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Hydraulik och pneumatik – Cylindrar – Mått och typer av kolvstänger (ISO 4395:2009, IDT)

Fluid power systems and components – Cylinder piston rod end types and dimensions (ISO 4395:2009, IDT)

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Denna standard ersätter SS-ISO 4395, utgåva 1.

The International Standard ISO 4395:2009 has the status of a Swedish Standard. This document contains the official English version of ISO 4395:2009.

This standard supersedes the Swedish Standard SS-ISO 4395, edition 1.

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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 4395 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 4395:1978), which has been technically revised.

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Introduction

In fluid power systems, power is transmitted and controlled through a liquid (for hydraulics) or a gas (for pneumatics) under pressure within an enclosed circuit.

One component of such systems is the cylinder. This is a device that converts 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.

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Fluid power systems and components — Cylinder piston rod end types and dimensions

1 Scope

This International Standard establishes a basic series for piston rod end types for application on cylinders used in hydraulic and pneumatic fluid power systems.

It specifies thread dimensions and configurations for use with hydraulic and pneumatic cylinder piston rod ends, as well as the dimensions of wrench flats and hook wrench holes that are sometimes necessary for the assembly of the cylinder piston rod's threaded end to accessories.

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 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. Dimension letter symbols are in accordance with ISO 6099.

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4 Types and dimensions for hydraulic cylinder piston rod ends

4.1 Piston rod thread types and dimensions

Piston rod thread types for hydraulic cylinders shall be chosen from Figures 1, 2 and 3. Piston rod threads shall conform to the dimensions given in Tables 1 and 2.

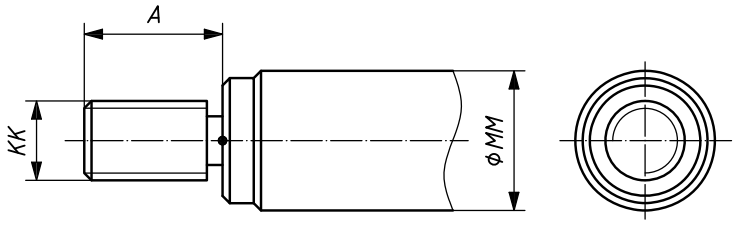

Figure 1 — Male thread with shoulder for hydraulic cylinder piston rods

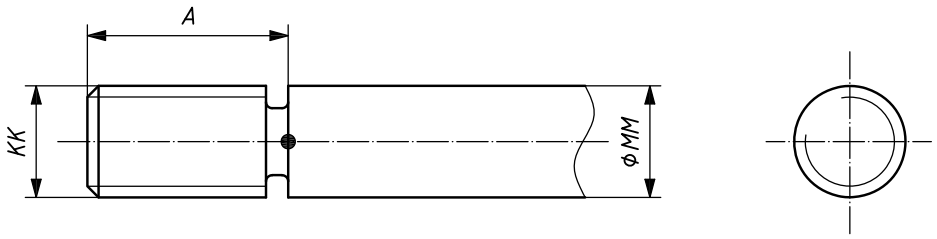

Figure 2 — Male thread without shoulder for hydraulic cylinder piston rods

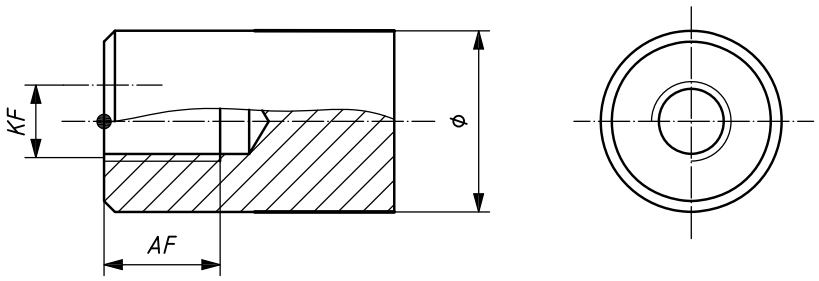

Figure 3 — Female thread for hydraulic cylinder piston rods

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Table 1 — Thread sizes and thread lengths for male threads for hydraulic cylinder piston rods

Dimensions in millimetres

Thread sizes *KK*	Thread length *A*[a]	
	Short type	Long type[b,c]
M10 × 1,25	14	22
M12 × 1,25	16	24
M14 × 1,5	18	28
M16 × 1,5	22	32
M18 × 1,5	25	36
M20 × 1,5	28	40
M22 × 1,5	30	44
M24 × 2	32	48
M27 × 2	36	54
M30 × 2	40	60
M33 × 2	45	66
M36 × 2	50	72
M42 × 2	56	84
M48 × 2	63	96
M56 × 2	75	112
M64 × 3	85	128
M72 × 3	90	128
M80 × 3	95	140
M90 × 3	106	160
M100 × 3	112	—
M110 × 3	112	—
M125 × 4	125	—
M140 × 4	140	—
M160 × 4	160	—
M180 × 4	180	—
M200 × 4	200	—
M220 × 4	220	—
M250 × 6	250	—
M280 × 6	280	—

a Thread length, *A*, is a maximum measure.

b When locknuts are required for adjustment, use the long type thread lengths. Bending loads shall be taken into consideration.

c For long type threads not specified in this table, the ratio between the long type and short type shall be at least 1,5.