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**BSI Standards Publication**

## **Industrial valves — Gearbox for valves**

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## National foreword

This British Standard is the UK implementation of EN ISO 22109:2020. It is identical to ISO 22109:2020.

The UK participation in its preparation was entrusted to Technical Committee PSE/18/5, Industrial valves, steam traps, actuators and safety devices against excessive pressure - Valve actuators.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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**Compliance with a British Standard cannot confer immunity from legal obligations.**

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January 2020

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## Industrial valves — Gearbox for valves (ISO 22109:2020)

Robinetterie industrielle — Réducteur pour  
appareil de robinetterie (ISO 22109:2020)

Industriearmaturen — Armaturengetriebe  
(ISO 22109:2020)

This European Standard was approved by CEN on 3 January 2020.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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## European foreword

This document (EN ISO 22109:2020) has been prepared by Technical Committee ISO/TC 153 "Valves" in collaboration with Technical Committee CEN/TC 69 "Industrial valves" the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2020, and conflicting national standards shall be withdrawn at the latest by July 2020.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

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### Endorsement notice

The text of ISO 22109:2020 has been approved by CEN as EN ISO 22109:2020 without any modification.

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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](http://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](http://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](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 153, *Valves*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 69, *Industrial valves*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

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](http://www.iso.org/members.html).

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# Industrial valves — Gearbox for valves

## 1 Scope

This document provides basic requirements for gearboxes to operate industrial valves for manual and automated on/off and modulating duties, this includes manual override gearboxes. It includes guidelines for classification, design and methods for conformity assessment.

It does not cover gear systems which are integral part in the design of valves and subsea gearboxes.

Other requirements or conditions of use different from those indicated in this document are agreed between the purchaser and the manufacturer or supplier (first party), prior to order.

## 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 5210, *Industrial valves — Multi-turn valve actuator attachments*

ISO 5211, *Industrial valves — Part-turn actuator attachments*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions 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 <http://www.electropedia.org/>

### 3.1

#### **gearbox**

self-contained gear unit for torque/thrust/speed/orientation change that can be manually operated by handwheel/lever and/or automated with an actuator

### 3.2

#### **ambient temperature**

temperature of the environment surrounding the *gearbox* (3.1)

### 3.3

#### **end of travel**

predefined position related to a fully open or a fully closed condition

### 3.4

#### **end stop**

mechanical device designed to stop the *gearbox* (3.1) drive train movement

### 3.5

#### **endurance**

lifetime without failure at specified conditions and tested by the type test