

INTERNATIONAL STANDARD

**ISO
5209**

Second edition
2019-08

General purpose industrial valves — Marking

Appareils de robinetterie industrielle d'usage général — Marquage

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Reference number
ISO 5209:2019(E)

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Published in Switzerland

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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).

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 153, *Valves*.

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.

This second edition cancels and replaces the first edition (ISO 5209:1977), which has been technically revised. The main changes compared to the previous edition are as follows:

- the structure has been aligned with the current Directives, Part 2;
- [Clause 4](#) has been updated to give the requirements for mandatory, supplementary and other markings;
- in [Table 1](#), item 20 "Allowable differential pressure", item 21 "Closing direction" and columns 3 to 5 have been added;
- a new [Clause 5](#) has been created to give details of marking.

Introduction

The purpose of this document is to establish some basic requirements for the marking of valves and to provide recommendations for additional markings.

This document is to be considered in conjunction with the requirements of International Standards applicable to specific types of valves or specific requirements agreed between the manufacturer and the customer.

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General purpose industrial valves — Marking

1 Scope

This document specifies the requirements for the mandatory and optional markings of general purpose industrial valves. It defines the method of applying the markings, on the body, on a flange, on an identification plate or any other location.

This document is considered in conjunction with the specified requirements of the valve product standards or valve performance standards.

The marking requirements for plastic valves are not within the scope of this document.

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 7-1, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation*

ISO 228-1, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation*

ANSI/ASME B1.20.1, *Pipe Threads, General Purpose, Inch*

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

integral marking

integrally cast, forged or stamped marking on the body or bonnet/cover of the valve

3.2

marking plate

plate fixed to the body or bonnet/cover with one or more mandatory markings

Note 1 to entry: See also [4.1.3](#).

3.3

identification plate

plate fixed to the valve with supplementary or other markings

Note 1 to entry: See also [4.1.3](#).

4 Requirements

4.1 General

4.1.1 Where the requirements in a valve product or performance standard differ from those given in this document, then the requirements of the product or performance standard apply.

4.1.2 [Table 1](#) lists the items that shall be considered for inclusion in product or performance standards. Details of the markings are given in [Clause 5](#).

4.1.3 Markings shall be located as detailed in [4.2](#), [4.3](#) and [4.4](#).

Painted-on markings are not permitted.

Markings on the body or bonnet/cover shall be integral with the body (e.g. cast, forged or stamped or laser-marked) or shall be on a marking plate securely fixed to the body (plate which is distinct from the identification plate). The material of this plate and the method of fixing to the body shall be at the discretion of the manufacturer, unless otherwise specified in product or performance standards.

All marking plates and identification plates and their means of fixing shall be in a material which is resistant to atmospheric corrosion. Marking plates shall also be suitable for the allowable temperature of the valve.

4.2 Mandatory markings

4.2.1 Items 1 to 4 in [Table 1](#) shall be marked on every valve and shall be integral markings or on a marking plate. If a valve has no defined PN or Class designation, items 7 and 9 in [Table 1](#) are mandatory. See also [4.5.4](#).

4.2.2 Items 5 and 6 in [Table 1](#) shall be marked on those valves requiring these markings (see [5.5](#) and [5.6](#)).

4.3 Supplementary markings

Items 7 to 21 in [Table 1](#) are optional unless otherwise specified in product or performance standard. The location of supplementary markings shall be determined by the manufacturer unless otherwise specified in the relevant product or performance standard.

4.4 Other markings

A manufacturer complying with the requirements of this document and those of product or performance standards relevant to the individual types of valve is allowed to:

- a) mark any of the items in [Table 1](#) additionally in a place other than that specified; e.g. if a marking is mandatory on the body or bonnet/cover, it may also be repeated on the identification plate;
- b) add to the markings specified, any technical and/or commercial references, providing that there is no risk of confusion between these markings and the markings in [Table 1](#).

Table 1 — Valve markings

Item	Subject		Marking		Subclause in this document
			PN designated valves	Class designated valves	
1	Nominal size	Flanged ends, Wafer type bodies	DN ...	DN ... and/or (NPS) ...	5.1.2
		Welding ends	DN ...	DN ... and/or (NPS)	5.1.2
		Threaded ends	... (thread size) and/or DN ...	... (thread size) and/or (NPS)	5.1.3
		Capillary ends	... (tube O/D)	... (tube O/D)	5.1.4
		Compression ends	... (tube O/D)	... (tube O/D)	5.1.4
		Other ends	—	—	5.1.5
2	PN/Class designation		PN ...	CLASS ...	5.2
3	Material		—	—	5.3
4	Manufacturer's name or trademark		ABC	ABC	5.4
5	Arrow for direction of flow		→	→	5.5
6	Ring joint number		—	R...	5.6
7	Maximum allowable temperature TS		... °C or ... C	... °C or ... C	5.7
8	Threaded end identification		$R, R_c, R_p, G, \text{NPT}$	$R, R_c, R_p, G, \text{NPT}$	5.8
			or other marking according to the relevant standard	or other marking according to the relevant standard	
9	Maximum allowable pressure PS		... bar	... bar	5.9
10	Product identification		—	—	5.10
11	Standard number		ISO ...	ISO ...	5.11
12	Melt identification		—	—	5.12
13	Trim		—	—	5.13
14	Service symbols		—	—	5.14
15	Internal coating, liner, lining or internal painting		—	—	5.15
16	Quality and test markings		—	—	5.16
17	Inspector's identification		✓	✓	5.17
18	Year of manufacture		2014 or 14	2014 or 14	5.18
19	Flow coefficient		K_v (or C_v) ...	K_v (or C_v) ...	5.19
20	Allowable differential pressure		Δp ... bar	Δp ... bar	5.20
21	Closing direction		—	—	5.21

