◆								
532.26	5.33	20.955	0.210						◆			
557.65	5.33	21.955	0.210	◆								
557.66	5.33	21.955	0.210						◆			
582.68	5.33	22.940	0.210	◆					◆			
608.08	5.33	23.940	0.210	◆					◆			
633.48	5.33	24.940	0.210	◆					◆			
658.88	5.33	25.940	0.210	◆					◆			
44.30	5.70	1.744	0.224					◆				
45.30	5.70	1.783	0.224					◆				
47.60	5.70	1.874	0.224							◆		
49.30	5.70	1.941	0.224					◆				
49.60	5.70	1.953	0.224							◆		
51.60	5.70	2.031	0.224							◆		
52.30	5.70	2.059	0.224					◆				
52.60	5.70	2.071	0.224							◆		
54.30	5.70	2.138	0.224					◆				
54.60	5.70	2.150	0.224							◆		
55.30	5.70	2.177	0.224					◆				
55.60	5.70	2.189	0.224							◆		
57.60	5.70	2.268	0.224							◆		
59.30	5.70	2.335	0.224					◆				
59.60	5.70	2.346	0.224							◆		
61.60	5.70	2.661	0.224							◆		
62.30	5.70	2.453	0.224					◆				
62.60	5.70	2.465	0.224							◆		
64.30	5.70	2.531	0.224					◆				
64.60	5.70	2.543	0.224							◆		
66.60	5.70	2.622	0.224							◆		
69.30	5.70	2.728	0.224					◆				
69.60	5.70	2.740	0.224							◆		
70.60	5.70	2.780	0.224							◆		
74.30	5.70	2.925	0.224					◆				
74.60	5.70	2.937	0.224							◆		
79.30	5.70	3.122	0.224					◆				
79.60	5.70	3.134	0.224							◆		
84.30	5.70	3.319	0.224					◆				
84.60	5.70	3.331	0.224							◆		
89.30	5.70	3.516	0.224					◆				
89.60	5.70	3.528	0.224							◆		
94.30	5.70	3.713	0.224					◆				
94.60	5.70	3.724	0.224							◆		
99.30	5.70	3.909	0.224					◆				
99.60	5.70	3.921	0.224							◆		
101.60	5.70	4.000	0.224							◆		
104.30	5.70	4.106	0.224					◆				
104.60	5.70	4.118	0.224							◆		
109.30	5.70	4.303	0.224					◆				
109.60	5.70	4.315	0.224							◆		
111.60	5.70	4.394	0.224							◆		
114.30	5.70	4.500	0.224					◆				
114.60	5.70	4.512	0.224							◆		

STANDARD SIZE MASTER LIST

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ID (mm)	CS (mm)	ID (inch)	CS (inch)	AS568	ISO 3601 G	ISO 3601 A	DIN 377-1	BS 4518	BS 1806	JIS B 2401	NF T47-501 G	NF T47-501 A
119.30	5.70	4.697	0.224					◆		◆		
119.60	5.70	4.709	0.224							◆		
124.30	5.70	4.894	0.224					◆				
124.60	5.70	4.906	0.224							◆		
129.30	5.70	5.091	0.224					◆				
129.60	5.70	5.102	0.224							◆		
131.60	5.70	5.181	0.224							◆		
134.30	5.70	5.287	0.224					◆				
134.60	5.70	5.299	0.224							◆		
139.30	5.70	5.484	0.224					◆				
139.60	5.70	5.496	0.224							◆		
144.30	5.70	5.681	0.224					◆				
144.60	5.70	5.693	0.224							◆		
149.30	5.70	5.878	0.224					◆		◆		
149.60	5.70	5.890	0.224							◆		
154.30	5.70	6.075	0.224					◆		◆		
159.30	5.70	6.272	0.224					◆		◆		
164.30	5.70	6.469	0.224					◆		◆		
169.30	5.70	6.665	0.224					◆		◆		
174.30	5.70	6.862	0.224					◆		◆		
179.30	5.70	7.059	0.224					◆		◆		
184.30	5.70	7.256	0.224					◆		◆		
189.30	5.70	7.453	0.224					◆		◆		
194.30	5.70	7.650	0.224					◆		◆		
199.30	5.70	7.846	0.224					◆		◆		
209.30	5.70	8.240	0.224					◆		◆		
219.30	5.70	8.634	0.224					◆		◆		
229.30	5.70	9.028	0.224					◆		◆		
239.30	5.70	9.421	0.224					◆		◆		
249.30	5.70	9.815	0.224					◆		◆		
259.30	5.70	10.209	0.224					◆		◆		
269.30	5.70	10.602	0.224					◆		◆		
279.30	5.70	10.996	0.224					◆		◆		
289.30	5.70	11.390	0.224					◆		◆		
299.30	5.70	11.783	0.224					◆		◆		
309.30	5.70	12.177	0.224					◆				
319.30	5.70	12.571	0.224					◆				
339.30	5.70	13.358	0.224					◆				
359.30	5.70	14.146	0.224					◆				
379.30	5.70	14.933	0.224					◆				
389.30	5.70	15.327	0.224					◆				
399.30	5.70	15.720	0.224					◆				
419.30	5.70	16.508	0.224					◆				
439.30	5.70	17.295	0.224					◆				
459.30	5.70	18.083	0.224					◆				
479.30	5.70	18.870	0.224					◆				
489.30	5.70	19.264	0.224					◆				
499.30	5.70	19.657	0.224					◆				
222.50	6.00	8.760	0.236							◆		
272.00	6.00	10.709	0.236							◆		
321.50	6.00	12.657	0.236							◆		
376.00	6.00	14.803	0.236							◆		
425.50	6.00	16.752	0.236							◆		
113.67	6.99	4.475	0.275	◆					◆			
114.71	6.99	4.516	0.275						◆			
116.84	6.99	4.600	0.275	◆					◆			
120.02	6.99	4.725	0.275	◆					◆			
123.19	6.99	4.850	0.275	◆					◆			
124.61	6.99	4.906	0.275						◆			
126.37	6.99	4.975	0.275	◆					◆			
129.54	6.99	5.100	0.275	◆					◆			
132.72	6.99	5.225	0.275	◆					◆			
134.54	6.99	5.297	0.275						◆			
135.89	6.99	5.350	0.275	◆					◆			
139.07	6.99	5.475	0.275	◆					◆			
142.24	6.99	5.600	0.275	◆					◆			
145.42	6.99	5.725	0.275	◆					◆			
148.59	6.99	5.850	0.275	◆					◆			
151.77	6.99	5.975	0.275	◆					◆			
155.58	6.99	6.125	0.275						◆			
158.12	6.99	6.225	0.275	◆					◆			
159.54	6.99	6.281	0.275						◆			
161.93	6.99	6.375	0.275						◆			
164.47	6.99	6.475	0.275	◆					◆			
166.70	6.99	6.563	0.275						◆			
168.28	6.99	6.625	0.275						◆			
170.82	6.99	6.725	0.275	◆					◆			
174.63	6.99	6.875	0.275						◆			
177.17	6.99	6.975	0.275	◆					◆			
180.98	6.99	7.125	0.275						◆			
183.52	6.99	7.225	0.275	◆					◆			
187.33	6.99	7.375	0.275						◆			
189.87	6.99	7.475	0.275	◆					◆			
193.68	6.99	7.625	0.275						◆			
196.22	6.99	7.725	0.275	◆					◆			
200.03	6.99	7.875	0.275						◆			
202.57	6.99	7.975	0.275	◆					◆			
208.92	6.99	8.225	0.275						◆			
215.27	6.99	8.475	0.275	◆					◆			
221.62	6.99	8.725	0.275						◆			
227.97	6.99	8.975	0.275	◆					◆			
234.32	6.99	9.225	0.275						◆			
240.67	6.99	9.475	0.275	◆					◆			
247.02	6.99	9.725	0.275						◆			
253.37	6.99	9.975	0.275	◆					◆			
259.72	6.99	10.225	0.275						◆			
266.07	6.99	10.475	0.275	◆					◆			
272.42	6.99	10.725	0.275						◆			

GLOBAL O-RING SIZE REFERENCE GUIDE

STANDARD SIZE MASTER LIST

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ID (mm)	CS (mm)	ID (inch)	CS (inch)	AS568	ISO 3601 G	ISO 3601 A	DIN 377-1	BS 4518	BS 1806	JIS B 2401	NF T47-501 G	NF T47-501 A
278.77	6.99	10.975	0.275	◆					◆			
285.12	6.99	11.225	0.275						◆			
291.47	6.99	11.475	0.275	◆					◆			
297.82	6.99	11.725	0.275						◆			
304.17	6.99	11.975	0.275	◆					◆			
310.52	6.99	12.225	0.275						◆			
316.87	6.99	12.475	0.275	◆					◆			
323.22	6.99	12.725	0.275						◆			
329.57	6.99	12.975	0.275	◆					◆			
335.92	6.99	13.225	0.275						◆			
342.27	6.99	13.475	0.275	◆					◆			
354.97	6.99	13.975	0.275	◆					◆			
367.67	6.99	14.475	0.275	◆					◆			
380.37	6.99	14.975	0.275	◆					◆			
393.07	6.99	15.475	0.275	◆					◆			
405.26	6.99	15.955	0.275	◆					◆			
417.96	6.99	16.455	0.275	◆					◆			
430.66	6.99	16.955	0.275	◆					◆			
443.36	6.99	17.455	0.275	◆					◆			
456.06	6.99	17.955	0.275	◆					◆			
468.76	6.99	18.455	0.275	◆					◆			
481.46	6.99	18.955	0.275	◆					◆			
494.16	6.99	19.455	0.275	◆					◆			
506.86	6.99	19.955	0.275	◆					◆			
532.26	6.99	20.955	0.275	◆					◆			
557.66	6.99	21.955	0.275	◆					◆			
582.68	6.99	22.940	0.275	◆					◆			
608.08	6.99	23.940	0.275	◆					◆			
633.48	6.99	24.940	0.275	◆					◆			
658.88	6.99	25.940	0.275	◆					◆			
109.00	7.00	4.291	0.276		◆	◆	◆				◆	◆
112.00	7.00	4.409	0.276		◆	◆	◆				◆	◆
115.00	7.00	4.528	0.276		◆	◆	◆				◆	◆
118.00	7.00	4.646	0.276		◆	◆	◆				◆	◆
122.00	7.00	4.803	0.276		◆	◆	◆				◆	◆
125.00	7.00	4.921	0.276		◆	◆	◆				◆	◆
128.00	7.00	5.039	0.276		◆	◆	◆				◆	◆
132.00	7.00	5.197	0.276		◆	◆	◆				◆	◆
136.00	7.00	5.354	0.276		◆	◆	◆				◆	◆
140.00	7.00	5.512	0.276		◆	◆	◆				◆	◆
142.50	7.00	5.610	0.276				◆					
145.00	7.00	5.709	0.276		◆	◆	◆				◆	◆
147.50	7.00	5.807	0.276				◆					
150.00	7.00	5.906	0.276		◆	◆	◆				◆	◆
152.50	7.00	6.004	0.276				◆					
155.00	7.00	6.102	0.276		◆	◆	◆				◆	◆
157.50	7.00	6.201	0.276				◆					
160.00	7.00	6.299	0.276		◆	◆	◆				◆	◆
162.50	7.00	6.398	0.276				◆					

ID (mm)	CS (mm)	ID (inch)	CS (inch)	AS568	ISO 3601 G	ISO 3601 A	DIN 377-1	BS 4518	BS 1806	JIS B 2401	NF T47-501 G	NF T47-501 A
165.00	7.00	6.496	0.276		◆	◆	◆				◆	◆
167.50	7.00	6.594	0.276				◆					
170.00	7.00	6.693	0.276		◆	◆	◆				◆	◆
172.50	7.00	6.791	0.276				◆					
175.00	7.00	6.890	0.276		◆	◆	◆				◆	◆
177.50	7.00	6.988	0.276				◆					
180.00	7.00	7.087	0.276		◆	◆	◆				◆	◆
185.00	7.00	7.283	0.276		◆	◆	◆				◆	◆
190.00	7.00	7.480	0.276		◆	◆	◆				◆	◆
195.00	7.00	7.677	0.276		◆	◆	◆				◆	◆
200.00	7.00	7.874	0.276		◆	◆	◆				◆	◆
203.00	7.00	7.992	0.276				◆				◆	◆
206.00	7.00	8.110	0.276		◆	◆	◆				◆	◆
212.00	7.00	8.346	0.276		◆	◆	◆				◆	◆
218.00	7.00	8.583	0.276		◆	◆	◆				◆	◆
224.00	7.00	8.819	0.276		◆	◆	◆				◆	◆
227.00	7.00	8.937	0.276								◆	◆
230.00	7.00	9.055	0.276		◆	◆	◆				◆	◆
236.00	7.00	9.291	0.276		◆	◆	◆				◆	◆
239.00	7.00	9.409	0.276								◆	◆
243.00	7.00	9.567	0.276		◆	◆	◆				◆	◆
250.00	7.00	9.843	0.276		◆	◆	◆				◆	◆
254.00	7.00	10.000	0.276				◆				◆	◆
258.00	7.00	10.157	0.276		◆	◆	◆				◆	◆
261.00	7.00	10.276	0.276				◆				◆	◆
265.00	7.00	10.433	0.276		◆	◆	◆				◆	◆
268.00	7.00	10.551	0.276				◆				◆	◆
272.00	7.00	10.709	0.276		◆	◆	◆				◆	◆
276.00	7.00	10.866	0.276				◆				◆	◆
280.00	7.00	11.024	0.276		◆	◆	◆				◆	◆
283.00	7.00	11.142	0.276				◆				◆	◆
286.00	7.00	11.260	0.276				◆				◆	◆
290.00	7.00	11.417	0.276		◆	◆	◆				◆	◆
295.00	7.00	11.614	0.276				◆				◆	◆
300.00	7.00	11.811	0.276		◆	◆	◆				◆	◆
303.00	7.00	11.929	0.276				◆				◆	◆
307.00	7.00	12.087	0.276		◆	◆	◆				◆	◆
311.00	7.00	12.244	0.276				◆				◆	◆
315.00	7.00	12.402	0.276		◆	◆	◆				◆	◆
320.00	7.00	12.598	0.276				◆				◆	◆
325.00	7.00	12.795	0.276		◆	◆	◆				◆	◆
330.00	7.00	12.992	0.276				◆				◆	◆
335.00	7.00	13.189	0.276		◆	◆	◆				◆	◆
340.00	7.00	13.386	0.276				◆				◆	◆
345.00	7.00	13.583	0.276		◆	◆	◆				◆	◆
350.00	7.00	13.780	0.276				◆				◆	◆
355.00	7.00	13.976	0.276		◆	◆	◆				◆	◆
360.00	7.00	14.173	0.276				◆				◆	◆
365.00	7.00	14.370	0.276		◆	◆	◆				◆	◆

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ID (mm)	CS (mm)	ID (inch)	CS (inch)	AS568	ISO 3601 G	ISO 3601 A	DIN 377-1	BS 4518	BS 1806	JIS B 2401	NF T47-501 G	NF T47-501 A
370.00	7.00	14.567	0.276				◆				◆	◆
375.00	7.00	14.764	0.276		◆	◆	◆				◆	◆
379.00	7.00	14.921	0.276				◆				◆	◆
383.00	7.00	15.079	0.276				◆				◆	◆
387.00	7.00	15.236	0.276		◆	◆	◆				◆	◆
391.00	7.00	15.394	0.276				◆				◆	◆
395.00	7.00	15.551	0.276				◆				◆	◆
400.00	7.00	15.748	0.276		◆		◆				◆	◆
406.00	7.00	15.984	0.276				◆				◆	
412.00	7.00	16.220	0.276		◆		◆				◆	
418.00	7.00	16.457	0.276				◆				◆	
425.00	7.00	16.732	0.276		◆		◆				◆	
429.00	7.00	16.890	0.276				◆				◆	
433.00	7.00	17.047	0.276				◆				◆	
437.00	7.00	17.205	0.276		◆		◆				◆	
443.00	7.00	17.441	0.276				◆				◆	
450.00	7.00	17.717	0.276		◆		◆				◆	
456.00	7.00	17.953	0.276				◆				◆	
462.00	7.00	18.189	0.276		◆		◆				◆	
466.00	7.00	18.346	0.276				◆				◆	
470.00	7.00	18.504	0.276				◆				◆	
475.00	7.00	18.701	0.276		◆		◆				◆	
479.00	7.00	18.858	0.276				◆				◆	
483.00	7.00	19.016	0.276				◆				◆	
487.00	7.00	19.173	0.276		◆		◆				◆	
493.00	7.00	19.409	0.276				◆				◆	
500.00	7.00	19.685	0.276		◆		◆				◆	
508.00	7.00	20.000	0.276				◆				◆	
515.00	7.00	20.276	0.276		◆		◆				◆	
523.00	7.00	20.591	0.276				◆				◆	
530.00	7.00	20.866	0.276		◆		◆				◆	
538.00	7.00	21.181	0.276				◆				◆	
545.00	7.00	21.457	0.2767		◆		◆				◆	
553.00	7.00	21.772	0.276				◆				◆	
560.00	7.00	22.047	0.276		◆		◆				◆	
570.00	7.00	22.441	0.276				◆				◆	
580.00	7.00	22.835	0.276		◆		◆				◆	
590.00	7.00	23.228	0.276				◆				◆	
600.00	7.00	23.622	0.276		◆		◆				◆	
608.00	7.00	23.937	0.276				◆				◆	
615.00	7.00	24.213	0.276		◆		◆				◆	
623.00	7.00	24.528	0.276				◆				◆	
630.00	7.00	24.803	0.276		◆		◆				◆	
640.00	7.00	25.197	0.276				◆				◆	
650.00	7.00	25.591	0.276		◆		◆				◆	
660.00	7.00	25.984	0.276				◆				◆	
670.00	7.00	26.378	0.276		◆		◆				◆	
144.10	8.40	5.673	0.331					◆				
149.10	8.40	5.870	0.331					◆				
149.50	8.40	5.886	0.331							◆		
154.10	8.40	6.067	0.331					◆				
154.50	8.40	6.083	0.331							◆		
159.10	8.40	6.264	0.331					◆				
159.50	8.40	6.280	0.331							◆		
164.10	8.40	6.461	0.331					◆				
164.50	8.40	6.476	0.331							◆		
169.10	8.40	6.657	0.331					◆				
169.50	8.40	6.673	0.331							◆		
174.10	8.40	6.854	0.331					◆				
174.50	8.40	6.870	0.331							◆		
179.10	8.40	7.051	0.331					◆				
179.50	8.40	7.067	0.331							◆		
184.10	8.40	7.248	0.331					◆				
184.50	8.40	7.264	0.331							◆		
189.10	8.40	7.445	0.331					◆				
189.50	8.40	7.461	0.331							◆		
194.10	8.40	7.642	0.331					◆				
194.50	8.40	7.657	0.331							◆		
199.10	8.40	7.839	0.331					◆				
199.50	8.40	7.854	0.331							◆		
204.10	8.40	8.035	0.331					◆				
204.50	8.40	8.051	0.331							◆		
208.50	8.40	8.209	0.331							◆		
209.10	8.40	8.232	0.331					◆				
209.50	8.40	8.248	0.331							◆		
214.50	8.40	8.445	0.331							◆		
219.10	8.40	8.626	0.331					◆				
219.50	8.40	8.642	0.331							◆		
224.50	8.40	8.839	0.331							◆		
229.10	8.40	9.020	0.331					◆				
229.50	8.40	9.035	0.331							◆		
234.10	8.40	9.217	0.331					◆				
234.50	8.40	9.232	0.331							◆		
239.10	8.40	9.413	0.331					◆				
239.50	8.40	9.429	0.331							◆		
244.50	8.40	9.626	0.331							◆		
249.10	8.40	9.807	0.331					◆				
249.50	8.40	9.823	0.331							◆		
254.50	8.40	10.020	0.331							◆		
259.50	8.40	10.217	0.331							◆		
264.50	8.40	10.413	0.331							◆		
269.50	8.40	10.610	0.331							◆		
274.50	8.40	10.807	0.331							◆		
279.50	8.40	11.004	0.331							◆		
284.50	8.40	11.201	0.331							◆		
289.50	8.40	11.398	0.331							◆		
294.50	8.40	11.594	0.331							◆		
299.50	8.40	11.791	0.331							◆		

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ID (mm)	CS (mm)	ID (inch)	CS (inch)	AS568	ISO 3601-1 G	ISO 3601-1 A	DIN 3771-1	BS 4518	BS 1806	JIS 2401	NF T47-501 G	NF T47-501 A
314.50	8.40	12.382	0.331							◆		
319.50	8.40	12.579	0.331							◆		
334.50	8.40	13.169	0.331							◆		
339.50	8.40	13.366	0.331							◆		
354.50	8.40	13.957	0.331							◆		
359.50	8.40	14.154	0.331							◆		
374.50	8.40	14.744	0.331							◆		
384.50	8.40	15.138	0.331							◆		
399.50	8.40	15.728	0.331							◆		
475.00	10.00	18.701	0.394							◆		
524.50	10.00	20.650	0.394							◆		
579.00	10.00	22.795	0.394							◆		
633.50	10.00	24.941	0.394							◆		
683.00	10.00	26.890	0.394							◆		
732.50	10.00	28.839	0.394							◆		
782.00	10.00	30.787	0.394							◆		
836.50	10.00	32.933	0.394							◆		
940.50	10.00	37.028	0.394							◆		
1044.00	10.00	41.102	0.394							◆		

SECTION FOUR

O-RING SEALING ELASTOMERS

- Elastomer Basics
- Elastomer Types
  - Dichtomatik Standard Elastomers
  - Details, Data and Properties
- O-Ring Lubrication Options
- Elastomer Testing and Approvals
- ASTM D2000

O-RING SEALING ELASTOMERS

Since o-rings are homogeneous (consist of rubber only), the ability of the o-ring to seal is directly dependent on the elastomer and its ability to maintain its sealing force over time. Therefore, elastomer selection is at least as important as properly specifying the o-ring size and the gland size and details.

ELASTOMER BASICS

Before selecting an elastomer, it is important to have a basic understanding of what an elastomer is and what makes it unique as a class of materials. To understand elastomers, one has to first have a basic understanding of polymers.

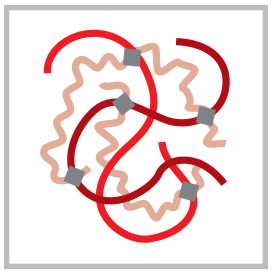
Polymers are long chains of repeating chemical units, or monomers. The chemical skeletal structures may be linear, cyclic or branched. Materials that consist largely of polymer chains can be divided into three basic families.

Plastics

Plastics are rigid long-chain polymers which are not usually connected or cross-linked. Plastics can either be thermoplastics, meaning they can be heated and cooled without changing properties, or thermosets, where an increase in temperature changes the chemical structure and properties. As a class of materials, plastics have low elongation and high elongation set.

Elastomers

Elastomers are flexible long-chain polymers which are capable of cross-linking. Cross-linking chemically bonds polymer chains which can prevent reversion to a non-cross-linked polymer at elevated temperatures. The cross-link is the key to the elastic, or "rubbery," properties of these materials. The elasticity provides resiliency in sealing applications.



Thermoplastic Elastomers

Thermoplastic elastomers, or TPEs, attempt to combine the properties of elastomers with the processing ease of thermoplastics. They are the result of a physical combination of soft, elastic polymer segments and hard, crystalline segments which are capable of cross-linking. Thermoplastic elastomers are generally classified by their structure rather than by their chemical makeup.

ELASTOMER TYPES

Elastomers are split into types or families based on the basic polymer from which they are made. The following table contains the nomenclature used for the different elastomer types per ASTM D 1418 and ISO 1629.

Within each elastomer type, the individual elastomers vary in the fillers, softeners (plasticizers), processing aids, curing agents, accelerators and other additives that they contain. The properties of the base polymer, the types and quantities of the additives and how the elastomer is processed are what determine the chemical and physical properties that may make a particular elastomer right or wrong for an application.

Chemical Description	Abbreviation ASTM D 1418	ISO/DIN 1629
Acrylonitrile-butadiene rubber	NBR	NBR
Hydrogenated acrylonitrile-butadiene rubber	HNBR	(HNBR)
Fluorocarbon rubber	FKM	FPM
Perfluoroelastomer	FFKM	(FFPM)
Ethylene propylene diene rubber	EPDM	EPDM
Silicone rubber	VMQ	VMQ
Fluorosilicone rubber	FVMQ	FVMQ
Chloroprene (or Neoprene) rubber	CR	CR
Polyester urethane	AU	AU
Polyether urethane	EU	EU
Natural rubber	NR	NR
Polyacrylate rubber	ACM	ACM
Ethylene Acrylic (Vamac®)	AEM	AEM
Styrene-butadiene rubber	SBR	SBR
Ethylene oxide epichlorohydrine rubber	ECO	ECO
Chlorosulfonated polyethylene	CSM	CSM
Butadiene rubber	BR	BR
Isoprene rubber	IR	IR
Butyl rubber	IIR	IIR

( ) = not listed in the standard.

DICHTOMATIK ELASTOMERS

Dichtomatik offers eight different standard o-ring materials. The table below indicates the name, the elastomer type and hardness and an ASTM D2000 call-out for each of these standard materials. Dichtomatik is committed to maintaining inventory of each AS568 size in each of the eight materials.

In addition to these standard materials, Dichtomatik maintains an extensive offering of non-standard materials and will also develop materials to meet these requirements of your application. Please contact Dichtomatik for assistance in identifying the best elastomer for your application.

DICHTOMATIK ELASTOMERS		
Name	Description	ASTM D2000 Call-out
N70R	NBR 70	M2BG714 EA14 EF11 EO14 EO34
N90R	NBR 90	M2BG914 B14 EA14 EF11 EF21 EO34
V575	FKM 75	M6HK810 A1-10 B38 EF31 Z1= 75 ± 5 duro
V603	FKM 75 Brown	M6HK810 A1-10 B38 C12 EF31 EO88 Z1= 75 ± 5 duro
S570	Silicone 70	M7GE705 B37 EA14 EO16 F19 G11
E868	EPDM 70 (peroxide cured)	M3CA720 A25 B35 C32 EA14 F19
U876	Polyurethane 70	n/a
U877	Polyurethane 90	n/a

O-RING SEALING ELASTOMERS

ELASTOMER TYPE DETAILS

Details are provided here for some of the more common o-ring sealing elastomers. General descriptions are provided in the text. Additional details on several of the elastomers are provided in the tables. Further information regarding compatibility with specific chemical species can be obtained in the chemical compatibility tables in the next section.

NBR

NBR is a very commonly used material for o-rings because of its good mechanical properties, its resistance to lubricants and greases and its relatively low cost. The physical and chemical resistance properties of NBR materials are determined by the acrylonitrile (ACN) content of the base polymer which can vary between 18% and 50%. Low ACN content ensures good flexibility at low temperatures, but offers limited resistance to oils and fuels. As the ACN content increases, the low temperature flexibility reduces and the resistance to oils and fuels improves.

Physical and chemical resistance properties of NBR materials are also affected by the cure system of the polymer. Peroxide-cured materials have improved physical properties, chemical resistance and thermal properties as compared to sulfur-donor-cured materials.

Standard grades of NBR are typically resistant to mineral oil-based lubricants and greases, many grades of hydraulic fluids, aliphatic hydrocarbons, silicone oils and greases and water to about 80°C.

NBR is generally not resistant to aromatic and chlorinated hydrocarbons, fuels with a high aromatic content, polar solvents, glycol-based brake fluids and non-flammable hydraulic fluids (HFD). NBR also has low resistance to ozone, weathering and aging, but in many applications this has no negative effect.

HNBR

HNBR is obtained by partially or fully hydrogenating NBR. This leads to considerable improvement of the resistance to heat, ozone and aging, and gives it very good mechanical properties. The media resistance compares to that of NBR.

EPDM

EPDM materials generally have a high resistance to hot water, steam, aging and chemicals, and are suitable for a wide range of application temperatures. They are divided into sulfur-cured and peroxide-cured types. Peroxide-cured compounds are suitable for higher temperatures and have much lower compression sets.

EPDM has good resistance to hot water and steam, detergents, caustic potash solutions, sodium hydroxide solutions, silicone oils and greases, many polar solvents and many diluted acids and chemicals. Special formulations are excellent for use with glycol-based brake fluids.

EPDM materials are totally unsuitable for use with all mineral oil products—lubricants, oils, fuels.

Silicone

Silicone rubbers are noted for their ability to be used over a wide temperature range and for excellent resistance to ozone, weathering and aging. Compared with most other sealing elastomers, the physical properties of silicones are poor. Generally, silicone materials are physiologically harmless so they are commonly used by the food and drug industries.

Standard silicones are resistant to water (to 100°C), aliphatic engine and transmission oils and animal and plant oils and fats.

Silicones are generally not resistant to fuels, aromatic mineral oils, steam (short term to 120°C possible), silicone oils and greases, acids or alkalis.

Fluorosilicone

Although fluorosilicone elastomers have the same mechanical properties as silicones, they are far more resistant to oils and fuels. The temperature range of applications is somewhat more restricted than that of silicones.

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ELASTOMER TYPE DETAILS *–continued*

FKM

FKM materials are noted for their very high resistance to heat and a wide variety of chemicals. Other key benefits include excellent resistance to aging and ozone, very low gas permeability and the fact that the materials are self-extinguishing.

Standard FKM materials have excellent resistance to mineral oils and greases, aliphatic, aromatic and chlorinated hydrocarbons, fuels, non-flammable hydraulic fluids (HFD) and many organic solvents and chemicals.

In addition to the standard FKM materials, a number of specialty materials with different monomer compositions and fluorine content (65% to 71%) are available that offer improved chemical or temperature resistance and/or better low temperature performance.

FKM materials are generally not resistant to hot water, steam, polar solvents, glycol-based brake fluids and low molecular weight organic acids.

Polyurethane

Polyurethanes differ from classic elastomers in that they have much better mechanical properties. In particular they have a high resistance to abrasion, wear and extrusion, a high tensile strength and excellent tear resistance. Polyurethanes are generally resistant to aging and ozone, mineral oils and greases, silicone oils and greases, non-flammable hydraulic fluids HFA & HFB, water up to 50°C and aliphatic hydrocarbons.

ADDITIONAL ELASTOMERS

FFKM

FFKM materials combine the outstanding heat and chemical resistance of PTFE with the elastic behavior of FKM elastomers. FFKM materials are very expensive and are typically used only when absolutely needed.

Chloroprene

Chloroprene materials have excellent resistance to ozone, aging and weathering and good mechanical properties. They have average resistance to mineral oils and are suitable for use with many refrigerants.

SBR

SBR materials are frequently used in glycol-based brake fluids, water, alcohols, glycols and silicone oils and greases.

TFE/P

Tetrafluoroethylene/propylene rubber (or Aflas®) is a fluorocarbon elastomer that is noted for its exceptional thermal and chemical resistance. TFE/P is well suited for use with hot water, steam, acids, alkaline solutions, ammonia, amines, alloyed engine and transmission oils, brake fluids (based on glycol, mineral oil and silicone oil), crude oil and sour gas.

ACM

ACM or polyacrylate is used mainly by the automotive industry, as it is resistant to most engine oils and transmission fluids, even at high temperatures.

