
**Road vehicles — Connection interface
for pyrotechnic devices, two-way and
three-way connections —**

Part 5:
**Pyrotechnic device and harness
connector assembly - type 3 (only
two-way)**

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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 22, *Road vehicles*, Subcommittee SC 32, *Electrical and electronic components and general system aspects*.

A list of all parts in the ISO 19072 series can be found on the ISO website.

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

Road vehicles integrate an increasing number of pyrotechnic devices contributing to occupant safety in vehicles (for example frontal and side airbag, safety belt pre-tensioner, etc.).

Building the complete system requires a supply of various components from several different equipment suppliers. There is a need for vehicle manufacturers to define a common specification to ensure that connectors designed and produced for the various equipment suppliers can be mated without any difficulty.

In the current design of this vehicle equipment, three areas of connection have been identified:

- connection between the pyrotechnic device (e.g. initiator) and the harness connector;
- connection between the tab holder and the clip holder of the harness connector; and
- connection between the harness connector and the electronic control module.

The connection between the pyrotechnic device and the harness connector is the only connection that can be standardised, and it forms the subject of this document. Due to the location of the safety device in the vehicle, the connector design could be right angle or straight.

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Road vehicles — Connection interface for pyrotechnic devices, two-way and three-way connections —

Part 5:

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1 Scope

This document defines the general minimum specifications of a type 3 two-way connection interface, linking the pyrotechnic device and harness connector built into a road vehicle.

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 8092-2, *Road vehicles — Connections for on-board electrical wiring harnesses — Part 2: Definitions, test methods and general performance requirements*

ISO 19072-1, *Road vehicles — Connection interface for pyrotechnic devices, two-way and three-way connections — Part 1: Pocket interface definition*

ISO 19072-2, *Road vehicles — Connection interface for pyrotechnic devices, two-way and three-way connections — Part 2: Test methods and general performances requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 8092-2 and the following apply.

3.1

connector

assembly used to connect several conductors together or a single conductor to an appliance

Note 1 to entry: A male (female) connector is a *housing* (3.2) containing male (female) contacts and accessory items. A male connector may be permanently fixed to a wiring harness or to an appliance [an electronic control unit (ECU) for example]. A female connector is generally permanently fixed to a wiring harness.

3.2

housing

connector (3.1) without its contacts

3.3

initiator

part of the pyrotechnical device with two male contacts

3.4

pocket

squib holder (3.6) inner interface including male contacts

**3.5
retainer**

ring holding an optional shorting clip (shunt) and providing coding and electrical insulation, generally made of plastic

Note 1 to entry: The shorting clip (shunt) may be omitted by decision between manufacturer and supplier.

**3.6
squib holder**

part of the pyrotechnic device, holding the *initiator* (3.3) and the *retainer* (3.5)

4 Dimensional features and performance requirements

4.1 General

The female connector shall be designed to avoid damage to male contacts and the initiator in the case of improper mating, see [Figure 1](#).

