

Australian Standard[®]

**FLUID POWER—HYDRAULIC
AND PNEUMATIC CYLINDERS—
BORE AND ROD DIMENSIONS**

This Australian standard was prepared by Committee ME/35, Fluid Power Systems and Components. It was approved on behalf of the Council of the Standards Association of Australia on 7 November 1985 and published on 6 January 1986.

The following interests are represented on Committee ME/35:

Australian Institute of Petroleum Limited
Australian Mining Industry Council
Australian Pneumatic and Hydraulic Association
Bureau of Steel Manufacturers of Australia
Confederation of Australian Industry
Department of Defence
Department of Industrial Relations, N.S.W.
Department of Technical and Further Education, N.S.W.
Federal Chamber of Automotive Industries
Fluid Power Society Australia
Metal Trades Industry Association of Australia
Railways of Australia Committee
Royal Melbourne Institute of Technology

Review of Australian Standards. *To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.*

Full details of all Australian Standards and related publications will be found in the Standards Australia Catalogue of Publications; this information is supplemented each month by the magazine 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Australian Standards, addressed to the head office of Standards Australia, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

This standard was issued in draft form for comment as DR 84278.

Australian Standard[®]

**FLUID POWER—HYDRAULIC
AND PNEUMATIC CYLINDERS—
BORE AND ROD DIMENSIONS**

First published	1977
Second edition	1986

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

ISBN 0 7262 3999 2

PREFACE

This edition of this standard was prepared by the Association's Committee on Fluid Power Systems and Components, to supersede AS 2019—1977, Hydraulic and Pneumatic Cylinders.

This edition differs from the previous edition in the following respects:

- (a) A new table (Table 3) covering piston strokes has been added.
- (b) The table dealing with piston rod thread end dimensions (Table 4) has been amended, the pitches having been added to thread designations M36 to M110 inclusive.
- (c) The table dealing with piston rod female thread end details (Table 5) has been amended. It now has one series of values for e min. and the two series of values of f_1 min. The two series of values for f_2 max. have been replaced by two series of values for f_1 .
- (d) The table dealing with piston rod male shouldered and unshouldered thread end details (Table 6) has been amended. The series of values for f_1 min. and the two series of values for f_2 max. have been replaced by two series of values for f_1 .
- (e) All references to nominal pressures have been eliminated.

 CONTENTS

	<i>Page</i>
SPECIFICATION	
1 Scope	3
2 Definition	3
3 Referenced Documents	3
4 Cylinder Bore	3
5 Piston Rod Diameter	3
6 Piston Rod Threaded Ends	3
7 Provision for Tightening	3
8 Piston Strokes	3

© Copyright — STANDARDS AUSTRALIA

Users of Standards are reminded that copyright subsists in all Standards Australia publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia. Permission may be conditional on an appropriate royalty payment. Requests for permission and information on commercial software royalties should be directed to the head office of Standards Australia.

Standards Australia will permit up to 10 percent of the technical content pages of a Standard to be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia.

Standards Australia will also permit the inclusion of its copyright material in computer software programs for no royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia at any time.

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

for

**FLUID POWER—HYDRAULIC AND PNEUMATIC CYLINDERS—
BORE AND ROD DIMENSIONS**

1 SCOPE. This standard specifies a range of values for certain features of fluid power cylinders for general application. The features are cylinder bores, piston rod diameters, piston strokes and piston rod threaded-end form and dimensions.

2 DEFINITION. For the purpose of this standard, the following definition applies:

'Shall' and 'should'—'shall' is taken to be mandatory, 'should' is taken to be advisory.

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

AS 1110 ISO Metric Hexagon Precision Bolts and Screws

AS 1721 General Purpose Metric Screw Threads

AS 2752 Preferred Numbers and Their Use

4 CYLINDER BORE. For the range 8 mm to 400 mm, the bore of the cylinder shall be one of the sizes given in Table 1. For larger bores, a size should be selected using the R 10 series of preferred numbers (see AS 2752).

5 PISTON ROD DIAMETER. For the range 4 mm to 360 mm, the diameter of the piston rod shall be one of the sizes given in Table 2. For larger piston rod diameters, a size should be selected from the R 20 series of preferred numbers.

6 PISTON ROD THREADED ENDS. The form of the threaded end of a piston rod shall be one of those illustrated in Fig. 1. The thread diameter/pitch dimensions shall be one of those given in Table 4, with the corresponding thread length for short threads or long threads. Thread classes shall be 6H for internal threads and 6g for external threads in accordance with AS 1721.

Dimensions of the threaded end shall be those given in Table 5 for internal threads, or in Table 6 for shouldered external and unshouldered external thread ends, for the corresponding thread pitch.

7 PROVISION FOR TIGHTENING. The piston rod end should incorporate provision for holding against turning during tightening. If in the form of wrench flats, the dimensions should be suitable for use with standard metric wrenches (see AS 1110 in which suitable bolt head dimensions and tolerances are specified).

8 PISTON STROKES. Piston stroke identification is shown in Fig. 1. The preferred piston strokes are given in Table 3.

NOTE: If an extension of this series is required, the R 10 series of preferred numbers should be used.

**TABLE 1
CYLINDER BORES**

millimetres					
8.00	16.00	32.00	63.00	125.00	250.00
10.00	20.00	40.00	80.00	160.00	320.00
12.00	25.00	50.00	100.00	200.00	400.00

**TABLE 2
PISTON ROD DIAMETERS**

millimetres						
4	12	22	40	70	125	220
5	14	25	45	80	140	250
6	16	28	50	90	160	280
8	18	32	56	100	180	320
10	20	36	63	110	200	360

**TABLE 3
PISTON STROKES**
(See Fig. 1.)

millimetres										
25	50	80	100	125	160	200	250	320	400	500