O-RING SEALING ELASTOMERS

PROPERTIES OF ELASTOMERS

Basic Property	NBR	HNBR	EPDM Sulfur	EPDM Peroxide	VMQ	FVMQ	FKM	AU/EU	CR	FFKM
Compression Set Resistance	◆	◆	□	◆	■	■	◆	□	■	□
Tear Strength	■	◆	□	■	▼	□	◆	■	■	■
Abrasion Resistance	■	■	■	■	▼	□	■/□	◆	■	□
Aging Resistance	▼	■	■	■	◆	◆	◆	◆	■	◆
Ozone Resistance	▼	■	■	■	◆	◆	◆	◆	■	◆
Resistance to Oil & Grease	■	■	●	●	□	■	◆	■	□	◆
Fuel Resistance	▼*	□	●	●	▼	■	■*	□	□	◆
Resistance to Hot Water	175°F *	212°F	265°F	300°F	212°F	212°F	175°F *	120°F	175°F	‡
	80°C	100°C	130°C	150°C	100°C	100°C	80°C	50°C	80°C	
Resistance to Steam	●	●	265°F	350°F	250°F †	250°F †	●	●	●	‡
			130°C	175°C	120°C	120°C				
High Temp–Standard	212°F	300°F	265°F	300°F	390°F	350°F	390°F	212°F	212°F	500°F
	100°C	150°C	130°C	150°C	200°C	175°C	200°C	100°C	100°C	260°C
High Temp–Special	250°F	n/a	n/a	n/a	480°F	n/a	n/a	n/a	n/a	625°F
	120°C				250°C					330°C
Low Temp–Standard	–22°F	–22°F	–50°F	–60°F	–65°F	–65°F	5°F	–40°F	–40°F	5°F
	–30°C	–30°C	–45°C	–50°C	–55°C	–55°C	–15°C	–40°C	–40°C	–15°C
Low Temp–Special	–60°F	–40°C	n/a	n/a	n/a	n/a	–30°F	n/a	–60°F	–30°F
	–50°C	–40°C					–35°C		–50°C	–35°C

◆ Very Good ■ Good □ Average ▼ Poor ● Not Recommended

*Better results with special compound †Short term only ‡Depends on compound

ELASTOMER TYPE DATA

	NBR	HNBR	EPDM
Brief Description:	copolymers of acrylonitrile and butadiene	copolymers of acrylonitrile and butadiene with selective hydrogenation of butadiene groups	terpolymers of ethylene, propylene and diene monomers
ASTM D1418 Designation:	NBR	HNBR	EPDM
ISO/DIN 1629 Designation:	NBR	n/a	EPDM
Trade Names:	Chemigum–Goodyear Hycar–Goodrich Krynac–Polysar, Ltd Nysyn–Copolymer Rubber Paracril–Uniroyal Perbunan–Bayer Nipol–Nippon Zeon Europrene–Enimont	Zetpol–Nippon Zeon Therban–Bayer Tornac–Polysar, Ltd.	Nordel–DupontDow Elastomers Vistalon–Exxon Dutral–EniChem Keltan–DSM Buna EP–Bayer Epcar–Goodrich Royalene–Uniroyal
Standard Color(s):	Black	Black, Green	Black
ASTM D2000 Code(s):	BF, BG, BK, CH	DH	AA, BA, CA, DA
Hardness Range:	40 to 95	50 to 90	40 to 90
Common Variations	acrylonitrile content (18% to 50%) sulfur-donor cured vs. peroxide cured drinking water application approved (NSF, WRc, KTW) FDA compliant XNBR (improved wear resistance)	acrylonitrile content (18% to 50%) sulfur-donor cured vs. peroxide cured residual double bond content (<1% to 10%) special compound for refrigerants	sulfur-donor cured vs. peroxide cured drinking water application (NSF, WRc, KTW) brake application formulation

	SILICONE	FLUOROSILICONE	FKM
Brief Description:	polydimethylsiloxane with vinyl and/or phenyl groups	polydimethylsiloxane with vinyl, phenyl and CF3 groups	co-, ter- and tetra-polymers of fluoronated hydrocarbon monomers
ASTM D1418 Designation:	VMQ	FVMQ	FKM
ISO/DIN 1629 Designation:	VMQ	FMQ	FPM
Trade Names:	Bayosoline–Bayer Silastic–Dow Corning Silplus–GE	Silastic LS–Dow Corning FSE–GE	Viton–DupontDow Elastomers Fluorel–Dyneon Technoflon–Ausimont Dai-el–Daikin
Standard Color(s):	Red (Rust)	Blue	Black
ASTM D2000 Code(s):	FC, FE, GE	FK	HK
Hardness Range:	25 to 80	50 to 80	50 to 95
Common Variations	low temperature high temperature high tensile strength and tear strength FDA compliant	high modulus	Copolymer or terpolymer Degree of fluorination (A, B, F, GB, GF, GFLT, GBLT, GLT, ETP)

O-RING SEALING ELASTOMERS

O-RING LUBRICATION

Most o-rings require some sort of lubrication for storage (to keep the parts from sticking together), for installation or for automatic feeding. Many lubrication options are available depending on the requirements of your application.

Shorter-term lubrication of the o-ring can be accomplished by coating the exterior of the part with:

- Silicone oil
- Graphite
- Molybdenum disulfide (MoS_2)
- Talcum Powder

Longer-term external lubrication can be realized with:

- PTFE coating
- Applying other dry lubricants to the surface

Some applications benefit from the use of an internally lubricated elastomer. Internal lubrication is typically accomplished in one of two ways.

1. A lubricant (typically an oil or wax) that is somewhat incompatible with the elastomer is added to the elastomer during compounding. The incompatibility causes the lubricant to "bloom" to the surface of the molded part over time, thus providing longer-term lubrication.
2. A non-blooming lubricant, such as molybdenum disulfide or PTFE, is added during compounding to provide even longer-term lubrication.

Please contact Dichtomatik North America for assistance in identifying the best lubrication choice for your application.

APPROVALS

Dichtomatik offers many materials that meet the requirements of or are approved by organizations that establish industrial standards or requirements. Some examples of these are:

- NSF-61, WRc, KTW approved materials for drinking water applications
- FDA-compliant materials for o-rings in contact with food or drugs
- UL157-listed materials for specific fluid contact applications such as oil or gasoline
- USDA 3A sanitary standard approved materials

ELASTOMER TESTING

The best sources for information on testing methods are ASTM, ISO and DIN (the organizations that write the standards). For reference purposes, the table below shows which standards are used for common standard elastomer tests.

ASTM D 1414 is also available. It provides instructions on how many standard elastomer tests are to be modified to be used specifically for testing molded o-rings rather than standard test specimens.

On a material data sheet it is important to know whether the data reported was obtained by testing slabs and buttons or by testing actual o-rings, as the results may differ.

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ELASTOMER TESTING *–continued*

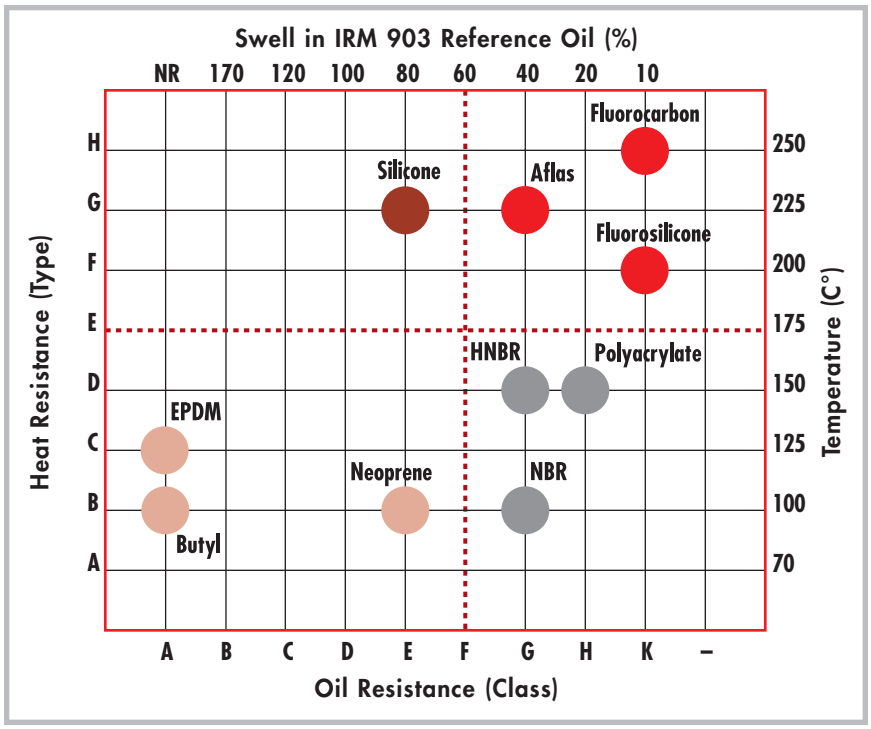
Elastomer Property or Test	ELASTOMER TESTS ASTM	ISO	DIN
Hardness (Shore A)	D 2240	7619	53505
Hardness (IRHD)	D 1415	48	53519
Tensile Strength	D 412	37	53504
Ultimate Elongation	D 412	37	53504
Modulus	D 412	37	53504
Brittleness Point	D 2137	812	53546
Temperature Retraction	D 1329	2921	n/a
Tear Strength	D 624	34, 816	53507, 53515
Compression Set	D 395	815	53517
Air Aging	D 573, D 865	188	53508
Immersion Testing	D 471	1817	53521
Ozone/Weather Resistance	D 1171	1431	53509

ASTM D2000 PRIMER

ASTM D2000 is published by The American Society for Testing & Materials as ***Standard Classification System for Rubber Products in Automotive Applications***. ASTM D2000 is an exact functional equivalent of ***SAE Recommended Practice J200***.

The purpose of the standard is to offer guidance on the types of materials available, to indicate what level of performance can be expected from the materials, and to offer a means of providing a "line call-out" designation for materials.

The materials are identified initially by type, which is an indication of heat resistance, and by class, which is based on oil resistance. The temperature resistance and the oil resistance are indicated with letter designations as shown to the right.



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ASTM D2000 PRIMER *–continued*

Within each type/class combination, the hardness, tensile strength and class can be specified. Each class also has additional available test requirements that must be met by the material. These requirements are often referred to as suffix requirements.

The actual specification is required to fully interpret an ASTM D2000 line callout, but an example line callout is shown and explained below.

ASTM D2000 M6HK810 A1-10 B38 EF31Z1

Units (M = SI Units)
Grade Number (1 = No Suffix Requirement)
Type (Heat Resistance)
Class (Oil Resistance)
Hardness (e.g. 8 = 80 Shore A)
Tensile Strength (e.g. 10 = 10 MPa)
Suffix Letter: A Heat Resistance
B Compression Set
EA Aqueous Fluid Resistance
EF Fuel Fluid Resistance
EO Oil/Lubricant Fluid Resistance
F Low Temperature Resistance
G Tear Resistance
R Resilience
Suffix Number 1st Digit = Test Method
2nd Digit = Test Temperature
Special "Z" Callout (Needs to be Specified)

It is important to note that the "Z" callouts are meaningless unless the requirement is specified. In the case of the above line callout, the callout provided on the print would have to be as shown below so that the Z callout is specified.

ASTM D2000 M6HK810 A1-10 B38 EF31Z1

Z1: Hardness = 75±5 Duro A

SECTION FIVE

CHEMICAL COMPATIBILITY GUIDE

CHEMICAL COMPATIBILITY GUIDE

CHEMICAL COMPATIBILITY TABLES

These tables are intended to assist the user in determining the suitability of various elastomers in many different chemical environments. The ratings are based on a combination of published literature, laboratory tests, actual field experience, and informed judgments. As laboratory tests do not necessarily predict end-use performance, users of DICHTOMATIK products should conduct their own evaluations to determine application suitability.

NOTE: Ratings are based on volume swell which is only one indicator of elastomer fluid compatibility and may be based on the solubility parameter alone. Fluid attack on the backbone of the polymer may show up as a change in physical properties such as tensile strength, elongation at break, and hardness.

Elevated temperatures and extended exposure times may create more aggressive conditions than cited in this guide.

This information is believed to be reliable, but no representation, guarantees or warranties of any kind are made to its accuracy or suitability for any purpose. The information presented is based on laboratory testing and does not necessarily indicate end product performance. It is recommended that users of DICHTOMATIK products conduct their own evaluations to determine suitability for the intended application.

COMPATIBILITY RATING SYSTEM

RATING	DESCRIPTION	VOLUME CHANGE	COMMENTS
1	Little or no effect	<10%	Elastomer may exhibit slight swelling and/or loss of physical properties under severe conditions.
2	Possible loss of physical properties	10–20%	Elastomer may exhibit swelling in addition to a change in physical properties. May be suitable for static applications.
3	Noticeable change	20–40%	Elastomer exhibits a noticeable change in swelling and physical properties. Questionable performance in most applications.
4	Excessive change	>40%	Elastomer not suitable for service.
–	Insufficient information	n/a	Insufficient information available for rating.

ELASTOMER ABBREVIATIONS

ABBREVIATION	ELASTOMER TYPE
ACM	Polyacrylate Rubber
TFE/P	Aflas® (Tetrafluoroethylene/Propylene)
AU	Polyurethane
CR	Neoprene/Chloroprene
EPDM	Ethylene-Propylene-Diene Rubber
FFKM	Perfluoroelastomer
FKM	Fluorocarbon Elastomer
FKM-ETP	ETP Based Fluorocarbon Elastomer
FVMQ	Fluorosilicone Rubber
HNBR	Hydrogenated Nitrile (or HSN)
IIR	Butyl Rubber
NBR	Nitrile or Buna-N (Acrylonitrile-Butadiene Rubber)
NR	Natural Rubber
SBR	Styrene-Butadiene Rubber
VMQ	Silicone Rubber

CHEMICAL COMPATIBILITY GUIDE

CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Acetaldehyde	4	4	2	2	–	–	–	–	4	4	4	2	–	–	–
Acetamide	1	3	1	2	–	–	–	–	1	2	3	1	–	–	–
Acetic Acid Amine	1	3	1	2	–	–	–	–	1	2	3	1	–	–	–
Acetic Acid, 25% to 60%	3	3	1	1	4	–	–	–	2	–	2	1	4	1	4
Acetic Acid, 85%	4	–	–	–	4	–	–	–	–	–	–	1	4	–	4
Acetic Acid, Glacial	3	4	2	2	4	4	4	–	4	3	2	2	4	2	4
Acetic Aldehyde	4	4	2	2	–	–	–	–	4	4	4	2	–	–	–
Acetic Anhydride	4	4	2	3	4	–	1	–	4	2	2	1	2	1	1
Acetic Ester	4	4	3	2	4	4	4	–	4	4	3	1	4	4	4
Acetic Ether	4	4	3	2	4	4	4	–	4	4	3	1	4	4	4
Acetic Oxide	4	4	2	3	4	–	1	–	4	2	2	1	2	1	1
Acetone	4	4	1	4	4	4	4	4	4	4	3	1	1	1	1
Acetonitrile	3	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Acetophenone	4	4	1	4	–	–	–	–	4	4	4	1	–	–	–
Acetyl Chloride	4	1	4	3	–	–	–	–	1	1	1	1	–	–	–
Acetyl Oxide	4	4	2	3	4	–	1	–	4	2	2	1	2	1	1
Acetylacetone	4	4	1	4	–	–	–	–	4	4	4	1	–	–	–
Acetylbenzene	4	4	1	4	–	–	–	–	4	4	4	1	–	–	–
Acetylene	1	1	1	2	1	–	1	1	1	1	1	1	1	1	1
Acetylene Tetrabromide	4	1	1	4	–	–	–	–	2	1	1	1	–	–	–
Acrylic Acid, Ethyl Ester	3	4	3	4	4	4	–	4	4	4	4	1	–	2	–
Acrylonitrile	4	4	4	4	4	–	4	–	4	2	3	1	4	4	4
Adipic Acid	1	2	2	–	1	–	1	–	1	2	2	1	1	1	1
Air Below 200°F	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Air, Oil-Containing	1	1	4	1	1	1	1	1	1	–	–	1	4	4	2
Alkazene	4	2	4	4	–	–	–	–	2	2	2	1	–	–	–
Allomaleic Acid	1	1	2	2	–	–	–	–	1	1	1	1	–	–	–
Allyl Alcohol	2	4	1	–	2	4	2	–	–	–	–	1	1	1	1
Allyl Chloride	2	2	1	–	–	–	–	–	–	2	2	1	–	–	–
Alum (NH_3-Cr-K)	1	1	1	–	1	–	1	–	–	–	–	1	4	1	1
Aluminum Acetate	2	4	1	4	–	–	–	–	4	1	3	1	–	–	–
Aluminum Bromide	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Aluminum Chloride	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Aluminum Fluoride	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Aluminum Hydroxide	2	2	2	–	–	–	–	–	–	1	2	1	–	–	–

1] Little or no effect (Volume swell <10%)
2] Possible loss of physical properties (Volume swell 10–20%)
3] Noticeable change (Volume swell 20–40%)
4] Not suitable for service
–] Insufficient info

CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Aluminum Nitrate	2	1	1	2	–	–	–	–	–	1	1	1	–	–	–
Aluminum Orthophosphate	1	1	1	1	–	–	–	–	–	1	1	1	–	–	–
Aluminum Phosphate	1	1	1	1	–	–	–	–	–	1	1	1	–	–	–
Aluminum Salts	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Aluminum Sulfate	1	3	1	1	1	4	2	–	1	1	1	1	2	1	1
Amines Mixed (Allyl, Ethyl, etc.)	4	4	2	2	–	–	–	–	4	2	4	1	–	–	–
Aminobenzene	4	3	2	4	4	4	4	–	4	2	2	1	4	–	4
Aminobenzoic Acid	4	2	2	–	–	–	–	–	–	1	2	1	–	–	–
Aminopyridine	4	4	2	–	–	–	–	–	–	3	4	1	–	–	–
Ammonia	2	4	1	–	2	4	2	–	–	–	–	2	1	1	1
Ammonia Gas, Cold	1	4	1	1	–	–	–	–	4	1	4	1	–	–	–
Ammonia Gas, Hot	4	4	2	1	–	–	–	–	4	2	4	1	–	–	–
Ammonia, Anhydrous Liquid	2	4	1	2	–	–	–	–	4	3	4	1	–	–	–
Ammonia-Aqua	4	2	1	1	–	–	–	–	1	1	1	1	–	–	–
Ammonium Acetate	1	4	1	–	1	4	2	–	–	–	–	1	1	1	1
Ammonium Carbonate	3	4	1	–	1	4	2	–	–	1	3	1	1	1	1
Ammonium Chloride	1	1	1	2	1	4	2	–	1	1	1	1	1	1	1
Ammonium Fluoride	1	4	1	–	1	–	2	–	–	–	–	2	4	2	1
Ammonium Hydroxide	4	2	1	1	–	–	–	–	1	1	1	1	–	–	–
Ammonium Nitrate	1	3	1	2	1	–	2	–	–	1	1	1	4	1	1
Ammonium Persulfate	4	3	1	–	–	–	–	–	1	1	3	1	–	–	–
Ammonium Phosphate	1	4	1	–	1	4	2	–	–	–	–	1	1	1	1
Ammonium Phosphate, Dibasic	1	1	1	1	–	–	–	–	–	1	1	1	–	–	–
Ammonium Salts	1	3	1	1	–	–	–	–	3	1	3	1	–	–	–
Ammonium Sesquicarbonate	3	4	1	–	1	4	2	–	–	1	3	1	1	1	1
Ammonium Sulfate	1	3	1	–	1	4	2	–	–	1	1	1	4	1	1
Ammonium Sulfide	2	3	1	–	2	4	2	–	–	1	1	1	4	1	2
Amyl Acetate	4	4	1	4	4	–	–	–	4	4	4	1	1	1	4
Amyl Alcohol	2	3	1	4	2	4	2	–	1	1	1	1	1	1	1
Amyl Borate	1	1	4	–	–	–	–	–	–	1	1	1	–	–	–
Amyl Cabrinol	1	1	3	2	–	–	–	–	2	–	1	1	–	–	–
Amyl Chloride	1	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Amyl Chloronaphthalene	4	1	4	4	–	–	–	–	2	2	1	1	–	–	–
Amyl Hydrate	2	3	1	4	2	4	2	–	1	1	1	1	1	1	1
Amyl Hydride	1	1	4	4	1	–	2	–	3	–	–	1	4	4	4

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CHEMICAL COMPATIBILITY GUIDE

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Amyl Naphthalene	4	1	4	4	–	–	–	–	1	2	1	1	–	–	–
Aniline	4	3	2	4	4	4	4	–	4	2	2	1	4	–	4
Aniline Chloride	4	2	3	4	4	4	–	–	2	1	2	1	4	–	4
Aniline Dyes	4	2	2	3	–	–	–	–	2	1	2	1	–	–	–
Aniline Hydrochloride	4	2	3	4	4	4	–	–	2	1	2	1	4	–	4
Aniline Oil	4	3	2	4	4	4	4	–	4	2	2	1	4	–	4
Aniline Salt	4	2	3	4	4	4	–	–	2	1	2	1	4	–	4
Animal Fats	1	1	2	2	–	–	–	–	1	1	1	1	–	–	–
Anon	4	–	4	–	4	–	4	–	–	–	–	1	4	4	4
Ant Oil, Artificial	4	4	2	4	4	4	–	–	–	4	4	2	–	–	–
Anthraquinone Sulphonic Acid	2	–	1	–	2	4	–	–	–	–	–	1	1	1	1
Antifreeze, Automotive	1	1	1	1	1	4	1	–	1	2	1	1	1	1	1
Antimony Chloride	1	1	1	1	1	–	1	1	1	–	–	1	1	1	1
Antimony Trichloride	1	–	1	–	1	–	2	–	–	–	–	1	1	1	1
Antimony Trioxide	1	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Aqua Regia	4	3	4	4	4	4	4	4	4	3	2	1	4	4	4
Argon	1	1	1	2	–	–	–	–	2	1	1	1	–	–	–
Aroclor 1248	3	1	2	3	–	–	–	–	2	1	1	1	–	–	–
Aroclor 1254	4	1	2	3	–	–	–	–	1	1	1	1	–	–	–
Aroclor 1260	1	1	2	1	–	–	–	–	1	1	1	1	–	–	–
Aromatic Fuels	2	1	4	4	–	–	–	–	2	2	1	1	–	–	–
Arsenic Acid	1	1	1	1	1	4	2	–	1	1	1	1	1	1	1
Arsenic Chloride	1	4	4	–	–	–	–	–	–	4	4	1	–	–	–
Arsenic Trichloride	1	4	4	–	–	–	–	–	–	4	4	1	–	–	–
Asphalt	2	1	4	4	–	–	–	–	2	–	1	1	–	–	–
ASTM FUEL A	1	1	4	4	1	1	2	2	1	3	1	1	4	4	4
ASTM FUEL B	2	1	4	4	2	4	4	4	1	4	1	1	4	4	4
ASTM FUEL C	3	2	4	4	4	4	4	4	2	4	1	1	4	4	4
ASTM FUEL D	2	1	4	–	–	–	–	–	–	4	1	1	–	–	–
ASTM OIL NO. 1	1	1	4	1	1	2	1	1	1	1	4	1	4	4	4
ASTM OIL NO. 2	1	1	4	3	1	2	2	1	1	2	1	1	4	4	4
ASTM OIL NO. 3	1	1	4	3	2	2	2	1	1	3	1	1	4	4	4
ASTM OIL NO. 4	2	1	4	4	–	–	–	–	2	2	1	1	–	–	–
ASTM OIL NO. 5	1	1	4	–	–	–	–	–	–	1	1	1	–	–	–
Automatic Transmission Fluid	1	1	4	3	1	2	2	4	1	1	4	1	4	4	4

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CHEMICAL/ELASTOMER LISTINGS

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Automotive Antifreeze	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Automotive Brake Fluid	4	4	1	2	4	–	2	4	3	1	2	1	1	1	1
Barium Chloride	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Barium Hydroxide	1	1	1	1	1	4	1	–	1	1	1	1	1	1	1
Barium Monosulfide	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Barium Salts	1	1	1	1	1	4	2	–	1	1	1	1	1	1	1
Barium Sulfate	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Barium Sulfide	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Beef Tallow Emulsion, Sulphonated	1	1	4	2	1	–	2	–	2	–	–	1	4	4	4
Beer	1	1	1	1	1	1	1	1	1	–	–	1	1	1	1
Benzaldehyde	4	3	2	4	4	4	4	–	4	2	4	2	2	2	2
Benzene	4	2	4	4	4	4	4	4	2	3	1	1	4	4	4
Benzenemonosulfonic Acid	4	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Benzenesulfonic Acid	4	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Benzine	1	1	4	2	2	1	2	1	1	–	–	1	4	4	4
Benzoic Acid	3	1	3	3	1	4	2	–	2	1	1	1	1	1	1
Benzoic Aldehyde	4	3	2	4	4	4	4	–	4	2	4	2	2	2	2
Benzophenone	4	1	2	–	–	–	–	–	1	1	1	1	–	–	–
Benzotrichloride	4	1	1	–	–	–	–	–	–	3	1	1	–	–	–
Benzoyl Chloride	4	2	4	–	–	–	–	–	2	2	2	1	–	–	–
Benzyl Alcohol	4	1	2	2	–	4	–	–	2	2	1	1	–	–	–
Benzyl Benzoate	4	1	2	–	–	–	–	–	1	3	1	1	–	–	–
Benzyl Chloride	4	1	4	4	–	–	–	–	1	2	1	1	–	–	–
Benzyl Dichloride	4	1	4	4	–	–	–	–	1	2	1	1	–	–	–
Bicarburetted Hydrogen	1	1	2	–	–	–	–	–	1	–	1	1	–	–	–
Bisulfite Lye	2	–	1	–	2	4	2	–	–	–	–	2	1	1	1
Bitumen	4	1	–	–	4	–	4	–	–	–	–	1	–	–	–
Black Ash	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Black Liquor	2	2	2	–	–	–	–	–	–	2	2	3	–	–	–
Black Lye	2	1	1	–	2	–	2	–	–	–	–	1	2	1	2
Blast Furnace Gas	3	1	3	1	2	–	2	1	2	1	1	1	4	2	2
Bleach	2	1	2	2	2	–	2	–	2	1	1	1	4	1	4
Bleach Liquor	4	1	1	2	–	–	–	–	2	1	1	1	–	–	–
Bleaching Lye	4	2	1	–	4	4	2	–	–	–	–	1	4	2	2
Blue Vitriol	1	1	1	1	1	–	2	–	1	1	1	1	1	1	1

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Boletic Acid	1	1	2	2	–	–	–	–	1	1	1	1	–	–	–
Bone Oil	1	1	3	2	1	1	4	1	1	1	1	1	4	4	4
Borax Solutions	2	1	1	2	1	4	2	–	1	1	1	1	1	1	1
Bordeaux Mixture	2	1	1	2	–	–	–	–	2	1	1	1	–	–	–
Boric Acid	1	1	1	1	1	4	2	–	1	1	1	1	1	1	1
Boron Fluids	2	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Brake Fluid DOT3, Glycol Type	4	–	1	1	4	–	2	4	1	–	–	–	1	1	1
Brake Fluid, Automotive	4	–	1	1	4	–	2	4	1	–	–	–	1	1	1
Brine	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Bromine	4	1	4	4	4	–	4	–	2	1	1	1	4	–	4
Bromine Pentafluoride	4	4	4	4	–	–	–	–	4	4	4	2	–	–	–
Bromine Trifluoride	4	4	4	4	–	–	–	–	4	4	4	2	–	–	–
Bromine Water	4	–	–	–	4	–	4	–	–	–	–	–	4	–	4
Bromine, Anhydrous	4	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Bromine, Liquid	4	–	–	–	4	–	4	–	–	–	–	–	4	–	4
Bromobenzene	4	1	4	4	–	–	–	–	1	4	1	1	–	–	–
Bromochloromethane	4	1	2	4	–	–	–	–	2	3	1	1	–	–	–
Bromochlorotrifluoroethane	4	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Bromomethane	3	1	4	4	4	4	4	4	1	2	1	1	4	4	4
Bromotrifluoromethane	1	2	1	4	–	–	–	–	2	–	2	2	–	–	–
Bunker Oil	2	1	4	2	2	–	–	–	1	2	1	1	–	–	–
Butadiene	4	2	4	3	–	–	2	–	1	2	1	1	4	4	4
Butane	1	1	4	4	1	1	2	1	1	2	1	1	4	4	4
Butanediol	1	–	1	–	1	4	1	–	–	–	–	–	2	1	1
Butanoic Acid	3	2	2	–	1	–	2	–	–	–	2	1	4	–	–
Butanol	4	1	2	2	4	4	2	–	1	1	1	1	1	1	1
Butter	1	1	–	–	1	–	2	–	–	–	–	1	4	–	4
Butyl Acetate	4	4	2	4	4	–	4	–	4	4	3	1	2	2	4
Butyl Acetyl Ricinoleate	2	1	1	–	–	–	–	–	2	1	1	1	–	–	–
Butyl Acrylate	4	4	4	–	–	–	–	–	4	4	4	1	–	–	–
Butyl Alcohol	4	1	2	2	4	4	2	–	1	1	1	1	1	1	1
Butyl Benzoate	4	1	1	–	–	–	–	–	1	–	1	1	–	–	–
Butyl Butyrate	4	1	1	–	–	–	–	–	1	–	1	1	–	–	–
Butyl Carbitol	4	1	1	4	–	–	–	–	4	2	1	1	–	–	–
Butyl Cellosolve	3	4	2	–	–	–	–	–	4	3	4	1	–	–	–

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Butyl Cellosolve Acetate	4	2	2	2	–	–	–	–	2	2	2	1	–	–	–
Butyl Ether	4	4	3	4	4	–	4	–	3	4	4	1	4	2	4
Butyl Hydride	1	1	4	4	1	1	2	1	1	2	1	1	4	4	4
Butyl Oleate	4	1	2	–	–	–	–	–	2	1	1	1	–	–	–
Butyl Phenol	4	2	4	4	4	4	4	4	–	–	–	1	4	4	4
Butyl Stearate	2	1	4	–	–	–	–	–	2	1	1	1	–	–	–
Butylamine	3	4	4	4	–	–	–	–	4	2	4	1	–	–	–
Butylene	2	1	4	4	1	1	2	–	2	–	1	1	4	–	4
Butylene Glycol	1	2	1	1	1	1	1	–	1	–	–	1	1	1	1
Butyne Diol	1	2	1	–	1	1	2	–	–	–	–	2	1	1	1
Butyraldehyde	4	4	2	4	–	–	–	–	4	4	4	2	2	2	2
Butyric Acid	3	2	2	–	1	–	2	–	–	–	2	1	4	–	–
Butyric Alcohol	4	1	2	2	4	4	2	–	1	1	1	1	1	1	1
Cadmium Cyanide	1	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Calcine Liquors	1	1	1	–	–	–	–	–	1	1	1	1	–	–	–
Calcium Acetate	2	4	1	4	–	–	–	–	4	1	4	1	–	–	–
Calcium Arsenate	1	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Calcium Bisulfite	3	1	4	2	1	1	1	–	2	1	1	1	1	1	1
Calcium Carbonate	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Calcium Chloride	1	1	1	1	1	4	1	–	1	1	1	1	4	1	1
Calcium Cyanide	1	1	1	1	–	–	–	–	–	1	1	1	–	–	–
Calcium Diacetate	2	4	1	4	–	–	–	–	4	1	4	1	–	–	–
Calcium Hydrate	1	1	1	1	1	4	1	–	1	1	1	1	1	1	1
Calcium Hydrogen Sulfite	3	1	4	2	1	1	1	–	2	1	1	1	1	1	1
Calcium Hydroxide	1	1	1	1	1	4	1	–	1	1	1	1	1	1	1
Calcium Hypochlorite	3	2	1	2	4	4	2	4	2	1	1	1	4	1	4
Calcium Nitrate	1	1	1	2	1	–	1	–	1	1	1	1	1	1	1
Calcium Oxychloride	3	2	1	2	4	4	2	4	2	1	1	1	4	1	4
Calcium Phosphate	1	1	1	1	1	–	1	–	1	1	1	1	1	1	1
Calcium Salts	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Calcium Silicate	1	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Calcium Sulfide	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Calcium Sulfite	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Calcium Thiosulfate	2	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Caliche Liquors	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–