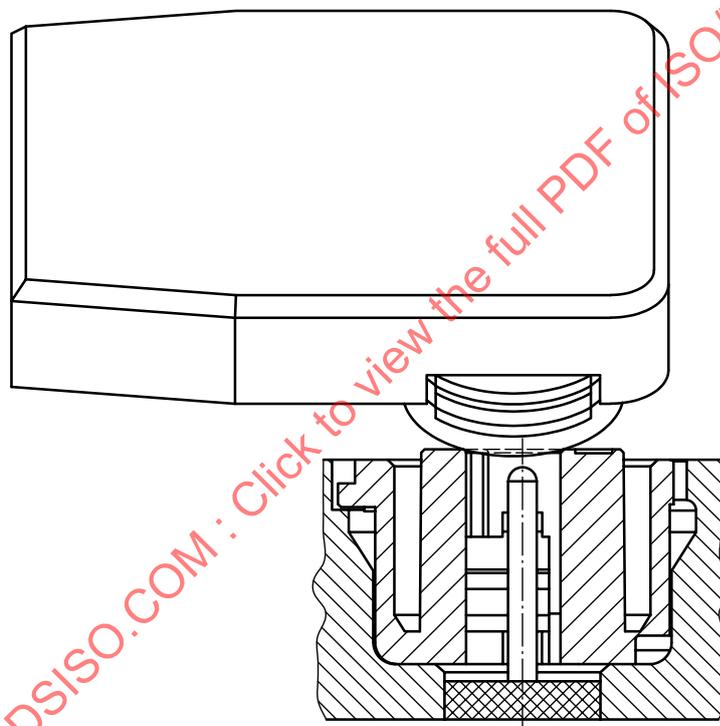
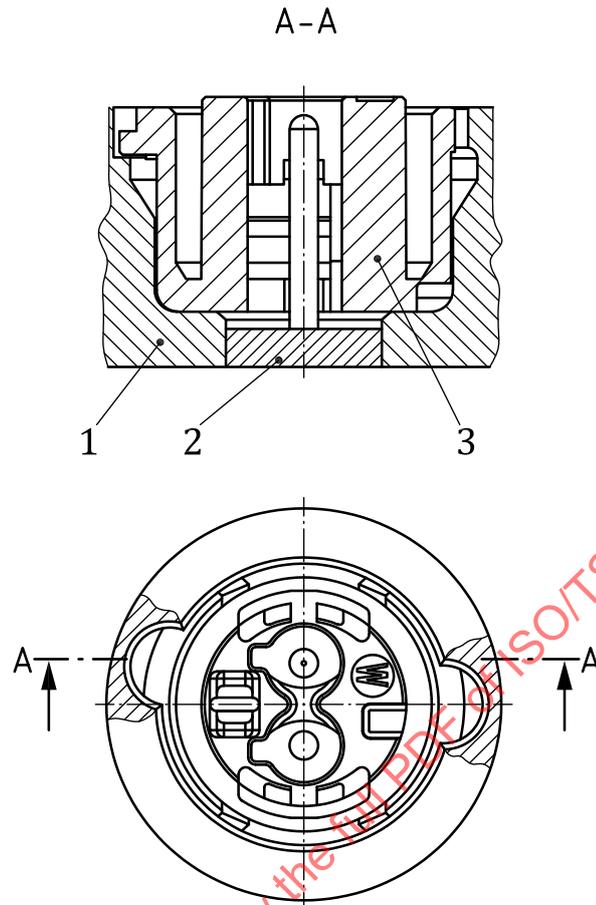


Figure 1 — Example of scoop proof design

Connector, retainer and squib holder assembly shall comply with requirements in ISO 19072-1 and ISO 19072-2.

4.2 Retainer and squib holder assembly

The dimensions of the retainer shall comply with [Figure 1](#). The dimensions of the squib holder interface are defined in ISO 19072-1. For the retainer and squib holder assembly see [Figure 2](#).

**Key**

- 1 squib holder
- 2 initiator
- 3 retainer

Figure 2 — Retainer and squib holder assembly

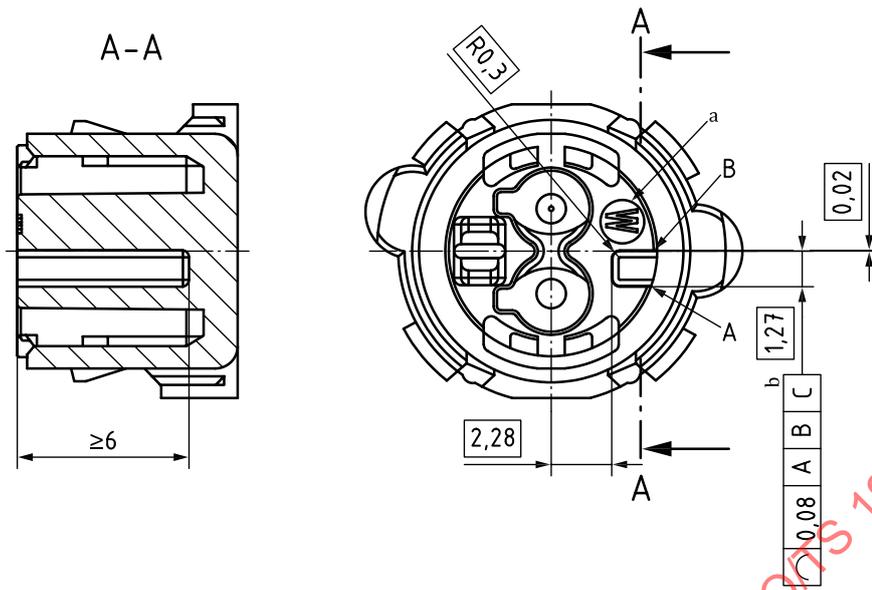
4.3 Coding and polarisation

Coding and polarisation are determined by the dimensions and position of the coding keys, each of which has its own colour code (see [Figure 3](#) and [Table 1](#)).

