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## Fluid power systems and components — Cylinder bores and piston rod diameters — Metric series

*Transmissions hydrauliques et pneumatiques — Alésages des vérins et diamètres des tiges de piston — Série métrique*

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ISO 3320:1987

<https://standards.iteh.ai/catalog/standards/sist/4caa1f84-be96-4fc3-a199-868da04e0909/iso-3320-1987>

Reference number  
ISO 3320:1987 (E)

## 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.

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. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 3320 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*.

The second edition cancels and replaces the first edition (ISO 3320:1975), table 1 (cylinder bores) of which has been technically revised. <https://www.iso.org/standard/41184.html>

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

# Fluid power systems and components — Cylinder bores and piston rod diameters — Metric series

## 0 Introduction

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

## 1 Scope and field of application

This International Standard establishes a metric series of cylinder bores and piston rod diameters for application to hydraulic and pneumatic fluid power cylinders.

This International Standard only applies to the dimensional criteria of products manufactured in conformity with this International Standard; it does not apply to their functional characteristics.

## 2 Reference

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

## 3 Definitions

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

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

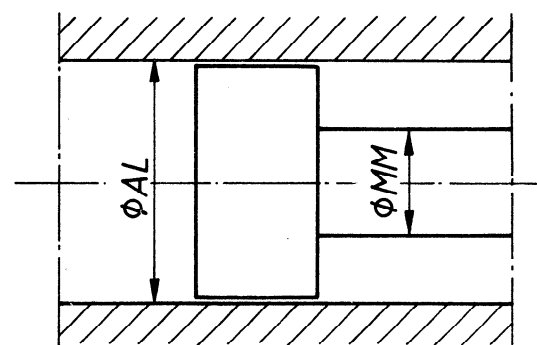
**3.2 cylinder bore:** The internal diameter of the cylinder.

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

## 4 Dimensions

Bore and rod dimensions are illustrated and identified in the figure.

Cylinder bores and piston rod diameters shall be selected from the dimensions given in tables 1 and 2.



$AL$  = cylinder bore

$MM$  = piston rod diameter

NOTE — Letter codes as specified in ISO 6099.

Figure — Identification of bore and rod dimensions

**Table 1 – Cylinder bores<sup>1)</sup>**

Dimensions in millimetres

<i>AL</i>	8	10	12	16	20	25	32	40	50	63	80	(90)	100	(110)
	125	(140)	160	(180)	200	(220)	250	(280)	320	(360)	400	(450)	500	

1) An extension upwards of the diameter ranges may, if required, be made using the series of preferred numbers: R 10 for diameters *AL* < 100 mm and R 20 for diameters *AL* > 100 mm.

Values in parentheses are non-preferred values and should be used only for special applications.

**Table 2 – Piston rod diameters<sup>1)</sup>**

Dimensions in millimetres

<i>MM</i>	4	5	6	8	10	12	14	16	18	20	22	25
	28	32	36	40	45	50	56	63	70	80	90	100
	110	125	140	160	180	200	220	250	280	320	360	

1) An extension upwards of the diameter ranges may, if required, be made using the R 20 series of preferred numbers.

## 5 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:

"Cylinder bores and piston rod diameters selected in accordance with ISO 3320, *Fluid power systems and components – Cylinder bores and piston rod diameters – Metric series.*"

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## Bibliography

ISO 3320:1987

The following International Standard is referred to in this International Standard for information purposes only:

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

UDC 62-222 : 621.8.032/.033

**Descriptors :** hydraulic fluid power, pneumatic fluid power, hydraulic equipment, pneumatic equipment, hydraulic cylinders, pneumatic cylinders, bores, piston-rods, dimensions.

Price based on 2 pages