BSI Standards Publication

Hydraulic fluid power — Dimensions and requirements of quick-action couplings

National foreword

This British Standard is the UK implementation of ISO 7241:2023. It supersedes BS ISO 7241:2014, which is withdrawn.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 committee manager.

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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 7241:2014), which has been technically revised.

The main changes are as follows:

— nominal size designations 20, 40, 50 have been replaced by 19, 38, 51 in accordance with ISO 4397;

— impulse pressure test type has been added in accordance with ISO 6803;

— a mistake in Table 7 has been corrected (two values were inverted);

— minor graphical updates.

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.

Introduction

In hydraulic fluid power systems, power is transmitted and controlled through a liquid under pressure within an enclosed circuit. Quick-action couplings are used to join or separate fluid conductors quickly and without the use of tools or special devices.

When hydraulic quick-action couplings are used on agricultural machinery, the female half is normally assembled on the tractor and the male half is normally assembled on the tractor attachment.

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INTERNATIONAL STANDARD ISO 7241:2023

Hydraulic fluid power — Dimensions and requirements of quick-action couplings

1 Scope

This document specifies the interface dimensions and basic performance requirements for two series of hydraulic quick-action couplings. Both series are in widespread use and have similar technological advantages:

— Series A is used predominantly in Europe and is preferred worldwide for agricultural and forestry machinery. This document specifies additional requirements for Series A for use in the agricultural machinery applications given in ISO 5675.

— Series B is used predominantly in North America and in the chemical industry.

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 3448, *Industrial liquid lubricants — ISO viscosity classification*

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

ISO 5675, *Agricultural tractors and machinery — General purpose quick-action hydraulic couplers*

ISO 6803, *Rubber or plastics hoses and hose assemblies — Hydraulic-pressure impulse test without flexing*

ISO 18869, *Hydraulic fluid power — Test methods for couplings actuated with or without tools*

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 terminology databases for use in standardization at the following addresses:

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

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

3.1
coupling valve opening force
maximum force required to fully open the hydraulic quick-action coupling valve when the pressure inside the coupling is at zero

3.2
female half
receptacle portion of a quick-action coupling which normally includes the mechanism to lock the two halves of quick-action coupling together

3.3
interface
portion of a coupling half that establishes and controls interchangeability