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Camphor	1	2	3	–	1	–	2	–	–	1	1	1	4	4	4
Camphorated Oil	1	2	4	–	2	–	4	–	–	–	–	1	4	4	4
Cane Sugar Liquors	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Caproic Aldehyde	4	4	2	2	4	–	4	–	4	–	4	2	4	–	4
Caprolactam	1	4	1	–	–	–	–	–	–	2	3	1	–	–	–
Caproyl Alcohol	1	1	3	2	–	–	–	–	2	–	1	1	–	–	–
Carbamate	3	1	2	–	–	–	–	–	1	–	1	1	–	–	–
Carbamide	1	1	1	–	1	–	2	–	–	–	–	1	1	1	1
Carbazole	–	–	–	–	–	–	–	–	–	–	1	1	–	–	–
Carbitol	2	2	2	2	–	–	–	–	2	–	2	1	–	–	–
Carbolic Acid	4	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Carbolineum	4	1	4	4	4	1	4	4	1	–	–	1	4	4	4
Carbon Dioxide, Dry	1	2	2	2	1	–	1	1	2	1	2	1	1	1	1
Carbon Dioxide, Wet	1	2	2	–	–	–	–	–	–	1	2	1	–	–	–
Carbon Disulfide	4	1	4	4	4	4	4	–	1	1	1	1	4	4	4
Carbon Monoxide, Dry	1	1	1	1	1	1	1	1	1	–	–	1	1	1	1
Carbon Monoxide, Wet	1	1	1	1	1	–	1	1	1	–	–	1	1	1	1
Carbon Tetrabromide	4	1	4	4	–	–	–	–	2	3	1	1	–	–	–
Carbon Tetrachloride	3	1	4	4	4	–	4	–	2	4	1	1	4	4	4
Carbonic Acid	4	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Castor Oil	1	1	2	1	–	–	–	–	1	1	1	1	–	–	–
Caustic Lime	1	1	1	1	1	4	1	–	1	1	1	1	1	1	1
Caustic Potash	2	3	1	3	2	4	2	4	3	1	2	1	2	1	2
Caustic Soda	2	4	1	3	2	–	2	4	3	1	3	1	2	1	2
Cellosolve	4	4	2	4	–	–	–	–	4	1	4	1	–	2	–
Cellosolve Acetate	4	4	2	4	–	–	–	–	4	3	4	1	–	–	–
Cement, Portland	1	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Cetane	1	1	4	4	–	–	–	–	3	1	1	1	–	–	–
Chloral Hydrate, Aqueous	4	2	2	–	4	–	4	–	–	–	–	1	4	2	4
Chloramine	1	–	1	–	1	–	1	–	–	–	–	2	1	1	1
Chlordane	2	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Chlorethanol	4	4	2	–	4	–	4	–	–	–	–	2	4	2	4
Chlorextol	2	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Chloric Acid	4	2	2	–	4	–	4	–	–	–	–	1	4	2	4
Chloride of Lime, Aqueous	4	1	1	–	4	4	4	–	–	–	–	1	4	1	4

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CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Chlorinated Lime	3	2	1	2	4	4	2	4	2	1	1	1	4	1	4
Chlorinated Naphthalene	4	1	4	4	–	–	–	–	2	4	1	1	–	–	–
Chlorinated Salt Brine	4	1	4	–	–	–	–	–	–	1	1	1	–	–	–
Chlorinated Solvents	4	1	4	4	–	–	–	–	1	4	1	1	–	–	–
Chlorine Dioxide	4	2	3	–	–	–	–	–	2	3	2	2	–	–	–
Chlorine Trifluoride	4	4	4	4	–	–	–	–	4	4	4	2	–	–	–
Chlorine Water	4	1	2	4	4	–	4	–	–	1	1	1	4	2	4
Chlorine, Dry Gas	4	1	4	4	–	–	–	–	1	3	1	1	–	–	–
Chlorine, Liquid	4	2	2	–	4	–	4	–	–	–	–	2	4	2	4
Chlorine, Wet	4	2	2	4	4	2	4	–	2	3	1	2	4	2	4
Chlorine, Wet Gas	4	2	2	–	4	–	4	–	–	–	–	2	4	2	4
Chloroacetic Acid	3	4	2	–	2	4	2	–	4	2	4	2	4	1	4
Chloroacetone	4	4	1	4	–	–	–	–	4	4	4	1	–	–	–
Chloroaniline	4	3	2	–	–	–	–	–	–	2	3	1	–	–	–
Chlorobenzene	4	2	4	4	4	–	4	4	3	–	1	2	4	4	4
Chlorobenzotrifluoride	4	1	4	4	–	–	–	–	2	–	1	1	–	–	–
Chlorobromomethane	4	2	2	4	–	–	–	–	2	3	1	2	–	2	–
Chlorobutadiene	4	1	4	4	–	–	–	–	2	3	1	1	–	–	–
Chlorododecane	4	1	4	4	–	–	–	–	1	2	1	1	–	–	–
Chloroethane	2	2	3	4	2	2	2	4	1	2	1	1	2	2	2
Chloroethylbenzene	4	2	4	4	–	–	–	–	2	2	2	1	–	–	–
Chloroform	4	2	4	4	4	4	4	–	3	4	1	1	4	4	4
Chlorohydrin	1	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Chloromethane	4	2	4	4	4	2	4	–	2	4	1	1	4	4	4
Chloronitroethane	4	4	4	4	–	–	–	–	4	–	4	1	–	–	–
Chloronitrous Acid	4	3	4	4	4	4	4	4	4	3	2	1	4	4	4
Chloropentafluoroethane	1	2	1	–	–	–	–	–	–	4	2	2	–	–	–
Chlorophenol	4	1	4	4	–	–	–	–	2	–	1	1	–	–	–
Chloroprene	4	1	4	4	–	–	–	–	2	3	1	1	–	–	–
Chloropropylene Oxide	4	4	2	4	–	–	–	–	4	4	4	2	–	–	–
Chlorosulfonic Acid	4	4	4	4	4	–	4	4	4	–	4	1	4	4	4
Chlorotoluene	4	1	4	4	–	–	–	–	2	–	1	1	–	–	–
Chlorotrifluoromethane	1	2	1	4	2	2	1	–	4	–	1	2	–	1	1
Chrome Alum	1	1	1	1	–	–	–	–	–	3	1	1	–	–	–
Chrome Plating Solution	4	1	2	2	–	–	–	–	2	1	1	1	–	–	–

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CHEMICAL COMPATIBILITY GUIDE

CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Chromic Acid	4	1	2	3	4	–	4	–	3	1	1	1	4	–	4
Chromic Anhydride	4	1	2	3	4	–	4	–	3	1	1	1	4	–	4
Chromic Oxide	4	1	2	–	–	–	–	–	–	1	1	1	–	–	–
Chromic Trioxide	4	1	2	3	4	–	4	–	3	1	1	1	4	–	4
Chromium Potassium Sulfate	2	1	2	–	–	–	–	–	–	2	1	1	–	–	–
Cinene	2	1	4	4	2	–	4	–	3	3	1	1	4	4	4
Cinnamene	4	2	4	4	4	–	4	–	3	4	1	1	4	4	4
Citric Acid	1	1	1	1	1	–	2	–	1	1	1	1	1	1	1
Clorox	2	1	2	2	–	–	–	–	2	1	1	1	–	–	–
Coal Oil	1	1	4	3	2	1	4	1	1	2	1	1	4	4	4
Coal Tar	1	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Cobalt Chloride	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Cobaltous Chloride	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Coconut Fat	1	1	4	1	1	1	2	1	1	–	–	1	4	4	4
Coconut Fatty Alcohol	1	1	2	–	1	–	1	–	–	–	–	1	2	2	2
Coconut Oil	1	1	3	1	1	–	2	–	1	1	1	1	4	–	4
Cod Liver Oil	1	1	3	2	1	1	1	1	1	1	1	1	2	2	2
Coke Oven Gas	4	1	4	2	4	–	4	–	2	1	1	1	4	4	4
Coolanol	1	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Copper Acetate	2	4	1	4	–	–	–	–	4	4	4	1	–	–	–
Copper Chloride	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1
Copper Cyanide	1	1	1	1	–	–	–	–	1	2	1	1	–	–	–
Copper Fluoride	1	1	1	–	1	–	2	–	–	–	–	1	1	1	1
Copper Nitrate	2	1	2	–	1	–	2	–	–	2	1	1	1	1	1
Copper Salts	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Copper Sulfate	1	1	1	1	1	–	2	–	1	1	1	1	1	1	1
Corn Syrup	1	1	1	1	1	–	2	–	1	1	1	1	2	1	1
Cottonseed Oil	1	1	3	1	1	1	2	–	1	1	1	1	2	2	2
Creosote, Coal Tar	1	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Cresol	4	1	4	4	4	1	4	–	2	1	1	1	4	4	4
Cresylic Acid	4	1	4	4	4	1	4	–	2	1	1	1	4	4	4
Crotonaldehyde	–	4	1	–	–	–	–	–	–	–	–	2	2	1	2
Crotonic Acid	4	4	2	4	–	–	–	–	4	2	4	1	–	–	–
Crude Oil, Asphalt Base	2	1	4	3	2	1	2	1	2	1	1	1	4	4	4
Cumene	4	1	4	4	–	–	–	–	2	3	1	1	–	–	–

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CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Cutting Oil	1	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Cyanogen Chloride	4	2	3	–	–	–	–	–	–	3	2	1	–	–	–
Cyclohexane	1	1	4	3	1	1	4	2	2	2	1	1	4	4	4
Cyclohexanol	1	1	4	4	1	1	4	–	2	1	1	1	4	4	4
Cyclohexanone	4	4	3	4	4	–	4	–	4	3	4	2	4	4	4
Cyclohexylamine	4	4	4	–	4	–	4	–	–	–	–	2	4	4	4
Cymene	4	1	4	4	–	–	–	–	2	–	1	1	–	–	–
Cymol	4	1	4	4	–	–	–	–	2	–	1	1	–	–	–
DDT	4	1	4	4	–	–	–	–	1	–	1	1	–	–	–
Decahydronaphthalene	4	1	4	4	–	–	–	–	1	–	1	1	–	–	–
Decalin	4	1	4	4	–	–	–	–	1	–	1	1	–	–	–
Decane	1	1	4	2	–	–	–	–	1	1	1	1	–	–	–
Deionized Water	2	1	2	–	–	–	–	–	–	2	2	1	–	–	–
Delco Brake Fluid	3	4	1	3	–	–	–	–	4	1	4	1	–	–	–
Detergent Solutions	1	1	1	1	1	–	2	4	1	1	1	1	1	1	1
Detergents	1	2	1	–	1	–	2	–	–	–	–	2	4	1	2
Developing Fluids	1	1	2	1	–	–	–	–	1	1	1	1	–	–	–
Dextrin	1	1	1	1	1	4	1	–	1	–	–	1	1	1	1
Dextron	1	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Diacetone	4	4	1	4	2	–	2	–	4	4	4	1	1	1	1
Diacetone Alcohol	4	4	1	4	2	–	2	–	4	4	4	1	1	1	1
Diacetylmethane	4	4	1	4	–	–	–	–	4	4	4	1	–	–	–
Diamine	2	4	1	3	–	–	–	–	4	1	4	2	–	–	–
Diazinon	3	2	4	4	–	–	–	–	2	4	4	1	–	–	–
Dibenzyl Ether	4	4	2	–	4	–	4	–	–	3	4	1	4	2	4
Dibenzyl Sebacate	4	2	2	3	–	–	–	–	3	1	2	1	–	–	–
Dibromodifluoromethane	4	–	2	4	–	–	–	–	–	–	–	1	–	–	–
Dibromoethylbenzene	4	1	4	4	–	–	–	–	2	4	1	1	–	–	–
Dibromomethane	2	1	4	–	–	–	–	–	1	–	1	1	–	–	–
Dibromotetrafluoroethane	2	2	4	4	–	–	–	–	–	4	2	2	–	–	–
Dibutyl Ether	4	4	3	4	4	–	4	–	3	4	4	1	4	2	4
Dibutyl Phthalate	4	2	2	2	4	–	4	–	2	2	2	1	4	–	4
Dibutyl Sebacate	4	1	3	2	4	–	4	–	2	2	1	2	4	4	4
Dibutylamine	4	4	4	3	–	–	–	–	4	2	4	1	–	–	–
Dicapryl Phthalate	4	2	2	3	–	–	–	–	2	–	2	1	–	–	–

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CHEMICAL COMPATIBILITY GUIDE

CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Dichloracetic Acid	4	4	1	–	4	4	4	–	–	–	–	2	4	1	4
Dichlorethane	4	2	4	4	4	4	4	4	–	–	–	2	4	4	4
Dichlorethylene	4	2	–	–	4	–	4	–	–	–	–	2	4	–	4
Dichloroaniline	–	3	–	–	–	–	–	–	–	–	2	1	–	–	–
Dichlorobenzene	4	1	4	4	4	–	4	–	2	3	1	1	4	4	4
Dichlorobutane	2	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Dichlorobutene	4	2	4	–	4	–	4	–	–	–	–	1	4	4	4
Dichlorodiethyl Sulfide	–	–	1	1	–	–	–	–	–	–	–	1	–	–	–
Dichlorodifluoromethane	1	2	2	4	2	1	1	–	4	4	1	2	2	2	2
Dichloroethylene	–	2	–	–	–	–	–	–	–	–	1	1	–	–	–
Dichlorofluoromethane	4	4	4	4	–	–	–	–	–	–	4	1	–	–	–
Dichloroisopropyl Ether	4	3	3	4	–	–	–	–	3	3	3	1	–	–	–
Dichloromethane	4	2	4	4	4	4	4	4	2	–	2	1	4	4	4
Dichlorotetrafluoroethane	1	1	1	4	2	1	1	–	2	4	1	2	1	1	1
Dicyclohexylamine	3	4	4	–	–	–	–	–	4	3	4	1	–	–	–
Diesel Fuel	1	1	4	2	1	2	2	2	1	–	–	1	4	4	4
Diesel Oil	1	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Di-Ester Synthetic Lubricants	2	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Diethyl Ether	4	4	4	4	4	–	4	–	3	4	4	1	4	4	4
Diethyl Sebacate	4	2	2	2	4	–	4	–	2	2	2	2	4	2	4
Diethyl Sulfate	4	4	1	–	–	–	–	–	–	1	4	1	–	–	–
Diethylamine	2	4	2	2	2	–	4	–	4	4	4	2	4	1	4
Diethylbenzene	4	1	4	4	–	–	–	–	3	3	1	1	–	–	–
Diethylene Glycol	1	2	1	2	1	–	1	–	1	1	2	1	1	1	1
Diethylene Glycol Butyl Ether	4	3	1	4	–	–	–	–	4	2	3	1	–	–	–
Diethylene Glycol Monobutyl Ether	4	1	1	4	–	–	–	–	4	2	1	1	–	–	–
Diethylhexyl Phthalate	4	2	2	3	–	–	–	–	2	2	2	1	–	–	–
Diethylhexyl Sebacate	4	2	2	3	–	–	–	–	3	1	2	1	–	–	–
Diglycolic Acid	2	1	1	–	2	–	2	–	–	–	–	1	1	1	1
Dihexyl Phtalate	4	4	–	–	4	–	4	–	–	–	–	2	4	–	4
Diisobutyl Ketone	4	4	1	–	4	–	4	–	–	–	–	2	2	1	4
Diisobutylene	2	1	4	4	–	–	–	–	3	–	1	1	–	–	–
Diisooctyl Sebacate	3	2	3	3	–	–	–	–	3	–	2	1	–	–	–
Diisopropyl Ketone	4	4	1	4	–	–	–	–	4	–	4	1	–	–	–
Diisopropylbenzene	4	1	4	–	–	–	–	–	2	–	1	1	–	–	–

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CHEMICAL/ELASTOMER LISTINGS

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Diisopropylidene Acetone	4	4	2	4	–	–	–	–	4	4	4	1	–	–	–
Dimethyl Acetamide	–	4	–	–	–	–	–	–	–	–	–	1	–	–	–
Dimethyl Ether	3	3	3	1	4	–	4	–	1	4	3	2	2	1	4
Dimethyl Formamide	4	4	2	3	4	4	4	–	4	3	1	2	2	2	4
Dimethyl Ketone	4	4	1	4	4	4	4	4	4	4	3	1	1	1	1
Dimethyl Phthalate	4	1	2	–	–	–	–	–	2	2	1	1	–	–	–
Dimethyl Sulfoxide	3	4	1	–	–	–	–	–	–	2	3	1	–	–	–
Dimethyl Terephthalate	–	2	–	–	–	–	–	–	–	–	–	1	–	–	–
Dimethylamine	4	4	1	–	4	–	4	–	–	–	–	2	4	1	4
Dimethylaniline	3	4	2	4	–	–	–	–	4	–	4	1	–	–	–
Dimethylbenzene	4	2	4	4	4	4	4	4	3	4	1	1	4	4	4
Dinitrotoluene	4	4	4	4	–	–	–	–	4	4	4	1	–	–	–
Dinonyl Phthalate	4	4	–	–	4	–	4	–	–	–	–	2	4	–	4
Dioctyl Phthalate	4	2	–	–	4	–	4	4	–	–	–	1	4	–	4
Dioctyl Sebacate	4	4	–	–	4	–	4	–	–	–	–	2	4	–	4
Dioxane	4	4	2	4	4	–	4	–	3	4	4	1	2	2	2
Dioxolane	4	4	2	4	–	–	–	–	4	4	4	1	–	–	–
Dipentene	2	1	4	4	2	–	4	–	3	3	1	1	4	4	4
Diphenyl	4	1	4	4	4	–	4	–	2	3	1	1	4	4	4
Diphenyl Oxide	4	1	4	3	–	–	–	–	2	2	1	1	–	–	–
Dodecyl Alcohol	1	1	2	–	1	–	1	–	–	–	–	1	2	2	2
Drinking Water	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Dry Cleaning Fluids	3	1	4	4	–	–	–	–	2	3	1	2	–	–	–
Engine Oils	1	1	4	2	1	2	2	1	1	–	–	1	4	4	4
Epichlorohydrin	4	4	2	4	–	–	–	–	4	4	4	2	–	–	–
Epoxy Resins	3	4	1	–	–	–	–	–	–	2	4	1	–	–	–
Epsom Salts	1	1	1	1	1	–	2	4	1	–	1	1	–	1	1
Ethanamide	1	3	1	2	–	–	–	–	1	2	3	1	–	–	–
Ethane	1	1	4	3	1	1	2	1	2	–	1	1	4	4	4
Ethanethiol	4	2	3	3	–	–	–	–	–	–	2	1	–	–	–
Ethanol	1	3	1	1	–	–	–	–	1	1	3	1	–	–	–
Ethanolamine	4	4	2	2	–	–	–	–	4	–	4	1	–	–	–
Ethene	1	1	2	–	–	–	–	–	1	–	1	1	–	–	–
Ethers	4	4	4	4	–	–	–	–	3	4	4	1	–	–	–
Ethine	1	1	1	2	1	–	1	1	1	1	1	1	1	1	1

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Ethyl Acetate	4	4	3	2	4	4	4	–	4	4	3	1	4	4	4
Ethyl Acetoacetate	4	4	2	2	–	–	–	–	4	–	4	1	–	–	–
Ethyl Acrylate	4	4	2	3	4	–	–	4	4	3	4	2	–	2	–
Ethyl Alcohol	1	3	1	1	–	–	–	–	1	1	3	1	–	–	–
Ethyl Aldehyde	4	4	2	2	–	–	–	–	4	4	4	2	–	–	–
Ethyl Benzene	4	2	4	4	4	–	4	4	2	3	1	1	4	4	4
Ethyl Benzoate	4	1	4	4	–	–	–	–	1	3	1	1	–	–	–
Ethyl Bromide	2	1	4	–	–	–	–	–	1	1	1	1	–	–	–
Ethyl Cellulose	2	4	2	3	–	–	–	–	4	–	4	1	–	–	–
Ethyl Chloride	2	2	3	4	2	2	2	4	1	2	1	1	2	2	2
Ethyl Chloroformate	4	1	4	4	–	–	–	–	2	2	1	1	–	–	–
Ethyl Cyanide	1	1	4	–	–	–	–	–	–	1	1	1	–	–	–
Ethyl Cyclopentane	1	1	4	4	–	–	–	–	1	2	1	1	–	–	–
Ethyl Dibromide	4	1	3	–	–	–	–	–	–	2	1	1	–	–	–
Ethyl Dichloride	4	1	3	–	–	–	–	–	–	1	1	1	–	–	–
Ethyl Ether	4	4	3	4	4	4	4	4	4	4	4	1	2	2	4
Ethyl Formate	4	1	2	–	–	–	–	–	1	1	1	2	–	–	–
Ethyl Hexanol	1	1	1	2	–	–	–	–	1	–	1	1	–	–	–
Ethyl Mercaptan	4	2	3	3	–	–	–	–	–	–	2	1	–	–	–
Ethyl Methyl Ketone	4	4	2	4	4	4	4	4	4	4	2	1	4	2	4
Ethyl Oxalate	4	1	1	4	–	–	–	–	2	–	1	1	–	–	–
Ethyl Pentachlorobenzene	4	2	4	4	–	–	–	–	2	2	2	1	–	–	–
Ethyl Silicate	1	1	1	4	–	–	–	–	1	–	1	1	–	–	–
Ethyl Sulfhydrate	4	2	3	3	–	–	–	–	–	–	2	1	–	–	–
Ethyl T-Butyl Ether	3	2	3	–	–	–	–	–	–	2	1	1	–	–	–
Ethylacetic Acid	3	2	2	–	1	–	2	–	–	–	2	1	4	–	–
Ethylamine	–	4	–	–	–	–	–	–	–	–	4	1	–	–	–
Ethylchlorocarbonate	4	1	4	4	–	–	–	–	2	2	1	1	–	–	–
Ethylene	1	1	2	–	–	–	–	–	1	–	1	1	–	–	–
Ethylene Alcohol	1	2	1	2	1	4	2	–	1	1	1	1	3	1	1
Ethylene Bromide	4	1	3	4	–	–	–	–	3	–	1	1	–	–	–
Ethylene Chloride	4	2	3	4	2	2	2	4	3	–	2	1	2	2	2
Ethylene Chlorohydrin	4	1	2	3	–	–	–	–	2	1	1	1	–	–	–
Ethylene Diamine	4	4	1	4	4	4	4	4	–	–	–	2	2	1	2
Ethylene Dibromide	4	1	3	4	–	–	–	–	3	–	1	1	–	–	–

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CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Ethylene Dichloride	4	2	3	4	2	2	2	4	3	–	2	1	2	2	2
Ethylene Glycol	1	2	1	2	1	4	2	–	1	1	1	1	3	1	1
Ethylene Glycol Butyl Ether Acetate	4	2	2	2	–	–	–	–	2	2	2	1	–	–	–
Ethylene Glycol Ethyl Ether Acetate	4	4	2	4	–	–	–	–	4	3	4	1	–	–	–
Ethylene Glycol Monobutyl Ether	3	4	2	–	–	–	–	–	4	3	4	1	–	–	–
Ethylene Glycol Monobutyl Ether	3	4	2	–	–	–	–	–	4	3	4	1	–	–	–
Ethylene Oxide	4	4	4	4	–	–	–	–	4	4	4	1	–	–	–
Ethylene Trichloride	4	2	4	4	4	4	4	–	3	4	1	2	4	4	4
Ethylenediamine	1	4	1	1	–	–	–	–	4	2	3	2	–	–	–
Ethylmorpholinestannous Octotate	4	4	2	–	–	–	–	–	–	–	4	1	–	–	–
Ethyne	1	1	1	2	1	–	1	1	1	1	1	1	1	1	1
Exhaust Gases, Containing Carbon Dioxide	1	1	1	1	1	–	1	1	1	–	–	1	1	1	1
Exhaust Gases, Containing Carbon Monoxide	1	1	1	1	1	1	1	1	1	–	–	1	1	1	1
Exhaust Gases, Containing Hydrogen Chloride	2	1	1	–	2	–	1	–	–	–	–	1	1	1	1
Exhaust Gases, Containing Hydrogen Fluoride	1	1	1	–	1	–	1	–	–	–	–	1	1	1	1
Exhaust Gases, Containing Nitrous Gases	–	1	1	4	–	–	1	4	2	–	–	1	4	2	–
Exhaust Gases, Containing Sulphur Dioxide	2	1	1	–	2	–	1	–	–	–	–	1	2	1	2
Exhaust Gases, Containing Sulphuric Acid	4	1	1	–	4	–	2	–	–	–	–	1	2	1	2
Fatty Acids	2	1	3	3	2	–	2	–	–	1	1	1	–	–	–
Fatty Alcohol	1	1	2	1	1	–	1	1	–	–	–	1	2	2	2
FC 11	2	2	4	4	2	–	2	–	2	4	2	2	–	–	–
FC 112	2	1	4	4	–	–	–	–	2	4	1	2	–	–	–
FC 113	2	2	4	4	2	2	1	–	4	4	2	2	–	–	–
FC 114	1	1	1	4	2	1	1	–	2	4	1	2	1	1	1
FC 114B2	2	2	4	4	–	–	–	–	–	4	2	2	–	–	–
FC 115	1	2	1	–	–	–	–	–	–	4	2	2	–	–	–
FC 116	1	2	1	–	–	–	–	–	–	–	2	2	–	–	–
FC 12	1	2	2	4	2	1	1	–	4	4	1	2	2	2	2
FC 13	1	2	1	4	2	2	1	–	4	–	1	2	–	1	1
FC 134A	2	4	1	–	2	–	1	–	–	–	–	4	–	–	–
FC 13B1	1	2	1	4	–	–	–	–	2	–	2	2	–	–	–
FC 14	1	1	1	4	–	–	–	–	–	–	1	1	–	–	–
FC 142B	2	2	4	–	–	–	–	–	–	4	2	2	–	–	–
FC 143A	4	1	4	4	–	–	–	–	2	2	1	1	–	–	–
FC 152A	1	4	1	–	–	–	–	–	–	–	4	1	–	–	–

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CHEMICAL COMPATIBILITY GUIDE

CHEMICAL/ELASTOMER LISTINGS

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FC 21	4	4	4	4	–	–	–	–	–	–	4	1	–	–	–
FC 218	1	1	1	–	–	–	–	–	–	–	1	2	–	–	–
FC 22	4	4	2	4	4	2	1	–	3	–	4	1	1	1	1
FC 31	4	4	1	–	–	–	–	–	–	–	4	2	–	–	–
FC 32	1	4	1	–	–	–	–	–	–	4	4	1	–	–	–
FC 43	1	1	1	1	–	–	–	–	–	1	3	1	–	–	–
FC 502, F22 and F316	2	2	1	–	–	–	–	–	–	–	2	2	–	–	–
FC 70	–	1	–	–	–	–	–	–	–	–	2	2	–	–	–
FC 75	1	2	1	1	–	–	–	–	2	3	2	4	–	–	–
FC BF Solvent	2	1	4	4	–	–	–	–	2	4	1	2	–	–	–
FC C-316	1	1	1	–	–	–	–	–	–	–	1	2	–	–	–
FC C-318	1	2	1	–	–	–	–	–	–	4	2	2	–	–	–
FC MF Solvent	2	2	4	4	2	–	2	–	2	4	2	2	–	–	–
FC PCA	1	2	4	4	–	–	–	–	–	4	2	3	–	–	–
FC TA	1	3	2	3	–	–	–	–	–	–	3	2	–	–	–
FC TC	1	1	2	4	–	–	–	–	–	–	1	2	–	–	–
FC TF Solvent	2	2	4	4	2	2	1	–	4	4	2	2	–	–	–
FC TMC	2	1	3	3	–	–	–	–	–	–	1	2	–	–	–
FC T-P35	1	1	1	1	–	–	–	–	–	–	1	2	–	–	–
FC T-WD602	2	1	2	4	–	–	–	–	–	–	1	2	–	–	–
Fermentation Gas	1	1	–	1	1	2	1	–	4	–	–	1	4	–	4
Ferric Chloride	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Ferric Nitrate	1	1	1	3	–	–	–	–	1	1	1	1	–	–	–
Ferric Sulfate	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Fish Oil	1	1	3	2	1	1	1	1	1	1	1	1	2	2	2
Flaxseed Oil	1	1	3	1	1	2	1	–	1	1	1	1	2	2	2
Fluorine Gas	4	2	4	4	4	–	–	–	–	–	2	2	4	–	–
Fluorobenzene	4	2	4	4	4	–	4	4	3	–	1	1	4	4	4
Fluoroboric Acid	1	–	1	–	–	–	–	–	–	–	–	1	–	–	–
Fluorosilicic Acid	1	2	2	4	1	–	2	–	4	1	2	1	1	1	1
Fomblin	–	1	–	–	–	–	–	–	–	–	1	1	–	–	–
Formaldehyde	3	1	2	2	2	–	2	4	4	4	2	2	1	1	1
Formalin	3	1	2	2	2	–	2	4	4	4	2	2	1	1	1
Formamide	4	3	1	–	4	–	4	–	–	2	3	1	1	1	–
Formic Acid	3	4	2	2	4	4	4	–	3	3	4	2	2	2	2

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Formic Aldehyde	3	1	2	2	2	–	2	4	4	4	2	2	1	1	1
Freon Mf Solvent	2	2	4	4	2	–	2	–	2	4	2	2	–	–	–
Fuel Oil	1	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Fumaric Acid	1	1	2	2	–	–	–	–	1	1	1	1	–	–	–
Furaldehyde	4	4	2	–	–	–	–	–	–	4	4	2	–	–	–
Furan	4	4	4	–	–	–	–	–	–	4	4	1	–	–	–
Furane	–	4	–	–	–	4	–	–	–	–	–	2	–	–	–
Furfural	4	4	2	4	4	4	–	–	–	4	4	2	–	–	–
Furfuraldehyde	4	4	2	4	4	4	–	–	–	4	4	2	–	–	–
Furfuran	4	4	4	–	–	–	–	–	–	4	4	1	–	–	–
Furfuryl Alcohol	4	4	2	4	–	4	–	–	4	2	3	2	–	–	–
Furnace Gas, Dry	4	1	1	1	4	–	2	–	1	–	–	1	1	1	1
Furyl Carbinol	4	4	2	4	–	4	–	–	4	2	3	2	–	–	–
Galden	–	1	–	–	–	–	–	–	–	2	2	4	–	–	–
Gallic Acid	2	1	2	–	–	–	–	–	1	1	1	1	–	–	–
Gas Liquor	1	1	4	4	1	–	4	4	4	–	–	1	4	4	4
Gas Oil	1	1	4	2	1	1	2	1	1	–	–	1	4	4	4
Gasoline	1	1	4	4	–	–	–	–	1	2	1	1	–	–	–
Gasoline/Alcohol Blend	4	2	4	4	4	4	4	4	2	–	1	1	4	4	4
Gelatin	1	1	1	1	1	–	2	2	1	–	–	1	1	1	1
Glauber's Salt	4	1	2	–	1	–	2	2	1	1	1	1	1	1	1
Glucose	1	1	1	1	1	–	2	–	1	1	1	1	2	1	1
Glycerin	1	1	1	1	1	–	2	–	1	1	1	1	2	1	1
Glycerol Chlorhydrin	4	–	2	–	4	–	4	–	–	–	–	2	2	2	2
Glycine, Aqueous, 10%	2	1	1	–	2	–	1	–	–	–	–	1	2	1	2
Glycol Chlorohydrin	4	1	2	3	–	–	–	–	2	1	1	1	–	–	–
Glycolic Acid	1	1	1	1	1	–	2	–	1	–	–	1	1	1	1
Glycols	1	2	1	2	1	4	2	–	1	1	1	1	3	1	1
Grain Alcohol	1	3	1	1	–	–	–	–	1	1	3	1	–	–	–
Gray Acetate	2	4	1	4	–	–	–	–	4	1	4	1	–	–	–
Green Sulfate Liquor	2	1	1	1	–	–	–	–	2	1	1	2	–	–	–
Halothane	4	1	4	4	–	–	–	–	2	1	1	2	–	–	–
Halowax Oil	4	1	4	4	–	–	–	–	1	1	1	2	–	–	–
Hartshorn	3	4	1	–	1	4	2	–	–	1	3	1	1	1	1
Heavy Water	1	2	1	1	–	–	–	–	1	1	1	1	–	–	–

