

# SVENSK STANDARD

## SS-ISO 6020-2:2015

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### **Hydraulik – Inbyggnadsmått för cylindrar, 16 MPa (160 bar) – Del 2: Kompakt serie (ISO 6020-2:2015, IDT)**

### **Hydraulic fluid power – Mounting dimensions for single rod cylinders, 16 MPa (160 bar) series – Part 2: Compact series (ISO 6020-2:2015, IDT)**

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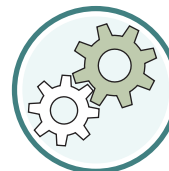
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Den internationella standarden ISO 6020-2:2015 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av ISO 6020-2:2015.

Denna standard ersätter SS-ISO 6020-2:2006, utgåva 2 och SS-ISO 6020-2:2006/Cor 1:2008, utgåva 1.

The International Standard ISO 6020-2:2015 has the status of a Swedish Standard. This document contains the official English version of ISO 6020-2:2015.

This standard supersedes the Swedish Standard SS-ISO 6020-2:2006, edition 2 and SS-ISO 6020-2:2006/Cor 1:2008, edition 1.

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Denna standard är framtagen av kommittén för Hydraulik och pneumatik, SIS/TK 106.

Har du synpunkter på innehållet i den här standarden, vill du delta i ett kommande revideringsarbete eller vara med och ta fram andra standarder inom området? Gå in på [www.sis.se](http://www.sis.se) - där hittar du mer information.



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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.

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](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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 fourth edition cancels and replaces the third edition (ISO 6020-2:2006), which has been technically revised to incorporate Technical Corrigendum 1, published 2008-10-15.

ISO 6020 consists of the following parts, under the general title *Hydraulic fluid power — Mounting dimensions for single rod cylinders, 16 MPa (160 bar) series*:

- *Part 1: Medium series*
- *Part 2: Compact series*
- *Part 3: Compact series with bores from 250 mm to 500 mm*

## **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 cylinder. This is a device that converts fluid power into linear mechanical force and motion. It consists of a moveable element, i.e. a piston and piston rod, operating within a cylindrical bore.





# Hydraulic fluid power — Mounting dimensions for single rod cylinders, 16 MPa (160 bar) series —

## Part 2: Compact series

### 1 Scope

This part of ISO 6020 establishes metric mounting dimensions for compact series cylinders, 16 MPa [160 bar<sup>1)</sup>], as required for interchangeability of commonly-used hydraulic cylinders.

NOTE 1 This part of ISO 6020 allows manufacturers of hydraulic equipment flexibility in the design of metric cylinders and does not restrict technical development; however, it does provide basic guidelines.

NOTE 2 The compact series dimensions are most applicable to square head cylinders.

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

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

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

### 3 Terms and definitions

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

### 4 Dimensions

4.1 Mounting dimensions for cylinders manufactured in accordance with this part of ISO 6020 shall be selected from [Figures 1 to 13](#) and [Tables 1 to 13](#).

4.2 Port and flange sizes and dimensions shall be selected from [Table 14](#) and in the respective International Standards cited therein.

4.3 All the dimensions and methods of mounting in this part of ISO 6020 are identified by codes in accordance with ISO 6099.

4.4 Tolerances for mounting dimensions shall be in accordance with [Table 15](#).

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

## 5 Bore sizes

This part of ISO 6020 includes the following bore sizes, in millimetres, in accordance with ISO 3320:

25 — 32 — 40 — 50 — 63 — 80 — 100 — 125 — 160 — 200.

NOTE Mounting dimensions for compact hydraulic single rod cylinders with bores from 250 mm to 500 mm are specified in ISO 6020-3.

## 6 Piston stroke tolerances

The tolerance on piston strokes shall be as follows:

- piston strokes  $\leq 1\,250$  mm:  $+2/-0$  mm;
- piston strokes  $> 1\,250$  mm and  $\leq 3\,150$ :  $+5/-0$  mm;
- piston strokes  $> 3\,150$  mm and  $\leq 8\,000$ :  $+8/-0$  mm.

## 7 Mounting types

This part of ISO 6020 includes the following mounting types, in accordance with ISO 6099:

- ME 5 — Head, rectangular (see [Figure 2](#) and [Table 2](#))
- ME 6 — Cap, rectangular (see [Figure 3](#) and [Table 3](#))
- MP 1 — Cap, fixed clevis (see [Figure 4](#) and [Table 4](#))
- MP 3 — Cap, fixed plain eye (see [Figure 5](#) and [Table 5](#))
- MP 5 — Cap, fixed eye with spherical bearing (see [Figure 6](#) and [Table 6](#))
- MS 2 — Side lugs (see [Figure 7](#) and [Table 7](#))
- MT 1 — Head, integral trunnion (male) (see [Figure 8](#) and [Table 8](#))
- MT 2 — Cap, integral trunnion (male) (see [Figure 9](#) and [Table 9](#))
- MT 4 — Intermediate trunnion (male) with selectable position (see [Figure 10](#) and [Table 10](#))
- MX 1 — Both ends studs or tie rods extended (see [Figure 11](#) and [Table 11](#))
- MX 2 — Cap studs or tie rods extended (see [Figure 12](#) and [Table 12](#))
- MX 3 — Head studs or tie rods extended (see [Figure 13](#) and [Table 13](#))

## 8 Piston rod characteristics

**8.1** This part of ISO 6020 covers piston rods that have shouldered male thread ends; see [Figure 1](#) and [Table 1](#) for basic dimensions.

