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Pneumatic fluid power — Push-in connectors for thermoplastic tubes

Transmissions pneumatiques — Raccords instantanés pour tubes thermoplastiques

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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).

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For an explanation of 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 131, *Fluid power systems*, Subcommittee SC 4, *Connectors and similar products and components*.

This second edition cancels and replaces the first edition (ISO 14743:2004), which has been technically revised. The main changes compared to the previous edition are as follows:

— new fitting size including inch dimensions has been added;

— new normative references have been added;

— updates on leakages performances and precisions have been added for cyclic endurance with vibration.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

In pneumatic fluid power systems, power is transmitted and controlled through air under pressure within a circuit.

Components are connected through their ports by means of connectors (fittings) and conductors.

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Pneumatic fluid power — Push-in connectors for thermoplastic tubes

1 Scope

This document specifies the general requirements and test methods for the design and performance of push-in connectors for use with thermoplastic tubes with outside diameters (OD) from 3 mm to 16 mm including dimensions in inches.

This document is intended to establish uniform methods of testing complete push-in connector assemblies as used in pneumatic fluid power applications. It is not applicable to air braking systems.

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 7-1, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation*

ISO 4759-1, *Tolerances for fasteners — Part 1: Bolts, screws, studs and nuts — Product grades A, B and C*

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

ISO 8573-1:2010, *Compressed air — Part 1: Contaminants and purity classes*

ISO 10619-1, *Rubber and plastics hoses and tubing — Measurement of flexibility and stiffness — Part 1: Bending tests at ambient temperature*

ISO 16030, *Pneumatic fluid power — Connections — Ports and stud ends*

ANSI/ASME B1.1, *Unified Inch Screw Threads, (UN and UNR Thread Form)*

ANSI/ASME B1.20.1, *Pipe Threads, General Purpose, Inch*

ANSI/ASME B1.20.3, *Dryseal Pipe Threads (Inch)*

3 Terms and definitions

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

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

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

— ISO Online browsing platform: available at https://www.iso.org/obp

4 Working conditions

Push-in connectors shall provide connections from –0,09 MPa [–0,9 bar[1)]] to a working pressure of 1,6 MPa (16 bar) when used at temperatures between –20 °C and +80 °C.

1) 1 bar = 0,1 MPa = 105 Pa; 1 MPa = 1 N/mm^2

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