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HEF-2	2	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Helium	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Heptane	1	1	4	4	1	1	2	1	2	3	1	1	4	4	4
Hexachloroacetone	4	4	1	–	–	–	–	–	–	4	4	1	–	–	–
Hexachlorobutadiene	4	1	–	–	4	–	–	–	–	–	–	1	4	–	4
Hexachlorocyclohexane	–	1	–	–	–	2	–	–	–	–	–	1	4	–	4
Hexadecane	1	1	4	4	–	–	–	–	3	1	1	1	–	–	–
Hexafluoroethane	1	2	1	–	–	–	–	–	–	–	2	2	–	–	–
Hexahydrobenzene	1	1	4	3	1	1	4	2	2	2	1	1	4	4	4
Hexahydrophenol	1	1	4	4	1	1	4	–	2	1	1	1	4	4	4
Hexahydropyridine	4	4	4	4	–	–	–	–	4	–	4	1	–	–	–
Hexaldehyde	4	4	2	2	4	–	4	–	4	–	4	2	4	–	4
Hexamethylene	1	1	4	3	1	1	4	2	2	2	1	1	4	4	4
Hexanaphthalene	1	1	4	3	1	1	4	2	2	2	1	1	4	4	4
Hexane	1	1	4	4	1	1	2	1	1	2	1	1	4	4	4
Hexane Triol	1	1	1	1	1	–	2	–	1	–	–	1	–	1	–
Hexanedioic Acid	1	2	2	–	1	–	1	–	1	2	2	1	1	1	1
Hexanol	1	1	3	2	–	–	–	–	2	–	1	1	–	–	–
Hexene-1	2	1	4	4	2	1	2	1	1	3	1	1	4	4	4
Hexyl Alcohol	1	1	3	2	–	–	–	–	2	–	1	1	–	–	–
Hydraulic Fluids, Hydraulic Oils DIN 51524	1	1	4	2	1	1	2	1	1	–	–	1	4	4	4
Hydraulic Fluids, Oil-in-Water Emulsions HFA	1	–	4	–	1	–	2	–	–	–	–	1	4	4	4
Hydraulic Fluids, Phosphoric Acid Ester HFD	4	–	–	4	4	4	4	4	4	–	–	1	4	–	4
Hydraulic Fluids, Polyglycol-Water Emulsions HFC	1	1	1	1	1	–	2	–	1	–	–	1	1	1	1
Hydraulic Fluids, Water-in-Oil Emulsions HFB	–	–	4	–	–	–	2	–	–	–	–	1	4	4	4
Hydrazine	2	4	1	3	–	–	–	–	4	1	4	2	–	–	–
Hydrazine Hydrate	2	–	1	–	2	2	2	–	2	–	–	2	4	1	2
Hydrobromic Acid	3	1	1	4	2	4	2	–	3	1	1	1	–	1	–
Hydrochloric Acid	1	1	1	–	2	4	2	–	–	–	–	1	1	1	1
Hydrochloric Acid, Concentrated	3	1	2	4	4	–	4	–	3	–	1	1	2	1	2
Hydrochloric Acid, Hot 37%	4	1	3	3	–	–	–	–	2	1	1	1	–	–	–
Hydrocyanic Acid	2	1	1	2	–	–	2	–	2	1	1	1	–	1	–
Hydrofluoric Acid	4	1	4	4	–	–	–	–	4	–	1	1	–	–	–
Hydrofluoric Acid, Anhydrous	4	1	3	4	–	–	–	–	4	–	1	1	–	–	–

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Hydrofluoric Acid, Concentrated Cold	–	–	2	–	–	–	–	–	–	–	–	2	–	2	2
Hydrofluoric Acid, Concentrated Hot	4	3	4	4	–	–	–	–	4	–	3	1	–	–	–
Hydrofluorosilicic Acid	2	1	1	4	–	–	–	–	4	1	1	1	–	–	–
Hydrogen Bromide	3	1	1	4	2	4	2	–	3	1	1	1	–	1	–
Hydrogen Chloride, Anhydrous	4	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Hydrogen Chloride, Gas	4	1	1	–	4	–	4	–	–	–	–	1	2	1	2
Hydrogen Cyanide	2	1	1	2	–	–	2	–	2	1	1	1	–	1	–
Hydrogen Dioxide	3	1	1	2	4	–	4	–	2	1	1	1	4	1	4
Hydrogen Fluoride, Anhydrous	–	4	2	4	–	–	–	–	–	–	4	2	–	–	–
Hydrogen Gas	1	1	1	2	1	–	1	1	2	–	1	1	1	1	1
Hydrogen Peroxide	3	1	1	2	4	–	4	–	2	1	1	1	4	1	4
Hydrogen Sulfide, Dry Cold	2	3	1	3	2	–	2	–	3	1	4	1	2	1	2
Hydrogen Sulfide, Dry Hot	1	4	1	3	–	–	–	–	3	1	4	1	–	–	–
Hydrogen Sulfide, Wet Cold	2	3	1	3	2	–	2	–	3	1	4	1	2	1	1
Hydrogen Sulfide, Wet Hot	1	4	1	3	–	–	–	–	3	1	4	1	–	–	–
Hydroquinone	2	2	3	2	1	–	2	2	2	3	3	2	2	1	2
Hydrosulphite, Aqueous	2	–	1	–	2	–	2	–	–	–	–	2	1	1	1
Hydroxy Benzene	4	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Hydroxylamine Sulfate	1	–	1	1	1	–	2	–	1	–	–	2	1	1	1
Hydroxymethylbenzene	4	1	4	4	4	1	4	–	2	1	1	1	4	4	4
Hydyne	2	4	1	4	–	–	–	–	4	–	4	2	–	–	–
Hypnone	4	4	1	4	–	–	–	–	4	4	4	1	–	–	–
Hypochlorous Acid	4	1	2	–	–	–	–	–	–	–	1	1	–	–	–
Ink	1	2	1	1	2	1	1	1	1	–	–	1	1	1	1
Iodine	2	1	2	–	–	–	–	–	1	1	1	1	–	–	–
Iodine Pentafluoride	4	4	4	4	–	–	–	–	4	4	4	2	–	–	–
Iodine, Tincture	1	1	1	2	1	4	2	–	2	–	–	1	1	1	1
Iodoform	–	1	1	–	–	–	–	–	–	–	–	1	–	1	–
Isobutanol	2	1	1	1	2	4	1	4	2	1	1	1	1	1	1
Isobutene	2	1	4	4	1	1	2	–	2	–	1	1	4	–	4
Isobutyl Alcohol	2	1	1	1	2	4	1	4	2	1	1	1	1	1	1
Isobutyl Aldehyde	3	4	2	–	–	–	–	–	–	4	4	2	–	–	–
Isobutyl Chloride	4	1	4	–	–	–	–	–	–	4	1	1	–	–	–
Isobutyl Ether	2	4	4	–	–	–	–	–	–	4	4	1	–	–	–
Isobutyl N-Butyrate	4	1	1	–	–	–	–	–	1	1	1	1	–	–	–

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Isobutylene	2	1	4	4	1	1	2	–	2	–	1	1	4	–	4
Isobutyraldehyde	3	4	2	–	–	–	–	–	–	4	4	2	–	–	–
Isobutyric Acid	2	4	2	–	–	–	–	–	–	3	4	1	–	–	–
Isododecane	1	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Isooctane	1	1	4	3	1	2	2	1	1	–	1	1	4	4	4
Isophorone	4	4	1	4	–	2	–	–	4	2	4	2	–	1	–
Isopropanol	2	1	1	1	2	–	2	4	2	1	1	1	1	1	1
Isopropyl Acetate	4	4	2	4	4	–	4	4	4	4	4	2	4	2	4
Isopropyl Alcohol	2	1	1	1	2	–	2	4	2	1	1	1	1	1	1
Isopropyl Benzene	4	1	4	4	–	–	–	–	2	3	1	1	–	–	–
Isopropyl Chloride	4	1	4	4	4	4	4	4	2	4	1	1	4	4	4
Isopropyl Ether	3	4	4	4	4	4	4	4	4	4	4	1	–	–	4
Isopropyl Toluene	4	1	4	4	–	–	–	–	2	–	1	1	–	–	–
JP-3	1	1	4	4	2	2	4	2	1	2	1	1	4	4	4
JP-4	1	1	4	4	2	2	4	2	2	2	1	1	4	4	4
JP-5	1	1	4	4	2	2	4	2	2	2	1	1	4	4	4
JP-6	1	1	4	4	2	2	4	2	2	2	1	1	4	4	4
JP-8	4	1	4	4	–	–	–	–	2	2	1	1	–	–	–
JP-9	3	1	4	4	–	–	–	–	2	–	1	1	–	–	–
JP-10	3	1	4	4	–	–	–	–	1	–	1	1	–	–	–
JP-X	1	4	4	–	–	–	–	–	–	2	4	1	–	–	–
Kel-F Liquids	1	2	1	1	–	–	–	–	2	3	2	3	–	–	–
Kerosene	1	1	4	3	2	1	4	1	1	2	1	1	4	4	4
Lacquer Solvents	4	4	4	4	–	–	–	–	4	4	4	1	–	–	–
Lacquers	4	4	4	4	–	–	–	–	4	4	4	1	–	–	–
Lactams	4	4	3	–	4	–	4	–	4	3	4	2	4	4	4
Lactic Acid, Cold	1	1	1	1	–	–	–	–	1	–	1	1	–	–	–
Lactic Acid, Hot	4	1	4	2	–	–	–	–	2	–	1	1	–	–	–
Lard	1	1	2	2	–	–	–	–	1	1	1	1	–	–	–
Laughing Gas	1	1	1	1	1	1	1	1	1	–	1	1	1	1	1
Lauryl Alcohol	1	1	2	–	1	–	1	–	–	–	–	1	2	2	2
Lavender Oil	2	1	4	4	2	–	4	2	2	1	1	1	–	–	–
Lead Acetate	2	4	1	4	2	4	2	–	4	4	4	1	4	1	1
Lead Nitrate	1	1	1	2	1	4	2	–	1	2	1	1	1	1	1
Lead Oxide	1	1	1	–	–	–	–	–	–	1	1	1	–	–	–

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CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Lemon Juice, Undiluted	1	–	–	1	1	–	2	–	–	–	–	1	1	–	1
Lichenic Acid	1	1	2	2	–	–	–	–	1	1	1	1	–	–	–
Light Grease	1	1	4	–	1	–	4	1	–	1	1	1	–	–	–
Ligroin	1	1	4	4	–	–	–	–	1	2	1	1	–	–	–
Lime Acetate	2	4	1	4	–	–	–	–	4	1	4	1	–	–	–
Lime Bleach	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Lime Hydrate	1	1	1	1	1	4	1	–	1	1	1	1	1	1	1
Lime Sulfur	4	1	1	1	–	–	–	–	1	–	1	1	–	–	–
Limonene	2	1	4	4	2	–	4	–	3	3	1	1	4	4	4
Lindol	4	2	2	3	4	2	4	0	2	1	1	1	4	2	4
Linoleic Acid	2	2	4	2	2	–	–	–	–	1	2	1	–	–	–
Linseed Oil	1	1	3	1	1	2	1	–	1	1	1	1	2	2	2
Liquefied Petroleum Gas	1	1	4	3	–	–	–	–	3	2	1	1	–	–	–
Liquid Oxygen	4	4	4	4	–	–	–	–	4	4	4	2	–	–	–
Liquor	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Lithium Bromide	1	1	1	1	1	1	2	–	1	–	–	1	1	1	1
Lithium Chloride	1	1	1	1	1	1	2	–	1	–	–	1	1	1	1
Lithium Hydroxide	2	3	1	–	–	–	–	–	–	1	3	1	–	–	–
Lye	2	3	1	3	2	4	2	4	3	1	2	1	2	1	2
Machine Oil, Mineral	1	1	4	2	1	1	2	1	1	–	–	1	4	4	4
Magnesium Chloride	1	1	1	1	1	–	2	4	1	1	1	1	–	1	1
Magnesium Hydrate	2	2	1	–	–	–	–	–	–	1	2	1	–	–	–
Magnesium Hydroxide	2	2	1	–	–	–	–	–	–	1	2	1	–	–	–
Magnesium Salts	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Magnesium Sulfate	1	1	1	1	1	–	2	4	1	–	1	1	–	1	1
Magnesium Sulfite	1	1	1	1	–	–	–	–	1	–	1	1	–	–	–
Maize Oil	1	1	4	1	1	–	2	–	1	1	1	1	4	4	4
Malathion	2	1	4	4	–	–	–	–	2	–	1	1	–	–	–
Maleic Acid	4	1	4	–	–	–	–	–	–	1	1	1	–	–	–
Maleic Anhydride	4	1	4	–	–	–	–	–	–	1	1	1	–	–	–
Malic Acid	1	1	4	2	–	–	–	–	1	1	1	1	–	–	–
Margarine	1	1	4	1	1	1	2	1	1	–	–	1	4	4	4
Marsh Gas	1	1	3	2	1	–	1	1	2	2	1	1	2	2	2
MEA	4	4	2	2	–	–	–	–	4	–	4	1	–	–	–
MEK	4	4	2	4	4	4	4	4	4	4	2	1	4	2	4

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CHEMICAL COMPATIBILITY GUIDE

CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Menthol	4	2	4	–	4	–	4	–	–	–	–	1	4	4	4
Mercaptobenzothiazole	3	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Mercuric Chloride	1	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Mercury	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Mercury Salts	1	1	1	1	1	–	2	–	1	–	–	1	1	1	1
Mercury Vapor	1	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Mesityl Oxide	4	4	2	4	–	–	–	–	4	4	4	1	–	2	–
Methacrylic Acid	4	4	2	4	–	–	–	–	4	2	4	1	–	–	–
Methanal	3	1	2	2	2	–	2	4	4	4	2	2	1	1	1
Methane	1	1	3	2	1	–	1	1	2	2	1	1	2	2	2
Methanecarboxylic Acid	3	4	2	2	4	4	4	–	4	3	2	2	4	2	4
Methanoic Acid	3	4	2	2	4	4	4	–	3	3	4	2	2	2	2
Methanol	2	2	1	2	2	–	2	–	1	1	1	1	1	1	1
Methoxy Butanol	1	1	2	–	1	–	2	–	–	–	–	1	4	2	4
Methyl 2-Pyrrolidone	–	2	2	2	–	–	–	–	2	–	1	1	–	–	–
Methyl Acetate	4	4	2	4	–	–	–	–	4	4	4	1	–	–	–
Methyl Acetoacetate	4	4	2	2	–	–	–	–	4	4	4	1	–	–	–
Methyl Acrylate	4	4	3	4	4	4	4	4	4	4	4	2	4	4	4
Methyl Alcohol	2	2	1	2	2	–	2	–	1	1	1	1	1	1	1
Methyl Benzene	4	2	4	4	4	4	4	4	3	4	1	1	4	4	4
Methyl Benzoate	4	1	4	4	–	–	–	–	1	2	2	1	–	–	–
Methyl Bromide	3	1	4	4	4	4	4	4	1	2	1	1	4	4	4
Methyl Butanethiol	4	1	4	4	–	–	–	–	–	1	1	1	–	–	–
Methyl Butanol	2	3	1	4	2	4	2	–	1	1	1	1	1	1	1
Methyl Butanone	4	4	2	4	–	–	–	–	4	–	4	1	–	–	–
Methyl Butyl Ketone	4	4	1	4	–	–	–	–	4	4	4	1	–	–	–
Methyl Carbonate	4	1	4	4	–	–	–	–	2	2	1	1	–	–	–
Methyl Cellosolve	3	4	2	4	–	–	–	–	4	1	4	1	–	–	–
Methyl Cellulose	2	4	2	2	–	–	–	–	4	1	4	1	–	–	–
Methyl Chloride	4	2	4	4	4	2	4	–	2	4	1	1	4	4	4
Methyl Chloroform	4	2	4	4	–	–	–	–	2	4	2	1	–	–	–
Methyl Chloroformate	4	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Methyl Ether	3	3	3	1	4	–	4	–	1	4	3	2	2	1	4
Methyl Ethyl Ketone	4	4	2	4	4	4	4	4	4	4	2	1	4	2	4
Methyl Ethyl Ketone Peroxide	4	4	4	2	–	–	–	–	4	–	4	1	–	–	–

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CHEMICAL/ELASTOMER LISTINGS

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Methyl Formate	4	4	2	–	–	–	–	–	–	4	4	1	–	–	–
Methyl Hydride	1	1	3	2	1	–	1	1	2	2	1	1	2	2	2
Methyl Isobutyl Ketone	4	4	3	4	4	4	4	4	4	4	2	2	4	2	4
Methyl Isopropyl Ketone	4	4	2	4	–	–	–	–	4	–	4	1	–	–	–
Methyl Methacrylate	4	4	4	4	4	4	4	4	4	4	4	2	4	4	4
Methyl Oleate	4	1	2	–	–	–	–	–	2	1	1	1	–	–	–
Methyl Phenol	4	1	4	4	4	1	4	–	2	1	1	1	4	4	4
Methyl Salicylate	4	–	2	–	–	–	–	–	–	–	–	1	–	–	–
Methyl T-Butyl Ether	3	4	3	–	–	–	–	–	–	2	2	1	–	–	–
Methylamine	4	4	1	–	4	–	–	–	–	–	–	2	2	1	2
Methylcyclopentane	4	1	4	4	–	–	–	–	2	2	2	1	–	–	–
Methylene Bromide	2	1	4	–	–	–	–	–	1	–	1	1	–	–	–
Methylene Chloride	4	2	4	4	4	4	4	4	2	–	2	1	4	4	4
Methylene Chlorobromide	4	1	2	4	–	–	–	–	2	3	1	1	–	–	–
Methylpropylbenzene	4	1	4	4	–	–	–	–	2	–	1	1	–	–	–
MIBK	4	4	3	4	4	4	4	4	4	4	2	2	4	2	4
Milk	1	1	2	1	1	1	1	–	1	–	–	1	2	2	2
Milk of Lime	4	1	–	–	4	–	2	–	–	–	–	1	4	–	2
Mineral Oils	1	1	4	2	1	2	4	1	1	1	1	1	4	4	4
Mineral Water	1	1	1	1	1	–	2	–	1	–	–	1	1	1	1
Mixed Acid Etchants	4	3	4	4	–	–	–	–	4	3	2	1	–	–	–
Molasses	1	1	2	–	1	–	2	–	–	–	–	1	4	2	4
Molybdenum Disulfide Grease	1	1	4	–	–	–	–	–	–	1	1	1	–	–	–
Monobromobenzene	4	2	4	4	4	4	4	4	4	–	–	1	4	4	4
Monochloracetic Acid	3	4	2	–	2	4	2	–	4	2	4	2	4	1	4
Monochloracetic Acid, Ethyl Ester	4	2	2	4	4	4	4	4	4	–	–	1	4	2	4
Monochloracetic Acid, Methyl Ester	4	2	1	4	4	4	4	4	4	–	–	1	4	1	4
Monochlorodifluoromethane	4	4	2	4	4	2	1	–	3	–	4	1	1	1	1
Monoethanolamine	4	4	2	2	–	–	–	–	4	–	4	1	–	–	–
Monomethyl Hydrazine	2	4	1	4	–	–	–	–	–	2	4	2	–	–	–
Monomethylaniline	4	2	4	–	–	–	–	–	–	2	2	1	–	–	–
Monovinyl Acetylene	1	1	1	2	–	–	–	–	–	3	1	1	–	–	–
Mopar Brake Fluid	3	4	1	3	–	–	–	–	4	1	4	1	–	–	–
Morpholine	4	–	2	–	4	–	4	–	–	–	–	–	4	2	4
Muriatic Acid	1	1	1	–	2	4	2	–	–	–	–	1	1	1	1

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CHEMICAL COMPATIBILITY GUIDE

CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Myristyl Alcohol	1	1	1	–	1	–	1	1	–	–	–	1	1	1	1
Naftolen ZD	2	1	4	–	2	–	4	–	–	–	–	1	4	4	4
Naphtha	3	1	4	4	4	4	4	2	2	2	1	1	–	–	–
Naphthalene	4	1	4	4	4	–	4	–	1	3	1	1	4	4	4
Naphthenic Acid	2	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Naphthoic Acid	2	1	–	–	2	–	–	–	1	–	–	1	–	–	–
Natural Gas	1	1	4	2	1	2	1	–	4	1	1	1	4	–	4
Neatsfoot Oil	1	1	2	2	–	–	–	–	1	1	1	1	–	–	–
Neon	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Neville Acid	4	1	2	4	–	–	–	–	2	1	1	1	–	–	–
Nickel Acetate	2	4	1	4	1	4	2	–	4	4	4	2	1	1	1
Nickel Ammonium Sulfate	1	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Nickel Chloride	1	1	1	1	1	–	2	–	1	1	1	1	1	1	1
Nickel Sulfate	1	1	1	1	1	–	2	–	1	1	1	1	1	1	1
Niter	1	1	1	1	1	4	2	–	1	1	1	1	1	1	1
Nitric Acid, 0–50%	3	1	3	2	2	–	2	–	2	2	1	1	4	2	2
Nitric Acid, 50–100%	4	2	4	4	–	–	–	–	4	3	2	1	–	–	–
Nitric Acid, Concentrated	4	4	4	–	4	4	4	–	–	–	–	–	4	4	4
Nitric Acid, Red Fuming	4	3	4	4	–	–	–	–	4	3	2	1	–	–	–
Nitric Acid, White Fuming	4	4	4	–	4	4	4	–	–	–	–	–	4	4	4
Nitrobenzene	4	3	4	4	4	4	4	4	4	1	2	2	4	4	4
Nitroethane	4	4	2	4	–	–	–	–	4	–	4	1	–	–	–
Nitrogen	1	1	1	1	1	1	1	1	1	–	1	1	1	1	1
Nitrogen Dioxide	4	4	4	4	–	–	–	–	4	3	4	2	–	4	–
Nitrogen Tetroxide	4	4	4	4	–	–	–	–	4	3	4	2	–	4	–
Nitroglycerine	4	1	1	–	4	–	–	–	–	–	–	1	2	1	2
Nitroglycol	4	1	1	–	4	–	2	–	–	–	–	1	–	1	–
Nitrohydrochloric Acid	4	3	4	4	4	4	4	4	4	3	2	1	4	4	4
Nitromethane	4	4	2	4	4	4	–	4	4	3	4	2	2	2	2
Nitromuriatic Acid	4	3	4	4	4	4	4	4	4	3	2	1	4	4	4
Nitropropane	4	4	2	4	4	4	4	4	4	2	4	1	2	2	2
Nitrotoluene, Ortho	4	4	4	4	4	–	4	4	4	–	–	–	4	4	4
Nitrous Gases	4	1	1	4	4	4	4	4	4	–	–	1	4	1	4
Nitrous Oxide	1	1	1	1	1	1	1	1	1	–	1	1	1	1	1
Norway Saltpeter	1	3	1	2	1	–	2	–	–	1	1	1	4	1	1

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Octachlorotoluene	4	1	4	4	–	–	–	–	2	–	1	1	–	–	–
Octadecane	1	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Octafluorocyclobutane	1	2	1	–	–	–	–	–	–	4	2	2	–	–	–
Octane	2	1	4	4	–	–	–	–	2	–	1	1	–	–	–
Octyl Alcohol	2	1	1	2	2	–	1	–	2	1	1	1	2	1	2
Octyl Cresol	–	2	4	4	–	–	4	4	4	–	–	2	4	4	4
Oil of Turpentine	2	1	4	–	2	–	4	–	–	–	–	1	4	4	4
Oleic Acid	2	2	4	3	1	–	2	1	2	1	2	1	4	4	4
Oleum	4	1	3	4	4	4	4	4	3	1	1	1	4	2	4
Oleyl Alcohol	1	1	1	1	1	4	1	1	1	–	–	1	1	1	1
Olive Oil	1	1	2	2	1	–	1	1	1	1	1	1	2	2	2
Orthoarsenic Acid	1	1	1	1	1	4	2	–	1	1	1	1	1	1	1
Orthochloroethyl Benzene	4	1	4	4	–	–	–	–	2	4	1	1	–	–	–
Oxalic Acid	3	1	1	2	4	–	4	–	1	1	1	1	4	1	2
Oxygen, Hot	4	3	4	2	–	–	–	–	1	4	3	1	–	–	–
Oxygen, Liquid	4	4	4	–	–	–	–	–	–	4	4	2	–	–	–
Ozonated Deionized Water	–	1	2	–	–	–	–	–	–	–	2	1	–	–	–
Ozone	4	1	1	1	2	–	2	2	1	1	1	1	4	2	4
Paint Thinner	4	2	4	4	–	–	–	–	2	3	2	1	–	–	–
Palm Kernel Fatty Acid	1	1	4	–	1	–	1	–	–	–	–	1	4	4	4
Palmitic Acid	2	1	3	4	2	–	2	–	1	1	1	1	4	4	4
Paper Makers Alum	1	1	1	–	1	–	1	–	–	–	–	1	4	1	1
Paraffin Emulsions	1	1	4	1	1	1	1	1	1	–	–	1	4	4	4
Paraffin Oil	1	1	4	1	1	1	1	1	1	–	–	1	4	4	4
Paraffins	1	1	4	–	1	–	1	–	–	–	–	1	4	4	4
Par-Al-Ketone	4	4	4	4	–	–	–	–	4	4	4	2	–	–	–
Peanut Oil	1	1	3	1	–	–	–	–	1	1	1	1	–	–	–
Pearl Ash	1	1	1	1	1	–	2	–	1	–	–	1	1	1	1
Pectin	1	1	1	1	1	1	1	1	1	–	–	1	1	1	1
Pentachlorodiphenyl	4	–	4	–	4	–	4	–	–	–	–	–	4	4	4
Pentaerythritol	1	1	1	–	–	–	–	–	–	1	1	1	–	–	–
Pentamethylene Amine	4	4	4	4	–	–	–	–	4	–	4	1	–	–	–
Pentane	1	1	4	4	1	–	2	–	3	–	–	1	4	4	4
Pentanedione-2,4	4	4	1	4	–	–	–	–	4	4	4	1	–	–	–
Pentanol	2	3	1	4	2	4	2	–	1	1	1	1	1	1	1

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Pentasol	2	3	1	4	2	4	2	–	1	1	1	1	1	1	1
Peracetic Acid, < 1%	4	1	1	4	4	4	4	4	4	–	–	1	4	4	4
Peracetic Acid, < 10%	4	–	2	4	4	4	4	4	4	–	–	1	4	4	4
Perchloric Acid	4	1	2	4	4	–	4	–	1	1	1	1	4	1	4
Perchloroethylene	3	1	4	4	4	–	4	–	2	4	1	1	4	4	4
Perchloromethane	3	1	4	4	4	–	4	–	2	4	1	1	4	4	4
Petrol	2	1	4	4	2	1	2	2	1	–	–	1	4	4	4
Petrol/Benzene Mixture, 50/50%	4	1	4	4	4	2	4	4	2	–	–	1	4	4	4
Petrol/Benzene Mixture, 60/40%	4	1	4	4	4	2	4	4	2	–	–	1	4	4	4
Petrol/Benzene Mixture, 70/30%	2	1	4	4	4	1	4	2	1	–	–	1	4	4	4
Petrol/Benzene Mixture, 80/20%	2	1	4	4	4	1	4	2	1	–	–	1	4	4	4
Petrol/Benzene/Ethanol, 50/30/20%	4	–	4	4	4	4	4	4	2	–	–	1	4	4	4
Petrolatum	1	1	4	4	–	–	–	–	1	–	–	1	–	–	–
Petroleum < 121°C/250°F	1	1	4	2	1	1	2	1	2	1	1	1	4	4	4
Petroleum > 121°C/250°F	3	2	4	3	1	1	2	1	3	2	2	1	4	4	4
Petroleum Asphalt	2	1	4	4	–	–	–	–	2	–	1	1	–	–	–
Petroleum Ether	1	1	4	2	2	1	2	1	1	–	–	1	4	4	4
Petroleum Oil, Crude	1	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Phenetole	4	4	4	4	4	4	4	4	4	4	4	2	4	4	4
Phenol	4	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Phenol Sulfonic Acid	–	1	–	–	–	–	–	–	–	–	1	1	–	–	–
Phenol, 85%	4	2	4	–	4	–	4	–	–	–	–	1	4	4	4
Phenolsulfonic Acid	–	1	–	–	–	–	–	–	–	–	1	1	–	–	–
Phenyl Benzene	4	1	4	4	4	–	4	–	2	3	1	1	4	4	4
Phenyl Bromide	4	1	4	4	–	–	–	–	1	4	1	1	–	–	–
Phenyl Chloride	4	2	4	4	4	–	4	4	3	–	1	2	4	4	4
Phenyl Ether	4	1	4	3	–	–	–	–	2	2	1	1	–	–	–
Phenyl Ethyl Ether	4	4	4	4	4	4	4	4	4	4	4	2	4	4	4
Phenyl Fluoride	4	2	4	4	4	–	4	4	3	–	1	1	4	4	4
Phenyl Hydrazine	2	2	4	–	2	–	4	–	–	–	–	1	4	4	4
Phenyl Methyl Ketone	4	4	1	4	–	–	–	–	4	4	4	1	–	–	–
Phenylamine	4	3	2	4	4	4	4	–	4	2	2	1	4	–	4
Phenylbenzene	4	1	4	4	–	–	–	–	2	3	1	1	–	–	–
Phenylenediamine	–	4	–	–	–	–	–	–	–	–	–	1	–	–	–
Phenylethane	4	2	4	4	4	–	4	4	2	3	1	1	4	4	4

