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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 22076-2024

Replacing GB/T 22076-2008

**Pneumatic fluid power - Cylindrical quick-action couplings
(English Translation)**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document replaces GB/T 22076-2008 "Pneumatic cylindrical quick-change connector plug connection dimensions, technical requirements, application guidelines and test Compared with GB/T 22076-2008, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

--- "Plug" is changed to "male end", and "socket" is changed to "female end" (see Chapter 1, 4.2, etc., Chapter 1, 4.2, etc. of the 2008 edition);

--- Changed some technical parameter requirements and corrected the errors in dimensions and tolerances (see Table 1 and Table 2, Table 1 and Table 2 of the 2008 edition);

--- Increased test frequency requirements (see 6.5);

--- Some notes are changed to clauses (see 6.9, 8.4.4, 8.7.3.3, 6.9, 8.3.4, 8.6.2.3 of the 2008 edition);

--- Increased the requirements for holding time (see 8.7.4.1.3);

--- Added the requirement of "connect and disconnect the quick-change connector and

check the leakage again" (see 8.7.5.1.5);

--- Added the requirement of "recording deformation, failure and other phenomena of quick-change connectors" (see 8.7.5.1.6);

--- Added requirements for flow characteristic test (see 8.8).

This document is modified to adopt ISO 6150:2018 "Pneumatic Maximum Working Pressure 1MPa, 1.6MPa and 2.5MPa (10bar, 16bar and 25bar) cylindrical quick-change connector plug connection dimensions, technical requirements, application guidelines and tests.

This document has the following structural adjustments compared to ISO 6150:2018.

--- Change 4.2.1~4.2.3 in ISO 6150:2018 to paragraphs;

---8.1 corresponds to the suspension section in Chapter 8 of ISO 6150:2018, 8.2~8.7 correspond to 8.1~8.6 in ISO 6150:2018, and the addition 8.8;

---8.3.1~8.3.3, 8.4.1~8.4.4, 8.5.1, 8.5.2, 8.6.1, 8.6.2, 8.7.1, 8.7.2~8.7.5 correspond to ISO 6150 respectively.

2018 8.2.1~8.2.3, 8.3.1~8.3.4, 8.4.1, 8.4.2, 8.5.1, 8.5.2, 8.6 suspension section, 8.6.1~8.6.4, and the next level of the above items has been adjusted accordingly, including the addition of 8.7.5.1.5 and 8.7.5.1.6.

The technical differences between this document and ISO 6150:2018 and their reasons are as follows.

--- ISO 5598 (see Chapter 3) has been replaced by the normative reference GB/T 17446 to adapt to my country's technical conditions and improve operability.

Sex;

--- Increased the test frequency requirements (see 6.5) to adapt to my country's technical conditions and improve operability;

--- ISO 4414 (see 7.2) has been replaced by the normative reference GB/T 7932 to adapt to my country's technical conditions and improve operability.

Sex;

--- ISO 9227 (see 8.5.1) has been replaced by the normative reference GB/T 10125 to adapt to my country's technical conditions and improve operability.

Sex;

--- Increased the requirements for holding time (see 8.7.4.1.3) to adapt to my country's technical conditions and improve operability;

--- Added "Connect and disconnect the quick-change connector and check the leakage

again" to the limit temperature test at the highest operating temperature (disconnected state).

"Record the deformation and failure of quick-change connectors" (see 8.7.5.1.6) to meet the requirements of my country Technical conditions to improve operability;

--- Added normative reference document GB/T 14513.1 (see 8.8) to adapt to my country's technical conditions and improve operability;

--- Added the requirements for flow characteristic test (see 8.8) to adapt to my country's technical conditions and improve operability.

The following editorial changes were also made to this document.

--- Change the standard name to "Pneumatic Cylindrical Quick-Change Connectors";

---Deleted the pressure unit "bar".

Introduction

In a pneumatic system, power is transmitted and controlled by compressed air in a circuit. Quick-release connectors are used to connect the pneumatic system without tools or special devices.

Quick connection or disconnection of fluid conduits under certain conditions.

Pneumatic cylindrical quick-change fittings

1 Scope

This document specifies the male end dimensions and tolerances, nomenclature, test methods, technical specifications, and specifications of pneumatic cylindrical quick-change connectors (hereinafter referred to as "quick-change connectors").

Technical performance and application guidance are provided.

Note 1: The structure and size of the female end are determined by the manufacturer.

This document is applicable to quick-change connectors with maximum working pressures of 1MPa, 1.6MPa and 2.5MPa respectively.

NOTE 2 Quick-change fittings with non-return valves for use in welding, cutting and related process equipment are given in ISO 7289.

This document applies only to the dimensional requirements of products manufactured in accordance with this document, but not to their functional characteristics.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

GB/T 7932 General rules and safety requirements for pneumatic systems and their components (GB/T 7932-2017, ISO 4414.

2010, IDT)

GB/T 10125 Artificial atmosphere corrosion test Salt spray test (GB/T 10125-2021, ISO 9227:2017, MOD) GB/T 14513.1 Determination of flow characteristics of compressible fluid components for pneumatic use Part 1: General rules and regulations for steady-state flow Test method (GB/T 14513.1-2017, ISO 6358-1:2013, IDT) GB/T 17446 Fluid power systems and components vocabulary (GB/T 17446-2024, ISO 5598:2020, MOD)

3 Terms and definitions

The terms and definitions defined in GB/T 17446 and the following apply to this document.

The maximum pressure that the quick-change fitting can withstand in the system.

4 Male terminal dimensions and tolerances

4.1

Quick-change fittings are divided into three series according to their maximum working pressure.

---A series. maximum working pressure 1MPa;

---B series. maximum working pressure 1.6MPa;

---C series. Maximum working pressure 2.5MPa.

4.2

Figures 1 to 3 and Tables 1 to 3 only give the dimensions and tolerances of the male end of the quick-change connector. The dimensions of the other end of the female end and the male end are not given.

(Parts connected to other components, pipes or hoses) are determined by the manufacturer.