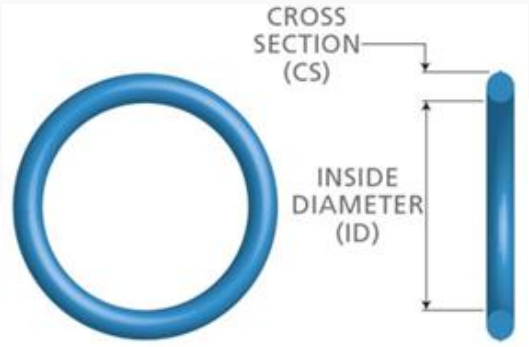
# International O-Ring Size Standards

## Introduction

Shortly after o-rings first came into common use, it became obvious that standards for o-ring sizes, tolerances would be beneficial. Various government and engineering organizations have produced a multitude of o-ring standards. Here we present a brief overview of what we believe to be the most often used/referenced standards by our customers. You will also find a link to a size chart showing all known sizes for each standard.




## Tolerances

Most of the actual standards referenced here specify acceptable tolerance ranges. With the exception of our AS568 size chart, our other size reference charts do not list tolerances since these vary between the standards issuing organization. In order to simplify tolerances for the standard o-rings we sell, please refer to either the AS568 size chart (for any American Standard Sizes), or our Metric O-Ring Tolerances chart (for any other "metric" o-ring).

## **Disclaimer**

**This information is only intended as a guide to identify o-ring sizes from various international standards. Although we believe this information to be accurate, we cannot guarantee 100% accuracy with every standard. Therefore, we recommend referral to the actual specifications before proceeding with design work, etc.**

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## International O-Ring Size Cross Reference Table

This chart shows all of the common international size standards and allows you to cross reference with other standards. Please note that no tolerances or materials are taken into consideration in this cross-reference chart. ***Go To Cross Reference Chart***

### AS 568

The AS 568 o-ring size standard is published by the Society of Automotive Engineers (S.A.E.) and is the most common size reference used by American companies. This chart specifies the inside diameters, cross-sections, tolerances, and size identification codes (dash numbers) for o-rings used in sealing applications and for straight thread tube fitting boss gaskets. ***Go To Size Chart***

### BS 1806

The BS 1806 o-ring size guide was issued by the British Standards Institution and lists all *Imperial* standard sizes. This standard includes all 5 of the main cross-section groups in AS568 plus several sizes that are "between" AS568 Sizes. BS 1806 has been superseded by BS ISO 3601, however, since BS 1806 is still widely referenced in certain industries/regions of the world, it is still relevant for cross-reference purposes. ***Go To Size Chart***

### ISO 3601

Issued by the International Organization for Standardization, the ISO 3601 standard contains two groups of o-rings, Class A and Class B.

Class A corresponds to the American standard AS 568B in its current format (the 900 series tube fitting o-rings are not included). The ISO 3601-1 Size Code for these o-rings is the same as the AS 568 dash number.

Class B allows substitution of o-rings in technically acceptable and economical "metric" sizes, which can then fit into metric grooves. The first digit of the Size Code indicates the cross-section group (A-E), while the last four digits indicate the o-ring inside diameter rounded to the one-tenth millimeter. ***Go To Size Chart***

### BS 4518

Issued by the British Standards Institution, Standard BS 4518 identifies British Standard metric sizes. The size code for these o-rings is a four digit number indicating the o-ring I.D. in tenths of millimeters followed by a hyphen and two digits indicating the o-ring Cross Section, also in tenths of a millimeter. ***Go To Size Chart***

### SMS 1586

SMS 1586 refers to Swedish Mechanical Standard for o-rings (Sveriges Mekanstandardisering). In this standard, o-rings are simply identified by ID and C/S, similar to DIN 3771. Additionally, all SMS 1586 o-rings are classified into two groups. The first group, intended for dynamic and static installations is indicated in our table by the letter D. The second group, intended mainly for static applications, is indicated with an S. ***Go To Size Chart***

### DIN 3771

The DIN 3771 o-ring standard is issued by The German Institute for Standards (Deutsches Institut für Normung). This standard identifies o-ring sizes by the ID x C/S and may be followed by a letter indicating the quality level (N - normal quality; S - special quality), and a code indicating the rubber polymer and IRHD hardness. ***Go To Size Chart***

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## NF T 47-501

NFT 47-501 is issued by the Association Française de Normalisation (French Standards Institute). It is very similar to ISO 3601-1 in both the sizes included and the size reference. The size reference codes are designated with a letter corresponding to each of 5 cross-section groups (A-E), 4 digits indicating ID (rounded to 0.1 mm), a 2nd letter indicating Precision Class and a 3rd letter indicating Visual (inspection) Class. The Precision Class is indicated by the letter A (for Aerospace applications) or G (for General Purpose applications). The visual classes are N (1.0 AQL) and S (.65 AQL). ***Go To Size Chart***

## JIS B 2401

JIS B 2401 is a Japanese Industrial Standard for o-ring sizes. This standard, often referred to as "Japanese Metrics", is organized into four series, based on their application. The o-rings in each section have ascending number codes to complete the size reference.

- P Series - Moving (dynamic)
- G Series - Fixed(static)
- S Series - Special Sizes
- V Series - Vacuum Flange

***Go To Size Chart***

## ISO 6149

ISO 6149 specifies o-rings designed for use in Metric Tube Fittings. This standard includes 13 different sizes and calls out the metric thread size for each o-ring size. ***Go To Size Chart***

## Generic Metric O-Ring Sizes

We have also included a table showing all of the most common metric sizes that may or may not match up with any of the international standard sizes. We can supply most of these sizes, as most factories have established tooling on these generic metric sizes. ***Go To Size Chart***