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CHEMICAL/ELASTOMER LISTINGS

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Phenylethyl Ether	4	4	4	4	–	–	–	–	4	4	4	1	–	–	–
Phenylethylene	4	2	4	4	4	–	4	–	3	4	1	1	4	4	4
Phenylhydrazine	4	1	4	4	–	–	–	–	–	1	1	1	–	–	–
Phenylhydrazine Chlorhydrate	2	2	1	–	2	–	4	–	–	–	–	2	4	1	4
Phenylsulfonic Acid	4	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Phorone	4	4	2	4	–	–	–	–	4	4	4	1	–	–	–
Phosphine	4	2	1	–	4	–	2	–	–	–	–	2	1	1	–
Phosphoric Acid, 20%	4	1	1	3	4	–	2	–	2	1	1	1	2	1	1
Phosphoric Acid, 80%	4	1	1	4	–	–	–	–	3	1	1	1	–	–	–
Phosphorous Chloride	4	2	1	–	4	–	4	–	1	1	1	2	1	1	–
Phosphorous Oxychloride	4	–	–	–	4	–	–	–	–	–	–	–	–	–	–
Phosphorous Trichloride	4	2	1	–	4	–	4	–	1	1	1	2	1	1	–
Photographic Developer	2	1	1	–	2	–	2	–	–	–	–	1	1	1	1
Photographic Emulsions	1	1	1	–	1	–	1	–	–	–	–	1	1	1	1
Photographic Fixing Baths	2	1	1	–	2	–	2	–	–	–	–	1	1	1	1
Phthalic Acid	1	1	1	–	1	–	2	–	–	–	–	1	4	1	–
Phthalic Anhydride	3	4	2	–	–	–	–	–	–	3	4	1	–	–	–
Pickling Solution	4	2	3	4	–	–	–	–	4	2	2	2	–	2	–
Picric Acid	2	1	2	4	2	2	1	–	2	–	1	1	2	2	2
Picric Acid, Aqueous	1	1	1	1	1	–	2	–	1	–	–	1	1	1	1
Pine Needle Oil	2	1	4	2	2	1	4	1	1	–	–	1	4	4	4
Pine Oil	1	1	4	4	–	–	–	–	1	–	1	1	–	–	–
Pinene	2	1	4	4	2	2	2	–	2	1	1	1	–	–	–
Piperidine	4	4	4	4	–	–	–	–	4	–	4	1	–	–	–
Plating Solution, Chrome	4	1	2	4	–	–	–	–	2	1	1	1	–	–	–
Plating Solution, Others	1	1	1	4	–	–	–	–	–	1	1	1	–	–	–
Polyethylene Glycol	2	3	1	–	–	–	–	–	–	1	3	1	–	–	–
Polyvinyl Acetate Emulsion	1	3	1	–	–	–	–	–	–	1	3	1	–	–	–
Portland Cement	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Potash	1	1	1	1	1	–	2	–	1	–	–	1	1	1	1
Potash Muriate	1	1	1	1	1	4	2	–	1	1	1	1	1	1	1
Potassium Acetate	2	3	1	4	2	2	2	–	4	–	4	1	1	1	1
Potassium Acid Sulfate	1	1	1	–	1	4	2	–	–	–	–	1	1	1	1
Potassium Bichromate	2	1	1	1	2	–	2	–	1	1	1	1	4	1	2
Potassium Bisulfate	1	1	1	–	1	4	2	–	–	–	–	1	1	1	1

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CHEMICAL COMPATIBILITY GUIDE

CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Potassium Borate, Aqueous	1	1	1	–	1	4	2	–	–	–	–	1	1	1	1
Potassium Bromate, 10%	1	1	1	–	1	4	2	–	–	–	–	1	1	1	1
Potassium Bromide	1	1	1	–	1	4	2	–	–	–	–	1	1	1	1
Potassium Carbonate	1	1	1	1	1	–	2	–	1	–	–	1	1	1	1
Potassium Chlorate	4	1	1	–	4	4	2	–	–	–	–	1	2	1	2
Potassium Chloride	1	1	1	1	1	4	2	–	1	1	1	1	1	1	1
Potassium Chromate	2	1	1	–	2	4	2	–	–	–	–	1	1	1	1
Potassium Copper Cyanide	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Potassium Cyanide	1	1	1	1	1	–	2	–	1	1	1	1	1	1	1
Potassium Dichromate	2	1	1	1	2	–	2	–	1	1	1	1	4	1	2
Potassium Hydrate	2	3	1	3	2	4	2	4	3	1	2	1	2	1	2
Potassium Hydrogen Sulfate	1	1	1	–	1	4	2	–	–	–	–	1	1	1	1
Potassium Hydroxide	2	3	1	3	2	4	2	4	3	1	2	1	2	1	2
Potassium Iodide	1	1	1	–	1	4	2	–	–	–	–	1	2	1	1
Potassium Muriate	1	1	1	1	1	4	2	–	1	1	1	1	1	1	1
Potassium Nitrate	1	1	1	1	1	4	2	–	1	1	1	1	1	1	1
Potassium Perchlorate	4	1	1	–	4	–	2	–	–	–	–	1	4	1	4
Potassium Permanganate	4	2	1	–	4	–	2	–	–	–	–	1	4	1	2
Potassium Persulfate	4	1	1	–	4	–	4	–	–	–	–	1	4	1	2
Potassium Sulfate	1	1	1	1	1	–	2	–	1	1	1	1	1	1	1
Potassium Sulfite	1	1	1	1	–	–	–	–	1	–	1	1	–	–	–
Potassium, Molten	–	–	–	–	–	–	–	–	–	–	–	4	–	–	–
Prestone Antifreeze	1	1	1	1	–	–	–	–	1	2	1	1	–	–	–
Producer Gas	1	1	4	2	–	–	–	–	2	1	1	1	–	–	–
Propane	1	1	4	3	1	1	1	1	2	1	1	1	4	–	4
Propanediol	1	1	1	–	1	–	2	–	–	1	1	1	1	1	1
Propanol	2	2	1	1	2	4	2	–	1	1	1	1	1	1	1
Propargyl Alcohol	1	1	1	–	1	–	1	–	–	–	–	1	2	1	–
Propene	4	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Propenenitrile	4	4	4	4	4	–	4	–	4	2	3	1	4	4	4
Propenyl Alcohol	2	4	1	–	2	4	2	–	–	–	–	1	1	1	1
Propionic Acid	1	1	–	–	1	–	2	–	–	–	–	1	–	–	–
Propyl Acetate	4	4	2	4	–	–	–	–	4	4	4	1	–	–	–
Propyl Alcohol	2	1	1	1	2	–	2	4	2	1	1	1	1	1	1
Propyl Nitrate	4	1	2	4	–	–	–	–	4	–	1	1	–	–	–

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Propyl Propionate	4	4	2	4	–	–	–	–	4	–	4	1	–	–	–
Propylacetone	4	4	1	4	–	–	–	–	4	4	4	1	–	–	–
Propylene	4	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Propylene Glycol	1	1	1	–	1	–	2	–	–	1	1	1	1	1	1
Propylene Oxide	4	4	2	4	4	–	–	–	4	4	4	2	–	–	–
Propylformic Acid	3	2	2	–	1	–	2	–	–	–	2	1	4	–	–
Pyranol Transformer Oil	1	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Pyridine	4	4	2	4	4	4	4	4	4	2	4	1	4	–	4
Pyroligneous Acid	4	4	2	–	–	–	–	–	4	4	4	1	–	–	–
Pyrrole	4	4	4	2	–	–	–	–	3	–	4	1	4	4	4
Quicksilver	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Radiation, Gamma, 1.0 E+07 Rads	3	4	1	2	–	–	–	–	4	1	4	2	–	–	–
Rapeseed Oil	2	1	2	4	2	2	2	2	1	1	1	1	–	2	–
Ricinus Oil	1	1	2	1	–	–	–	–	1	1	1	1	–	–	–
Sagrotan	2	1	1	1	2	4	2	–	1	–	–	1	1	1	1
Sal Ammoniac	1	1	1	2	1	4	2	–	1	1	1	1	1	1	1
Salicylic Acid	2	1	1	–	1	1	1	–	1	1	1	1	1	1	1
Salt Water	1	2	1	1	1	–	1	–	1	1	1	1	1	1	1
Sea Water	1	1	1	1	1	2	2	–	1	–	–	1	1	1	1
Sewage	1	2	1	1	–	–	–	–	1	1	2	1	–	–	–
Silicate Esters	2	1	4	4	–	–	–	–	1	1	1	1	–	–	–
Silicic Acid, Aqueous	1	1	1	–	1	–	2	–	–	–	–	1	1	1	1
Silicone Greases	1	1	1	4	1	1	1	1	1	–	–	1	2	1	1
Silicone Oils	1	1	1	4	1	1	1	1	1	1	1	1	2	1	1
Silver Nitrate	2	1	1	1	2	–	2	–	1	1	1	1	–	1	2
Silver Salts, Aqueous	2	1	1	1	2	–	2	–	1	–	–	1	2	1	2
Slaked Lime	1	1	1	1	1	4	1	–	1	1	1	1	1	1	1
Soap Solutions	1	2	1	1	1	1	2	–	1	1	1	1	1	1	1
Soda Ash	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Soda, Aqueous	1	1	1	1	1	–	2	–	1	–	–	1	1	1	1
Sodium Acetate	2	4	1	4	–	–	–	–	4	2	4	1	–	–	–
Sodium Acid Sulfite	1	1	1	1	1	–	2	–	1	1	1	1	1	1	1
Sodium Benzoate	1	1	1	–	1	–	2	–	–	–	–	1	1	1	1
Sodium Bicarbonate	1	1	1	1	1	–	2	–	1	1	1	1	1	1	1
Sodium Bisulfate	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–

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Sodium Bisulfite	1	1	1	1	1	–	2	–	1	1	1	1	1	1	1
Sodium Borate	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Sodium Carbonate	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Sodium Chlorate	4	1	1	–	4	–	4	–	–	–	–	1	4	1	4
Sodium Chloride	1	1	1	1	1	–	2	–	1	1	1	1	–	1	1
Sodium Cyanide	1	2	1	1	–	–	–	–	1	1	2	1	–	–	–
Sodium Dioxide	2	1	1	4	–	–	–	–	1	1	1	1	–	–	–
Sodium Hydrogen Sulfite	1	1	1	1	1	–	2	–	1	1	1	1	1	1	1
Sodium Hydroxide	2	4	1	3	2	–	2	4	3	1	3	1	2	1	2
Sodium Hypochlorite	2	1	2	2	2	–	2	–	2	1	1	1	4	1	4
Sodium Metaphosphate	1	1	1	–	–	–	–	–	1	1	1	1	–	–	–
Sodium Nitrate	2	1	1	4	1	–	2	–	–	1	1	1	1	1	1
Sodium Nitrite	2	1	1	–	2	–	2	–	–	–	–	1	1	1	1
Sodium Perborate	2	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Sodium Peroxide	2	1	1	4	–	–	–	–	1	1	1	1	–	–	–
Sodium Phosphate, Dibasic	1	1	1	4	1	–	2	–	–	1	1	1	1	1	1
Sodium Salts	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Sodium Silicate	1	1	1	–	1	–	2	–	–	1	1	1	1	1	1
Sodium Sulfate	1	1	1	–	1	–	2	–	–	–	–	1	1	1	1
Sodium Sulfate Decahydrate	4	1	2	–	1	–	2	2	1	1	1	1	1	1	1
Sodium Sulfate, Anhydrous	1	1	1	1	–	–	–	–	1	–	1	1	–	–	–
Sodium Sulfide	2	1	1	–	2	–	2	–	–	–	–	1	4	2	2
Sodium Sulfite	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Sodium Superoxide	2	1	1	4	–	–	–	–	1	1	1	1	–	–	–
Sodium Thiosulfate	3	1	1	1	4	–	1	–	1	–	1	1	1	1	1
Sodium Tripolyphosphate	4	2	1	–	–	–	–	–	–	1	2	1	–	–	–
Sodium, Molten	–	–	–	–	–	–	–	–	–	–	–	4	–	–	–
Sour Crude Oil	3	1	4	4	–	–	–	–	4	–	1	1	–	–	–
Sour Natural Gas	3	1	4	4	–	–	–	–	4	–	1	1	–	–	–
Soybean Oil	1	1	3	1	–	–	–	–	1	1	1	1	–	–	–
Stannic Chloride	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Stannous Chloride	1	1	1	2	–	–	–	–	1	1	1	1	–	–	–
Starch Syrup	1	1	1	–	1	–	1	–	–	–	–	1	1	1	1
Starch, Aqueous	1	1	1	1	1	–	1	–	1	–	–	1	1	1	1
Steam < 149°C/300°F	4	2	1	3	–	–	–	–	4	2	2	1	–	–	–

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Steam > 149°C/300°F	4	4	4	4	–	–	–	–	4	3	3	2	–	–	–
Stearic Acid	2	2	2	2	1	1	2	1	1	1	2	1	4	1	1
Stoddard Solvent	1	1	4	4	1	1	4	1	1	2	1	1	–	–	–
Styrene	4	2	4	4	4	–	4	–	3	4	1	1	4	4	4
Succinic Acid	1	1	1	–	1	4	2	–	–	–	–	1	1	1	1
Sucrose Solutions	1	1	1	1	–	–	–	–	1	–	1	1	–	–	–
Sugar Syrup	1	1	1	–	1	–	–	–	–	–	–	1	1	1	–
Sulfite Liquors	2	1	2	4	–	–	–	–	2	–	1	1	–	–	–
Sulfolane	2	2	1	–	–	–	–	–	–	1	2	1	–	–	–
Sulfur	–	1	1	–	–	–	–	–	–	–	–	1	–	1	–
Sulfur Chloride	4	1	4	3	4	–	4	–	1	1	1	1	–	–	–
Sulfur Dioxide, Aqueous	4	3	1	2	4	–	4	–	2	2	2	1	4	1	2
Sulfur Dioxide, Liquefied	4	1	1	–	4	–	4	–	–	–	–	1	4	1	–
Sulfur Hexafluoride	2	2	1	2	1	–	1	–	2	3	3	2	–	1	1
Sulfur Trioxide	4	1	2	2	–	–	–	–	2	2	1	1	–	–	–
Sulfur, Molten	4	1	3	3	–	–	–	–	1	1	1	1	–	–	–
Sulfuric Acid	2	1	1	–	2	–	4	–	–	–	–	1	2	1	2
Sulfuric Acid, Concentrated Room Temp	4	1	3	4	4	4	4	–	4	4	1	1	4	1	2
Sulfurous Acid	2	3	2	4	–	–	–	–	–	1	1	1	–	–	–
Sulfuryl Chloride	4	1	2	–	4	–	4	–	–	–	–	1	2	2	2
Super Shell Gasoline	1	1	4	4	–	–	–	–	2	3	1	1	–	–	–
Tallow	1	1	4	–	1	–	2	–	–	–	–	1	4	4	4
Tannic Acid	1	1	1	2	1	–	2	2	1	1	1	1	1	1	1
Tanning Extract	1	1	1	1	1	–	2	2	1	–	–	1	1	1	1
Tar Oil	4	–	4	–	4	–	4	–	–	–	–	1	4	4	4
Tar, Bituminous	3	1	4	2	4	–	4	–	1	1	1	1	4	4	4
Tartaric Acid	1	1	2	1	1	–	2	–	1	1	1	1	1	1	1
T-Butyl Alcohol	2	1	2	2	–	–	–	–	2	1	1	1	–	–	–
T-Butyl Mercaptan	4	1	4	4	–	–	–	–	–	1	1	1	–	–	–
T-Butylcatechol	4	1	2	–	–	–	–	–	1	1	1	1	–	–	–
TCP	4	2	2	3	4	2	4	0	2	1	1	1	4	2	4
Terpineol	2	1	3	–	–	–	–	–	1	1	1	1	–	–	–
Tetrabromomethane	4	1	4	4	–	–	–	–	2	3	1	1	–	–	–
Tetrabutyl Titanate	2	1	1	4	–	–	–	–	4	1	1	1	–	–	–
Tetrachlorodifluoroethane	2	1	4	4	–	–	–	–	2	4	1	2	–	–	–

1] Little or no effect (Volume swell <10%)
2] Possible loss of physical properties (Volume swell 10–20%)
3] Noticeable change (Volume swell 20–40%)
4] Not suitable for service
–] Insufficient info

CHEMICAL COMPATIBILITY GUIDE

CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Tetrachloroethane	4	2	4	–	4	–	4	–	2	4	1	1	4	4	4
Tetrachloroethylene	3	2	4	4	4	–	4	–	2	4	1	1	4	4	4
Tetrachloromethane	3	1	4	4	4	–	4	–	2	4	1	1	4	4	4
Tetraethyl Lead	2	1	4	–	2	–	4	–	2	3	1	1	–	–	–
Tetraethylorthosilicate	1	1	1	4	–	–	–	–	1	–	1	1	–	–	–
Tetrafluoromethane	1	1	1	4	–	–	–	–	–	–	1	1	–	–	–
Tetrahydrofuran	4	4	4	4	4	–	4	–	4	4	3	2	4	4	4
Tetrahydronaphthalene	4	1	4	4	4	–	4	–	1	4	1	1	4	4	4
Thionyl Chloride	4	2	2	–	4	–	4	–	–	–	2	1	2	1	2
Thiophene	4	4	4	–	4	–	4	–	–	–	–	–	4	4	4
Tin Chloride	1	1	1	–	1	–	2	–	–	–	–	1	1	1	1
Titanium Tetrachloride	2	2	3	3	1	1	2	2	2	2	1	2	1	1	1
Toluene	4	2	4	4	4	4	4	4	3	4	1	1	4	4	4
Toluene Diisocyanate	4	3	2	4	–	–	–	–	4	4	1	1	–	–	–
Transformer Oil	1	1	4	2	2	1	4	1	1	1	1	1	4	4	4
Transmission Fluid, Type A	1	1	4	2	1	1	2	1	1	1	1	1	–	–	–
Triacetin	2	4	1	–	2	–	2	–	4	4	4	1	2	1	4
Triallyl Phosphate	4	1	1	3	–	–	–	–	2	1	1	1	–	–	–
Tributoxyethyl Phosphate	4	2	3	–	4	–	4	–	2	1	1	1	4	4	4
Tributyl Mercaptan	4	1	4	4	–	–	–	–	3	–	1	1	–	–	–
Tributyl Phosphate	4	3	3	4	4	4	4	–	4	2	4	1	4	4	4
Trichloroacetic Acid	2	4	2	–	2	–	4	–	4	3	3	1	2	2	2
Trichloroethane	4	2	4	4	–	–	–	–	2	4	2	1	–	–	–
Trichloroethyl Phosphate	4	4	–	–	4	–	4	–	–	–	–	2	–	–	–
Trichloroethylene	4	2	4	4	4	4	4	–	3	4	1	2	4	4	4
Trichlorofluoromethane	2	2	4	4	2	–	2	–	2	4	2	2	–	–	–
Trichloromethane	4	2	4	4	4	4	4	–	3	4	1	1	4	4	4
Trichlorotrifluoroethane	2	2	4	4	2	2	1	–	4	4	2	2	–	–	–
Tricresyl Phosphate	4	2	2	3	4	2	4	–	2	1	1	1	4	2	4
Triethanolamine	4	4	2	–	4	–	2	–	4	1	4	2	4	2	–
Triethyl Aluminum	4	3	3	–	–	–	–	–	–	–	2	2	–	–	–
Triethyl Borane	4	1	3	–	–	–	–	–	–	–	1	1	–	–	–
Trifluoroethane	4	1	4	4	–	–	–	–	2	2	1	1	–	–	–
Triglycol	1	1	1	–	1	–	1	–	–	–	–	1	1	1	1
Triiodomethane	–	1	1	–	–	–	–	–	–	–	–	1	–	1	–

1] Little or no effect (Volume swell <10%)
2] Possible loss of physical properties (Volume swell 10–20%)
3] Noticeable change (Volume swell 20–40%)
4] Not suitable for service
–] Insufficient info

CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Trimethylolpropane	4	1	2	–	4	–	2	–	–	–	–	1	2	2	–
Trinitrophenol	2	1	2	4	2	2	1	–	2	–	1	1	2	2	2
Trinitrotoluene	4	2	4	–	–	–	2	–	2	2	2	1	–	–	–
Trioctyl Phosphate	4	2	2	3	4	–	4	–	2	1	2	1	4	2	–
Trisodium Phosphate	1	1	1	1	1	–	2	–	1	–	–	1	1	1	1
Tritolyl Phosphate	4	2	2	3	4	2	4	0	2	1	1	1	4	2	4
Tung Oil	1	1	4	4	–	–	–	–	2	1	1	1	–	–	–
Turpentine	2	1	4	4	2	4	4	–	2	1	1	1	4	4	4
Ultra Pure Deionized Water	–	1	2	–	–	–	–	–	–	2	2	1	–	–	–
Unsymmetrical Dimethyl Hydrazine	2	4	1	4	–	–	–	–	4	3	4	2	–	–	–
Urea	1	1	1	–	1	–	2	–	–	–	–	1	1	1	1
Varnish	2	1	4	4	–	–	–	–	2	2	1	1	–	–	–
Vaseline	1	1	4	2	1	–	1	1	1	–	–	1	4	4	4
Vaseline Oil	1	1	4	2	1	–	1	1	1	–	–	1	4	4	4
Vegetable Oils	1	1	3	1	–	–	–	–	1	1	1	1	–	–	–
Vinegar	2	2	1	3	–	–	–	–	3	–	1	1	–	–	–
Vinegar Acid	3	4	2	2	4	4	4	–	4	3	2	2	4	2	4
Vinegar Naphtha	4	4	3	2	4	4	4	–	4	4	3	1	4	4	4
Vinegar Salts	2	4	1	4	–	–	–	–	4	1	4	1	–	–	–
Vinyl Acetate	4	4	2	–	–	–	–	–	–	4	4	2	–	–	–
Vinyl Acetylene	1	1	1	2	–	–	–	–	–	3	1	1	–	–	–
Vinyl Chloride	4	1	4	–	–	–	–	–	–	–	1	2	–	–	–
Vinyl Cyanide	4	4	4	4	4	–	4	–	4	2	3	1	4	4	4
Vinyl Fluoride	–	2	–	–	–	–	–	–	–	–	1	1	–	–	–
Vinylbenzene	4	2	4	4	4	–	4	–	3	4	1	1	4	4	4
Water	1	1	1	2	1	4	2	4	1	1	1	1	2	1	1
Wax Alcohol	1	1	4	–	2	–	2	–	–	–	–	1	4	4	–
Whiskey	1	1	1	1	1	1	1	–	1	1	1	1	1	1	1
White Lye	2	4	1	–	2	–	2	–	–	–	–	2	4	1	1
White Oil	1	1	–	1	1	–	2	1	1	–	–	1	–	–	–
White Pine Oil	2	1	4	4	–	–	–	–	1	1	1	1	–	–	–
White Spirit	1	1	4	–	2	–	2	1	–	–	–	1	4	4	4
Wine	1	1	1	1	1	1	1	–	1	1	1	1	1	1	1
Winthers Acid	4	1	2	4	–	–	–	–	2	1	1	1	–	–	–
Wolmar Salts	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–

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3] Noticeable change (Volume swell 20–40%)
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–] Insufficient info

CHEMICAL COMPATIBILITY GUIDE

CHEMICAL/ELASTOMER LISTINGS

Chemical Medium	NBR	FKM	EPDM	VMQ	HNBR	AU	CR	ACM	FVMQ	TFE/P	FKM-ETP	FFKM	NR	IIR	SBR
Wool Fat	1	1	1	1	1	1	1	1	1	–	–	1	2	1	1
Xenon	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Xylamon, Wood Preservative	4	2	4	–	4	2	4	4	–	–	–	1	4	4	4
Xylene	4	2	4	4	4	4	4	4	3	4	1	1	4	4	4
Xylidine	3	4	4	4	–	–	–	–	4	2	3	1	–	–	–
Xylol	4	1	4	4	–	–	–	–	1	4	1	1	–	–	–
Yeast, Aqueous	1	1	1	1	1	–	1	–	1	–	–	1	1	1	1
Zeolites	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Zinc Acetate	2	3	1	3	2	1	2	1	3	3	4	1	1	1	4
Zinc Chloride	2	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Zinc Salts	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–
Zinc Sulfate	1	1	1	1	–	–	–	–	1	1	1	1	–	–	–

1] Little or no effect (Volume swell <10%)
2] Possible loss of physical properties (Volume swell 10–20%)
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–] Insufficient info

SECTION SIX

O-RING QUALITY ASSURANCE

- O-Ring Performance Factors
  - Manufacturing Quality Systems
  - Surface Quality
  - Storage/Shelf-life

O-RING QUALITY ASSURANCE

O-RING PERFORMANCE FACTORS

Many factors other than the gland design, specified o-ring size and elastomer selection can impact the performance of the o-ring in a sealing application. These additional factors have to do with manufacturing, inspecting and storing the o-rings properly and are typically addressed by a good quality assurance program.

Three factors that are of particular importance when dealing with o-rings are:

- Manufacturing Quality Systems
- Surface Quality
- Storage/Shelf Life

MANUFACTURING QUALITY SYSTEMS

The vast majority of o-rings that DICHTOMATIK offers are manufactured in facilities that are ISO-9000 and/or QS9000 certified. While these quality systems do not guarantee perfect parts, they do typically justify the associated overhead and the resulting increased cost by ensuring that the parts are manufactured, inspected and handled in a consistent manner.

Details regarding manufacturing quality systems are available from many other sources and are not specific to o-rings so they will not be presented in this handbook.

SURFACE QUALITY

The surface quality of an o-ring has a significant impact on its sealing performance. Several industry standards exist that define surface quality defect types and set maximum acceptable sizes for each defect type. Several of the more common industry standards are described below.

RMA OR-1

This publication from the Rubber Manufacturers Association describes basic visual quality acceptance criteria for o-rings. Acceptance criteria in this standard are, for the most part, the least stringent of the standards listed here.

MIL-STD-413

This military standard published by the Department of Defense has been adopted by many non-defense-related users of o-rings. All DICHTOMATIK o-rings are inspected for surface quality per this standard unless otherwise specified. MIL-STD-413 is more stringent than RMA OR-1.

DIN 3771-4

This publication is the German industrial standard for o-ring surface quality. The standard includes two grade levels—normal and special. The requirements of this standard are similar to those found in RMA OR-1 and MIL-STD-413.

SAE AS871

This publication from the aerospace side of the Society of Automotive Engineers (SAE) is more stringent than OR-1, MIL-STD-413 and DIN 3771. Standard industrial o-rings will often not meet the requirements of this standard.

SAE AS708

This publication, also from the aerospace side of SAE, defines the requirements for Top Visual Quality O-Rings. This standard should be used only where stringent performance requirements are required, such as safety critical applications.

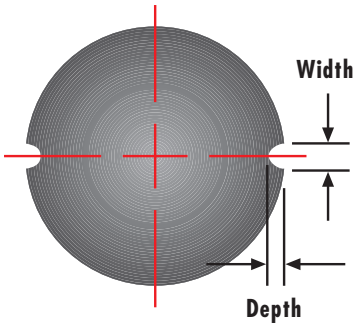
NOTE: The visual inspection standards are written for imperfection detection with the unaided eye. Magnification is for reference purposes only.

Surface quality defects are typically classified into the following eight types. For each type, the defect is defined and illustrated and then acceptance criteria are listed for several of the standards listed above.

BACKRIND

Backrind is usually seen as a longitudinal recess found at the parting line on the ID and/or the OD of the o-ring. The recess is usually shaped like a wide "U" or "W," and it may cover all or part of the circumference of the o-ring. Backrind is usually caused by thermal expansion of the elastomer over a sharp mold edge or by premature curing of the elastomer.

BACKRIND



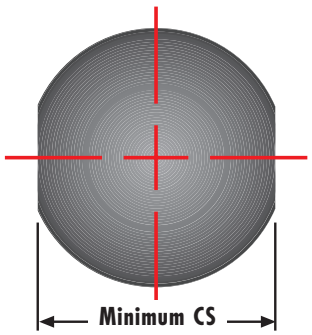
AS568 Series	ISO 3601 CS Code	Units	O-Ring Cross-Section Min	Max	RMA OR-1 Depth	Width	MIL-STD-413 Depth	Width	DIN 3771 Normal Depth	Width	DIN 3771 Special Depth	Width
-000	A	mm	0.00	2.53	0.08	0.13	0.00	0.00	0.08	0.18	0.08	0.10
		inch	0.000	0.099	0.003	0.005	0.000	0.000	0.003	0.007	0.003	0.004
-100	B	mm	2.54	3.42	0.08	0.18	0.08	0.13	0.08	0.27	0.08	0.15
		inch	0.100	0.134	0.003	0.007	0.003	0.005	0.003	0.011	0.003	0.006
-200	C	mm	3.43	5.20	0.10	0.20	0.10	0.15	0.10	0.36	0.10	0.20
		inch	0.135	0.204	0.004	0.008	0.004	0.006	0.004	0.014	0.004	0.008
-300	D	mm	5.21	6.83	0.10	0.20	0.10	0.15	0.10	0.53	0.10	0.20
		inch	0.205	0.268	0.004	0.008	0.004	0.006	0.004	0.021	0.004	0.008
-400	E	mm	6.84	n/a	0.13	0.38	0.13	0.25	0.13	0.70	0.13	0.30
		inch	0.269	n/a	0.005	0.015	0.005	0.010	0.005	0.028	0.005	0.012

O-RING QUALITY ASSURANCE

EXCESSIVE BUFFING

Excessive buffing is usually seen as flattening on the ID or OD of the o-ring at or near the parting line. Excessive buffing is when sufficient material has been removed at the parting line to cause the cross section of the o-ring to be out of specification. Buffing at the parting line can be detrimental even if the cross-section is still within the specification, as the "buffed" surface may be coarser and may not seal properly. In either case, a flattened or noticeably buffed surface is undesirable and should be cause for reevaluation of the de-flashing process.

EXCESSIVE BUFFING

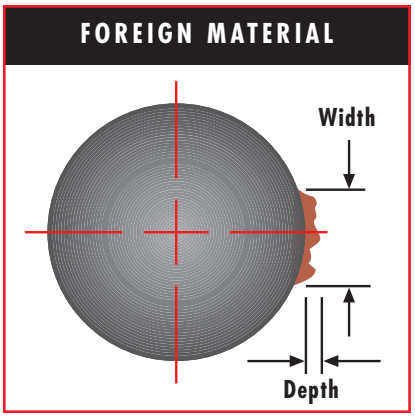


AS568 Series	Units	RMA OR-1 Minimum CS	MIL-STD-413 Minimum CS
-000	mm	1.70	1.70
	inch	0.067	0.067
-100	mm	2.54	2.54
	inch	0.100	0.100
-200	mm	3.43	3.43
	inch	0.135	0.135
-300	mm	5.20	5.20
	inch	0.205	0.205
-400	mm	6.84	6.84
	inch	0.269	0.269

ISO 3601 CS Code	DIN 3771 Normal Minimum CS	DIN 3771 Special Minimum CS
A	Deviations of the curved cross-section are permissible when the flattened area transitions into the curve of the circular cross-section smoothly and the CS still falls within the permissible tolerances.	
B		
C		
D		
E		

FOREIGN MATERIAL

Foreign material is defined as any contamination present or any indentation caused by the removal of the contaminant. The size of the protruding contaminant or the remaining indentation is limited as shown in the table below.



