BS ISO 6605:2017

BSI Standards Publication

Hydraulic fluid power — Test methods for hoses and hose assemblies

National foreword

This British Standard is the UK implementation of ISO 6605:2017. It supersedes BS ISO 6605:2002, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee MCE/18/-/4, Connectors and associated components.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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INTERNATIONAL STANDARD

ISO 6605

Third edition
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Hydraulic fluid power — Test methods for hoses and hose assemblies

Transmissions hydrauliques — Méthodes d'essai pour les tuyaux et flexibles

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

The committee responsible for this document is Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 4, *Connectors and similar products and components*.

This third edition cancels and replaces the second edition (ISO 6605:2002), which has been technically revised with the following changes:

— a WARNING was added before the Scope;

— added ISO/TR 11340 and ISO/TS 17165-2 and removed ISO 6945 from the normative references;

— added new ISO verbiage to the terms and definitions;

— added definitions for "change in length", "minimum burst pressure" and "cyclic endurance (impulse) test";

— replaced "operating pressure" with "maximum working pressure" throughout the document;

— added the statements: "The proof pressure shall be twice the maximum working pressure, unless otherwise specified" and "The minimum burst pressure shall be four times the maximum working pressure, unless otherwise specified in the pertinent hose product standard";

— replaced ISO 4672:1997 with ISO 10619-2:2011;

— added: "For values of d less than 25 mm, use d = 25 mm for the $2d$ term in the expression for the hose free length, so that the hose between the end of the hose fitting and the start of the bend radius is straight" and "The actual free hose length shall agree with the calculated free hose length to within +1/-0 % or +8/-0 mm, whichever is greater" to 5.6.2.2;

— redefined the frequency in 5.6.2.5, added a new 5.6.2.6 and 5.6.2.9, revised Figure 2 and added Figure 3;

— deleted the abrasion test;

— updated all the references in the Bibliography.

Introduction

In hydraulic fluid power systems, power is transmitted and controlled through a liquid under pressure within an enclosed circuit. A hose assembly is a flexible fluid power conductor consisting of a length of hose attached, at both ends, to hose fittings.

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WARNING — Some of the tests described in this document are considered hazardous. It is, therefore, essential that, in conducting these tests, all appropriate safety precautions be strictly adhered to. Attention is drawn to the danger of burst, fine jets (which can penetrate the skin) and energy release of expanding gases. To reduce the hazard of energy release, bleed air out of test specimens prior to pressure testing. Tests shall be set up and performed by properly trained personnel.

1 Scope

This document specifies uniform test methods for evaluating the performance of hoses and hose assemblies (hoses and attached hose fittings) used in hydraulic fluid power systems.

Specific tests and performance criteria for evaluating hoses and hose assemblies used in hydraulic applications are in accordance with the requirements of the respective product (hoses or hose fitting) specifications.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1402, *Rubber and plastics hoses and hose assemblies — Hydrostatic testing*

ISO 3448, *Industrial liquid lubricants — ISO viscosity classification*

ISO 4671, *Rubber and plastics hoses and hose assemblies — Methods of measurement of the dimensions of hoses and the lengths of hose assemblies*

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

ISO 5893, *Rubber and plastics test equipment — Tensile, flexural and compression types (constant rate of traverse) — Specification*

ISO 6133, *Rubber and plastics — Analysis of multi-peak traces obtained in determinations of tear strength and adhesion strength*

ISO 8033, *Rubber and plastics hoses — Determination of adhesion between components*

ISO/TR 11340, *Rubber and rubber products — Hydraulic hose assemblies — External leakage classification for hydraulic systems*

ISO/TS 17165-2, *Hydraulic fluid power — Hose assemblies — Part 2: Practices for hydraulic hose assemblies*

ISO 23529, *Rubber — General procedures for preparing and conditioning test pieces for physical test methods*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5598 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/