
**Pneumatic fluid power — Cylindrical
quick-action couplings for maximum
working pressures of 1 MPa, 1,6 MPa,
and 2,5 MPa (10 bar, 16 bar and 25
bar) — Plug connecting dimensions,
specifications, application guidelines
and testing**

*Transmissions pneumatiques — Raccords rapides cylindriques pour
pressions maximales d'utilisation 1 MPa, 1,6 MPa et 2,5 MPa (10 bar,
16 bar et 25 bar) — Dimensions de raccordement de la partie mâle,
spécifications, conseils d'utilisation et essais*

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Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Dimensions and tolerances	2
5 Designation	4
6 Requirements	5
6.1 Material	5
6.2 Hardness	5
6.3 Surface finish	5
6.4 Corrosion protection	5
6.5 Number of couplings and uncouplings	5
6.6 Test pressures	5
6.7 Tests at extreme working temperatures	5
6.8 Limited rotation for self-alignment	6
6.9 Structural rigidity	6
6.10 Leakage	6
7 Application guidelines	6
7.1 Installation with vibrating tools	6
7.2 Coupling and uncoupling safety considerations	6
8 Testing	6
8.1 Accuracy of test equipment and instrumentation	6
8.2 Checking of compliance	7
8.3 Hydraulic test	7
8.4 Corrosion test	7
8.5 Test for structural rigidity	7
8.6 Operational tests	8
8.6.1 Disconnect force	9
8.6.2 Connect force	10
8.6.3 Measurement of leakage at maximum working pressure	11
8.6.4 Extreme temperature test at maximum working pressure	12
9 Identification statement (Reference to this document)	13
Bibliography	15

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 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 6150:1988), which has been technically revised.

The main changes compared to the previous edition are as follows:

- the complete document was reformatted and updated with the most current information.

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 pneumatic fluid power systems, power is transmitted and controlled through gas under pressure within an enclosed circuit.

Cylindrical quick-action couplings conforming to this document are designed to join or separate fluid conducting lines quickly without the use of tools or special devices.

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Pneumatic fluid power — Cylindrical quick-action couplings for maximum working pressures of 1 MPa, 1,6 MPa, and 2,5 MPa (10 bar, 16 bar and 25 bar) — Plug connecting dimensions, specifications, application guidelines and testing

1 Scope

This document specifies the dimensions and tolerances so as to ensure the interchangeability of pneumatic quick-action coupling plugs. It also provides specifications and application guidelines, and specifies the tests to be applied to the plugs together with sockets.

NOTE 1 The construction and dimensions of sockets are left to the manufacturer's option.

This document applies to cylindrical quick-action couplings for maximum working pressures of 1 MPa, 1,6 MPa and 2,5 MPa (10 bar, 16 bar and 25 bar) for use in pneumatic fluid power systems.

NOTE 2 Quick-action couplings with shut-off valves for equipment for welding, cutting and related processes are covered by ISO 7289.

This document applies only to the dimensional criteria of products manufactured in accordance with this document. It does not apply to their functional characteristics.

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 4414, *Pneumatic fluid power — General rules and safety requirements for systems and their components*

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

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

3 Terms and definitions

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

ISO and IEC maintain terminological 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

maximum working pressure

maximum pressure at the coupling in a system

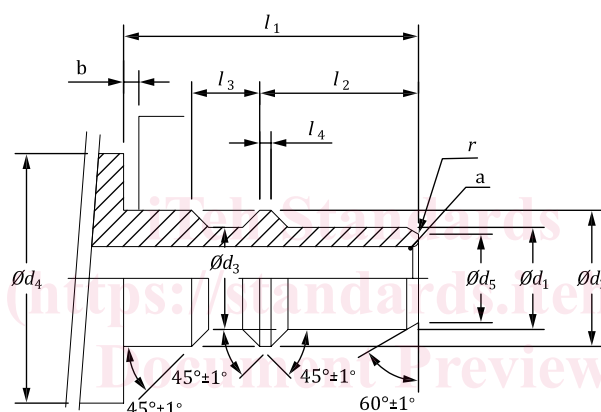
4 Dimensions and tolerances

4.1 Cylindrical quick-action couplings for pneumatic fluid power systems are classified according to their maximum working pressure into the following three different series:

- Series A: Cylindrical quick-action couplings for a maximum working pressure of 1 MPa (10 bar).
- Series B: Cylindrical quick-action couplings for a maximum working pressure of 1,6 MPa (16 bar).
- Series C: Cylindrical quick-action couplings for a maximum working pressure of 2,5 MPa (25 bar).

4.2 Tables 1 to 3 and Figures 1 to 3 are only concerned with the dimensions and tolerances of the plug. The socket is left to the manufacturer's option; the same condition applies to the plug end for connection to either a component, or a pipe or hose.

4.2.1 The dimensions and tolerances for plugs on series A cylindrical quick-action couplings are shown in Figure 1 and given in Table 1.



a Inside diameter as large as possible.

b The distance between the shoulder of the plug and the end surface of the socket, when connected, shall not exceed 1 mm.

