

AS 2710—1984

Australian Standard[®]

**SCREW GAUGES—
VERIFICATION**

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Confederation of Australian Industry
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Department of Defence Support
Department of Industry and Commerce
Department of Technical and Further Education
Electricity Supply Association of Australia
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PREFACE

This standard was prepared by the Association's Committee on Screw Threads in response to a need for a definitive treatment on the subject of verification of screw gauges. It has been recognized for some time that although Australian standards currently deal with screw thread gauges of various types, no attempt has been made to specify methods of verification of gauges, although such methods are required by many organizations in their day to day activities.

It should be noted that at this time there are no International standards dealing with verification of screw threads and/or related screw thread gauges, although some work is being carried out by ISO/TC 1—Screw Threads. Initially it was the intention of the committee to closely follow the ISO developments and to publish the results of the ISO deliberations directly as Australian standards. However the work within ISO/TC 1 has been proceeding for several years and it appears at this stage that there is little likelihood of any detailed standards being finalized in the foreseeable future. This standard therefore takes into account the related ISO/TC 1 documentation where appropriate. The bulk of the requirements given in this standard, however, have been based on the National Physical Laboratory (United Kingdom) Notes on Applied Science No 1—Gauging and Measuring of Screw Threads, published by Her Majesty's Stationery Office, and due acknowledgement is hereby made.

The standard outlines the basic requirements for verification of screw gauges, and on the one hand provides sufficient information to carry out a full calibration of any respective gauge type yet on the other hand does not preclude the use of other methods and/or instrumentation, provided that the results of measurement are compatible with those given in the standard.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
SCREW GAUGES—VERIFICATION

SECTION 1. SCOPE AND GENERAL

1.1 SCOPE. This standard sets out methods for measuring the dimensional features of gauges for screw threads of vee-form. It deals with gauges for single and multiple start, symmetric screw threads, with 47.5, 55, or 60-degree included angles. The standard provides information on terms and definitions used in the measurement of screw threads and provides basic information on the types of equipment to be used in the measurement of screw thread gauges.

NOTES:

1. The methods of measurement and measuring equipment set out in this standard do not preclude the use of other methods and/or equipment, provided that it can be demonstrated that the use of such methods and/or equipment will achieve results of measurements having accuracies at least equal to those given.
2. It is not possible to specify in this standard precise details of the equipment to be used, the essential requirements being that the equipment is capable of measuring the gauges in the manner prescribed in Section 3 and to an accuracy commensurate with the gauge tolerances.
3. The tolerances on screw check gauges and screw setting gauges are relatively very small and therefore the condition and accuracy of the measuring equipment must be of a very high order, and the equipment must be calibrated more frequently. In particular attention is directed to the tolerance on pitch for such gauges; equipment used for checking the pitch of these gauges must be capable of measuring pitch to an accuracy of the order of 0.5 μm between two adjacent threads and within 2.5 μm over a 50 mm length of thread.

1.2 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 (Based on ISO Recommendations)*
AS 1721 General Purpose Metric Screw Threads*
AS B233 Screw Thread Measuring Cylinders
AS XXXX Terms and Definitions Used for Screw Threads, Screwing Tools and Screw Thread Gauges†

1.3 TEST CONDITIONS. All measurements of screw thread gauges must be made under stable temperature conditions. Screw thread gauges, reference standards and measuring equipment must therefore be allowed to reach a common uniform temperature before measurements are undertaken. For screw check gauges, screw setting gauges and screw thread gauges made of non-ferrous materials, the temperature must also be close to the international standard temperature for dimensional measurement of 20°C, preferably within 1°C.

* In course of revision.

† In course of preparation.