

# JIS

JAPANESE  
INDUSTRIAL  
STANDARD

Translated and Published by  
Japanese Standards Association

---

---

**JIS B 7502** : 2016

(JMA/JSA)

**Micrometers**

---

ICS 17.040.30

Reference number : JIS B 7502 : 2016 (E)

PROTECTED BY COPYRIGHT

25 S

B 7502 : 2016

Date of Establishment: 1952-05-08

Date of Revision: 2016-08-22

Date of Public Notice in Official Gazette: 2016-08-22

Investigated by: Japanese Industrial Standards Committee  
Standards Board for ISO area  
Technical Committee on Basic Engineering

---

JIS B 7502 : 2016, First English edition published in 2017-01

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

---

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

© JSA 2017

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Printed in Japan

KK/HN

PROTECTED BY COPYRIGHT

## Contents

	Page
Introduction .....	1
1 Scope .....	1
2 Normative references .....	1
3 Terms and definitions .....	2
4 Design specification (design characteristics) .....	3
4.1 General .....	3
4.2 Names of main parts .....	3
4.3 Dimensions .....	6
4.4 Measuring range .....	10
4.5 Types of indicating devices .....	11
4.6 Protection of electronic digital indication for field use .....	13
4.7 Insulation plate .....	13
4.8 Measuring faces .....	14
4.9 Measuring-force limiting device .....	14
4.10 Adjustment devices .....	14
4.11 Spindle .....	14
5 Metrological characteristics and performance .....	14
5.1 General .....	14
5.2 Metrological characteristics .....	15
5.3 Performance .....	20
6 Marking on product documents .....	28
7 Proof of conformance with specifications .....	28
7.1 General .....	28
7.2 Measurement standard for calibration of metrological characteristics and performance .....	29
7.3 Standard reference temperature .....	29
8 Inspection .....	29
9 Marking .....	29
Annex A (informative) Example of an error-of-indication curve .....	30
Annex B (informative) Notes on use .....	31
Annex C (informative) Typical data sheet for design specification (design characteristics), metrological characteristics and performance .....	32
Annex D (informative) Relation to the GPS matrix model .....	33

B 7502 : 2016

Annex JA (informative)	Marking on product documents .....	35
Annex JB (informative)	Comparison table between JIS and corresponding International Standard .....	36

Currently in preview, click buy full version

## 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 Precision Measuring Instruments manufacturers Association (JMA)/ 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 7502:1994** is replaced with this Standard.

**JIS B 7502:1994** may be applied in the **JIS** mark certification based on the relevant provisions of Article 19 Clause 1, etc. of the Industrial Standardization Law until August 21, 2017.

This **JIS** document is protected by the Copyright Law.

Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights, applications for a patent after opening to the public or utility model rights. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying any of such patent rights, applications for a patent after opening to the public or utility model rights.

# Micrometers

## Introduction

This Japanese Industrial Standard has been prepared based on the second edition of **ISO 3611** published in 2010 with some modifications of the technical contents in order to correspond to the practical manufacture and use.

The portions given sidelines or dotted underlines are the matters in which the contents of the corresponding International Standard have been modified. A list of modifications with the explanations is given in Annex JB.

This Standard is one of geometrical product specifications (GPS) under the GPS Basic Standard (see **ISO/TR 14638** : 1995) and related to the chain link 5 for the chain of standards on size. The details on the relation between this Standard and other GPS Standards are given in Annex D.

## 1 Scope

This Standard specifies micrometer for external measurements, bar-shaped micrometer for internal measurements, micrometer for spline measurements of teeth, and micrometer head (hereafter referred to as micrometer, unless otherwise specified), equipped with analogue indication, mechanical or electronic digital indication.

NOTE: The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

ISO 3611 : 2010 *Geometrical product specifications (GPS) — Dimensional measuring equipment : Micrometers for external measurements — Design and metrological characteristics* (MOD)

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 21-1**.

## 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 0641-1 *Geometrical Product Specifications (GPS) — Inspection by measurement of workpieces and measuring equipment — Part 1 : Decision rules for proving conformance or nonconformance with specifications*

NOTE: Corresponding International Standard : ISO 14253-1 *Geometrical product specifications (GPS) — Inspection by measurement of workpieces and measuring equipment — Part 1 : Decision rules for proving conformity or nonconformity with specifications*