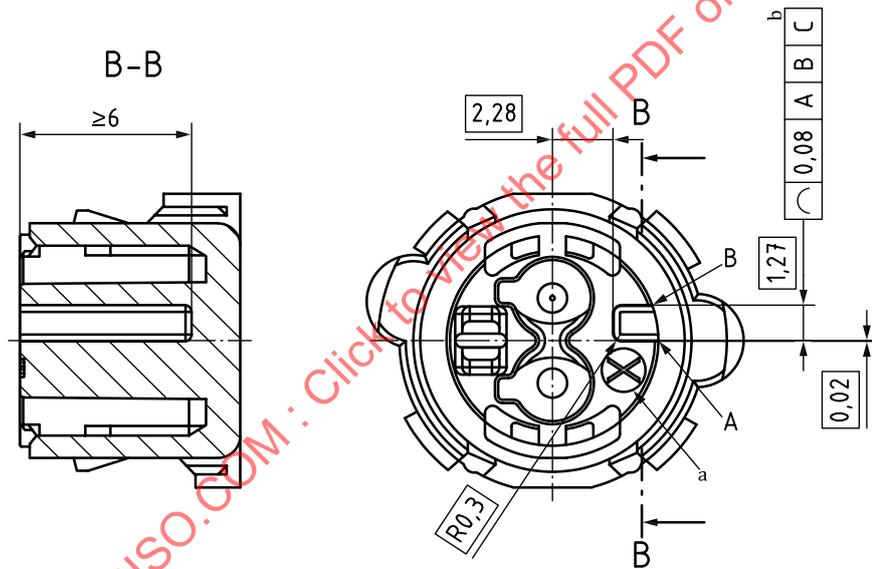
The colour code is in accordance with RAL¹⁾, however, there should be an agreement about the range between the customer and supplier.

1) RAL colour space system developed by Reichsausschuß für Lieferbedingungen und Gütesicherung (German Institute for Quality Assurance and Certification e. V.).

