AS 3779—1990
ISO 7863—1984

Australian Standard®

Height setting micrometers and riser blocks

[Title allocated by Defence Cataloguing Authority: Gauge, Height, (Vernier Gauge, Block) NSC 5210].

This Australian Standard was prepared by Committee ME/27, Engineering Tolerance Systems, Metrology and Surface Quality. It was approved on behalf of the Council of Standards Australia on 27 April 1990 and published on 12 November 1990.

The following interests are represented on Committee ME/27:

Bureau of Steel Manufacturers of Australia
CSIRO, Division of Applied Physics
Confederation of Australian Industry
Department of Defence
Department of Technical and Further Education, N.S.W.
Institute of Technology, South Australia
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Institution of Production Engineers
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Royal Melbourne Institute of Technology
Society of Manufacturing Engineers
South Australia Institute of Technology
University of Queensland

This Standard was issued in draft form for comment as DR 88212.

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First published as AS 3779—1990.

PUBLISHED BY STANDARDS AUSTRALIA
(STANDARDS ASSOCIATION OF AUSTRALIA)
1 THE CRESCENT, HOMEBUSH, NSW 2140

ISBN 0 7262 6323 0

PREFACE

This Standard was prepared by the Standards Australia Committee on Engineering Tolerance Systems, Metrology and Surface Quality as a part of a program to provide a comprehensive range of Australian Standards for measuring instruments.

It is identical with and has been reproduced from ISO 7863—1984, *Height setting micrometers and riser blocks.*

For the purpose of this Australian Standard, the ISO text should be modified as follows:

(a) Substitute a point (.) for a comma (,) as a decimal marker.

(b) *Clause 5.4*: Include Note as follows.

NOTE: Manufacturers making a statement of compliance with this Australian Standard on a product, or on packaging or promotional material related to that product, are advised to ensure that such compliance is capable of being verified.

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(c) The cross-references to other publications should be replaced by references to Australian Standards.

Reference to International Standards		*Australian Standard*	
ISO		AS	
3650	Gauge blocks	1457	Gauge blocks and rectangular length bars and their accessories
5459	Technical drawings— Geometrical tolerancing—Datums and datum-systems for geometrical tolerances	1100 1100.201	Technical drawing Mechanical drawing

CONTENTS

Height setting micrometers and riser blocks

1 Scope and field of application

This International Standard specifies the characteristics of height setting micrometers with a measuring capacity up to 600 mm and a minimum scale value not greater than 2 µm together with riser blocks up to 600 mm in height.

Test methods for the accuracy of these instruments are given in annexes A and B for general information only.

2 References

ISO 1, *Standard reference temperature for industrial length measurements.*

ISO 3650, *Gauge blocks.*

ISO 5459, *Technical drawings — Geometrical tolerancing — Datums and datum-systems for geometrical tolerances.*

ISO 8512/1, *Surface plates — Part 1: Cast iron surface plates.* [1)]

ISO 8512/2, *Surface plates — Part 2: Granite surface plates.* [1)]

3 Terms and definitions

3.1 Terms

For the terms relating to height setting micrometers see figure 1,, and for riser blocks see figure 3.

3.2 Definitions

3.2.1 height setting micrometer: A measuring instrument comprising a substantial housing which carries a vertical movable column, positioned by a micrometer screw, with measuring elements provided with regularly spaced, alternative or coplanar measuring faces.

3.2.2 scale mark: One of the marks constituting a scale.

3.2.3 scale division: A part of the scale delimited by two adjacent scale marks.

3.2.4 minimum scale value: The smallest value of the measurand which the scale is graduated to indicate.

3.2.5 repeatability: The property which characterizes the ability of a measuring instrument to give identical indications, for repeated measurements of the same quantity, over a short interval of time, under stated conditions of use.

3.2.6 datum plane: A simulated datum feature (see ISO 5459), here represented, for example, by a surface plate of grade 0 (see ISO 8512/1 and ISO 8512/2).

4 Specifications for height setting micrometers

4.1 Housing and column

The housing and column shall be made of material with a linear thermal coefficient of $(11 \pm 1) \times 10^{-6}\ K^{-1}$ and suitably heat-treated to stabilize their lengths.

The stabilizing process for the elements of the measuring column shall ensure that the rate of change in the length of the elements due to residual instability of the material is not greater than

$$\pm (0{,}05 + 0{,}001\ L)\ \mu m/year$$

where L is the nominal length in millimetres.

The column shall move freely within the housing and shall be free from stickiness.

[1)] At present at the stage of draft.