AS568 Series	ISO 3601 CS Code	Units	O-Ring Cross-Section Min	Max	RMA OR-1 Depth	Width	MIL-STD-413 Depth	Width	DIN 3771 Normal Depth	Width	DIN 3771 Special Depth	Width
-000	A	mm	0.00	2.53	0.08	0.13	Non-Visible					
		inch	0.000	0.099	0.003	0.005	Non-Visible		NOT		NOT	
-100	B	mm	2.54	3.42	0.08	0.20	0.08	0.13	PERMITTED		PERMITTED	
		inch	0.100	0.134	0.003	0.008	0.003	0.005				
-200	C	mm	3.43	5.20	0.10	0.25	0.10	0.18				
		inch	0.135	0.204	0.004	0.010	0.004	0.007				
-300	D	mm	5.21	6.83	0.15	0.38	0.13	0.25				
		inch	0.205	0.268	0.006	0.015	0.005	0.010				
-400	E	mm	6.84	n/a	0.15	0.51	0.15	0.38				
		inch	0.269	n/a	0.006	0.020	0.006	0.015				

O-RING QUALITY ASSURANCE

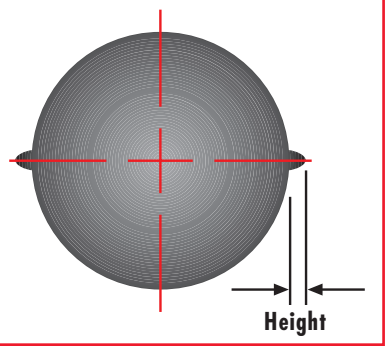
PARTING LINE PROJECTION & EXCESSIVE FLASH

Parting line projection is defined as a continuous ridge of material on the parting line on the ID or the OD of the o-ring. Parting line projection is often a result of mold wear causing enlarged radii at transition from the mold cavity to the flat plane of the tool.

Excessive flash is a thin, film-like feature that extends beyond the parting line projection. Excessive flash is typically a result of improper or inadequate de-flashing.

The maximum allowed height of the parting line projection and excessive flash combined is shown in the table below.

PARTING LINE PROJECTION

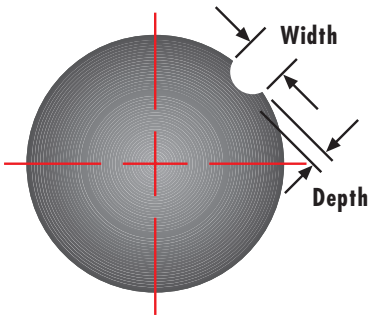


AS568 Series	ISO 3601 CS Code	Units	O-Ring Cross-Section Min	Max	RMA OR-1 Height	MIL-STD-413 Height	DIN 3771 Normal Height	DIN 3771 Special Height
-000	A	mm	0.00	2.53	0.08	0.08	0.10	0.10
		inch	0.000	0.099	0.003	0.003	0.004	0.004
-100	B	mm	2.54	3.42	0.10	0.08	0.12	0.10
		inch	0.100	0.134	0.004	0.003	0.005	0.004
-200	C	mm	3.43	5.20	0.13	0.10	0.14	0.13
		inch	0.135	0.204	0.005	0.004	0.006	0.005
-300	D	mm	5.21	6.83	0.15	0.13	0.16	0.15
		inch	0.205	0.268	0.006	0.005	0.006	0.006
-400	E	mm	6.84	n/a	0.18	0.15	0.18	0.15
		inch	0.269	n/a	0.007	0.006	0.007	0.006

NON-FILL

Non-fills are typically seen as random and irregular surface indentations. The indentations usually have a coarser texture than the unaffected portions of the o-ring surface. Non-fills are caused by inadequate elastomer to fill the cavity, by imperfect flow of the elastomer within the mold or by air being trapped in the mold. Maximum allowed depths and widths for the indentation are provided below.

NON-FILL



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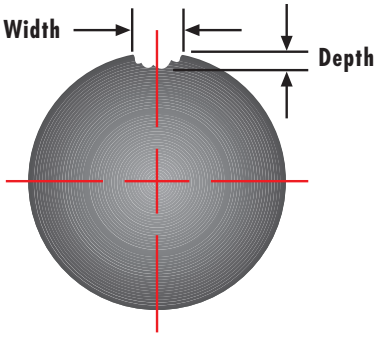
NON-FILL *–continued*

AS568 Series	ISO 3601 CS Code	Units	O-Ring Cross-Section Min	Max	RMA OR-1 Depth	Width	MIL-STD-413 Depth	Width	DIN 3771 Normal Depth	Width	DIN 3771 Special Depth	Width
-000	A	mm	0.00	2.53	0.00	0.00	0.00	0.00	0.08	0.60	0.08	0.15
		inch	0.000	0.099	0.000	0.000	0.000	0.000	0.003	0.024	0.003	0.006
-100	B	mm	2.54	3.42	0.08	0.76	0.05	0.25	0.08	0.80	0.08	0.25
		inch	0.100	0.134	0.003	0.030	0.002	0.010	0.003	0.031	0.003	0.010
-200	C	mm	3.43	5.20	0.10	0.76	0.08	0.38	0.10	1.00	0.10	0.40
		inch	0.135	0.204	0.004	0.030	0.003	0.015	0.004	0.039	0.004	0.016
-300	D	mm	5.21	6.83	0.10	1.02	0.08	0.63	0.10	1.30	0.10	0.63
		inch	0.205	0.268	0.004	0.040	0.003	0.025	0.004	0.051	0.004	0.025
-400	E	mm	6.84	n/a	0.10	1.27	0.08	1.02	0.13	1.70	0.13	1.00
		inch	0.269	n/a	0.004	0.050	0.003	0.040	0.005	0.067	0.005	0.039

MOLD DEPOSIT INDENTATIONS

Mold deposit indentations are typically irregularly shaped, shallow depressions in the o-ring surface. The texture of the indentations is usually rougher than that of the unaffected surface of the o-ring. The indentations are caused by accumulated hardened deposits on the surface of the mold cavities.

MOLD DEPOSIT INDENTATIONS

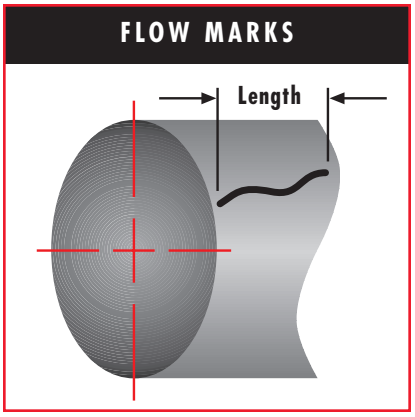


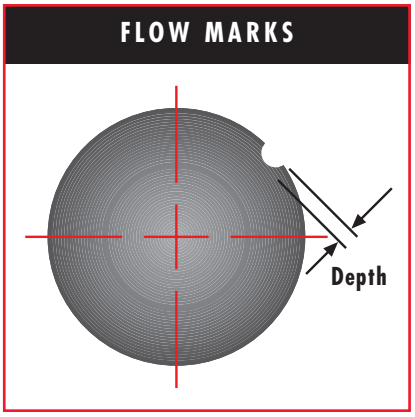
AS568 Series	ISO 3601 CS Code	Units	O-Ring Cross-Section Min	Max	RMA OR-1 Depth	Width	MIL-STD-413 Depth	Width	DIN 3771 Normal Depth	Width	DIN 3771 Special Depth	Width
-000	A	mm	0.00	2.53	0.08	0.38	0.08	0.25	0.08	0.60	0.08	0.15
		inch	0.000	0.099	0.003	0.015	0.003	0.010	0.003	0.024	0.003	0.006
-100	B	mm	2.54	3.42	0.08	0.51	0.08	0.38	0.08	0.80	0.08	0.25
		inch	0.100	0.134	0.003	0.020	0.003	0.015	0.003	0.031	0.003	0.010
-200	C	mm	3.43	5.20	0.10	0.64	0.10	0.51	0.10	1.00	0.10	0.40
		inch	0.135	0.204	0.004	0.025	0.004	0.020	0.004	0.039	0.004	0.016
-300	D	mm	5.21	6.83	0.13	0.76	0.10	0.63	0.10	1.30	0.10	0.63
		inch	0.205	0.268	0.005	0.030	0.004	0.025	0.004	0.051	0.004	0.025
-400	E	mm	6.84	n/a	0.15	1.02	0.13	0.76	0.13	1.70	0.13	1.00
		inch	0.269	n/a	0.006	0.040	0.005	0.030	0.005	0.067	0.005	0.039

O-RING QUALITY ASSURANCE

FLOW MARKS

Flow marks are thread-like recesses in the surface of the o-ring. The recesses are typically curved and have rounded edges. Flow marks are caused by improper flow and premature curing of the elastomer in the mold. Size limits on flow marks are given below.



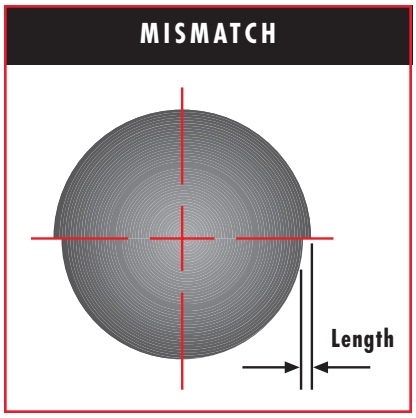


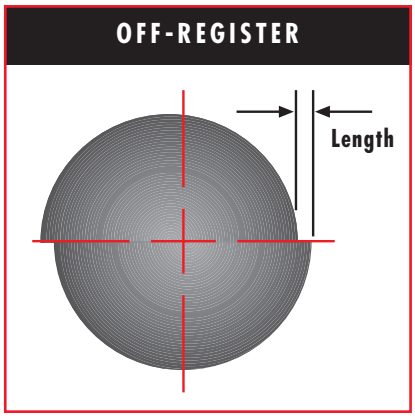
AS568 Series	ISO 3601 CS Code	Units	O-Ring Cross-Section Min	Max	RMA OR-1 Depth	Length	MIL-STD-413 Depth	Length	DIN 3771 Normal Depth	Length*	DIN 3771 Special Depth	Length**
-000	A	mm	0.00	2.53			0.05	1.52	0.08	1.50	0.05	1.50
		inch	0.000	0.099	**NO**		0.002	0.060	0.003	0.059	0.002	0.059
-100	B	mm	2.54	3.42	**STANDARD**		0.05	1.52	0.08	1.50	0.05	1.50
		inch	0.100	0.134	**AVAILABLE**		0.002	0.060	0.003	0.059	0.002	0.059
-200	C	mm	3.43	5.20			0.05	4.57	0.08	6.50	0.05	5.00
		inch	0.135	0.204			0.002	0.180	0.003	0.256	0.002	0.197
-300	D	mm	5.21	6.83			0.05	4.57	0.08	6.50	0.05	5.00
		inch	0.205	0.268			0.002	0.180	0.003	0.256	0.002	0.197
-400	E	mm	6.84	n/a			0.05	4.57	0.08	6.50	0.05	5.00
		inch	0.269	n/a			0.002	0.180	0.003	0.256	0.002	0.197

* Maximum length equal to greater of value listed or o-ring ID times **0.05** ** Maximum length equal to greater of value listed or o-ring ID times **0.03**

OFF-REGISTER AND/OR MISMATCH

An off-register condition is when the top and bottom halves of the mold are not aligned but are shifted with respect to one another. A mismatch condition is when the top half and the bottom half of the o-ring are different sizes. The maximum length of the off-register or mismatch condition is given below.





AS568 Series	ISO 3601 CS Code	Units	O-Ring Cross-Section Min	Max	RMA OR-1 Length	MIL-STD-413 Length	DIN 3771 Normal Length	DIN 3771 Special Length
-000	A	mm	0.00	2.53	0.08	0.08	0.08	0.08
		inch	0.000	0.099	0.003	0.003	0.003	0.003
-100	B	mm	2.54	3.42	0.10	0.10	0.10	0.08
		inch	0.100	0.134	0.004	0.004	0.004	0.003
-200	C	mm	3.43	5.20	0.10	0.10	0.13	0.10
		inch	0.135	0.204	0.005	0.005	0.005	0.004
-300	D	mm	5.21	6.83	0.15	0.15	0.15	0.12
		inch	0.205	0.268	0.006	0.006	0.006	0.005
-400	E	mm	6.84	n/a	0.15	0.15	0.15	0.13
		inch	0.269	n/a	0.006	0.006	0.006	0.005

O-RING QUALITY ASSURANCE

O-RING SHELF LIFE

O-rings and other rubber products may undergo changes in physical properties as they age. As such, guidelines exist regarding the maximum recommended shelf life for various elastomer types. The shelf life limits in the table to the right are recommendations from Military Handbook 695 and are considered to be quite conservative.

O-ring shelf life can be maximized by maintaining proper storage conditions for the o-rings. The list below offers storage condition recommendations.

ELASTOMER SHELF LIFE

Elastomer Type	ASTM Designation	Recommended Shelf Life
Nitrile	NBR	3 to 5 years
Styrene Butadiene	SBR	3 to 5 years
Polybutadiene	BR	3 to 5 years
Polyisoprene	NR, IR	3 to 5 years
Chlorosulfonated Polyethylene	CSM	5 to 10 years
Ethylene Propylene	EPDM	5 to 10 years
Neoprene/Chloroprene	CR	5 to 10 years
Polyurethane (Polyether)	EU	5 to 10 years
Epichlorohydrin	ECO	5 to 10 years
Fluorocarbon Elastomer	FKM	up to 20 years
Perfluoroelastomer	FFKM	up to 20 years
Silicone	VMQ	up to 20 years
Fluorosilicone	FVMQ	up to 20 years
Polyacrylate	ACM	up to 20 years

Temperature

The ideal temperature for o-ring storage is 40°F to 80°F (4°C to 27°C). The temperature should not be permitted to exceed 120°F (49°C). The o-rings should be a minimum of 4 feet away from any direct heat source (heater, radiator, vent, etc.).

Humidity

Relative humidity should be maintained at less than 65%. Excessively dry conditions (relative humidity less than ~25%) should also be avoided.

Light

Ultraviolet light can be harmful to certain elastomer types. Whenever possible, o-rings should be stored so that they are not directly exposed to sunlight or high-UV-content artificial light.

Oxygen or Ozone Exposure

Oxygen and ozone can lead to unwanted hardening or chemical attack. O-rings should be stored in airtight containers to limit exposure to these gasses. Electrical equipment that creates ozone should not be placed in areas where o-rings are stored.

Deformation

O-rings should be stored so that they are free from tension, compression or any other deforming force that could lead to permanent shape change.

SECTION SEVEN

O-RING TROUBLESHOOTING AND FAILURE ANALYSIS

- Examples of O-Ring Failure
  - Extrusion or Nibbling
  - Over-Compression
  - Heat Hardening/Thermal Degradation
  - Spiral Failure
  - Chemical Degradation
  - Explosive Decompression
  - Abrasion
  - Plasticizer Extraction
  - Installation Damage
  - Weather or Ozone Cracking

O-RING FAILURE ANALYSIS

For each o-ring application, there is a complex matrix of system parameters—pressure, temperature, friction, environmental exposure and chemical exposure. All of these parameters must be considered together when designing the o-ring gland and selecting the o-ring size and elastomer in order to ensure long-term seal reliability. This section describes the most common failure modes seen in o-ring applications. It then suggests what design factors may contribute to each failure mode and what corrective actions can be taken to eliminate the failures.

COMMON O-RING FAILURE MODES

The failure modes covered in this section are:

- **Extrusion or Nibbling**
- **Over-Compression**
- **Heat Hardening/Thermal Degradation**
- **Spiral Failure**
- **Chemical Degradation**
- **Explosive Decompression**
- **Abrasion**
- **Plasticizer Extraction**
- **Installation Damage**
- **Weather or Ozone Cracking**

EXTRUSION OR NIBBLING

Description:
The seal develops ragged edges, generally on the low pressure side, which appear tattered. This condition is more common with high pressure systems.

Contributing Factors	Suggested Solutions
Excessive clearances	Decrease clearances
Excessive system pressure	Decrease system pressure if possible Use back-up ring
Irregular clearance gaps due to eccentricity	Increase rigidity and concentricity of metal components
Sharp groove edges	Break edges of groove to minimum of .004" (0.10mm)
Low-modulus/low-hardness elastomer	Use higher-modulus/higher-hardness elastomer
Softening of elastomer due to fluid incompatibility	Use more chemically compatible elastomer
Excessive gland fill	Increase groove width or change o-ring size
Expansion of cylinder wall due to pressure	Stiffen cylinder wall to limit expansion

OVER-COMPRESSION

Description:
The seal exhibits parallel flat surfaces corresponding to the sealing surfaces. May also develop circumferential splits within the flattened surfaces.

Contributing Factors	Suggested Solutions
■ Excessive compression squeeze	▶ Use smaller o-ring or adjust gland dimensions
■ Elastomer with poor compression set properties	▶ Use material with better compression set resistance
■ Elastomer with inadequate heat resistance	▶ Use more heat resistant elastomer
■ Elastomer that swells excessively in system fluid	▶ Use more chemically resistant elastomer
■ Improperly cured part used	▶ Check cure state of parts prior to installation

HEAT HARDENING/THERMAL DEGRADATION

Description:
The seal may exhibit radial cracking on the highest temperature surfaces, often accompanied by the flattening of the seal characteristic of over-compression. Certain elastomers may exhibit signs of softening, such as a shiny surface.

Contributing Factors	Suggested Solutions
■ Thermal properties of elastomer	▶ Select more heat-resistant elastomer ▶ Select elastomer containing antioxidants
■ Excessive temperatures, temperature excursions or temperature cycling	▶ Consider possibility of cooling sealing surfaces ▶ Increase thermal mass to dampen temperature cycling or excursions ▶ Change the position of the gland away from heat source

O-RING FAILURE ANALYSIS

SPIRAL FAILURE

Description:
The seal surface exhibits a series of deep, spiral, 45°-angle cuts. This failure is often seen with long-stroke, hydraulic piston seals.

Contributing Factors	Suggested Solutions
■ Eccentric components	▶ Increase rigidity and concentricity of metal components
■ Wide clearances in combination with side loads	▶ Decrease clearances
■ Uneven surface finishes	▶ Machine metal surfaces to 10 to 20 µinch surface finish
■ Inadequate lubrication	▶ Specify an external lubricant or use an internally lubricated material
■ Elastomer is too soft	▶ Use a higher durometer material
■ Stroke speed too slow—dynamic reciprocating	▶ Increase stroke speed or use D-ring instead of o-ring

CHEMICAL DEGRADATION

Description:
The seal may exhibit many signs of degradation including blisters, cracks, voids or discoloration. However, in some cases the degradation is only detectable by measurement of physical properties.

Contributing Factors	Suggested Solutions
■ Incompatibility with chemical environment	▶ Use more chemically resistant elastomer ▶ Use PTFE encapsulated o-rings ▶ Decrease temperature that o-ring sees, as higher temperatures accelerate chemical degradation

EXPLOSIVE DECOMPRESSION

Description:
Explosive decompression results when high-pressure gases are absorbed by the seal, and then, as the pressure is rapidly dropped, the expanding gasses are trapped in the micropores of the elastomer, causing surface blisters and ruptures as they escape. The effected seals will exhibit random short splits or ruptures deep into the seal cross-section. When first removed the surface may also be covered with small blisters.

Contributing Factors	Suggested Solutions
■ Rapid pressure drop from high pressure	▶ Slow the release of system pressure
■ Low-modulus/low-hardness elastomer	▶ Specify a higher-modulus/higher-hardness material ▶ Specify a decompression-resistant material

ABRASION

Description:
Abrasion occurs only with dynamic seals—seals involved with a rotary, oscillating or reciprocating motion. The seal or parts of the seal exhibit a single flat surface parallel to the direction of motion. Loose particles and scrapes may be found on the seal surface.

Contributing Factors	Suggested Solutions
■ Rough sealing surfaces	▶ Use recommended gland surface finishes
■ Sealing surfaces too smooth to allow for adequate lubrication	▶ Use recommended gland surface finishes
■ Process environment containing abrasive particles	▶ Eliminate abrasive components or protect seal from exposure to them

O-RING FAILURE ANALYSIS

PLASTICIZER EXTRACTION

Description:
Seen primarily in fuel systems, plasticizer extraction is characterized by a loss of volume or weight of the seal. It is often difficult to detect with only a visual inspection.

Contributing Factors	Suggested Solutions
■ Heavy use of plasticizers to achieve low-temperature properties or hardness	▶ Switch to elastomer with low-temperature properties so plasticizers aren't needed
■ Exposure to organic solvents compatible with plasticizers used	▶ Change plasticizers used to ones less compatible with process fluids

INSTALLATION DAMAGE

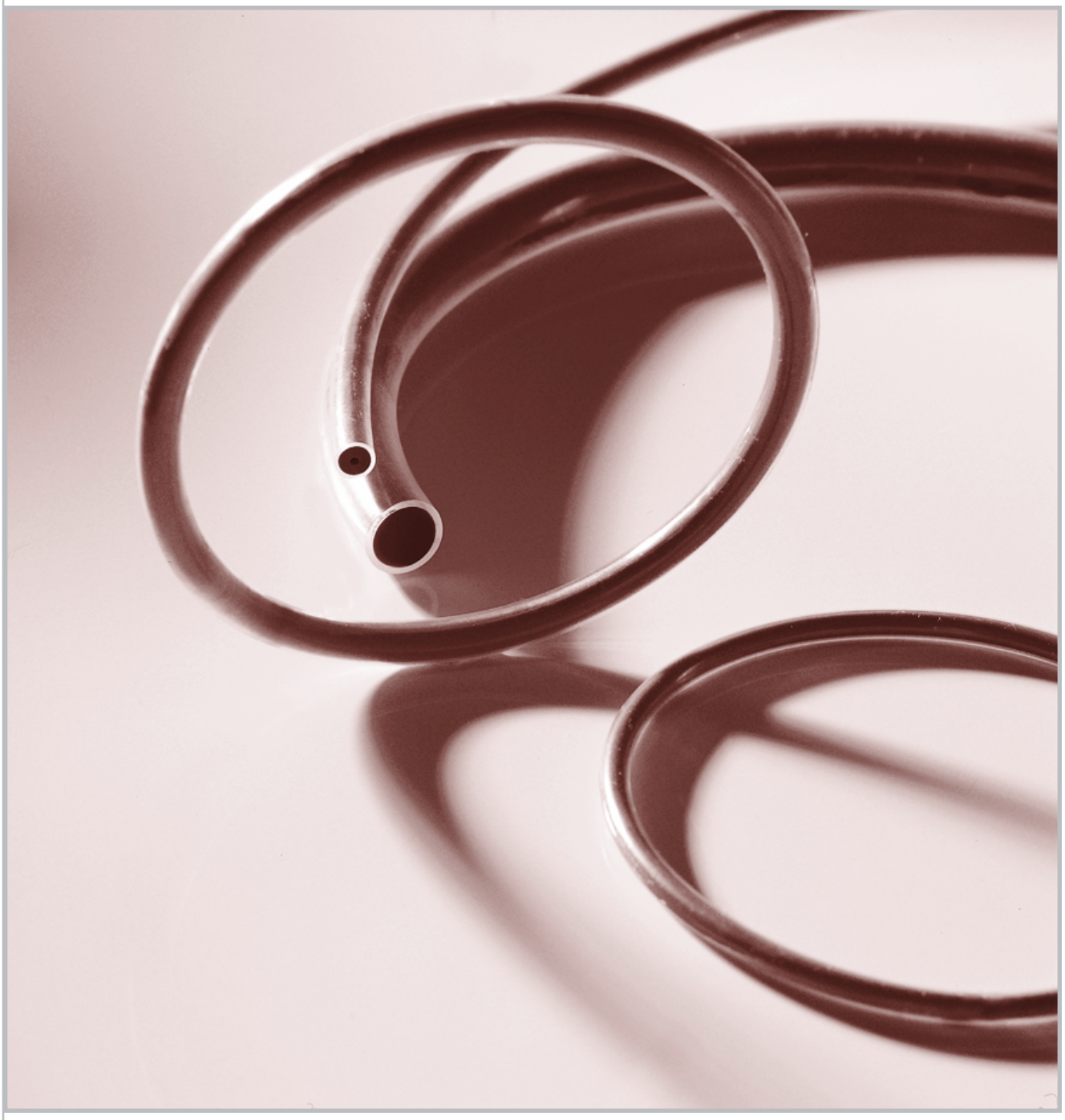
Description:
The seal or parts of the seal may exhibit small cuts, nicks or gashes.

Contributing Factors	Suggested Solutions
■ Sharp surfaces on glands or components	▶ Break all sharp metal edges and cover threads with tubes or tape for installation
■ Inadequate lead-in chamfer	▶ Provide a 15° lead-in chamfer of adequate length so o-ring sees only chamfer
■ O-ring too large for gland	▶ Review gland and o-ring design per recommended design standards
■ Low-modulus/low-hardness elastomer	▶ Specify a higher-modulus/higher-hardness material

WEATHER OR OZONE CRACKING

Description:
Occurring in seals exposed to ozone, UV radiation or other air pollutants, weather or ozone cracking is characterized by small surface cracks perpendicular to the direction of stress.

Contributing Factors	Suggested Solutions
■ Exposure to ozone, UV radiation or other air pollutants	▶ Select more ozone- and UV-resistant elastomer ▶ Apply anti-ozonant or wax coating to seal ▶ Modify the design to avoid the damaging exposure
■ Excessive seal stretch (>5% ID stretch)	▶ Modify design to reduce stretch to less than 5%



SECTION EIGHT

DICHTOMATIK NORTH AMERICA PRODUCT OFFERING

- O-Rings and Related Sealing Products
- Fluid Power Sealing Products
- Radial Shaft Seals
- Custom Molded Products

DICHTOMATIK NORTH AMERICA PRODUCT OFFERING

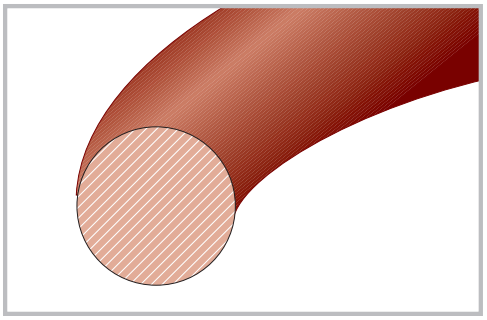
Dichtomatik North America offers a wide range of sealing product lines. The following is an overview of the types of sealing products that we can offer.

In the following diagrammatic illustrations, the color of the cross-section indicates the material of fabrication: Elastomer PTFE Polyurethane Nylon Metal Grease

O-RINGS & RELATED SEALING PRODUCTS

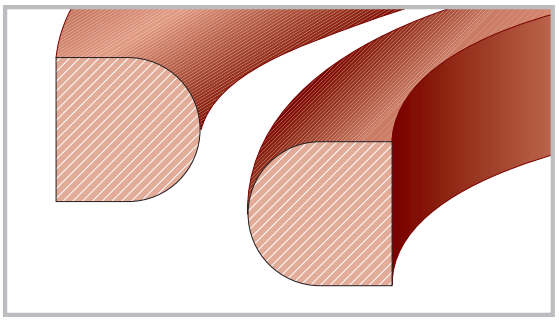
O-Rings

Dichtomatik offers o-rings in almost any size and in a wide range of materials. We are tooled on most standard o-ring sizes and maintain a large inventory of all AS568 sizes in eight different materials.



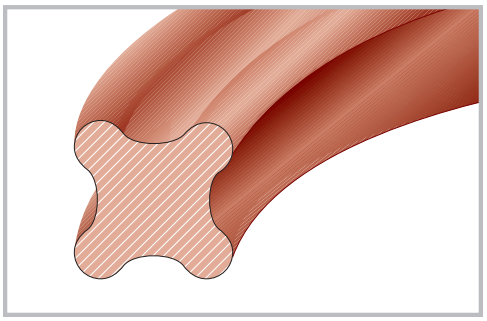
D-Rings

D-rings are often used as an alternative to o-rings in reciprocating dynamic applications because of their resistance to spiral failure. They can be used for sealing on the ID or the OD. Dichtomatik D-rings can be made in most sizes and materials.



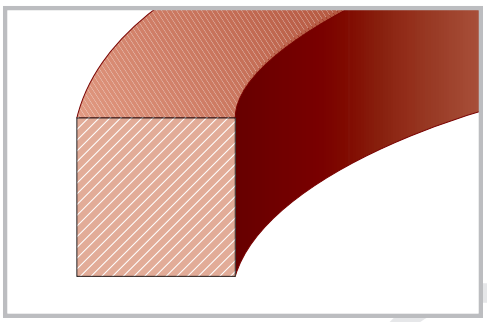
X-Rings

X-rings can be used as an alternative to o-rings in dynamic applications because of their reduced friction and their resistance to spiral failure. Dichtomatik offers most AS568 equivalent sizes in NBR 70 as standards and in most sizes and materials as non-standard parts.



Square Rings

Square rings can be either molded or lathe-cut. The lathe-cut parts are often less expensive than comparably sized o-rings, especially for larger IDs. Dichtomatik can offer both molded and lathe-cut square rings in most sizes and materials.



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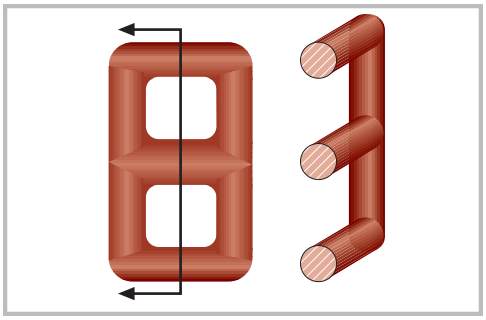
O-Ring Cross-Section Gaskets

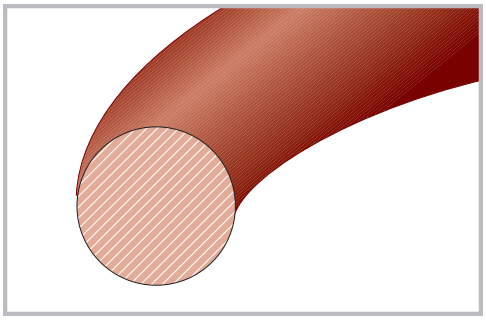
For face-type applications, the o-ring cross-section can be applied to non-circular openings or even when multiple openings require sealing. These sometimes are known as press-in-place gaskets.



O-Ring Cord and Spliced O-Rings

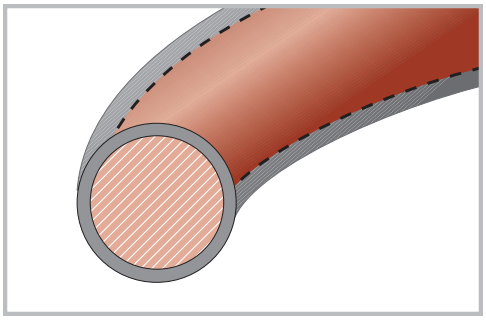
O-ring cord can be supplied in bulk or spliced into o-rings of any ID. Spliced o-rings can be a convenient and cost-effective alternative to molded o-rings when large ID's, small quantities or low compression set is required.

Cord and spliced o-rings are available in a variety of cross-sections and materials.



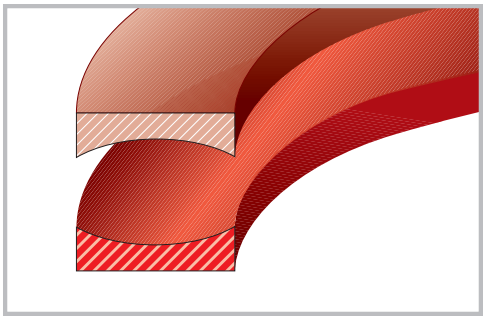
FEP Encapsulated O-Rings

FEP encapsulated o-rings are used in harsh chemical environments or with extreme temperatures. They offer excellent sealing capabilities at a fraction of the cost of perfluoroelastomer o-rings. Dichtomatik offers FEP encapsulated silicone and FKM o-rings.