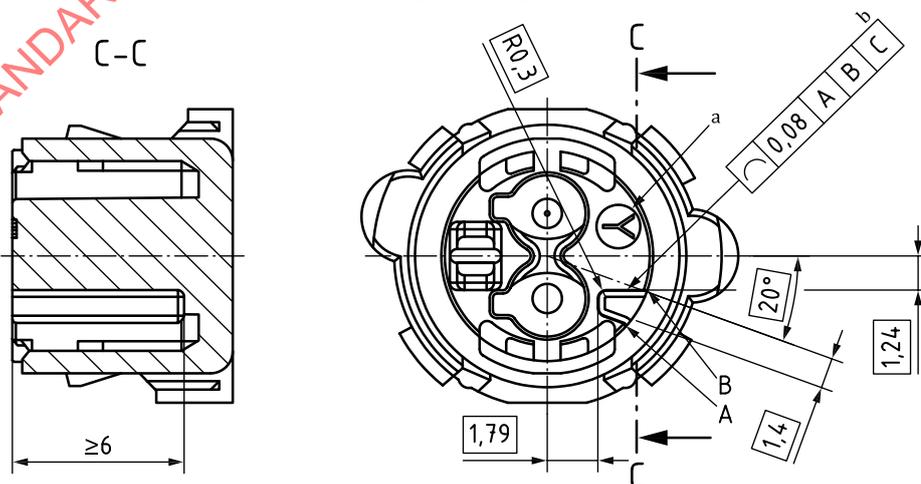
Dimensions in millimetres



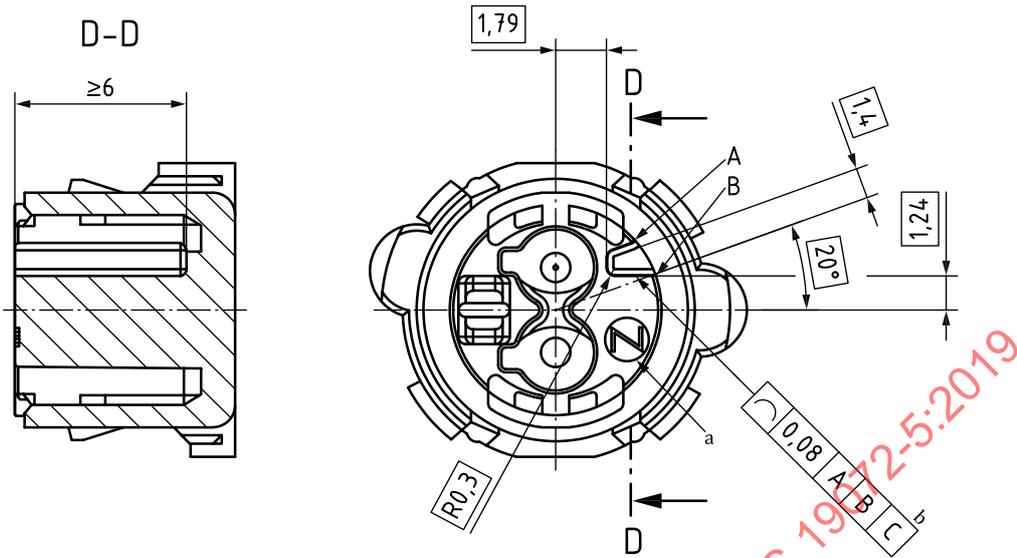
3 a) Coding W



3 b) Coding X



3 c) Coding Y



3 d) Coding Z

NOTE Features that are not dimensioned are not part of the interface description.

- a Optional label, indicating the coding by roman numerals.
- b Measured between A and B at datum D.

Figure 3 — Dimensions and position of coding keys

Table 1 — Type of coding used and assigned colour code

Colours similar RAL		Connection 2-way			
No.	Colour description	W	X	Y	Z
3015	Pink	X			
4005	Purple		X		
7036	Grey			X	
6018	Green				X

