

AS 1349—1986

Australian Standard<sup>®</sup>

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**Bourdon tube pressure and  
vacuum gauges**

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[Title allocated by Defence Cataloguing Authority:  
GAUGES, PRESSURE AND VACUUM  
(Bourdon Tube Type) . . . NSC Gp 66]

This Australian standard was prepared by Committee MS/33, Pressure and Vacuum Gauges. It was approved on behalf of the Council of the Standards Association of Australia on 11 August 1986 and published on 5 September 1986.

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*This standard was issued in draft form for comment as DR 85046.*

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First published .....	1973
Second edition .....	1986

Incorporating:  
Amdt. 1—1987

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

ISBN 0 7262 4318 3

## PREFACE

This standard was prepared by the Association's Committee on Pressure and Vacuum Gauges, to supersede AS 1349–1973.

The standard was first published in 1973 and was based on BS 1780, Part 2–Bourdon Tube Pressure and Vacuum Gauges, which was rewritten to suit Australian conditions.

The preparation of this edition was undertaken for the purpose of updating the standard and, in particular, reviewing the requirements of Section 4, Performance and Testing, at the request of the National Association of Testing Authorities (NATA).

Revisions and additions contained in the one published amendment to the 1973 edition have been incorporated, and additional changes have been made in accordance with current SAA practice.

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# CONTENTS

	<i>Page</i>
SECTION 1. SCOPE AND GENERAL	
1.1 SCOPE .....	4
1.2 REFERENCED DOCUMENTS .....	4
1.3 DEFINITIONS .....	4
1.4 UNIT OF PRESSURE .....	7
SECTION 2. GAUGE SIZES AND SCALE RANGES	
2.1 GAUGE SIZES .....	8
2.2 SCALE RANGES .....	8
SECTION 3. DESIGN AND CONSTRUCTION	
3.1 CASE .....	9
3.2 SHANK .....	10
3.3 BOURDON TUBE AND MOVEMENT .....	13
3.4 DIAL AND POINTER .....	13
3.5 DESIGNATION OF THE SCALE UNIT .....	14
3.6 SCALE MARKING .....	14
3.7 PROTECTION AGAINST CORROSION .....	15
3.8 REQUIREMENTS FOR SPECIFIC SERVICE TYPE PRESSURE GAUGES .....	15
3.9 GENERAL SAFETY REQUIREMENTS .....	16
SECTION 4. PERFORMANCE AND TESTING	
4.1 ACCURACY .....	17
4.2 OVERLOAD .....	17
4.3 TEST APPARATUS .....	17
4.4 TEST PROCEDURES .....	17
4.5 TEST REPORT AND RECORDS .....	17
SECTION 5. MARKING AND PACKAGING	
5.1 MARKING .....	18
5.2 PACKAGING .....	18
APPENDICES	
A NOTES ON THE CORRECTION OF DEADWEIGHT TESTERS AND MANOMETERS .....	19
B RECOMMENDATIONS FOR THE INSTALLATION AND USE OF PRESSURE GAUGES .....	21
C PURCHASING GUIDELINES .....	24

STANDARDS ASSOCIATION OF AUSTRALIA

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**Australian Standard**

**for**

**BOURDON TUBE PRESSURE AND VACUUM GAUGES**

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SECTION 1. SCOPE AND GENERAL

**1.1 SCOPE.** This standard specifies requirements for Bourdon tube pressure and vacuum gauges with circular concentric scales within the pressure range - 100 kPa to + 100 000 kPa, and the nominal size range (approximate dial diameter) 50 mm to 300 mm. Compound gauges (pressure and vacuum) are also included.

The gauges are graded according to accuracy, two grades being specified, viz test gauges and industrial gauges.

The gauges are generally suitable for use with fluids such as air, oil, water or steam, but special provision is made for gauges which are intended for high pressure applications, or for use with oxygen or acetylene, or with other reactive gases.

NOTES:

1. Recommendations regarding the installation and use of pressure gauges are given in Appendix B.
2. Guidelines for purchasers on specifying requirements when ordering gauges are given in Appendix C.

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

AS 1110	ISO Metric Hexagon Precision Bolts and Screws
AS 1210	SAA Unfired Pressure Vessels Code
AS 1376	Conversion Factors
AS 1568	Copper and Copper Alloys-Forging Stock and Forgings
AS 1569	Copper and Copper Alloys-Seamless Tubes for Heat Exchangers
AS 1722	Pipe Threads of Whitworth Form Part 1-Sealing Pipe Threads Part 2-Fastening Pipe Threads
AS 1835	Tubes for Pressure Purposes-Seamless Steel
AS 1836	Tubes for Pressure Purposes-Welded Steel
AS 2400	SAA Packaging Code
AS 2900.0	Quantities, Units, and Symbols-General Principles Concerning Quantities, Units, and Symbols
ANSI B2.2	Dryseal Pipe Thread
BS 3127	Specification for Ferrous and Non-ferrous Bourdon Tubing
BS 3693	Recommendations for the Design of Scales and Indexes Part 1-Instruments of Bold Presentation and for Rapid Reading Part 2-Indicating Instruments to be read to 0.33-1.25 per cent Resolution

**1.3 DEFINITIONS.**

**1.3.1 Gauge types.**

**1.3.1.1 Pressure gauge**-an instrument giving a visual indication, by means of a pointer relative to a scale, of the amount by which the pressure of a fluid applied to it exceeds the pressure of the surrounding atmosphere.

**1.3.1.2 Vacuum gauge**-an instrument giving a visual indication by means of a pointer relative to a scale, of the amount by which the pressure of a fluid applied to it is less than the pressure of the surrounding atmosphere.

**1.3.1.3 Compound pressure gauge**-an instrument giving a visual indication by means of a single pointer relative to a scale, of the amount by which the pressure of a fluid applied to it exceeds, or is less than, the pressure of the surrounding atmosphere. The scale is continuously graduated with zero at atmospheric pressure.

**1.3.1.4 Duplex gauge**-a gauge having two independent Bourdon tubes and two independent pressure connections, and a means to measure and indicate two independent pressures.

**1.3.1.5 Differential gauge**-a gauge having two pressure connections, and a means to measure and indicate the difference between two pressures.

**1.3.1.6 Suppressed scale gauge**-a gauge having a scale that starts at some point appreciably above zero.

**1.3.1.7 Absolute pressure gauge**-a gauge graduated to measure and indicate pressure above absolute zero pressure.

**1.3.1.8 Receiver gauge**-a gauge designed to measure and indicate the pneumatic signal from a pneumatic transmitter. The receiver gauge is generally calibrated in terms of the transmitter range which may include values of pressure, temperature, flow and other variables.

**1.3.1.9 Retard gauge**-a gauge having a scale in which either one or both ends is/are compressed.

**1.3.1.10 Specific service type gauge**-a gauge intended for a specific service such as for use with oxygen or acetylene.

**1.3.2 Accuracy grades.**

**1.3.2.1 Accuracy grade**-the grade into which an instrument falls by virtue of the specified limits of error with which it purports to comply.

**1.3.2.2 Test gauge**-a gauge of which the accuracy is such that the gauge is suitable for calibrating industrial gauges, and intended primarily for this purpose.

**1.3.2.3 Industrial gauge**-a gauge of which the accuracy is such that the gauge is suitable for general industrial use.



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