Contoured Back-Up Rings

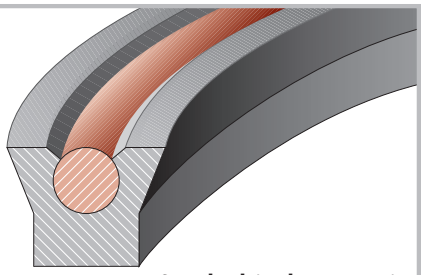
Back-up rings are used in high-pressure applications to keep the o-ring from extruding. Dichtomatik offers back-up rings in a variety of materials from NBR to PTFE to Nylon. Sizes appropriate for use with AS568 o-rings in NBR 90 are available from inventory. Other sizes and materials can be supplied as non-standard parts.



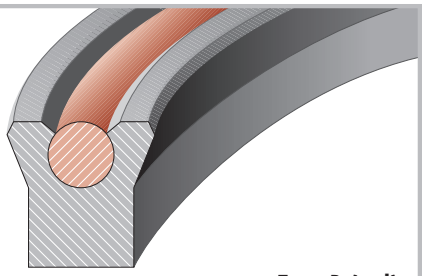
Loaded U-Cups

Dichtomatik offers NuPac™ loaded u-cups for fluid power sealing applications. The NuPac Seals are available in Standard, Deep and Type B in a wide variety of inch and metric dimensions.

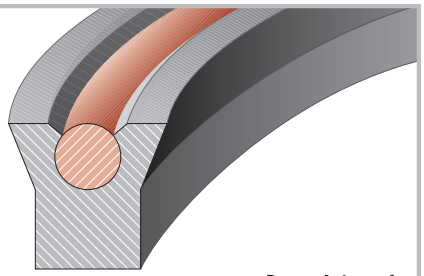
The standard NuPac seals are made of NuThane™ polyurethane with a nitrile o-ring or x-ring energizer. A wide variety of other materials are available upon request.



Standard (rod or piston)



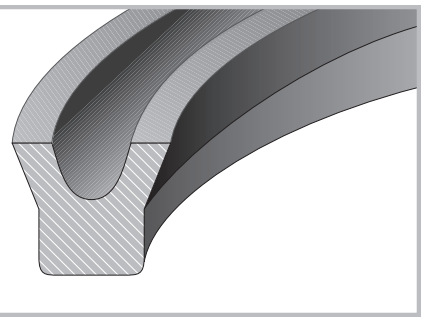
Type B (rod)



Deep (piston)

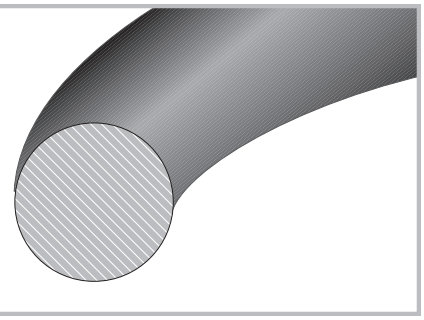
Unloaded U-Cups

Unloaded U-cups (or U-Rings) are available in symmetrical or non-symmetrical designs with flat lips or beveled lips in a variety of sizes and materials.



Polyurethane O-Rings

Polyurethane o-rings are available in 70 and 90 durometer polyurethane in a variety of sizes for hydraulic and pneumatic applications.



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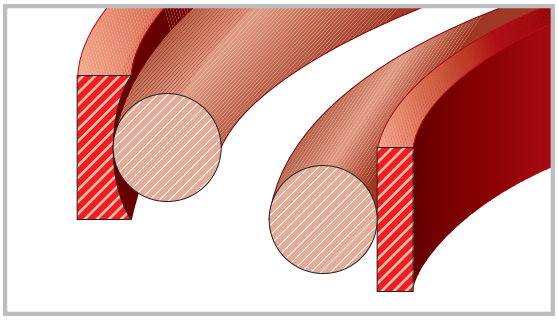
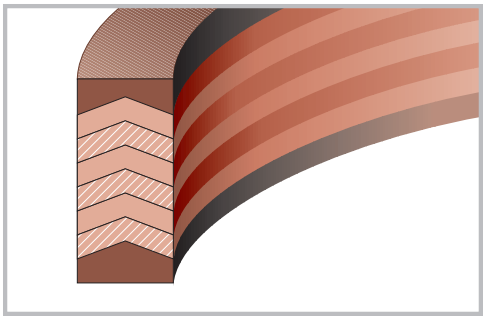
PTFE-Capped Seals

PTFE-capped seals use an o-ring to energize a PTFE cap that actually runs against the dynamic surface. This combines the outstanding dynamic properties of PTFE and the simplicity of o-ring sealing. PTFE-capped seals are available for ID or OD sealing and with a flat or contoured PTFE ring.



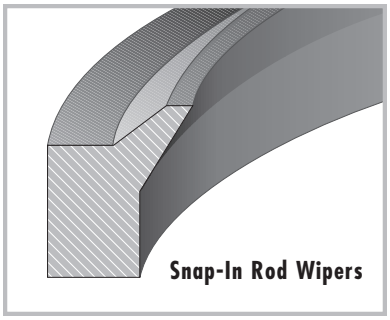
V-Packings

A V-packing is a set of elastomeric (and sometimes non-elastomeric) rings which rely on fluid pressure to activate the seal. V-packings are typically used in reciprocating shaft applications as rod seals.

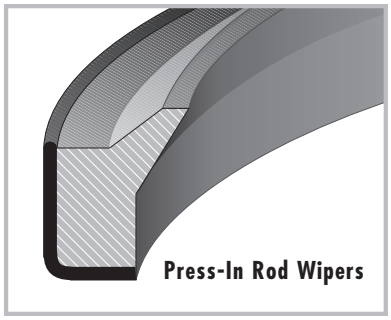


Rod Wipers

Rod wipers are either snapped in or pressed in and are used to clear dirt, debris and other contaminants from the rod so that the primary rod-sealing elements are protected. Dichtomatik rod wipers are available in a wide range of materials and configurations.



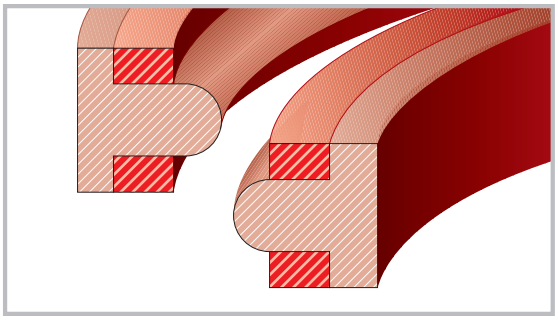
Snap-In Rod Wipers



Press-In Rod Wipers

T-Seals

T-seals are three-piece sealing systems that involve an elastomeric T-ring and two back-up rings. The T-ring has a wide base to resist rolling and spiral failure in reciprocating applications and to energize the back-up rings. T-seals require proper installation of three components and are much more expensive than an equivalent O-ring or D-ring.



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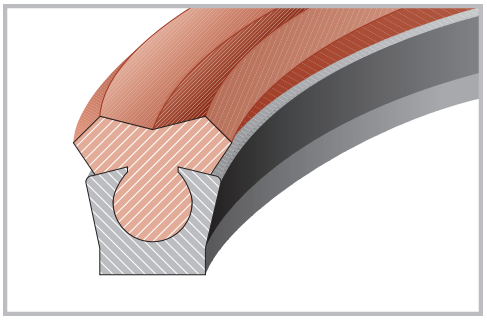
DICHTOMATIK NORTH AMERICA PRODUCT OFFERING

FLUID POWER SEALING PRODUCTS–*continued*

CapBac™ Seals

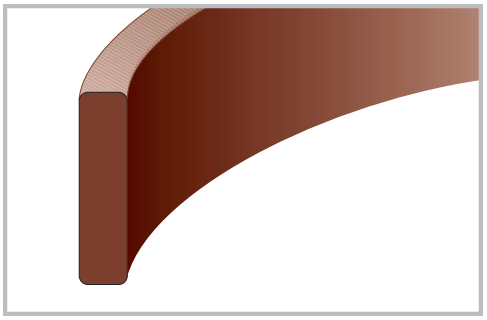
CapBac seals are two-piece seals that are typically used as rod seals. The polyurethane cap offers anti-extrusion protection and serves as a redundant sealing lip, offering excellent performance and reliability. The standard elastomeric portion is NBR but is also available in EPDM, Neoprene, FKM, and HNBR by special order.

Note:This picture is representative of typical double-lip rod seals of the type currently available.



Wear Rings/Guide Bands

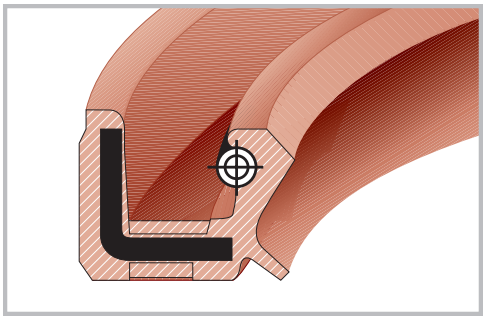
Wear rings or guide bands serve no sealing function. Instead, they are used to maintain the concentricity of the rod in the bore so that the other sealing elements can function properly and don't wear unevenly. Dichtomatik wear rings are available in Nylon.



RADIAL SHAFT SEALS

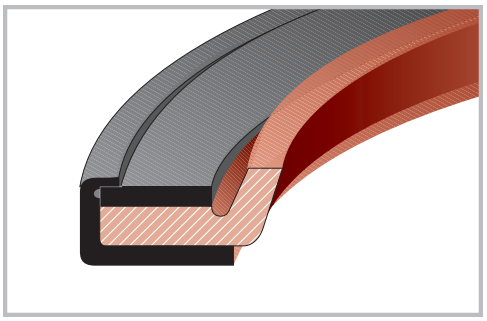
Oil Seals

Oil seals are used to seal around a rotating shaft and keep an oil-based lubricant inside an axle, engine, etc. Dichtomatik can supply seals in almost any case or lip configuration, with or without a spring-loaded lip and in whatever material is required to fit your application.



Grease Seals

Grease seals are used to seal more viscous grease lubricants in rotary shaft applications. Dichtomatik can supply a wide variety of styles, sizes and materials to fit your application.



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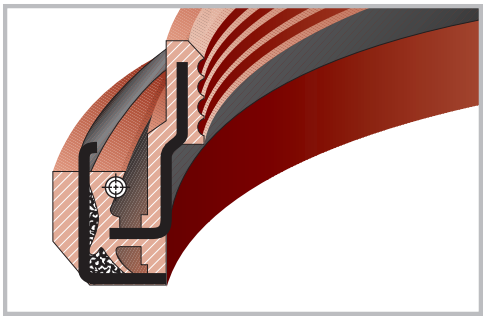
RADIAL SHAFT SEALS–*continued*

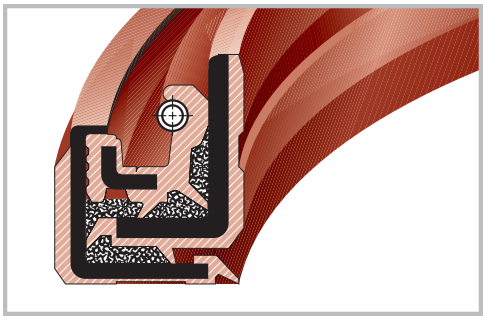
Heavy-Duty Oil Bath Seals

Heavy-duty oil bath seals are used in heavy-duty axle applications. Dichtomatik offers seals used primarily in the transit and trailer industries.



AP Seals

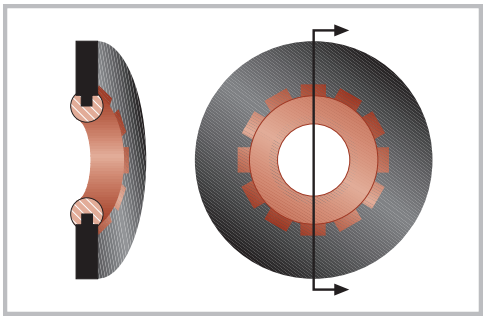
Transcom–Dichtomatik AP seals are specially designed for low to moderate speed applications that require outstanding contamination exclusion. In many cases the AP seal can be customized to directly replace less capable shaft seals. Contact Transcom–Dichtomatik for help with your specific application.



CUSTOM MOLDED PRODUCTS

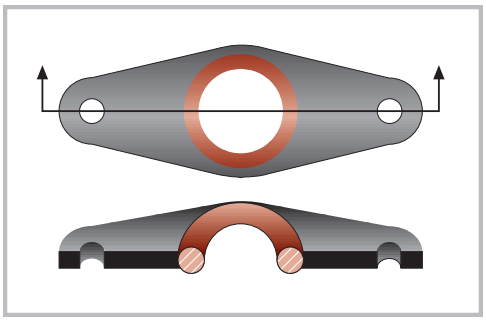
Fitting, Fastener and Thread Seals

Fitting, fastener and thread seals are typically small, round composite gaskets for sealing at fittings, fasteners and bolts. Call a Dichtomatik representative for assistance with your standard or custom applications.



Edge-Bonded Gaskets

Dichtomatik offers edge-bonded gaskets with metal or plastic carriers in most common sealing elastomers. Our low tooling charges make Dichtomatik the perfect source for even lower-volume parts.



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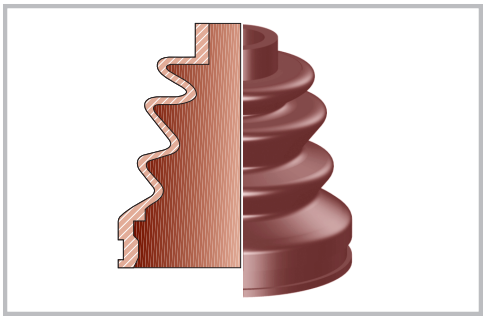
DICHTOMATIK NORTH AMERICA PRODUCT OFFERING

CUSTOM MOLDED PRODUCTS—*continued*

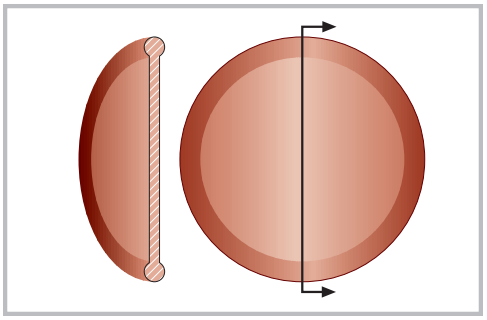
Boots & Bellows

Dichtomatik boots and bellows are available in a wide variety of sizes, materials and configurations. Specify your length and diameter, the connection point types and desired number of convolutions, and Dichtomatik can take care of the rest.



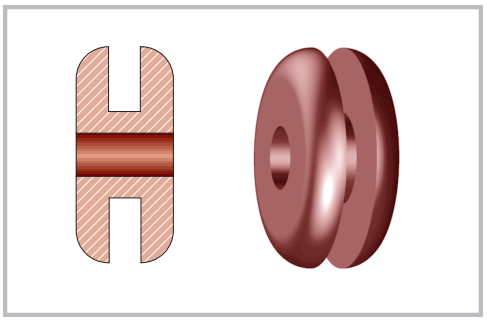
Diaphragms

Dichtomatik can supply a wide variety of diaphragms to meet the needs of your applications. Dichtomatik offers flat, convoluted, dished and long-stroke rolling diaphragms, all in a wide variety of elastomers.



Grommets

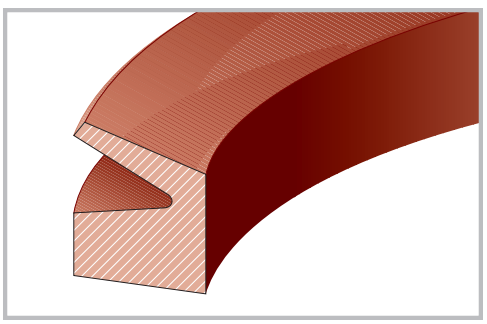
Grommets are used to protect wires, tubes, etc., passing through plates that could potentially have sharp edges and cause damage to the wire or tube. Dichtomatik grommets are available in a wide variety of sizes, material types and configurations.



OTHER PRODUCTS

V-Rings

V-rings are installed on a rotating shaft and seal axially against the counter-face. V-rings are typically used to supplement other seals by serving as deflectors or by creating a labyrinth for contaminants.



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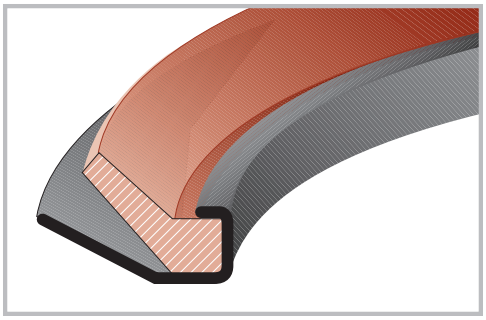
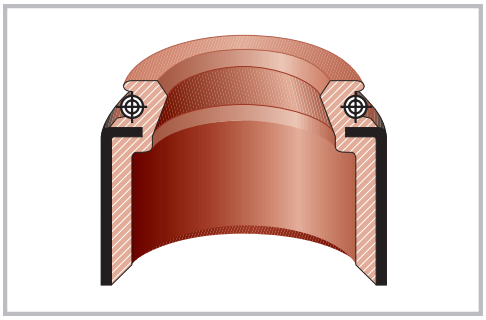
Axial Face Seals

Axial face seals are installed on a rotating shaft and seal axially against the counter-face. Axial face seals have a metal case which may serve as a deflector or to create a labyrinth.



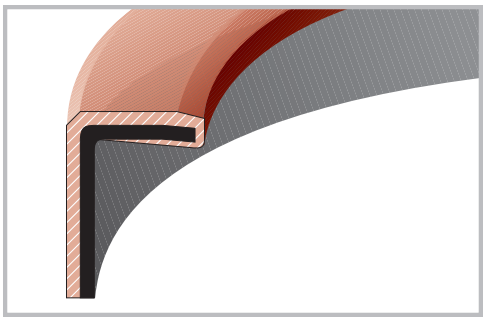
Valve Stem Seals

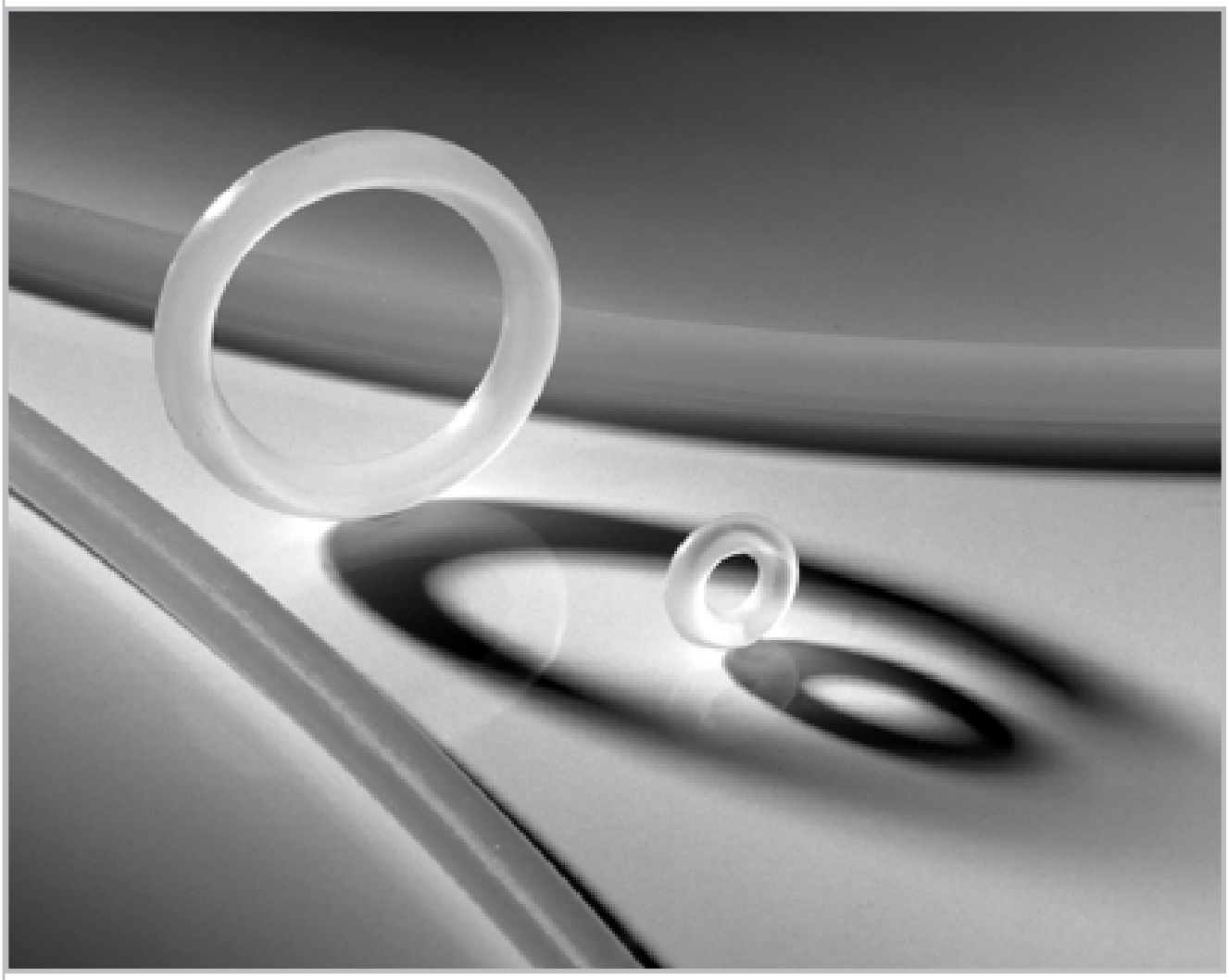
Dichtomatik can offer valve stem seals, primarily for non-automotive applications.



End Caps

End caps are used to plug unused ports or access ports in oil-sealing applications. Dichtomatik end caps are available to fit a wide variety of bore sizes.





SECTION NINE

TECHNICAL REFERENCE

- Unit Conversions
  - Temperature Conversions
  - Measurement Unit Factors
  - Conversion Tables
- Common Abbreviations
- Glossary of O-Ring Related Terms

REFERENCE—UNITS CONVERSION

TEMPERATURE CONVERSIONS

Temperature conversions are not accomplished with simple multipliers, since the Celsius and Fahrenheit scales are shifted 32 degrees with respect to one another. The formulas for converting from Celsius to Fahrenheit and Fahrenheit to Celsius are given below. A table of conversions for temperatures common on material data sheets are given at right.

Absolute temperatures are not typically used in the elastomeric seal industry, but they may be encountered. The metric and non-metric absolute temperature scales are the Kelvin and Rankin scales respectively. To convert from Celsius to Kelvin, add +273.15 to the Celsius temperature. To convert from Fahrenheit to Rankin, add +459.67 to the Fahrenheit temperature.

Temperature Conversion Calculation

$$°F = (°C \times \frac{9}{5}) + 32$$

$$°C = (°F - 32) \times \frac{5}{9}$$

TEMPERATURE °C	°F	
300	572	
275	527	
250	482	
225	437	
200	392	
175	347	
150	302	
125	257	
100	212	◄ BOILING POINT OF WATER
70	158	
38	100	
23	73	◄ ROOM TEMPERATURE
0	32	◄ FREEZING POINT OF WATER
–10	14	
–18	0	
–25	–13	
–35	–31	
–40	–40	
–50	–58	
–55	–67	
–65	–85	
–75	–103	
–80	–112	

CONVERSION TABLE USE

The **MEASUREMENT UNIT FACTORS** in the table (on page 207) can be used to convert your unit measure. Multiply the units you have by the factor of the unit measurement from the table that you want, and divide by the factor of the units that the value is currently in.

EXAMPLE: To convert 1000 square meters to acres, multiply acre unit measure (0.0002471) by 1000 and divide by the square meter unit measuement (1); thus, [1000 x 0.0002471] ÷ 1 = .2471.

Therefore, 1000 square meters is the same as .2471 acres.

As an alternative, the conversion tables on the following six pages can be used. To use the tables, find the ***units that you have*** in the left column. Look across the table to find the units you wish to convert to. The value that is contained in that row and column is the multiplier that converts from the units that you have to the units that you want.

EXAMPLE: To convert 100 knots to m/s, find the row labeled "knots" and look across to the column labeled "m/s" and find the multiplier 0.514444.

100 x 0.514444 = 51.4444

Therefore, 100 knots is the same as 51.4444 meters per second.

NOTE: Some of the conversion tables have been split into two tables to accommodate the page width.

MEASUREMENT UNIT FACTORS

Unit	Abbreviation	Factor
LENGTH		
meter	m	1
centimeter	cm	100
millimeter	mm	1,000
yard	yd	1.0936
foot	ft	3.2808
inch	in	39.37
kilometer	km	0.001
mile	mi	0.000621
mil	mil	39,370
micron	mm	1,000,000
angstrom	Å	10,000,000,000
AREA		
square meter	m2	1
square centimeter	cm2	10,000
square yard	yd2	1.196
square foot	ft2	10.7639
square inch	in2	1550
square kilometer	km2	0.000001
square mile	mi2	3.861E-07
acre	acre	0.0002471
VOLUME		
cubic meter	m3	1
cubic centimeter	cm3	1,000,000
cubic yard	yd3	1.30795
cubic foot	ft3	35.315
cubic inch	in3	61023.74
liter	l	1000
gallon	gal	264.172
quart	qt	1056.688
pint	pt	2113.376
milliliter	ml	1,000,000
fluid ounce	ozfl	33,814
tablespoon	tbsp	67,628
teaspoon	tsp	202,884
TIME		
years	yr	1
days	day	365.24
hours	hr	8765.81
minutes	min	525,949
seconds	sec	31,556,926

Unit	Abbreviation	Factor
VELOCITY		
meters per second	m/s	1
centimeters per second	cs/s	100
feet per second	ft/s	3.28
kilometers per hour	kph	3.6
miles per hours	mph	2.237
knots	knots	1.944
MASS		
kilogram	kg	1
gram	g	1000
pound	lb	2.205
ounce	oz	35.274
ton	ton	0.001102
metric ton	t	0.001
slug	slug	0.06852
FORCE		
Newton	N	1
dyne	dyne	100000
gram force	gf	101.97
pound force	lbf	0.2248
ENERGY		
Joule	J	1
erg	erg	10000000
kilocalorie	kcal	0.0002388
calorie	cal	0.2388
British Thermal Unit	BTU	0.0009478
foot pound	ftlbf	0.73756
POWER		
watt	watt	1
horsepower	hp	0.001341
PRESSURE		
megapascal	mPa	1
pascal	Pa	1000
atmosphere	atm	0.009869
bar	bar	0.01
psi	psi	0.145
torr	torr	7.5
millimeters of mercury	mmHg	7.5
inches of mercury	inHg	0.2953
inches of water	inH_2O	4.0186

CONVERSION TABLES

LENGTH—METRIC	m	cm	mm	km	µm	Å
m	1	100	1000	0.001	1000000	10000000000
cm	0.01	1	10	0.00001	10000	100000000
mm	0.001	0.1	1	0.000001	1000	10000000
yd	0.9144	91.44	914.1	0.0009144	914400	9144000000
ft	0.3048	30.48	304.8	0.0003048	304800	3048000000
in	0.0254	2.54	25.4	0.0000254	25400	254000000
km	1000	100000	1000000	1	1000000000	1E+13
mi	1609.344	160934.4	1609344	1.609344	1609344000	1.60934E+13
mil	0.0000254	0.00254	0.0254	2.54E-08	25.4	254000
µm	0.000001	0.0001	0.001	0.000000001	1	10000
Å	1E-10	0.00000001	0.0000001	1E-13	0.0001	1

LENGTH—AMERICAN	yd	ft	in	mi	mil
m	1.0936	3.2808	39.37	0.000621	39370
cm	0.010936	0.032808	0.3937	0.00000621	393.7
mm	0.0010936	0.0032808	0.03937	0.000000621	39.37
yd	1	3	36	0.000568182	36000
ft	0.333333333	1	12	0.000189394	12000
in	0.027777778	0.083333333	1	1.57828E-05	
1000km	1093.6	3280.8	39370	0.621	39370079
mi	1760	5280	63360	1	63360000
mil	2.77778E-05	8.33333E-05	0.001	1.58E-08	1
µm	1.0936E-06	3.2808E-06	0.00003937	6.21E-10	3.94E-02
Å	1.0936E-10	3.2808E-10	3.937E-09	6.21E-14	3.94E-06

CONVERSION TABLES

AREA— METRIC	m^2	cm^2	mm^2	km^2
m^2	1	10000	1000000	0.000001
cm^2	0.0001	1	100	1E-10
mm^2	0.000001	0.01	1	1E-12
yd^2	0.83612736	8361.2736	836127.36	8.36127E-07
ft^2	0.09290304	929.0304	92903.04	9.2903E-08
in^2	0.00064516	6.4516	645.16	6.4516E-10
km^2	1000000	10000000000	1E+12	1
mi^2	2589988	25899880000	2.58999E+12	2.589988
acre	4046.8726	40468726	4046872600	0.004046873

AREA— AMERICAN	yd^2	ft^2	in^2	mi^2	acre
m^2	1.19599	10.76391	1550	3.861E-07	0.0002471
cm^2	0.000119599	0.001076391	0.155	3.861E-11	2.471E-08
mm^2	1.19599E-06	1.07639E-05	0.00155	3.861E-13	2.471E-10
yd^2	1	9	1296	3.23E-07	0.00020661
ft^2	0.111111111	1	144	3.59E-08	2.29568E-05
in^2	0.000771605	0.006944444	1	2.49E-10	1.59E-07
km^2	1195990	10763910	1550000000	0.3861	247.1
mi^2	3097600	27878400	4014489600	1	639.99744
acre	4840	43560	6272665	0.0015625	1

CONVERSION TABLES

VOLUME—METRIC	m^3	cm^3	l	ml
m^3	1	1000000	1000	1000000
cm^3	0.000001	1	0.001	1
yd^3	0.764555	764555	764.555	764555
ft^3	0.028316852	28316.85185	28.31685185	28316.85185
in^3	1.63871E-05	16.387064	0.016387064	16.387064
l	0.001	1000	1	1000
gal	0.003785412	3785.411784	3.785411784	3785.411784
qt	0.000946353	946.352946	0.946352946	946.352946
pt	0.000473176	473.176473	0.473176473	473.176473
ml	0.000001	1	0.001	1
ozfl	2.95735E-05	29.57352956	0.02957353	29.57352956
tbsp	1.47868E-05	14.78676478	0.014786765	14.78676478
tsp	4.92892E-06	4.928921594	0.004928922	4.928921594

VOLUME—AMERICAN	yd^3	ft^3	in^3
m^3	1.30795	35.315	61023.744
cm^3	1.30795E-06	0.000035315	0.06102374
yd^3	1	27	46656
ft^3	1728	28.31685185	7.480518519
in^3	2.14335E-05	0.000578704	1
l	0.00130795	0.035315	61.02374
gal	0.004951132	0.133680556	231
qt	0.001237783	0.033420139	57.75
pt	0.000618892	0.016710069	28.875
ml	1.30795E-06	0.000035315	0.06102374
ozfl	3.86807E-05	0.001044379	1.8046875
tbsp	1.93404E-05	0.00052219	0.90234375
tsp	6.44679E-06	0.000174063	0.30078125

