

# Australian Standard 2019 — 1977

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## HYDRAULIC AND PNEUMATIC CYLINDERS



STANDARDS ASSOCIATION OF AUSTRALIA  
*Incorporated by Royal Charter*

THE FOLLOWING SCIENTIFIC, INDUSTRIAL AND GOVERNMENTAL organizations and departments were officially represented on the committee entrusted with the preparation of this standard:

Associated Chambers of Manufactures of Australia  
Australian Mining Industry Council  
Australian Pneumatic and Hydraulic Association  
Bureau of Steel Manufacturers of Australia  
CSIRO, Division of Mechanical Engineering  
Department of Defence  
Department of Mines, N.S.W.  
Department of Technical and Further Education, N.S.W.  
Federal Chamber of Automotive Industries  
Fluid Power Society Australia  
Heavy Engineering Manufacturers Association  
Metal Trades Industry Association of Australia  
Petroleum Marketing Engineers Advisory Committee  
Railways of Australia Committee  
Royal Melbourne Institute of Technology

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This standard, prepared by Committee ME/35, Fluid Power Systems and Components, was approved on behalf of the Council of the Standards Association of Australia on 14 February 1977, and was published on 1 April 1977.

To keep abreast of progress in industry, Australian standards are regularly reviewed. Suggestions for improvements to published standards, addressed to the head office of the Association, are welcomed.

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*This standard was issued in draft form for public review as DR 76037.*

**AUSTRALIAN    STANDARD    SPECIFICATION**

# **HYDRAULIC AND PNEUMATIC CYLINDERS**

**AS 2019 — 1977**

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## PREFACE

This standard was prepared by the Association's Committee on Fluid Power Systems and Components, which was formed in 1970 to prepare standards that would both introduce metrication of fluid power components and rationalize dimensional ranges. The committee decided to follow the work of ISO/TC 131, Fluid Power, and, where appropriate, to incorporate the requirements of the international standards in Australian standards for hydraulic and pneumatic cylinders.

This standard incorporates three ISO standards and one ISO document, and is in exact technical agreement with ISO 3320, 3321 and 3322, and ISO draft TC 131/SC 3 N 117. This latter document contains discrepancies with respect to the fine pitch thread series provided in AS 1721, General Purpose Metric Screw Threads, and these discrepancies are being investigated through the responsible ISO and SAA committees.

At this time, development of other ISO standards is being watched, and it is anticipated that other aspects of hydraulic and pneumatic cylinders, such as tolerances, mounting dimensions, and port sizes, will be incorporated as they become available.

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# STANDARDS ASSOCIATION OF AUSTRALIA

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## Australian Standard Specification for HYDRAULIC AND PNEUMATIC CYLINDERS

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**1 SCOPE.** This specification provides a range of values for certain features of fluid power cylinders for general application. The features are cylinder nominal bore, piston rod diameter, nominal pressure, and piston rod threaded-end design and dimensions.

NOTE: Tolerances, surface textures, and other features will be provided at a later stage.

**2 DEFINITIONS.** For the purpose of this specification, the following definitions apply:

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

*Nominal value* — a value assigned for convenient designation.

**3 CYLINDER NOMINAL BORE.** For the range 8 to 400 mm, the nominal bore of the cylinder shall be one of the sizes given in Table 1. For larger nominal bores a size should be selected using the R10 series of preferred numbers. (See SAA MP19, Report on Preferred Numbers and Their use.)

**4 PISTON ROD NOMINAL DIAMETER.** For the range 4 to 360 mm, the nominal diameter of the piston rod shall be one of the sizes given in Table 2. For larger piston rod diameters, a nominal size should be selected from the R20 series of preferred numbers.

**5 PISTON ROD THREADED ENDS.** The design 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 3, with the corresponding thread length for short or long threads.

Dimensions of the threaded end shall be those given in Table 4 for female threads, and in Table 5 for shouldered male and unshouldered male thread ends, for the corresponding thread pitch.

**6 PROVISION FOR TIGHTENING.** The piston rod end should incorporate provision for holding against turning when tightening. If in the