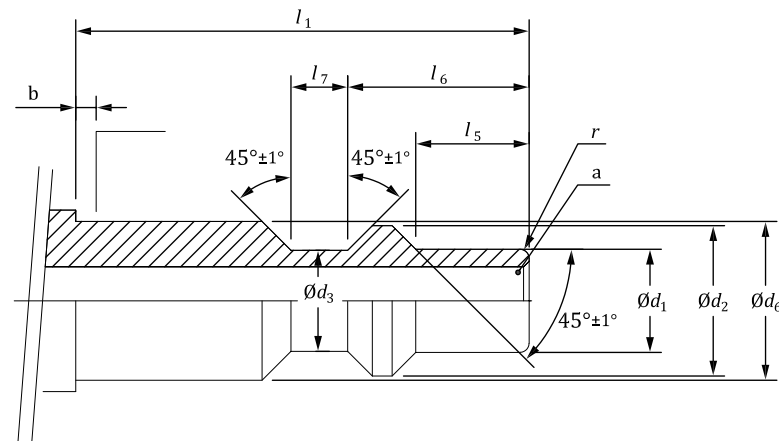
Figure 1 — Plug for 1 MPa (10 bar) maximum working pressure (series A)

Table 1 — Dimensions for plug for 1 MPa (10 bar) maximum working pressure (series A)

Dimensions in millimetres

Nominal diameter	d_1 h ₁₁	d_2 d ₁₁	d_3	d_4^1 min.	d_5	l_1 +0,2/0	l_2	l_3	l_4	r
6	4,5	6	4,5	11	3,9	16	7 + 0,2/0	3 + 0,15/0	0,5	0,2 to 0,3
10	8	10	8	15	7	20	8,5 + 0,3/0	5,5 + 0,2/0	1	0,3 to 0,5
13	11	13	11	18	10	21				
16	13	16	13	20	12	24				
18	16	18	16	23	15	27				
¹ Minimum actual diameter.										

4.2.2 The dimensions and tolerances for plugs on series B cylindrical quick-action couplings are shown in Figure 2 and given in Table 2.



- a Inside diameter as large as possible; break corner at 0,5 mm max. Test that the flow characteristics of the male part provide sufficient air flow and strength at the male part.
- b The distance between the shoulder of the plug and the end surface of the socket, when connected, shall not exceed 1 mm.

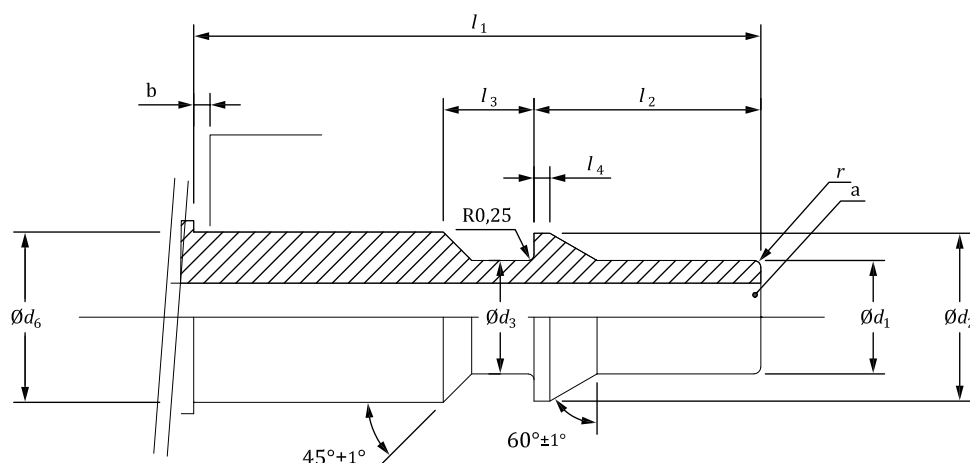
Figure 2 — Plug for 1,6 MPa (16 bar) maximum working pressure (series B)

Table 2 — Dimensions for plug for 1,6 MPa (16 bar) maximum working pressure (series B)

Dimensions in millimetres

Nominal diameter	d_1 -0,1/ -0,2	d_2 -0,1/ -0,2	d_3 -0,05/ -0,15	d_6 -0,1/ -0,2	l_1 min.	l_5 +0,10/ -0,15	l_6 +0,10/ -0,15	l_7 +0,10/ -0,15	r +0,10/ -0,15
7	4,55	6,5	4,45	7	20	5	8	2,5	0,4
12	8,2	11	7,9	11,9	23,6	5,4	9,4	2,8	
15	11	14,4	11,6	15,2	26,1	7,65	12,3	2,6	1
17	14,4	16,8	14,3	16,8	34,8	9,55	14,7	2,8	0,4
23	20,55	23	20,45	23	35	6,5	10,7	3	1

4.2.3 The dimensions and tolerances for plugs on series C cylindrical quick-action couplings are shown in [Figure 3](#) and given in [Table 3](#).



- a Inside diameter as large as possible.
 b The distance between the shoulder of the plug and the end surface of the socket, when connected, shall not exceed 1 mm.

Figure 3 — Plug for 2,5 MPa (25 bar) maximum working pressure (series C)

Table 3 — Dimensions for plug for 2,5 MPa (25 bar) maximum working pressure (series C)

Dimensions in millimetres

Nominal diameter	d_1 f ₈	d_2 js ₁₁	d_3 ±0,15	d_6 f ₈	l_1 min.	l_2 ±0,1	l_3 JS ₁₃	l_4 ±0,1	r max.
8	5	7,4	5	7,5	25	10	4,5	0,7	0,3
10	7,5	9,7	7,4	10	27,5	12	7	0,75	1
14	11	13,7	11	14	36,5	17	9,5	1,5	
17	14	16,7	14	17	41	18	12,5	2	
27	23	26,7	23	27	61	27	16	2,5	2

5 Designation

The designation for a quick-action coupling in accordance with this document shall include, in the order given, the following information:

- identity block, i.e. the word "Coupling";
- the reference to this document;
- the letter standing for the series of coupling (i.e. A, B or C);
- the nominal diameter.

EXAMPLE

A cylindrical quick-action coupling for maximum working pressure of 1,6 MPa (16 bar), i.e. series B, and having a nominal diameter of 15 mm shall be designated as follows:

Coupling ISO 6150-B-15