4.5 Omission of markings

4.5.1 For valves lower than or equal to DN 50, or for valves with threaded ends lower than or equal to size 2", where due to the physical size of the valve, it is not practicable to apply all the mandatory markings as required by [4.2](#), the relevant valve product or performance standard shall specify which markings may be omitted or alternatively placed on the identification plate or other location.

4.5.2 For Class designated valves where, due to the physical size of the valve, it is not practicable to incorporate the word "CLASS", it is permissible to omit the word "CLASS" or to indicate only the letters "CL".

4.5.3 For PN designated valves, it is permissible to omit the letters “DN” from the nominal size designation (item 1) providing the PN designation (item 2) follows immediately after the size number and on the same line, e.g. DN 50 PN 25 may be abbreviated to 50 PN 25.

4.5.4 Valves with compression or capillary ends have no defined PN or Class designation but such valves are not required to be marked with items 7 and 9 in [Table 1](#).

5 Details of markings

5.1 Nominal size

5.1.1 The nominal size marking shall be the size designation of the end connections with which the body has been provided.

5.1.2 For valves with flanges, butt welding or socket welding end connections or with wafer type bodies, the nominal size marking shall comprise the letters “DN” and the appropriate DN number as specified in the relevant flange, butt welding or socket welding standard, e.g. DN 100.

NOTE 1 For Class designated valves, the NPS marking, e.g. NPS 4 can be used in addition to or as an alternative to the DN marking. The relationship between NPS and DN is specified in the relevant flange or welding end standard.

NOTE 2 See also [4.5.3](#).

5.1.3 For threaded end valves, the nominal size marking shall be the thread size as specified in the relevant pipe thread standard.

NOTE In addition to, or as an alternative to the thread size marking, the DN marking can be used. The relationship between NPS and DN is specified in the relevant product or performance standard.

5.1.4 For capillary and compression ends, the nominal size marking shall be the outside diameter of the tube for which the valve is suitable and shall be as specified in the relevant tube standard.

5.1.5 For valves provided with other end connections or having the pipe end connections of differing nominal sizes or type, e.g. one flanged end and one welding end, the nominal size marking shall be as specified in the relevant product or performance standard or shall be agreed between the manufacturer and the purchaser.

5.2 PN/Class designation

5.2.1 For PN designated valves, the marking shall comprise the letters “PN” and the appropriate PN designation number, e.g. PN 16.

5.2.2 For Class designated valves, the marking shall comprise the word “CLASS” and the appropriate Class designation number, e.g. CLASS 150. See also [4.5.2](#).

5.3 Material

The marking indicating the material of the body and bonnet/cover shall be the designation as given in the relevant material standard.

5.4 Manufacturer's name or trademark

This marking shall be the manufacturer's name or registered trademark or company logo.

5.5 Arrow for direction of flow

All unidirectional flow valves shall be marked on the body with an arrow to indicate the direction of flow, by means of integral marking or a marking plate.

5.6 Ring joint number

Flanged ends and/or body bonnet/cover flanges with Class designated flanges that are grooved for ring joints, shall be marked with the corresponding ring number (e.g. R25). This marking shall be placed on the rim of the relevant flanges. In the case of non-standard ring joints for body bonnet/cover flanges, the flanges shall be marked "R.SPL".

5.7 Maximum allowable temperature, TS

This marking shall indicate the maximum allowable temperature, TS, in °C. The degree symbol (°) may be omitted, e.g. 120 C.

5.8 Threaded end identification

This marking shall identify the type of thread provided, as designated in ISO 7-1, ISO 228-1, ANSI/ASME B1.20.1 or other relevant thread standard.

5.9 Maximum allowable pressure, PS

This marking shall indicate the maximum allowable pressure, PS, in bar.

5.10 Product identification

This marking shall be the manufacturer's type, model or identification which is common to all valves of a particular type.

5.11 Reference to standards

This marking shall be the number of the standard to which the valve conforms, e.g. ISO 10631.

5.12 Melt identification

This marking shall indicate the material manufacturer's identification or coding for the melt of material from which the body and bonnet/cover have been produced.

5.13 Trim

The requirements for identification of the trim components shall be specified in the relevant product or performance standard.

5.14 Service symbols

This marking indicates the suitability of a valve for a particular application or service. Acceptable symbols should be specified in a valve product or performance standard. It is acceptable for the service symbol to be appended to the maximum allowable temperature and/or the maximum allowable pressure markings (items 7 and 9).

5.15 Internal coating, liner, lining or internal painting

This marking shall indicate the material of any internal coating, lining or internal painting which has been applied to the valve shell components or the material of any liner fitted. The appropriate symbol/coding is specified in the relevant product or performance standard.