INTERNATIONAL STANDARD

ISO 10100

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Hydraulic fluid power — Cylinders — Acceptance test

Transmissions hydrauliques — Vérins — Essais de réception

Reference number
ISO 10100:1990(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. 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 10100 was prepared by Technical Committee ISO/TC 131, *Fluid power systems*.

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Introduction

In hydraulic fluid power systems, power is transmitted and controlled through a liquid under pressure in an enclosed circuit.

One component of such systems is the hydraulic fluid power cylinder. This is a device that 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.

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Hydraulic fluid power — Cylinders — Acceptance test

1 Scope

This International Standard specifies acceptance and function tests for hydraulic fluid power cylinders.

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

CETOP RP 91 H:1977, *Fluids for hydraulic transmissions — Mineral oils — Specification.*

3 Definitions

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

4 Identity check

Record the following information about the cylinder to be tested:

a) type;

b) port dimensions;

c) stroke length;

d) model label;

e) bore;

f) rod diameter;

g) overall length;

h) mounting dimensions.

5 Functional tests

5.1 General test conditions

The test shall be performed under the following conditions:

— Test pressure: 1,5 times the recommended operating pressure.

— Test fluid[1]: a hydraulic oil that is recommended by the cylinder manufacturer and whose specifications conform to one of the grades described in CETOP RP 91 H.

— Temperature of test fluid: 15 °C to 40 °C.

5.2 Leakage test

5.2.1 Idling test

Cycle the cylinder several times between the end positions. Pause in the end positions at a pressure of less than or equal to 1 000 kPa (10 bar) for a minimum of 30 s.

5.2.2 Sight test

Observe for

a) oil leakage on piston and rod seal;

b) oil leakage on static seals;

1) Test fluids should be compatible with the fluids to be used for subsequent operation.

c) oil leakage on connection, bleeding and throttle screws;

d) irregular movement of the piston rod.

5.3 Test pressure check

5.3.1 Test

Stroke the cylinder several times to the end positions. Pause in the end position for a minimum of 30 s.

5.3.2 Sight test

5.3.2.1 See 5.2.2.

5.3.2.2 Observe welded seams for leakage.

6 Cushioning test

When the throttle screws or damping valves are closed, on commencement of cushioning, the cylinder rod should show a marked deceleration before the end stroke is reached.

7 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:

"Acceptance test for hydraulic cylinders in accordance with ISO 10100, *Hydraulic fluid power — Cylinders — Acceptance test.*"

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Descriptors: hydraulic fluid power, hydraulic equipment, hydraulic cylinders, tests, acceptance testing.

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