CONVERSION TABLES

VOLUME—AMERICAN	gal	qt	pt	ozfl	tbsp	tsp
m^3	264.172	1056.688	2113.376	33814	67628	202884
cm^3	0.000264172	0.001056688	0.002113376	0.033814	0.067628	0.202884
yd^3	201.974	807.896	1615.792	25852.672	51705.35	155116.05
ft^3	7.480518519	29.92207407	59.84414815	957.5063704	1915.012963	5745.038889
in^3	0.004329	0.01731602	0.034632035	0.55411255	1.108225	3.324675
l	0.264172	1.056688	2.113376	33.814	67.628	202.884
gal	1	4	8	128	256	768
qt	0.25	1	2	32	64	192
pt	0.125	0.5	1	16	32	96
ml	0.000264172	0.001056688	0.002113376	0.033814	0.067628	0.202884
ozfl	0.0078125	0.03125	0.0625	1	2	6
tbsp	0.00390625	0.015625	0.03125	0.5	1	3
tsp	0.001302083	0.005208333	0.010416667	0.166666667	0.333333333	1

TIME	yr	day	hr	min	sec
yr	1	365.24	8765.81	525949	31556925
day	0.002737926	1	24	1440	86400
hr	0.00011408	0.041666667	1	60	3600
min	1.90133E-06	0.000694444	0.016666667	1	60
sec	3.16888E-08	1.15741E-05	0.000277778	0.016666667	1

VELOCITY	m/S	cs/s	ft/s	kph	mph	knots
m/s	1	100	3.28	3.6	2.237	1.944
cs/s	0.01	1	0.0328	0.036	0.02237	0.01944
ft/s	0.3048	30.48	1	1.09728	0.681818182	0.5924838
kph	0.277777778	27.77777778	0.911344415	1	0.621	0.54
mph	0.44704	44.704	1.466666667	1.609344	1	0.868976
knots	0.514444444	51.44444444	1.6878	1.852	1.150779	1

CONVERSION TABLES

MASS	kg	g	lb	oz	ton	t	slug
kg	1	1000	2.205	35.274	0.001102	0.001	0.06852
g	0.001	1	0.002205	0.035274	0.000001102	0.000001	0.00006852
lb	0.45359237	453.59237	1	16	0.0005	0.000453592	0.03108095
oz	0.028349523	28.34952313	0.0625	1	0.00003125	2.83495E-05	0.001942559
ton	907.18474	907184.74	2000	32000	1	0.90718474	62.1619
t	1000	1000000	2205	35274	1.102	1	68.52
slug	14.5939	14593.9	32.174	514.785	0.016087	0.0145939	1

FORCE	N	dyne	gf	lbf
N	1	100000	101.97	0.2248
dyne	0.00001	1	0.0010197	0.000002248
gf	0.00980665	980.665	1	0.0022046
lbf	4.44822	444822	453.59237	1

ENERGY	J	erg	kcal	cal	BTU	ft-lbf
J	1	10000000	0.00023885	0.23885	0.0009478	0.737562
erg	0.0000001	1	2.3885E-11	2.3885E-08	9.478E-11	7.37562E-08
kcal	4186.8	41868000000	1	1000	3.96832	3088.0252
cal	4.1868	41868000	0.001	1	0.00396832	3.0880252
BTU	1055.0559	10550558526	0.25199576	251.99576	1	778.16296
ft-lbf	1.35582	13558179	0.000323832	0.323832	0.001285068	1

POWER	W	kW	hp	ft-lbf/s
W	1	0.001	0.001341	0.73756
kW	1000	1	1.341	737.56
hp	745.7	0.7457	1	550
ft-lbf/s	1.35582	0.00135582	0.001818182	1

CONVERSION TABLES

PRESSURE–METRIC	Mpa	Pa	bar	torr	mmHg
MPa	1	1,000,000	10	7500.6	7500.6
Pa	1E-06	1	1E-05	0.0075	0.0075
atm	0.101325	101,325	1.01325	760	760
bar	0.1	100,000	1	750.06	750.06
psi	0.00689476	6894.76	0.0689476	51.715	51.715
torr	0.000133322	133.322	0.00133322	1	1
mmHg	0.000133322	133.322	0.00133322	1	1
inHg	0.003386388	3386.388	0.03386388	25.4	25.4
inH_2O	0.00024884	248.84	0.0024884	1.86645	1.86645

PRESSURE–AMERICAN	atm	psi	inhg	inH_2O
MPa	9.869	145.04	295.3	4018.65
Pa	9.869E-06	0.000145	0.0002953	0.00401865
atm	1	14.6959	29.921	407.189
bar	0.9869	14.504	29.53	401.865
psi	0.068046	1	2.036	27.7076
torr	0.00131579	0.019337	0.03937	0.535775
mmHg	0.00131579	0.019337	0.03937	0.535775
inHg	0.033421	0.491154	1	13.6087
inH_2O	0.00245586	0.03609119	0.0734824	1

REFERENCE—ABBREVIATIONS

COMMON ABBREVIATIONS

ACM	polyacrylate rubber
ACN	acrylonitrile; component in nitrile rubber
AEM	ethylene-acrylic rubber; copolymer of ethylene and methyl acrylate; Vamac®
AMS	Aerospace Material Specification
ANSI	American National Standards Institute
AQL	Acceptable Quality Level
ARP	Aerospace Recommended Practice
AS	Aerospace Standard
ASTM	American Society for Testing and Materials
atm	atmosphere—a unit of pressure
AU	polyester-based polyurethane rubber
BR	polybutadiene rubber
C or °C	degrees Celsius
cc	cubic centimeter
CIIR	chlorobutyl rubber
CO	homopolymer of epichlorohydrin
CR	polychloroprene rubber; Neoprene
CS	cross-section
CSM	chlorosulfonated polyethylene rubber; Hypalon®
Dia	diameter
DIN	German standardization organization
ECO	copolymer of epichlorohydrin and ethylene oxide
EPA	Environmental Protection Agency
EPM, EPDM	ethylene-propylene rubber
EU	polyether-based polyurethane rubber
F or °F	degrees Fahrenheit
FDA	Food and Drug Administration
FEPM	tetrafluoroethylene-propylene rubber; Aflas®
FFKM	perfluoroelastomer
FKM	fluorocarbon elastomer
FMQ	fluoromethyl silicone rubber; fluorosilicone
FPM	feet per minute
FSA	Fluid Sealing Association
FVMQ	fluoro vinyl methyl silicone rubber; fluorosilicone
GRS	Government Rubber Styrene; now SBR
HNBR	hydrogenated nitrile rubber
HSN	highly saturated nitrile; alternative name for HNBR
ID	inside diameter
IIR	butyl rubber; copolymer of isobutylene and isoprene
in.	inch
IR	isoprene rubber
IRHD	International Rubber Hardness degrees
IRM	Industry Reference Material—e.g. IRM 903 oil
ISO	International Organization for Standardization
JIC	Joint Industrial Conference on Hydraulic Standards for Industrial Equipment
JIS	Japanese Industrial Standard
K	degrees Kelvin; absolute temperature scale
Max.	maximum
Mil	Military (specification)
Mil Std	Military Standard
Min	minimum
MPa	megaPascal; SI unit of pressure
MQ	methyl silicone rubber
MS	Military Standard
NAS	National Aerospace Standard
NBR	nitrile butadiene rubber; Buna N; copolymer of acrylonitrile and butadiene
NBS	National Bureau of Standards
NR	natural rubber; polyisoprene
NSF	National Sanitation Foundation
OD	outside diameter
OSHA	Occupational Safety and Health Administration
PLI	pounds per linear inch
PMQ	phenyl methyl silicone rubber
PSI	pounds per square inch
PTFE	polytetrafluoroethylene
PVMQ	phenyl vinyl methyl silicone rubber
QPL	qualified products list
RMA	Rubber Manufacturers Association
rpm	revolutions per minute
SAE	Society of Automotive Engineers
SBR	styrene butadiene rubber; copolymer of styrene and butadiene
SG	specific gravity
SI	denotes The International System of Units or metric system
Spec.	specification
TC	critical temperature
TFE	tetrafluoroethylene; a fluoroplastic
TIR	Total Indicator Reading
UL	Underwriters Laboratories
UV	ultraviolet light
VMQ	vinyl methyl silicone rubber
W	width
XNBR	carboxylated nitrile rubber

GLOSSARY

Abrasion the surface loss of a material due to frictional forces.

Absorption the penetration of matter in bulk into other matter, as in dissolving of a gas by a liquid.

Accelerator a compounding material used in small amounts with a vulcanizing agent to increase the speed of vulcanization.

Accelerator, delayed action an accelerator that, in conjunction with other curing agent(s), produces, at vulcanizing temperatures, a period of no significant cross-linking, followed by a period of rapid cross-link formation.

Accuracy a concept of exactness. When applied to a test method, it denotes the extent to which bias is absent; when applied to a measured value, it denotes the extent to which both bias and random error are absent.

Activator compounding material used in small proportions to increase the effectiveness of an accelerator.

Adhesion failure the loss of structural integrity due to the separation of two bonded surfaces at the bond interface.

Adsorption the surface retention of matter by other matter.

Agglomerates clusters of particles of compounding materials contained in a continuous rubber phase.

Aging (act of) exposure of materials to a deteriorating environment for a specified time interval.

Aging the irreversible change of material properties during exposure to a deteriorating environment for a specified time interval.

Aliphatic straight-chain hydrocarbons. Three sub-groups are alkanes, alkenes, and alkynes.

Alloy a unique composition of two or more polymers that has one or more of the polymers treated or processed in a special way to confer enhanced performance characteristics on the resulting material.

Amorphous materials with no definite arrangement of atoms.

Angstrom (Å) a unit of length, an angstrom is one ten-thousandth of a micron (10 –4 µm) or 100,000,000 Å=1 cm.

Anticoagulant a substance added to field latex to retard bacterial action which would otherwise cause rapid coagulation of the latex.

Antidegradant a compounding material used to retard deterioration caused by oxidation, ozone, light and combinations of these.

Anti-extrusion ring a thin ring installed on the low-pressure side of a seal to prevent elastomer extrusion into the clearance gap.

Antiflex cracking agent a compounding material used to retard cracking caused by cyclic deformations.

Antioxidant compounding material used to retard deterioration caused by oxidation.

Antiozonant compounding material used to retard deterioration caused by ozone.

Antistatic agent a material which reduces the tendency for accumulation of electric charge on the surface of an article.

Aromatic oil a hydrocarbon process oil containing at least 35%, by mass, of aromatic hydrocarbons.

Ash the residue from incineration of a material under specified conditions.

Autoclave a vessel used for vulcanizing rubber compounds by means of steam pressure.

Backrinding a molding defect in which the rubber adjacent to the flash line shrinks below the surface of the molded product, with the flash line often being ragged and torn.

Bake-out secondary post-curing operation designed to remove residual volatile materials.

Batch the product of one mixing operation.

Blank a portion of a rubber compound of suitable volume to fill the cavity of a mold.

Bleeding the exuding of a liquid compounding material from the surface of a vulcanized or unvulcanized rubber.

Blister a cavity or sack that deforms the surface of a material.

Bloom a liquid or solid material that has migrated to the surface of a rubber and generally changes the surface appearance.

Bound monomer a monomer that is combined or reacted with itself or other types of monomers in a polymerization reaction to form a polymer.

Breakaway friction the force required to overcome friction to start a body in motion over a surface.

Brittle point the temperature at which elastomers break when subjected to an impact.

Bulk modulus of elasticity also known as compression modulus, the ratio of compressive force applied to a surface per unit surface area to the change in volume of the substance per unit volume.

Bumping, molding process the application, release, and reapplication of pressure prior to the start of vulcanization to vent entrapped gases, thereby facilitating complete filling of the mold.

GLOSSARY

Butt joint a connection made with two ends cut at right angles.

Calender a machine with two or more parallel, counter-rotating rolls with a controllable, roll-to-roll spacing, rotating at selected surface speeds and controlled temperatures, used for sheeting, laminating, skim coating (topping) and friction coating, to a controlled thickness and/or surface condition.

Chalking the formation of a powdery residue on the surface of a rubber, commonly resulting from surface degradation.

Chemisorption a chemical adsorption process in which weak chemical bonds are formed between gas or liquid molecules and a solid surface.

Coagent a compounding ingredient used in small amounts to increase the cross-linking efficiency of certain no-sulfur vulcanizing systems or to modify the properties given by such systems.

Coefficient of friction the force in the direction of motion required to move one surface with respect to another, divided by the force normal to the two surfaces.

Coefficient of thermal expansion the increment in volume of a unit volume of material for a rise of one degree temperature at constant pressure.

Cohesive failure a rupture occurring entirely within any single uniform layer of the assembly.

Cold flow slow deformation, under gravitational force, at or below room temperature.

Comonomer one of the two or more monomer species that polymerize to form a copolymer.

Composite seal a seal composed of two or more dissimilar materials.

Compound an intimate admixture of a polymer(s) with all the materials necessary for the finished article.

Compression the amount of deformation on a seal, often calculated by dividing the deformation by the original seal cross-sectional diameter.

Compression molding molding process in which the material is placed directly in the mold cavity and compressed to shape by closure of the mold.

Compression set the residual deformation of a material after removal of the compressive stress.

Conditioning (environmental) the storage of a rubber, under specified conditions (time, temperature, humidity) prior to testing.

Conditioning (mechanical) the prescribed program of deformation of a specimen prior to testing.

Conductive rubber an elastomer having high conductivity.

Copolymer a polymer formed from two different monomers.

Covalent bonding chemical bonding whereby each atom of a bound pair contributes one electron to form a pair of electrons.

Crack(s), atmospheric fissure(s) originating in the surface of a rubber vulcanizate or product as a result of natural weathering.

Crack(s), ozone fissure(s) originating in the surface of a rubber vulcanizate, caused by exposure to an ozone-containing environment; the fissure(s) are perpendicular to the direction of strain.

Crack(s), flex fissure(s) originating in the surface of a rubber vulcanizate, resulting from cyclic deformation (usually bending).

Creep the time-dependent part of a strain resulting from stress.

Cross-link chemical bond bridging one polymer chain to another.

Cross-linking agent compounding material that produces cross-linking in rubber.

Crystallization, polymer arrangement of previously disordered polymer segments of repeating patterns into geometric symmetry.

Cure see ***vulcanization***, the preferred term.

Density the mass-per-unit volume of a material.

Desiccant compounding material used to irreversibly absorb moisture present (in a rubber mix) particularly for the purpose of minimizing risk of porosity during vulcanization.

Die swell difference between the dimensions of the cross-section of an extrudate and the corresponding dimensions of the die orifice by which the extrudate is formed.

Diene polymer a polymer formed from one or more monomer species, at least one of which is a diolefin.

Diffusion the spontaneous mixing of one substance with another when in contact with, or separated by, a permeable membrane or microporous barrier.

Dispersing agent (latex) a surface-active substance used to facilitate the suspension of solid compounding materials in a liquid medium and to stabilize the dispersion thereby produced.

GLOSSARY

Dispersion (the act of) application of shearing forces to distribute one or more compounding materials uniformly throughout the mass of a continuum material.

Dumbbell specimen a flat specimen having a narrow, straight central portion of essentially uniform cross section.

Durometer an instrument for measuring the indentation hardness of rubber.

Dynamic seal a seal designed to prevent leakage between surfaces which move relative to each other.

Elastic limit the greatest stress that a material is capable of sustaining without any permanent strain remaining upon complete release of the stress.

Elastomer a viscoelastic macromolecular material that can respond to large deformations.

Elongation the extension of a uniform section of a specimen expressed as percentage of the original length.

Elongation, ultimate the elongation at the time of rupture.

Emulsifying agent (latex) a surface-active substance used to facilitate the dispersion of an immiscible liquid compounding material in another liquid and to stabilize the emulsion thereby produced.

Esters a compound formed by the elimination of water and the bonding of an alcohol and an organic acid. Characterized by "–C=C-O-" bonding.

Ethers a compound characterized by "-O-" bonding.

Extender an organic material used to augment the polymer in a compound.

Extensometer a device for determining elongation of a specimen as it is strained.

Extrudate the material that issues from an extruder.

Extruder machine designed to force a rubber or rubber mix through an orifice, which is often shaped to the geometry of the desired product.

Extrusion 1) the continuous shaping of a material during plastic passage through a die. 2) the displacement of a part of the seal into the clearance gap under action of fluid pressure or thermal expansion.

Face seal, flange seal an axial contact seal.

Fatigue life (dynamic) the number of deformations required to produce a specified state of fatigue breakdown in a test piece or product that is deformed under a prescribed set of conditions.

Filler a solid compounding material, usually in finely divided form, which may be added in relatively large proportions to a polymer for technical or economic reasons.

Fissure a surface split or crack.

Flash the excess material protruding from the surface of a molded article at the mold junctions.

Flex life the number of cycles required to produce a specified state of failure in a specimen that is flexed in a prescribed method.

Flow marks marks or lines on a molded product, caused by imperfect fusion or "knitting" of material.

Fluorocarbon elastomer also known as fluoroelastomer.

Fluorosilicone a fluorinated silicone elastomer.

Foam stabilizer (latex) a substance used in the preparation of latex foam to help stabilize the foam latex before gelation, drying and vulcanization.

Formula a list of the materials and their amounts used in the preparation of a compound.

Frequency the number of periodic oscillations, vibrations or waves per unit of time.

Furnace carbon black type of carbon black produced by the decomposition reaction of hydrocarbons when injected into a high-velocity stream of combustion gases under controlled conditions.

Gasket a deformable material clamped between essentially stationary faces to prevent the passage of matter through an opening or joint.

Gel, dry rubber the portion of unvulcanized rubber insoluble in a chosen solvent.

Gland a cavity into which a seal is installed.

Grain anisotropy introduced into rubber during processing operations.

Gum compound a rubber compound containing only those ingredients necessary for vulcanization and small amounts of other ingredients for processing, coloring and improving the resistance to aging.

Hardness a material's ability to resist a distorting force (indentor point).

Heat buildup the accumulation of thermal energy generated within a material as a result of hysteresis, evidenced by an increase in temperature.

Hertz (Hz) an international unit for frequency—the number of cycles per second.

Homogeneous having uniform composition or structure.

Homogenization repeated passage of raw rubber through a mill or other mixing device, under specified conditions, to ensure uniformity.

GLOSSARY

Homopolymer a polymer formed from a single monomer species.

Hydrogen bonding unusually strong dipole-dipole attractions that occur among molecules in which hydrogen is bonded to a highly electronegative atom.

Hydrophilic affinity toward water (water-loving); a hydrophilic surface is one that will allow water to spread across it in large puddles.

Hydrophobic aversion to water; a hydrophobic surface will not allow large puddles of water, but rather will form droplets. These surfaces are often termed "de-wetted."

Hydroscopic attracts and absorbs water.

Hysteresis the lagging of strain behind stress during deformation.

Impact resistance resistance to fracture under shock force.

Inhibitor a material used to suppress a chemical reaction.

Ion an atom that has either gained or lost electrons, making it a charged particle.

Ionic bonding the electrostatic attraction between oppositely charged ions—characterized by electron transfer.

Isotactic a polymeric molecular structure containing a sequence of regularly spaced asymmetric atoms arranged in like configuration in the polymer chain.

Ketone an organic compound containing the carbonyl group "-C=O."

Kinetic friction the minimum force required to maintain a body in motion over a surface.

Latex colloidal aqueous dispersion of rubber.

Lip seal a custom seal, static or dynamic, that seals on a flexible extension.

Lot a mass of material or collection of articles of similar composition and characteristics.

Masterbatch a homogeneous mixture of rubber and one or more materials in known proportions for use as a raw material in the preparation of the final compounds.

Mastication a breakdown or softening of raw rubber, or a mix, by the combined action of mechanical work (shear) and atmospheric oxygen, sometimes accelerated by the use of a peptizer and frequently at elevated temperatures.

Microhardness hardness measured with an instrument having a smaller indentor and applying a lower force than the standard instrument, permitting measurements on smaller specimens or thinner sheets that are not amenable to measurement by normal instruments.

Micron (µm) a unit of length, one millionth of a meter.

Mill a machine used for rubber mastication, mixing or sheeting, having two counter-rotating rolls with adjustable longitudinal axis separation that usually rotate at different speeds.

Mismatch a defect resulting from differing cross-section dimensions in adjacent mold halves.

Mixer a machine that incorporates and disperses compounding ingredients into rubber to form a mix or a compound through the action of mechanical work (shear).

Mixer, internal a machine with a closed cavity in which a specially shaped rotor (or rotors) masticates the rubber or incorporates and disperses compounding materials into the rubber, or both.

Modulus, tensile See tensile stress, at given elongation the preferred term.

Modulus, Young's the ratio of normal stress to corresponding strain for tensile or compressive stresses below the proportional limit of the material.

Mold cavity hollow space in the mold designed to impart the desired form to the product being made.

Mold marks surface imperfection transferred to a molded product from corresponding marks on a mold.

Mold release see ***release agent*** (mold).

Molding shrinkage the difference in dimensions between a molded product and the mold cavity in which it was molded, both the mold and product being at normal room temperature when measured.

Molding, compression the process of forming a material to a desired shape by flow induced by a force applied after a material is placed in the mold cavity.

Molding, injection the process of forming a material by forcing it from an external heated chamber through a sprue (runner, gate) into the cavity of a closed mold by means of a pressure gradient that is independent of the mold-clamping force.

Molding, transfer the process of forming a material by forcing it from an auxiliary heated chamber through a sprue (runner, gate) into the cavity of a closed mold by means of a pressure gradient that is dependent on the mold-clamping force.

Molecule smallest quantity of a substance that retains the properties of that substance.

Monomer a low-molecular-weight substance consisting of molecules capable of reacting with like or unlike molecules to form a polymer.

Mooney viscosity the measurement of the plasticity of compounded or uncompounded elastomeric seal material.

GLOSSARY

Necking the localized reduction in cross section that may occur in a material under tensile stress.

Network a three-dimensional structure formed by interchain or intrachain bonding of polymer molecules in combination with chain entanglements.

Nip the radial clearance between rolls of a mill or calender on a line of centers.

Nitrile (Buna-N) a common hydrocarbon elastomer.

Non-fill defect resulting from the failure of the rubber to fill out all the mold pattern detail.

Non-polar pertaining to an element or compound which has no permanent dipole moment.

Occlusion process by which materials are entrapped within the folds of a given substance during manufacture.

Off-register misalignment of mold halves causing out-of-round O-ring cross section.

Olefins a family of hydrocarbons with one carbon-carbon double bond.

Oligomer a polymer consisting of only a few monomer units, such as a dimer, trimer, tetramer, etc., or their mixtures.

O-ring see ***seal, 0-ring***.

Outgassing the release of adsorbed or occluded gases or water vapor, usually by heating.

Oxidation a chemical reaction in which a compound loses electrons.

Paraffins saturated straight-chain hydrocarbons of the methane series.

Perfluoroelastomer a fully fluorinated fluoroelastomer.

Permanent set the permanent distortion of an elastomer after being strained.

Permeability the permeation rate divided by the pressure gradient of the gas or vapor. For a homogeneous material that obeys Fick's law, the permeability is equal to the product of the diffusion coefficient and the solubility coefficient of the gas or vapor.

Permeance the permeation rate divided by the pressure differential of a gas or vapor between opposite faces of a solid body.

Permeation rate the flow rate of a gas or vapor, under specified conditions, through a prescribed area of a solid body, divided by that area.

Physiosorption a physical adsorption process in which there are van der Waals forces of interaction between gas or liquid molecules and a solid surface.

Pigment an insoluble compounding material used to impart color.

Plasticizer a compounding material used to enhance the deformability of a polymeric compound.

Polar describing a molecule or radical that has, or is capable of developing, electrical charges. Polar molecules ionize in solution and impart conductivity.

Polymer a substance consisting of macromolecules characterized by the repetition (neglecting ends, branch junctions and other minor irregularities) of one or more types of monomeric units.

Polymer network a three-dimensional reticulate structure formed by chemical or physical linking of polymer chains.

Porosity the presence of numerous small cavities.

Post-cure heat or radiation treatment, or both, to which a cured or partially cured thermosetting plastic or rubber composition is subjected to enhance the level of one or more properties.

Pot life the period of time during which a reacting thermosetting plastic or rubber composition remains suitable for its intended use after mixing with a reaction-initiating agent.

Precision a concept of uniformity based on the magnitude of the random errors. The smaller the random errors, the higher the precision.

Primary accelerator the principal, highest concentration accelerator used in a vulcanizing system.

Processability the relative ease with which raw or compounded rubber can be handled in rubber machinery.

Processing aid a compounding material that improves the processability of a polymeric compound.

Radial clearance the difference in the radial dimensions between the sealing surfaces of a radial seal.

Recipe a formula, mixing procedure and any other instructions needed for the preparation of a product.

Recovery the degree to which a rubber product returns to its normal dimensions after being distorted.

Reinforcement the act of increasing the mechanical performance capability of a rubber by the incorporation of materials that do not participate significantly in the vulcanization process.

Release agent (mold) a substance applied to the inside surfaces of a mold or added to a material to be molded, to facilitate removal of the product from the mold.

Resilience the ratio of energy output to energy input in a rapid (or instantaneous) full recovery of a deformed specimen.

GLOSSARY

Resilience, impact the ratio of output to input mechanical energy in a rapid deformation and recovery cycle of a rubber specimen.

Retarder a material used to reduce the tendency of a rubber compound to vulcanize prematurely.

Reversion (vulcanization) deterioration of vulcanizate properties that may occur when vulcanization time is extended beyond the optimum.

Rubber a material that is capable of recovering from large deformations quickly and forcibly, and can be, or already is, modified to a state in which it is essentially insoluble (but can swell) in a boiling solvent such as benzene, methyl ethyl ketone or ethanol toluene azeotrope.

Rubber hardness degree, international (IRHD) a measure of hardness, the magnitude of which is derived from the depth of penetration of a specified indentor into a specimen under specified conditions. The scale is so chosen that zero would represent a material showing no measurable resistance to indentation, and 100 would represent a material showing no measurable indentation.

Runner the secondary feed channel for transferring material under pressure from the inner end of the sprue to the cavity gate.

Scarf joint a connection made with two ends cut at an angle and overlapping.

Scorch premature vulcanization of a rubber compound.

Scorch, Mooney the time to incipient cure of a compound when tested in the Mooney shearing disk viscometer under specific conditions.

Seal any material or device that prevents or controls the passage of matter across the separable members of a mechanical assembly.

Seal, 0-ring a product of precise dimensions molded in one piece to the configuration of a torus with circular cross-section, suitable for use in a machined groove for static or dynamic service.

Secondary accelerator accelerator used in smaller concentrations, compared to the primary accelerator, to achieve a faster rate of vulcanization.

Set strain remaining after complete release of the force producing the deformation.

Shelf life see ***storage life, shelf***.

Shock load the sudden application of an external force.

Shrinkage 1) decrease in volume of a seal in service due to extraction of fillers. 2) decrease in volume of an elastomeric compound during molding.

Silicone rubber poly dimethyl siloxane elastomer.

Solubility the ability or tendency of one substance to blend uniformly with another.

Sorption the term used to denote the combination of absorption and adsorption processes in the same substance.

Specific gravity the ratio of the weight of a given substance to the weight of an equal volume of water at a specified temperature.

Spew line line on the surface of a molded product at the junction of the mold parts.

Squeeze the compression of a seal, usually expressed as a percentage calculated by dividing the deformation by the original seal cross-sectional diameter.

Static seal a seal in which the sealing surfaces do not move relative to each other.

Stiction the increase in static friction resulting from prolonged seal compression.

Stiffness, bending the force required to produce a bent configuration under specified conditions.

Stock see ***compound***.

Storage life, shelf the period of time after production during which a material or product that is stored under specified conditions retains its intended performance capabilities.

Strain the unit change, due to force, in the size or shape of a body referred to its original size or shape.

Stress the intensity, at a point in a body, of the internal forces (or components of force) that act on a given plane through the point.

Stress relaxation the decrease in stress after a given time at constant strain.

Swelling the increase in volume of a specimen immersed in a liquid or exposed to a vapor.

Tear mechanical rupture initiated and propagated at a site of high stress concentration caused by a cut, defect or localized deformation.

Tear strength the maximum force required to tear a specified specimen, the force acting substantially parallel to the major axis of the test specimen.

Tensile set the extension remaining after a specimen has been stretched and allowed to retract in a specified manner expressed as a percentage of the original length.

Tensile strength the maximum tensile stress applied during stretching a specimen to rupture.

Tensile stress a stress applied to stretch a test piece (specimen).

GLOSSARY

Tension fatigue fracture, through crack growth, of a component or test specimen subjected to a repeated tensile deformation.

Tension set the strain remaining after a test piece or product has been stretched and allowed to retract.

Terpolymer a polymer formed from three monomer species.

Thermal carbon black type of carbon black produced under controlled conditions by the thermal decomposition of hydrocarbon gases in the absence of air or flames.

Thermal degradation irreversible and undesirable change in the properties of a material due to exposure to heat.

Thermoplastic elastomer (TPE) a diverse family of rubber-like materials that, unlike conventional vulcanized rubbers, can be processed and recycled like thermoplastic materials.

Torr pressure unit; international standard unit replacing the English measure, millimeters of mercury (mm-Hg).

TR-10 a test method for approximating the low-temperature capabilities of an elastomer.

Transition, first order a reversible change in phase of a material; in the case of polymers, usually crystallization or melting.

Transition, glass (T g) the reversible physical change in a material from a viscous or rubbery state to a brittle, glassy state.

Ultraviolet (UV) electromagnetic radiation in the wavelength 4– 400 nanometers.

UV stabilizer a compounding material that, through its ability to absorb ultraviolet radiation and render it harmless, retards the deterioration caused by sunlight and other UV light sources.

Van der Waals force an attractive force between two atoms due to a fluctuating dipole moment in one molecule inducing a dipole moment in the other molecule which then interact.

Vapor pressure the pressure of the vapor in equilibrium with its liquid or solid phase.

Viscoelasticity a combination of viscous and elastic properties in a material with the relative contribution of each being dependent on time, temperature, stress and strain rate.

Viscosity the resistance of a material to flow under stress.

Viscosity, Mooney a measure of the viscosity of a rubber or rubber compound determined in a Mooney shearing disk viscometer.

Void, cellular material a cavity unintentionally formed in a cellular material and substantially larger than the characteristic individual cells.

Volatilization also known as vaporization, the conversion of a chemical substance from a liquid or solid state to a gaseous or vapor state.

Volt a unit of electromotive force or difference in electric potential.

Volume swell the increase in dimension caused by the absorption of a fluid.

Vulcanizate the product of vulcanization, a cross-linked rubber.

Vulcanization an irreversible process during which a rubber compound, through a change in its chemical structure (for example, cross-linking), becomes less plastic and more resistant to swelling by organic liquids, while elastic properties are conferred, improved, or extended over a greater range of temperature.

Vulcanizing agent compounding material that produces cross-linking in rubber.

Vulcanizing system the combination of a vulcanizing agent and, as required, accelerators, activators and retarders used to produce the desired vulcanization characteristics or vulcanizate characteristics.

Warm-up the reduction in viscosity of a rubber or rubber mix, by mechanical work and heat, to render it suitable for further processing.

Wicking transmission of a gas or liquid, due to a pressure differential or capillary action, along fibers incorporated in a rubber product.

Wiper ring a device designed to keep out foreign material.

Yield point that point on the stress-strain curve, short of ultimate failure, where the rate of stress with respect to strain goes through a zero value and may become negative.

Yield strain the level of strain at the yield point.

Yield stress the level of stress at the yield point.

NOTE: Many definitions are from ASTM D1566. Additional terminology relating to rubber can be found there.

THE O-RING HANDBOOK QUICK INDEX

USING THE QUICK INDEX

To quickly access certain reference sections in the Dichtomatik O-Ring Handbook, locate the section title below, fan the pages of the handbook and turn to the section with edge markings that line up with the section title.

The AS568 Sizes, Master Size List and Chemical Compatibility Guide sections are indicated in red so that they can be found even more easily.

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