INTERNATIONAL STANDARD

ISO 10762

Second edition
2015-05-01

Hydraulic fluid power — Mounting dimensions for cylinders, 10 MPa (100 bar) series

Transmissions hydrauliques — Dimensions d'interchangeabilité des vérins, série 10 MPa (100 bar)

Reference number
ISO 10762:2015(E)

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: Foreword — Supplementary information.

The committee responsible for this document is ISO/TC 131, *Fluid power systems*, Subcommittee SC 3, *Cylinders*.

This second edition cancels and replaces the first edition (ISO 10762:1997), which has 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 cylinders, 10 MPa (100 bar) series

1 Scope

This International Standard establishes mounting dimensions for cylinders for use at 10 MPa [100 bar[1)]], as required for interchangeability of these cylinders.

NOTE This International Standard allows manufacturers of hydraulic equipment flexibility in the design of 10 MPa (100 bar) cylinders and does not restrict technical development; however, it does provide basic guidelines.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 1179-1, *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 and area ratios — Metric series*

ISO 4395, *Fluid power systems and components — Cylinder piston rod end types and dimensions*

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

3 Terms and definitions

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

4 Dimensions

Mounting dimensions for cylinders manufactured in accordance with this International Standard shall be as given in Figures 1 to 13 and Tables 1 to 13.

5 Bore sizes

The following bore sizes in accordance with ISO 3320, in millimetres, are included in this series:

40 — 50 — 63 — 80 — 100 — 125 — 160 — 200

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

6 Stroke tolerances

The tolerance on piston strokes shall be as follows:

— piston strokes ≤1 250 mm: +2/-0 mm;

— piston strokes >1 250 mm and ≤3 150: +5/−0 mm;

— piston strokes >3 150 mm and ≤8 000: +8/−0 mm.

7 Mounting types

This International Standard includes the following mounting types, in accordance with ISO 6099:

— ME5 — Rectangular flange, integral with head (see Figure 3 and Table 3);

— ME6 — Cap, rectangular flange (see Figure 4 and Table 4);

— MP1 — Cap, fixed clevis (see Figure 5 and Table 5);

— MP3 — Cap, fixed eye (see Figure 6 and Table 6);

— MP5 — Cap, fixed eye with spherical plain bearing (see Figure 7 and Table 7);

— MS2 — Side lugs (see Figure 8 and Table 8);

— MT1 — Head, integral trunnion (male; see Figure 9 and Table 9);

— MT4 — Intermediate trunnion (male) with selectable position (see Figure 10 and Table 10);

— MX1 — Both ends, studs or tie rods extended (see Figure 11 and Table 11);

— MX2 — Cap, studs or tie rods extended (see Figure 12 and Table 12);

— MX3 — Head, studs or tie rods extended (see Figure 13 and Table 13).

8 Piston rod characteristics

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

8.2 For piston rod end types, see ISO 4395.

8.3 If other piston rod diameters or other piston rod threads are required, those specified in ISO 3320 and ISO 4395 shall be used.

9 Identification statement (reference to this International Standard)

It is strongly recommended to fabricators who elect to conform to this International Standard to use the following statement in test reports, catalogues, and sales literature:

"Interchangeable mounting dimensions selected in accordance with ISO 10762:2015, *Hydraulic fluid power — Mounting dimensions for cylinders, 10 MPa (100 bar) series*."

