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Australian Standard®

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

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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

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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 have been replaced by two series of values for f_1.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 have been replaced by two series of values for f_1.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

Page

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