



JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS Z 2324-1 : 2018

**Non-destructive testing —
Automatic inspection system for inner
diameter surface of machining holes —
Part 1: Standard test blocks**

ICS 19.100

Reference number : JIS Z 2324-1 : 2018 (E)

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Date of Establishment: 2018-08-20

Date of Public Notice in Official Gazette: 2018-08-20

Investigated by: Japanese Industrial Standards Committee

Standards Board for ISO area

Technical Committee on safety

JIS Z 2324-1 : 2018, First English edition published in 2020-08

Translated and published by: Japanese Standards Association
Mita MT Building, 3-13-12, Mita, Minato-ku, Tokyo, 108-0073 JAPAN

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Printed in Japan

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Foreword

This Japanese Industrial Standard has been established by the Minister of Economy, Trade and Industry, through deliberations at the Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law.

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Non-destructive testing — Automatic inspection system for inner diameter surface of machining holes — Part 1 : Standard test blocks

1 Scope

This Japanese Industrial Standard specifies the requirements for the standard test blocks that are used for inspection and calibration of systems mainly used for the automatic inspection of flaws on inner diameter surface of machining holes used in automobile and industrial machine components (hereafter referred to as the standard test blocks).

NOTE Standard test blocks are also called master works, master pieces or masters.

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 0021 *Geometrical product specifications (GPS) — Geometrical tolerancing — Tolerancing of form, orientation, location and run-out*
- JIS B 0401-1 *Geometrical product specifications (GPS) — ISO code system for tolerances on linear sizes — Part 1 : Basis of tolerances, deviations and fits*
- JIS B 0651 *Geometrical Product Specifications (GPS) — Surface texture : Profile method — Nominal characteristics of contact (stylus) instruments*
- JIS G 5501 *Grey iron castings*
- JIS G 5502 *Spheroidal graphite iron castings*
- JIS H 4100 *Aluminium and aluminium alloy extruded profiles*
- JIS Z 2300 *Terms and definitions of nondestructive testing*
- JIS Z 8102 *Names of non-luminous object colours*
- ISO/IEC Guide 98-3 *Uncertainty of measurement — Part 3 : Guide to the expression of uncertainty in measurement (GUM : 1995)*

3 Terms and definitions

For the purpose of this Standard, the following terms and definitions, and those given in **JIS Z 2300** apply.

3.1

automatic inspection system for inner diameter surface of machining holes

system that automatically detects flaws on the inner diameter surface of machining holes, and judges the acceptance of the component

A laser type, camera type and eddy current type are included.

3.2**cavity**

general term for hollows existing in cast products or on the surface of machining holes

It is also called a cast cavity or a blow hole.

3.3**artificial cavity**

cylindrical discontinuity machined into an intended dimension and shape on a test block by means of mechanical machining or other method

It is also called a false cavity.

3.4**artificial flaw**

discontinuity such as a pit and groove, except a cylindrical discontinuity, machined into an intended dimension and shape on a test block by means of mechanical machining or other method

3.5**alumite treatment**

anodic-oxide coating treatment on aluminium and aluminium alloys

3.6**cross-hatching finish**

polishing in which meshed streaks etc. are made on an inner diameter surface by honing

4 Types and symbols

The test blocks are classified into six types according to the shape, inner diameter and treatment method of inner diameter surface (alumite treatment or cross-hatching finish), and expressed with the symbols shown in Table 1.