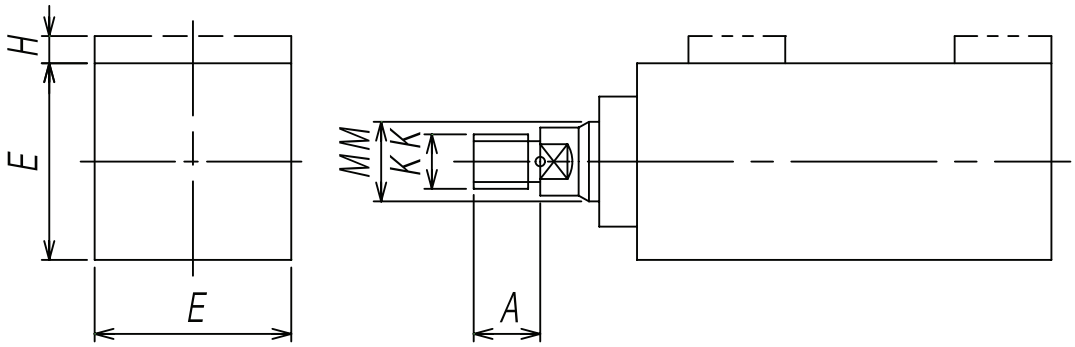

Figure 1 — Basic dimensions

Table 1 — Basic dimensions

Dimensions in millimetres

Bore	Rod *MM*[a]	*KK* 6g	*A* max.	*E* max.	*H*[b] max.
40	18	M14 × 1,5	18	52	5
	22	M14 × 1,5	18		
		M16 × 1,5	22		
	28	M14 × 1,5	18		
		M20 × 1,5	28		
50	22	M16 × 1,5	22	65	5
	28	M16 × 1,5	22		
		M20 × 1,5	28		
	36	M16 × 1,5	22		
		M27 × 2	36		
63	28	M20 × 1,5	28	77	3
	36	M20 × 1,5	28		
		M27 × 2	36		
	45	M20×1,5	28		
		M33 × 2	45		
80	36	M27 × 2	36	96	4
	45	M27 × 2	36		
		M33 × 2	45		
	56	M27 × 2	36		
		M42 × 2	56		
100	45	M33 × 2	45	115	5
	56	M33 × 2	45		
		M42 × 2	56		
	70	M33 × 2	45		
		M48 × 2	63		

NOTE For accessories, see ISO 8133. Port dimensions and positions are given in Figure 2 and Table 2.

[a] See 8.3.

[b] Extra height is provided for the reinforced rod cover on all four bore sizes 50 mm, 63 mm, 80 mm and 100 mm; also provided for both the rod and cap cover on rod sizes for the 40 mm bore.

Table 1 *(continued)*

Bore	Rod *MM*[a]	*KK* 6g	*A* max.	*E* max.	*H*[b] max.
125	56	M42 × 2	56	140	—
	70	M42 × 2	56		
		M48 × 2	63		
	90	M42 × 2	56		
		M64 × 3	85		
160	70	M48 × 2	63	180	—
	90	M48 × 2	63		
		M64 × 3	85		
	110	M48 × 2	63		
		M80 × 3	95		
200	90	M64 × 3	85	225	—
	110	M64 × 3	85		
		M80 × 3	95		
	140	M64 × 3	85		
		M100 × 3	112		

NOTE For accessories, see ISO 8133. Port dimensions and positions are given in Figure 2 and Table 2.

[a] See 8.3.

[b] Extra height is provided for the reinforced rod cover on all four bore sizes 50 mm, 63 mm, 80 mm and 100 mm; also provided for both the rod and cap cover on rod sizes for the 40 mm bore.

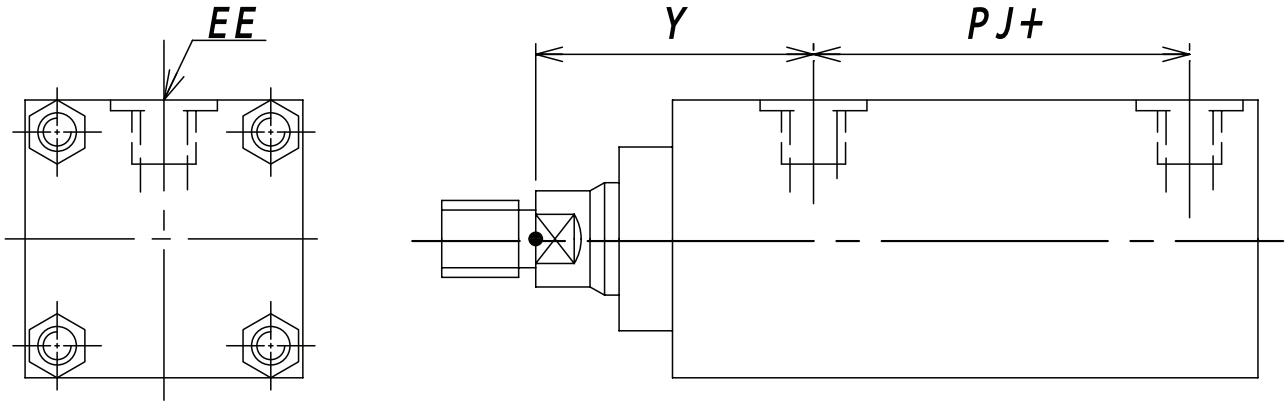

Figure 2 — Port dimensions and positions

Table 2 — Port dimensions and positions

Dimensions in millimetres

Bore	*EE*		*Y*[b]	*PJ*[b]
	ISO 1179-1 port	ISO 6149-1 port[a]		
40	G 3/8	M18 × 1,5	58	58
50	G 3/8	M18 × 1,5	65	58
63	G 1/2	M22 × 1,5	69	66
80	G 1/2	M22 × 1,5	77	74
100	G 3/4	M27 × 2	79	86
125	G 3/4	M27 × 2	80	93
160	G 1	M33 × 2	85	100
200	G 1	M33 × 2	85	120

a Threaded ports in accordance with ISO 6149-1 are preferred for new designs.

b The tolerance on dimensions *Y* and *PJ* is dependent on stroke; see Table 14.