INTERNATIONAL STANDARD

ISO 6022

Second edition
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Hydraulic fluid power — Mounting dimensions for single rod cylinders, 25 MPa (250 bar) series

Transmissions hydrauliques — Dimensions d'interchangeabilité des vérins 25 MPa (250 bar) à simple tige

Reference number
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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

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 6022 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 3, *Cylinders*.

This second edition cancels and replaces the first edition (ISO 6022:1981 and ISO 8137:1986), which have been technically revised.

Introduction

In hydraulic fluid power systems, power is transmitted and controlled through a liquid under pressure within an enclosed circuit.

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

Hydraulic fluid power — Mounting dimensions for single rod cylinders, 25 MPa (250 bar) series

1 Scope

This International Standard establishes mounting dimensions for hydraulic cylinders for use at 25 MPa [250 bar[1)]], as required for interchangeability of these cylinders.

NOTE This International Standard allows manufacturers of hydraulic equipment flexibility in the design of 25 MPa (250 bar) cylinders and does not restrict technical development; however, it does provide basic guidelines.

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 1179-1[2)], *Connections for general use and fluid power — Ports and stud ends with ISO 228-1 threads with elastomeric or metal-to-metal sealing — Part 1: Threaded ports*

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

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

ISO 5598[3)], *Fluid power systems and components — Vocabulary*

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

ISO 6149-1[4)], *Connections for fluid power and general use — Ports and stud ends with ISO 261 threads and O-ring sealing — Part 1: Ports with O-ring seal in truncated housing*

ISO 6162-1, *Hydraulic fluid power — Flange connectors with split or one-piece flange clamps and metric or inch screws — Part 1: Flange connectors for use at pressures of 3,5 MPa (35 bar) to 35 MPa (350 bar), DN 13 to DN 127*

ISO 6162-2, *Hydraulic fluid power — Flange connectors with split or one-piece flange clamps and metric or inch screws — Part 2: Flange connectors for use at pressures of 35 MPa (350 bar) to 40 MPa (400 bar), DN 13 to DN 51*

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1) 1 bar = 0,1 MPa = 10^5 Pa; 1MPa = 1 N/mm^2

2) To be published. (Revision of ISO 1179:1981)

3) To be published. (Revision of ISO 5598:1985)

4) To be published. (Revision of ISO 6149-1:1993)

ISO 6164, *Hydraulic fluid power — Four-screw, one-piece square-flange connections for use at pressures of 25 MPa and 40 MPa (250 bar and 400 bar)*

ISO 8132[5)], *Hydraulic fluid power — Single rod cylinders, 16 MPa (160 bar) medium and 25 MPa (250 bar) series — Mounting dimensions for accessories*

3 Terms and definitions

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

4 Dimensions

4.1 Select mounting dimensions for cylinders manufactured in accordance with this International Standard from Figures 1 to 4 and Tables 1 to 4 inclusive.

4.2 Select dimensions for ports and flanges from Table 5 and the relevant International Standards cited therein.

4.3 All dimensions and mounting types in this International Standard are labelled with codes in accordance with ISO 6099.

5 Bore sizes

This International Standard covers the following bore sizes, in millimetres, in accordance with ISO 3320:

50 — 63 — 80 — 100 — 125 — 140 — 160 — 180 — 200 — 250 — 320

6 Mounting types

This International Standard includes the following mounting types:

— MF3: Head, circular flange (see Figure 2 and Table 2)

— MF4: Cap, circular flange (see Figure 2 and Table 2)

— MP3: Cap, fixed plain eye (see Figure 3 and Table 3)

— MP4: Cap, detachable plain eye (see Figure 3 and Table 3)

— MP5: Cap, fixed eye with spherical bearing (see Figure 3 and Table 3)

— MP6: Cap, detachable eye with spherical bearing (see Figure 3 and Table 3)

— MT4: Intermediate fixed or movable trunnion (male) (see Figure 4 and Table 4).

5) To be published. (Revision of ISO 8132:1986, ISO 6981:1992 and ISO 6982:1992)

7 Piston rod characteristics

7.1 This International Standard covers piston rods having a shouldered male thread end (see Figure 1 and Table 1 for basic dimensions).

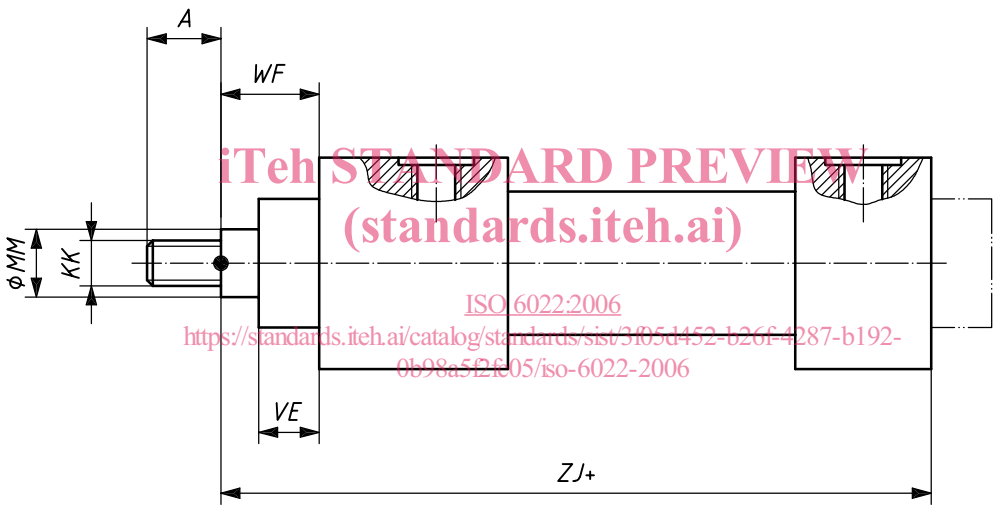
7.2 For rod end types, see ISO 4395.

7.3 Accessory mounting dimensions shall be selected in accordance with ISO 8132.

8 Identification statement (reference to this International Standard)

Use the following statement in test reports, catalogues and sales literature when electing to comply with this International Standard:

"Hydraulic single rod cylinders for use at 25 MPa (250 bar) selected in accordance with ISO 6022:2006, *Hydraulic fluid power — Mounting dimensions for single rod cylinders, 25 MPa (250 bar) series*."



For rod end types, see ISO 4395.

Figure 1 — General dimensions

Table 1 — General dimensions

Dimensions in millimetres

Bore	*MM* [a]	*ZJ* [b]	*KK* [a] 6g	*A* max.	*VE* max.	*WF* [b]
50	32	240	M27 × 2	36	29	47
	36					
63	40	270	M33 × 2	45	32	53
	45					
80	50	300	M42 × 2	56	36	60
	56					
100	63	335	M48 × 2	63	41	68
	70					
125	80	390	M64 × 3	85	45	76
	90					
140	90	425	M72 × 3	90	48	76
	100					
160	100	460	M80 × 3	95	50	85
	110					
180	110	497	M90 × 3	106	55	95
	125					
200	125	540	M100 × 3	112	61	101
	140					
250	160	640	M125 × 4	125	71	113
	180					
320	200	750	M160 × 4	160	88	136
	220					

[a] If other piston rod diameters or other threads are required, use those identified in ISO 3320 and ISO 4395.

[b] Tolerances for dimensions *ZJ* and *WF* are dependent on stroke; see Table 6.