
INTERNATIONAL STANDARD



4395

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Fluid power systems and components — Cylinders — Piston rod thread dimensions and types

*Transmissions hydrauliques et pneumatiques — Vérins — Dimensions et types de filetage
des tiges de piston*

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[ISO 4395:1978](#)

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Descriptors : hydraulic cylinders, pneumatic cylinders, piston rods, screw threads, dimensions.

FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 4395 was developed by Technical Committee ISO/TC 131, *Fluid power systems and components*, and was circulated to the member bodies in March 1977.

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The member body of the following country expressed disapproval of the document on technical grounds :

Australia

Fluid power systems and components – Cylinders – Piston rod thread dimensions and types

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0 INTRODUCTION

In fluid power systems, power is transmitted and controlled through a fluid (liquid or gas) under pressure within a 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.

1 SCOPE AND FIELD OF APPLICATION

This International Standard establishes a basic series for piston rod threads for application to hydraulic and pneumatic fluid power cylinders.

It also specifies thread dimensions and configurations to be used with hydraulic and pneumatic fluid power piston rod ends.

2 DEFINITIONS

2.1 cylinder: A device which converts fluid power into linear mechanical force and motion.

2.2 piston rod: The element transmitting mechanical force and motion from the piston.

2.3 piston rod thread: A thread by which the piston rod is to be attached to any component outside the cylinder.

3 TYPES AND DIMENSIONS

3.1 Refer to figures 1, 2 and 3 for identification of piston rod thread types.

3.2 Select the thread sizes from the dimensions shown in the table.

4 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 :

“Piston rod thread dimensions and types selected in accordance with ISO 4395, *Fluid power systems and components – Cylinders – Piston rod thread dimensions and types.*”

TABLE – Piston rod threads

Dimensions in millimetres

Thread sizes	Thread length, L ¹⁾	
	short type	long type ²⁾
M3 × 0,35	6	9
M4 × 0,5 ³⁾	8	12
M5 × 0,5	10	15
M6 × 0,75 ³⁾	12	16
M8 × 1 ³⁾	12	20
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	85	128
M80 × 3	95	140
M90 × 3	106	140
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	—

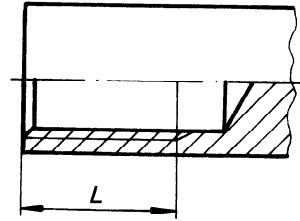


FIGURE 1 – Female thread

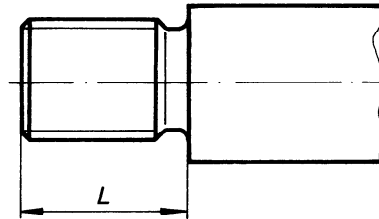


FIGURE 2 – Shouldered male thread

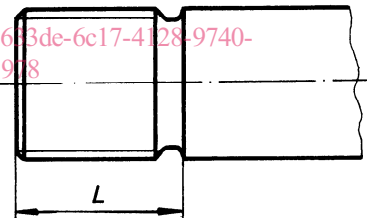


FIGURE 3 – Unshouldered male thread

1) Female thread L is a minimum measure; male thread L is a maximum measure.

2) When locknuts are required for adjustment, use the long type thread lengths.

3) For specific pneumatic purposes, use the following thread sizes : M4 × 0,7, M6 × 1 and M8 × 1,25.

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