4.4 Figure 4 illustrates the dimensional features and properties for retainer function

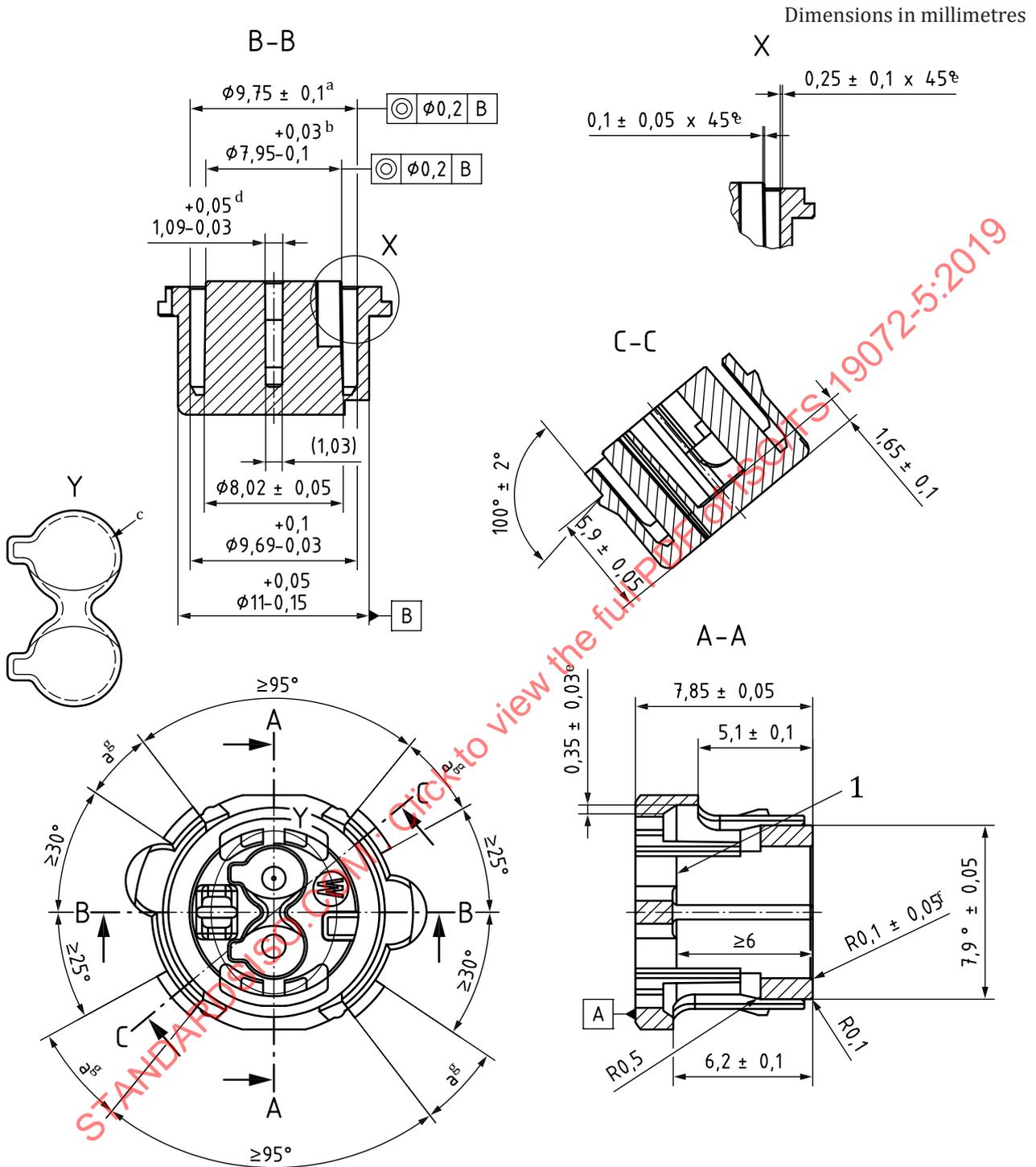


Figure 4 — Dimensions of retainer

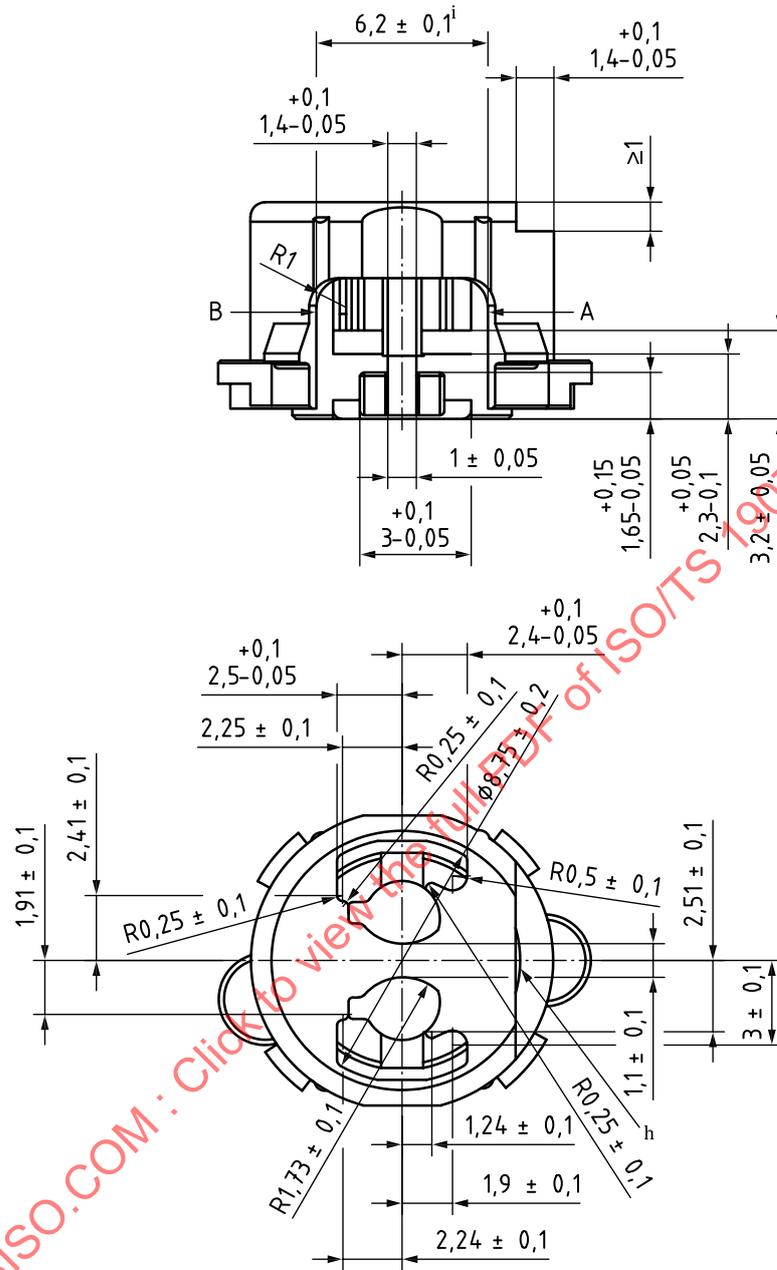


Figure 4 — continued - Dimensions of retainer

