International Standard 8131

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Hydraulic fluid power — Single rod cylinders, 160 bar (16 MPa) compact series — Tolerances

Transmissions hydrauliques — Vérins 160 bar (16 MPa) *série compacte à simple tige — Tolérances*

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Foreword

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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.

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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.

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Hydraulic fluid power — Single rod cylinders, 160 bar (16 MPa) compact series — Tolerances

0 Introduction

In hydraulic 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 lays down dimensional tolerances for 160 bar [1] (16 MPa) compact series cylinders in accordance with ISO 6020/2 as required for interchangeability of commonly used hydraulic cylinders.

2 References

ISO 286, *ISO system of limits and fits.* [2]

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

ISO 4393, *Fluid power systems and components — Cylinders — Basic series of piston strokes.*

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

ISO 6020/2, *Hydraulic fluid power — Single rod cylinders — Mounting dimensions — 160 bar (16 000 kPa) series — Part 2 : Compact series.*

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

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 Tolerances

4.1 Stroke tolerances

4.1.1 The nominal strokes, S, shall be selected from the recommended values shown in ISO 4393.

4.1.2 See table 1 for the nominal stroke tolerances.

Table 1 — Nominal stroke tolerances

Values in millimetres

Cylinder bore [1]	Nominal stroke S	Nominal stroke tolerance [2]
25 32 40 50	$S \leqslant 500$	$^{+2}_{0}$
	$S > 500$	$^{+3,2}_{0}$
63 80 100	$S \leqslant 500$	$^{+2,5}_{0}$
	$S > 500$	$^{+4}_{0}$
125 160 200	$S \leqslant 500$	$^{+4}_{0}$
	$S > 500$	$^{+5}_{0}$

1) See ISO 3320.

2) The tolerances referred to apply to strokes up to and including 1 250 mm. For longer strokes, select tolerances from national standards or by agreement between manufacturer and user.

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

2) At present at the stage of draft. (Revision of ISO/R 286-1962.)