

Pneumatic fluid power — Cylinders with detachable mountings, 1 000 kPa (10 bar) series, bores from 32 mm to 320 mm — Basic, mounting and accessories dimensions

ICS 23.100.20

National foreword

This British Standard reproduces verbatim ISO 15552:2004 and implements it as the UK national standard. It supersedes BS ISO 6431:1992 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee MCE/18, Fluid power systems, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

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Summary of pages

This document comprises a front cover, an inside front cover, the ISO title page, pages ii to iv, pages 1 to 18, an inside back cover and a back cover.

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Pneumatic fluid power — Cylinders with detachable mountings, 1 000 kPa (10 bar) series, bores from 32 mm to 320 mm — Basic, mounting and accessories dimensions

Transmissions pneumatiques — Vérins avec fixations détachables, série 1 000 kPa, alésages de 32 mm à 320 mm — Dimensions de base, des fixations et des accessoires



Foreword

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The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 15552 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 3, *Cylinders*.

This first edition of ISO 15552 cancels and replaces ISO 6431:1992.

Introduction

In pneumatic fluid power systems, power is transmitted and controlled through a gas under pressure within a circuit.

One component of such systems is the pneumatic cylinder. This is a device which converts power into linear mechanical force and motion. It consists of a movable element, i.e. a piston, and a piston rod, operating within a cylindrical bore.

To enable them to be fastened to user mechanisms, pneumatic cylinders comprise in addition some devices called “mountings”.

Pneumatic fluid power — Cylinders with detachable mountings, 1 000 kPa (10 bar) series, bores from 32 mm to 320 mm — Basic, mounting and accessories dimensions

1 Scope

This International Standard established a metric series of basic, mounting and accessories dimensions as required for interchangeability of single- or double-rod pneumatic cylinders, with or without provision for magnetic sensors for a maximum rated pressure of 1 000 kPa (10 bar).

It is applicable to pneumatic cylinders with detachable mountings.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 273, *Fasteners — Clearance holes for bolts and screws*

ISO 3320, *Fluid power systems and components — Cylinder bores and piston rod diameters — Metric series*

ISO 4393, *Fluid power systems and components — Cylinders — Basic series of piston strokes*

ISO 4395, *Fluid power systems and components — Cylinders — Piston rod thread dimensions and types*

ISO 5598, *Fluid power systems and components — Vocabulary*

ISO 6099, *Fluid power systems and components — Cylinders — Identification code for mounting dimensions and mounting types*

ISO 16030, *Pneumatic fluid power — Connections — Ports and stud ends*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5598 apply.

4 Dimensions

4.1 Basic dimensions

The basic dimensions are given in Tables 1 and 2 and shown in Figures 1 and 2.

4.2 Mounting dimensions

The mounting dimensions are given in Tables 3 to 8 and shown in Figures 3 to 8.

NOTE The sign + after letters means that the stroke is to be added to the actual dimension.

4.3 Accessories dimensions

The accessories dimensions are given in Tables 9 to 13 and shown in Figures 9 to 13.

NOTE The tolerances of dimensions dependent on stroke included in the tables apply for strokes up to and including 1 250 mm. If strokes are longer than 1 250 mm, tolerances should be selected from national standards or by agreement between the manufacturer and user.

5 Nominal stroke

5.1 The nominal strokes shall be selected from the recommended values given in ISO 4393; they are shown in Figure 14.

5.2 The nominal stroke tolerances are given in Table 14.

6 Bore sizes

Included in this series are the following bore sizes *AL*, in millimetres, in accordance with ISO 3320:

32 – 40 – 50 – 63 – 80 – 100 – 125 – 160 – 200 – 250 – 320

7 Mounting types

This International Standard includes the following mounting types as described in ISO 6099:

- MF1 Head with rectangular flange (see Table 3, Figure 3);
- MF2 Cap with rectangular flange (see Table 3, Figure 3);
- MP2 Cap with detachable clevis (see Table 4, Figure 4);
- MP4 Cap with detachable eye (see Table 5, Figure 5);
- MP6 Cap with detachable eye with spherical bearing (see Table 6, Figure 6);
- MS1 End angles (see Table 7, Figure 7);
- MT4 Intermediate fixed or movable trunnion (see Table 8, Figure 8).

8 Accessory types

This International Standard includes the following accessory types as described in ISO 6099:

- AA4 Pivot pin, plain (see Table 9, Figure 9);
- AA6 Pivot pin, spherical bearing (see Table 10, Figure 10);