INTERNATIONAL STANDARD

ISO 13726

First edition
1998-08-01

Hydraulic fluid power — Single rod cylinders, 16 MPa (160 bar) compact series with bores from 250 mm to 500 mm — Accessory mounting dimensions

Transmissions hydrauliques — Vérins à simple tige, série compacte 16 MPa (160 bar) d'alésages 250 mm à 500 mm — Dimensions d'interchangeabilité des accessoires

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.

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.

International Standard ISO 13726 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 3, *Cylinders*.

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Printed in Switzerland

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 which 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 – Single rod cylinders, 16 MPa (160 bar) compact series with bores from 250 mm to 500 mm – Accessory mounting dimensions

1 Scope

This International Standard specifies the mounting dimensions required for interchangeability of accessories for 16 MPa (160 bar[1)]) compact cylinders conforming to ISO 6020-3. The accessories have been designed specifically for use with cylinders manufactured in accordance with ISO 6020-3, but this does not limit their application.

This International Standard covers the following accessories:

— plain rod clevis (see figure 1 and table 1);

— plain rod eyes (see figure 2 and table 2);

— plain pivot pins (locking plate type) (see figures 3 and 4 and tables 3 and 4).

These accessories are used on hydraulic cylinders for mechanically transmitting the cylinder force. The design of these accessories is based on the maximum forces resulting from the specified internal diameters of the cylinders and pressures according to ISO 3320 and ISO 3322.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 286-2:1988, *ISO system of limits and fits — Part 2: Tables of standard tolerance grades and limit deviations for holes and shafts.*

ISO 3320:1987, *Fluid power systems and components — Cylinder bores and piston rod diameters — Metric series.*

ISO 3322:1985, *Fluid power systems and components — Cylinders - Nominal pressures.*

ISO 5598:1985, *Fluid power systems and components — Vocabulary.*

ISO 6020-3:1994, *Hydraulic fluid power — Mounting dimensions for single rod cylinders, 16 MPa (160 bar) series — Part 3: Compact series with bores from 250 mm to 500 mm.*

ISO 6982:1992, *Hydraulic fluid power — Cylinders — Rod end spherical eyes — Mounting dimensions.*

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

3 Definitions

For the purposes of this International Standard, the definitions given in ISO 5598 shall apply.

4 Accessory mounting dimensions

The mounting dimensions for accessories shall be as shown in figures 1 to 4 and as given in tables 1 to 4.

For rod eyes with spherical bearing, use those specified in ISO 6982.

5 General

5.1 Material

The accessories shall be made of a material having a minimum proof stress of non-proportional elongation, $R_{p0,2}$, of 250 N/mm^2 and a percentage elongation after fraction, A min., of at least 12 %.

5.2 Load capacity

All cross-sections shall be selected so that, under the maximum tensile load produced by the cylinder, the yield strength of the material used for the accessories is at least 2,5 times the maximum tensile load.

6 Application instructions

6.1 Installation

6.1.1 A tolerance of f8 is recommended for plain bearing pins (see ISO 286-2).

6.1.2 The rod clevis and the rod eyes shall be screwed firmly against the piston rod shoulder before locking.

6.2 Lubrication

6.2.1 Sufficient lubrication for the satisfactory performance of these accessories shall be provided.

6.2.2 The method and frequency of such lubrication depends on the particular operating conditions.

7 Example of ordering designation

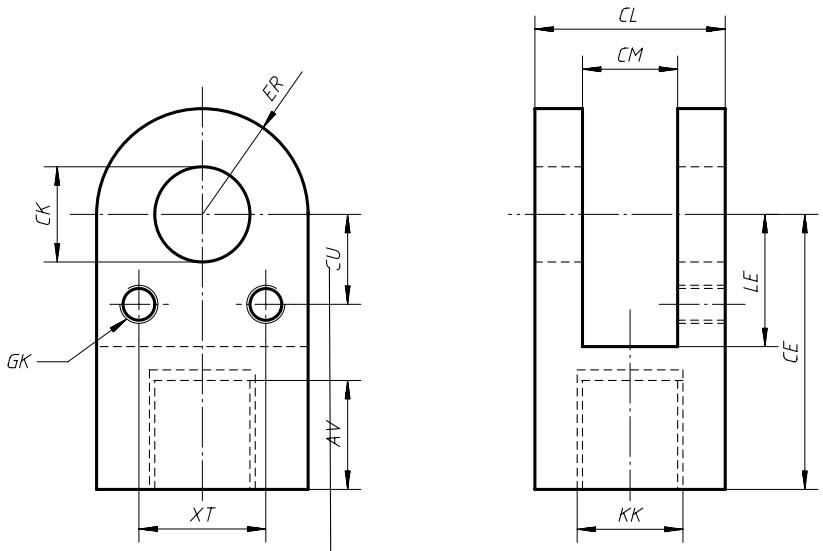
A plain rod eye with a bore CK = 90 mm and of type 90 shall be designated as follows:

Plain rod eye ISO 13726 - 90

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:

"Interchangeable cylinder accessory mounting dimensions selected in accordance with ISO 13726, *Hydraulic fluid power — Single rod cylinders, 16 MPa (160 bar) compact series with bores from 250 mm to 500 mm — Accessory mounting dimensions.*"

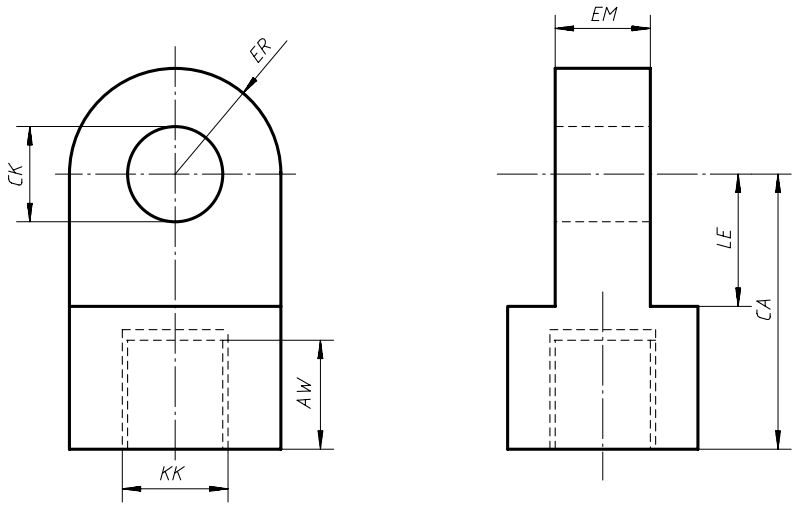


NOTE – A suitable locking device shall be used.

Figure 1 — Plain rod clevis

Table 1 — Dimensions of plain rod clevis

Type	**Typical bore**	**Nominal force** N	*KK*	*CK* H9	*CM* A13	*ER* max.	*CE* JS14	*AV* min.	*LE* min.	*CL* max.	*XT* JS13	*CU* JS13	*GK*
90	250	800 000	M100 x 3	90	90	100	245	113	115	180	100	56	M12
110	320	1 250 000	M125 x 4	110	110	120	290	126	130	220	120	66	M12
125	360	1 600 000	M125 x 4	125	125	140	310	126	130	250	120	72	M14
140	400	2 000 000	M160 x 4	140	140	160	365	161	165	280	140	77	M14
180	500	3 200 000	M200 x 4	180	180	200	470	205	210	360	180	92	M16



NOTE – A suitable locking device shall be used.

Figure 2 — Plain rod eye

Table 2 — Dimensions of plain rod eyes

Dimensions in millimetres

Type	**Typical bore**	**Typical rod**	**Nominal force** N	*KK*	*CK* H9	*EM* h13	*ER* max.	*CA* JS14	*AW* min.	*LE* min.
90	250	140	800 000	M100 x 3	90	90	100	245	115	110
110	320	180	1 250 00	M125 x 4	110	110	120	290	130	130
125	360	180	1 600 000	M125 x 4	125	125	140	310	130	150
140	400	220	2 000 000	M160 x 4	140	140	160	365	165	170
180	500	280	3 200 000	M200 x 4	180	180	200	470	210	210

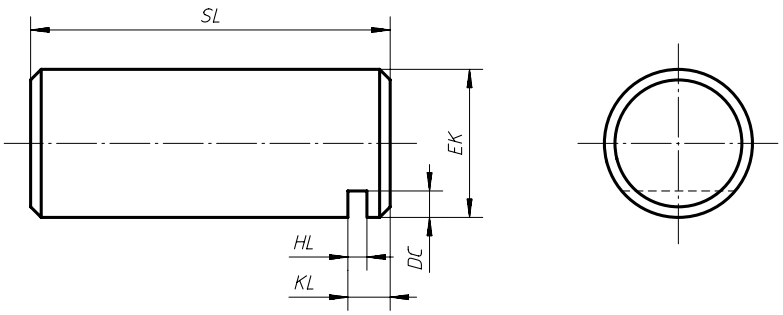


Figure 3 — Plain pivot pin (locking plate type)

Table 3 — Dimensions of plain pivot pins (locking plate type)

Dimensions in millimetres

Type	**Nominal force** N	*EK* f8	*SL* ± 1	*KL* 0 / – 1	*HL* + 0,3 / + 0,1	*DC* min.
90	800 000	90	230	35	15	15
110	1 250 000	110	270	35	15	15
125	1 600 000	125	310	40	18	22,5
140	2 000 000	140	340	40	18	25
180	3 200 000	180	425	45	20	30