

**Tööstuslikud ventiilid. Malmventiilid**

Industrial valves - Cast iron globe valves

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 13789:2010 sisaldab Euroopa standardi EN 13789:2010 ingliskeelset teksti.

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English Version

## Industrial valves - Cast iron globe valves

Robinetterie industrielle - Robinets à soupape en fonte

Industriearmaturen - Ventile aus Gusseisen

This European Standard was approved by CEN on 9 April 2010.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

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## Foreword

This document (EN 13789:2010) has been prepared by 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of an identical text or by endorsement, at the latest by November 2010, and conflicting national standards shall be withdrawn at the latest by November 2010.

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

This document supersedes EN 13789:2002.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive 97/23/EC.

For relationship with EU Directive, see informative Annex ZA, which is an integral part of this document.

This document supersedes EN 13789:2002 where the following modifications were made:

- the normative references were updated in Clause 2, in 4.1.3.1, in 4.2.4, in 5.1 and in Table B.1;
- 4.1.1.1 was revised to take into account the publication of EN 12516-4:2008;
- 4.1.2.1, 4.2.1 and Table ZA.1 were revised to be in compliance with EU Directive 97/23/EC (PED);
- Annex B became informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

## 1 Scope

This European Standard specifies the requirements for cast iron globe valves in straight, angle or oblique pattern (see EN 736-2) with flanged or threaded end connections.

This European Standard is applicable to cast iron globe valves mainly used for industrial and general purpose applications. However, they can be used for other applications provided the requirements of the relevant performance standards are met.

The range of nominal sizes covered is:

a) flanged:

DN 10; DN 15; DN 20; DN 25; DN 32; DN 40; DN 50; DN 65; DN 80; DN 100; DN 125; DN 150; DN 200; DN 250; DN 300; DN 350; DN 400.

b) threaded:

$\frac{1}{2}$ ,  $\frac{3}{4}$ , 1,  $1\frac{1}{4}$ ,  $1\frac{1}{2}$ , 2.

The range of pressure designations covered is:

c) for flanged end valves:

PN 6; PN 10; PN 16; PN 25; PN 40;

d) for threaded end valves:

PN 6; PN 10; PN 16.

## 2 Normative references

The following referenced documents are indispensable for the application 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.

EN 19, *Industrial valves — Marking of metallic valves*

EN 558, *Industrial valves — Face-to-face and centre-to-face dimensions of metal valves for use in flanged pipe systems — PN and Class designated valves*

EN 736-1:1995, *Valves — Terminology — Part 1: Definition of types of valves*

EN 736-2:1997, *Valves — Terminology — Part 2: Definition of components of valves*

EN 736-3:2008, *Valves — Terminology — Part 3: Definition of terms*

EN 1092-2, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 2: Cast iron flanges*

EN 1563:1997, *Founding — Spheroidal graphite cast irons*

EN 12266-1, *Industrial valves — Testing of valves — Part 1: Pressure tests, test procedures and acceptance criteria — Mandatory requirements*

EN 12266-2, *Industrial valves — Testing of valves — Part 2: Tests, test procedures and acceptance criteria — Supplementary requirements*

EN 12351, *Industrial valves — Protective caps for valves with flanged connections*

EN 12516-3, *Valves — Shell design strength — Part 3: Experimental method*

EN 12516-4, *Industrial valves — Shell design strength — Part 4: Calculation method for valve shells manufactured in metallic materials other than steel*

EN 12570, *Industrial valves — Method for sizing the operating element*

EN ISO 5210, *Industrial valves — Multi-turn valve actuator attachments (ISO 5210:1991)*

ISO 7-1:1994, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions of types of valves and components and the terms and definitions given in EN 736-1:1995, EN 736-2:1997 and EN 736-3:2008 apply.

NOTE The terms maximum allowable pressure,  $PS$ , and test pressure,  $PT$ , defined in EU Directive 97/23/EC (PED) are equivalent to the terms allowable pressure,  $p_s$ , and test pressure,  $p_t$ , defined in EN 736-3:2008.

### 4 Requirements

#### 4.1 Design

##### 4.1.1 Materials

4.1.1.1 The body and bonnet materials shall be selected from EN 12516-4.

For PN 40 rated valves, spheroidal graphite cast iron only shall be used.

4.1.1.2 The manufacturer shall declare the materials of construction and any coatings of components in contact with the line fluid from which the suitability of the valve for the application can be determined.

4.1.1.3 Welding of grey cast iron and impregnation of castings of all materials is not permitted.

##### 4.1.2 Pressure/temperature ratings

4.1.2.1 The pressure/temperature ratings shall be in accordance with EN 1092-2.

NOTE Annex B may be used to determine the equivalent ISO material grade for the EN material grades specified in 4.1.1.1.

4.1.2.2 Any restrictions of temperature and/or pressure below those specified in EN 1092-2, for example, those imposed by soft seals, special trims, shall be indicated on the valve (see 8.1.2).

4.1.2.3 The use of valves at lower temperatures than shown in the pressure/temperature rating tables in EN 1092-2 is permitted providing that the body and bonnet is manufactured from spheroidal graphite cast iron material grades EN-GJS-350-22-LT or EN-GJS-400-18-LT. For temperatures below the lowest temperature shown in the rating tables the maximum allowable pressure shall be no greater than the pressure corresponding to the lowest temperature in the rating tables. The lowest scheduled operating temperature shall be not less than the temperature specified in EN 1563 for the Charpy impact tests.

##### 4.1.3 Dimensions

###### 4.1.3.1 Face-to-face, centre-to-face and end-to-end dimensions

Face to face and centre-to-face dimensions of flanged valves shall be in accordance with EN 558 and specified by the purchaser (see Annex A).