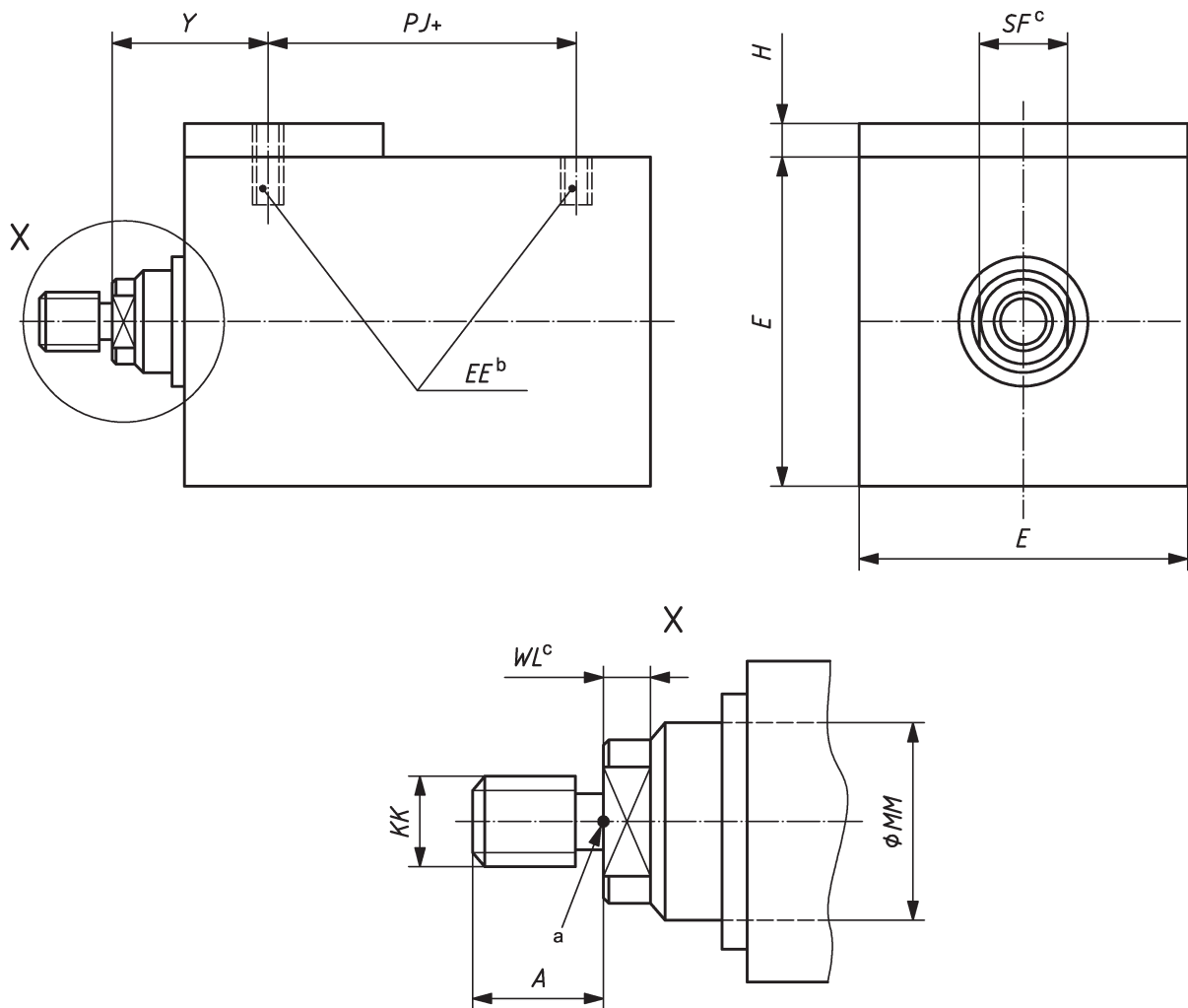
**8.2** For rod end types, see ISO 4395.

**8.3** For accessories, see ISO 8133.

## 9 Identification statement (reference to this part of ISO 6020)

It is strongly recommended to fabricators who elect to conform to this part of ISO 6020 to use the following statement in test reports, catalogues and sales literature:

“Interchangeable mounting dimensions selected in accordance with ISO 6020-2, *Hydraulic fluid power — Mounting dimensions for single rod cylinders, 16 MPa (160 bar) series — Part 2: Compact series.*”



### Key

- a Reference point.
- b See [Table 14](#) for port options.
- c Dimensions  $SF$  and  $WL$  are controlled by ISO 4395.

Figure 1 — General dimensions