AS 1014—1986
Reconfirmed 2018

Australian Standard®

GAUGING OF METRIC SCREW THREADS

This Australian standard was prepared by Committee ME/28, Screw Threads. It was approved on behalf of the Council of the Standards Association of Australia on 4 September 1985 and published on 6 January 1986.

The following interests are represented on Committee ME/28:

Confederation of Australian Industry

CSIRO, Division of Applied Physics

Department of Defence

Department of Technical and Further Education, N.S.W.

Electricity Supply Association of Australia

Fasteners Institute of Australia

Federal Chamber of Automotive Industries

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Metal Trades Industry Association of Australia

Railways of Australia Committee

Society of Automotive Engineers, Australia

This standard was issued in draft form for comment as DR 84292.

STANDARDS AUSTRALIA

RECONFIRMATION

OF
AS 1014—1986
Gauging of metric screw threads

RECONFIRMATION NOTICE

Technical Committee ME-029 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

Certain documents referenced in the publication may have been amended since the original date of publication. Users are advised to ensure that they are using the latest versions of such documents as appropriate, unless advised otherwise in this Reconfirmation Notice.

Approved for reconfirmation in accordance with Standards Australia procedures for reconfirmation on 19 January 2018.

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NOTES

AS 1014—1986

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GAUGING OF METRIC SCREW THREADS

First published 1971
Second edition 1986

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

ISBN 0 7262 3942 9

PREFACE

This edition of this standard was prepared by the Association's Committee on Screw Threads, to supersede AS 1014—1971.

Following the recent (1980) revision of the ISO screw thread and screw thread gauging standards, the committee is currently engaged in revising all of the Australian standards on metric screw threads and associated gauges and gauging practices. This standard is a part of that program.

The current edition of ISO 1502, ISO General Purpose Metric Screw Threads—Gauging, contains few major technical changes from ISO R 1502—1970 on which it is based. The main reason for this complete revision of AS 1014, however, is to more closely align with ISO practices than was previously the case. This agrees with the policy of Committee ME/28 'that in order to provide the best benefits of standardized metric screw threads and associated gauges and gauging practices, the Australian Standards should be completely aligned with their ISO counterparts wherever practical, irrespective of how Australia voted on the ISO standard'. In the case of ISO 1502, Australia cast a negative vote for technical reasons.

This new edition of AS 1014 incorporates the technical changes in ISO 1502, but the most important technical change is the adoption of the ISO symbols for the screw thread parameters. This change recognizes that most of the world's industrial countries have elected to adopt the ISO metric screw thread system and associated gauges as their national standards without change. Hence it would be unrealistic for Australia, whose industries are so linked to international design and procurement, to depart substantially from standards which have almost complete acceptance throughout the world.

This standard is technically identical with ISO 1502.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
GAUGING OF METRIC SCREW THREADS

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard specifies requirements for gauges for single start parallel general purpose metric screw threads.

The standard covers types of gauges, inspection of screw threads, design features of screw gauges, material and hardness requirements, and limits and tolerances of gauging elements.

The standard also gives information on symbols for screw threads and screw thread gauge parameters.

Appendices are included giving notes on the function, use and checking of gauges (Appendix A), the bases for the gauge deviations and tolerances (Appendix B), and detailed examples of deriving specific gauge limits (Appendix C).

1.2 APPLICATION. The gauges and gauging practices specified in this standard apply to parallel metric screw threads manufactured in accordance with either AS 1275 or AS 1721.

1.3 REFERENCED DOCUMENTS. The following standards are referred to in this standard:

AS 1098 Roller-type Screw Calliper Gauges

AS 1275 Metric Screw Threads for Fasteners

AS 1721 General Purpose Metric Screw Threads

AS 2710 Screw Gauges—Verification

AS XXXX Glossary of Terms for Screw Threads*

AS B129 Designs for Geometric Limit Gauges (Plain and Screwed in Inch Units)

1.4 DEFINITIONS. For the purpose of this standard, the definitions given in AS XXXX apply.

1.5 SYMBOLS. The symbols used in this standard to define the screw thread and screw gauge parameters are given in Table 1.1.

NOTE: These symbols are now aligned with the ISO symbols. For comparison of the current symbols with those used in AS 1014—1971, see Appendix D.

1.6 TYPES OF GAUGES.

1.6.1 General. This standard specifies the following types of gauges to be used for checking product threads, together with associated setting and check gauges.

1.6.2 Gauges for external threads and associated check and setting gauges.

1.6.2.1 *Screw gauges.*

GO and NOT GO solid screw ring gauges.
GO and NOT GO adjustable screw ring gauges.
GO and NOT GO screw calliper gauges.

1.6.2.2 *Associated check and setting gauges.*

GO and NOT GO screw check plugs for new solid GO screw ring gauges.
GO and NOT GO screw check plugs for new solid NOT GO screw ring gauges.
Wear screw check plugs for solid GO screw ring gauges.
Wear screw check plugs for solid NOT GO screw ring gauges.
Setting plugs for adjustable screw ring and calliper gauges.

1.6.2.3 *Plain gauges for checking the major diameter.*

GO and NOT GO plain ring gauges.
GO and NOT GO plain calliper gauges.

1.6.3 Gauges and internal threads.

GO and NOT GO screw plug gauges.
GO and NOT GO plain plug gauges, for checking the minor diameter.

1.7 MATERIALS AND HARDNESS.

1.7.1 Material. Gauges and/or gauge elements, as appropriate, shall be manufactured from a high quality tool steel or other suitable material with similar properties.

1.7.2 Hardness. The hardness of the gauging surfaces shall be within 697 HV to 800 HV (60 HRC to 64 HRC).

1.8 REFERENCE TEMPERATURE. The temperature to which the dimensions of the gauges are referred is 20°C.

1.9 MARKING. Each gauge shall be clearly and permanently marked with the information necessary for positive identification. For plug gauges with renewable inserts, the marking shall appear on the gauge handle and gauge insert(s) wherever practicable.

The following particulars shall be included in the marking:

(a) The designation of the screw thread in accordance with either AS 1275 or AS 1721.

(b) The size of the gauge, i.e. the limiting dimensions of the relevant product thread, as appropriate.

For screw gauges, this should be the maximum or minimum pitch diameter of the relevant product thread.

(c) If the product thread is to be coated, the gauges should be marked 'BEF COAT' or 'AFT COAT', as appropriate. However, care should be taken to avoid unnecessary duplication of gauges.

(d) 'GO' or 'NOT GO'.

(e) 'SET' for setting plugs.

(f) 'CHK' for check plugs.

(g) 'WEAR CHK' for wear check plugs.

(h) The manufacturer's name or trademark.

(j) A serial number, if required.

* In course of preparation