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Handbook

Dimensioning and Tolerancing to AS 1100.101—1992 and AS 1100.201—1992

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RECONFIRMATION

OF
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Dimensioning and Tolerancing to AS 1100.101—1992 and AS 1100.201—1992

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Dimensioning and Tolerancing to AS 1100.101—1992 and AS 1100.201—1992

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PREFACE

There have been considerable developments in the dimensioning and tolerancing of product designs since the mid 1940s. These have accelerated in recent years in response to the demands of internationalised markets, increasing product sophistication and the need for more accurate and unambiguous design specifications for operating the deskilled automated manufacturing processes and quality inspection methods that are now extensively used in manufacturing.

The system of dimensioning and tolerancing that is evolving integrates market needs with product design and manufacturing technology requirements. It comprises an overall strategy that is supported by theoretical principles and widely accepted industrial practices. An ever-improving system of recommended practices continues to be formalised by international committees working under the auspices of the International Organization for Standardization (ISO). These recommendations of ISO are being widely adopted throughout industrialised countries and are either adopted in their entirety or are the principal components of most of today's national Standards. Thus, the degree of consistency in dimensioning and tolerancing practices throughout the industrialised world is rapidly increasing. Australia has adopted, with some minor exceptions, the current ISO recommendations related to dimensioning and tolerancing and these are embodies in Australian Standards AS 1100.101—1992, Technical drawing—General principles and AS 1100.201—1992, Technical drawing—Mechanical engineering drawing.

It has been recognised that the volume of information surrounding the subject of dimensioning and tolerancing is so vast that Standards now tend to concentrate on ***how*** to apply dimensions and tolerances. This is to achieve a reasonably compact Standard containing appropriate information in a form that can be used efficiently and effectively. The questions of ***why*** certain principles and practices have evolved generally have to be left aside. The purpose of this book is to address these ***why*** issues and provide a cohesive, overall view of the dimensioning and tolerancing system with further explanations of the principles, practices and recent developments in this subject.

The Handbook relates principally to AS 1100.101—1992 and AS 1100.201—1992 and can be extended to most of the current ISO recommendations. It should in no way be considered to override, replace or be a substitute for any Australian Standard but rather, to support and enhance the understanding and use of AS 1100.101—1992 and AS 1100.201—1992.

The dimensioning and tolerancing material contained in this Handbook has been accumulated by the author over a period of 30 or more years of working in industry, teaching, researching, and as a member of the Standards Australia ME/72 Committee Working Group on Dimensioning and Tolerancing. I gratefully acknowledge the numerous people that have assisted me in my understanding of this subject. Much of this Handbook is a reflection of their efforts.

Two dear friends and colleagues who gave me wise counsel and invaluable insights into dimensioning and tolerancing are the late Cyril Gladman and Ken Edensor. Not only did they have a profound influence on my knowledge, but more importantly, they made most significant contributions to the advancement of the overall subject and were leading contributors to the development of Australian and ISO Standards in this area.

Finally, I acknowledge, with gratitude, the brief extracts contained in this Handbook from the Institute of Manufacturing Management and Technology, UNSW, course notes "How to ... Interpret, Manufacture & Inspect to Geometry Tolerance Specifications" and Australian Standards AS 1100.101—1992 and AS 1100.201—1992. Copies of the complete Standards can be obtained in Australia from Standards Australia, PO Box 1055, Strathfield NSW 2135.

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