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O-rings

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Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by Japan Fluid Power Association (JFPA)/ Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently **JIS B 2401** : 1999 is replaced with this Standard.

This revision has been made based on **ISO 3601-1** : 2002 *Fluid power systems—O-rings—Part 1 : Inside diameters, cross-sections, tolerances and size identification code* for the purpose of making it easier to compare this Standard with International Standard; to prepare Japanese Industrial Standard conforming with International Standard; and to propose a draft of an International Standard which is based on Japanese Industrial Standard.

Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

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In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

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Introduction This Japanese Industrial Standard has been prepared based on the third edition of ISO 3601-1 *Fluid power systems—O-rings—Part 1: Inside diameters, cross-sections, tolerances and size identification code* published in 2002 with some modifications of the technical contents.

The portions given sidelines or dotted underlines are the matters modified from the original International Standard. A list of modifications with the explanations is given in Annex 4 (informative)

1 Scope This Standard specifies ISO O-rings for general industry (series G) and for aerospace and similar applications (series A), as well as O-rings for general equipment for moving (P), for fixing (G) and for vacuum flanges (V).

Remarks 1 The dimensions and tolerances specified in this Standard are suitable for any elastomeric material, provided that suitable tooling (1) is available.

Note (1) The tooling most commonly available is based on 70 IRHD NBR (nitrile rubber) shrinkage rates (see JIS K 6253). For materials that shrink differently from this standard NBR compound, a special mould can be required to maintain the tolerance limits listed.

2 The International Standard corresponding to this Standard is as follows.

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and JIS are IDT (identical), MOD (modified), and NEQ (not equivalent) according to ISO/IEC Guide 21.

ISO 3601-1 : 2002 *Fluid power systems—O-rings—Part 1 : Inside diameters, cross-sections, tolerances and size identification code* (MOD)

2 Normative references The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

JIS B 0142 *Glossary of terms for oil hydraulics and pneumatics*

Remarks : ISO 5598 : 1985, *Fluid power systems and components—Vocabulary* is equivalent to the said standard.

JIS B 2408 *O-rings—Quality acceptance criteria*

Remarks : **ISO/FDIS 3601-3** : 2002, *Fluid power systems—O-rings—Part 3 : Quality acceptance criteria* is identical with the said standard.

JIS B 2410 *O-rings—Suitability of elastomeric materials for industrial applications*

Remarks : **ISO 3601-5** : 2002, *Fluid power systems—O-rings—Part 5 : Suitability of elastomeric materials for industrial applications* is identical with the said standard.

JIS K 6250 *Rubber—General rules of physical testing methods*

JIS K 6251 *Rubber, vulcanized or thermoplastic—Determination of tensile stress-strain properties*

Remarks : **ISO 37** : 1994, *Rubber, vulcanized or thermoplastic—Determination of tensile stress-strain properties* is equivalent to the said standard.

JIS K 6253 *Hardness testing methods for rubber, vulcanized or thermoplastic*

Remarks : **ISO 48** : 1994, *Rubber, vulcanized or thermoplastic—Determination of hardness (hardness between 10 IRHD and 100 IRHD)* and ***ISO 7619*** *: 1986, Rubber—Determination of indentation hardness by means of pocket hardness meters* is equivalent to the said standard

JIS K 6257 *Rubber, vulcanized or thermoplastic—Determination of heat ageing properties*

Remarks : **ISO 188** : 1998, *Rubber, vulcanized or thermoplastic—Accelerated ageing and heat resistance tests* is equivalent to the said standard

JIS K 6262 *Permanent set testing methods for rubber, vulcanized or thermoplastic*

Remarks : **ISO 815** : 1991, *Rubber, vulcanized or thermoplastic—Determination of compression set at ambient, elevated or low temperatures and* ***ISO/DIS 2285*** *: 1997, Rubber, vulcanized or thermoplastic—Determination of tension set at normal and high temperatures* is equivalent to the said standard

JIS Z 8601 *Preferred numbers*

Remarks : **ISO 3** : 1953, *Preferred numbers—Series of preferred numbers* is equivalent to the said standard

3 Definitions and symbols For the purpose of this Standard, the definitions and symbols given in **JIS B 0142** and the following apply.

O-ring inside diameter: d_1 (see figure 1)

O-ring thickness: d_2 (see figure 1)

4 Shape The shape of O-rings shall be in accordance with figure 1.