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**Industrial valves — Isolating valves for  
low-temperature applications —**

**Part 1:  
Design, manufacturing and  
production testing**

*Robinetterie industrielle — Robinets d'isolement pour application à  
basses températures —*

*Partie 1: Conception, essais de fabrication et de production*



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Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 28921-1 was prepared by Technical Committee ISO/TC 153, *Valves*, Subcommittee SC 1, *Design, manufacture, marking and testing*.

ISO 28921 consists of the following parts, under the general title *Industrial valves — Isolating valves for low-temperature applications*:

- *Part 1: Design, manufacturing and production testing*
- *Part 2: Type testing*

## Introduction

The purpose of this part of ISO 28921 is the establishment of basic requirements and practices for design, fabrication, material selection and production testing of valves used in low-temperature services. The intention is to provide requirements for design, material selection and valve preparation for valves to be used in low-temperature service.



# Industrial valves — Isolating valves for low-temperature applications —

## Part 1: Design, manufacturing and production testing

### 1 Scope

This part of ISO 28921 specifies requirements for design, dimensions, material, fabrication and production testing of isolation valves for low-temperature applications.

It applies to gate, globe, check, butterfly and ball valves and can be used for other valve types used in low-temperature services.

This part of ISO 28921 covers isolation valves for use in cryogenic temperature service where the design low-temperature service is  $-50\text{ }^{\circ}\text{C}$  down to  $-196\text{ }^{\circ}\text{C}$ .

This part of ISO 28921 does not apply to valves for cryogenic services, designed in accordance with ISO 21011, used with cryogenic vessels.

Where the requirements of this part of ISO 28921 vary from those given in the valve product standards, the requirements of this part of ISO 28921 apply.

This part of ISO 28921 covers valves with body, bonnet, bonnet extension or cover made of metallic materials.

It covers valves of nominal sizes DN: 10; 15; 20; 25; 32; 40; 50; 65; 80; 100; 125; 150; 200; 250; 300; 350; 400; 450; 500; 600; 650; 700; 750; 800; 850; 900,

corresponding to nominal pipe sizes NPS: 3/8; 1/2; 3/4; 1; 1 1/4; 1 1/2; 2; 2 1/2; 3; 4; 5; 6; 8; 10; 12; 14; 16; 18; 20; 24; 26; 28; 30; 32; 34; 36,

and applies to pressure designations:

- PN 16; 25; 40; 100; 160; 250.
- Class 150; 300; 600; 800; 900; 1 500.

NOTE PN 250 and Class 1 500 in sizes DN > 100 and NPS > 4 are not covered in this part of ISO 28921.

### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable to its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5208, *Industrial valves — Pressure testing of metallic valves*

ISO 5209, *General purpose industrial valves — Marking*

ISO 10434, *Bolted bonnet steel gate valves for the petroleum, petrochemical and allied industries*

ISO 10497, *Testing of valves — Fire type-testing requirements*

ISO 10631, *Metallic butterfly valves for general purposes*

ISO 14313, *Petroleum and natural gas industries — Pipeline transportation systems — Pipeline valves*