EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 736-3

January 2008

ICS 01.040.23; 23.060.01

Supersedes EN 736-3:1999

English Version

Valves - Terminology - Part 3: Definition of terms

Appareils de robinetterie - Terminologie - Partie 3 : Définition des termes

Armaturen - Terminologie - Teil 3: Definition von Begriffen

This European Standard was approved by CEN on 14 December 2007.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, 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 United Kingdom.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No. EN 736-3:2008: E

Contents

Page

Foreword

This document (EN 736-3:2008) 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of an identical text or by endorsement, at the latest by July 2008, and conflicting national standards shall be withdrawn at the latest by July 2008.

This document supersedes EN 736-3:1999.

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.

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, 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.

Introduction

EN 736-3 harmonizes the definitions of terms for valves. EN 736-1 deals with the definitions of types of valves and EN 736-2 with definitions of components.

It is possible that other terms and their definitions are found in other European standards.

Experts writing European standards are asked to use the terms and definitions given in this European standard. If other terms and definitions are necessary or are published in other European standards, please inform the secretariat of CEN/TC 69 so that the terms and definitions in these European standards can be included or harmonized.

1 Scope

This European standard defines the terms and their definitions (or the source if defined in other European standards) used for several types of valves or in several fields of application. These terms concern the pressures and temperatures, the dimensions, the design, the flow control characteristics and the test of valves.

The terms and definitions in this European standard may also apply to products other than valves, in which case it may be necessary to apply these definitions analogously.

This European standard covers terms common to more than one type of valve.

The terms and definitions specific to one type of valve, or to one application are found in the relevant product standard or fitness for purpose standard.

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 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 764-1, *Pressure equipment - Part 1: Terminology - Pressure, temperature, volume, nominal size*

EN 1333, *Flanges and their joints — Pipework components — Definition and selection of PN*

EN 1759 (all parts), *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, Class designated*

EN 12982, *Industrial valves — End-to-end and centre-to-end dimensions for butt welding end valves*

EN 60534-1, *Industrial-process control valves — Part 1: Control valve terminology and general considerations (IEC 60534-1:2005)*

EN ISO 6708, *Pipework components — Definition and selection of DN (nominal size) (ISO 6708:1995)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1 Terms relating to pressure and temperature

3.1.1
maximum allowable pressure
PS, Ps, ps: see EN 764-1

3.1.2
test pressure
P_{test}, p_t: see EN 764-1

3.1.3
maximum/minimum allowable temperature
TS, t_S: see EN 764-1

3.1.4
test temperature
T_{test}, t_t: see EN 764-1

3.1.5
PN
see EN 1333

3.1.6
Class
see EN 1759

3.1.7
allowable differential pressure
maximum allowable static differential pressure at a given temperature of a valve when it is in the closed position

3.2 Terms relating to dimensions

3.2.1
DN (nominal size)
see EN ISO 6708

3.2.2
NPS
see EN 1759

3.2.3
face-to-face dimension
FTF
see EN 558

3.2.4
centre-to-face dimension
CTF
see EN 558

3.2.5
end-to-end dimension
ETE
see EN 12982

3.2.6
centre-to-end dimension
CTE
see EN 12982

3.2.7
travel
see EN 60534-1

3.2.8
relative travel
h
see EN 60534-1

3.2.9
rated travel
see EN 60534-1

3.2.10
maximum travel
for valves with end stops, the total displacement of the obturator between these mechanical end stops

NOTE The end stops may be in the body, the bonnet or cover, the operating device, etc.

3.3 Terms relating to design

3.3.1
full bore valve
valve with a flow section equal to or greater than 80 % of the section corresponding to the nominal inside diameter of the body end port

NOTE The nominal inside diameter of the body end port for the particular valve type is specified in the corresponding product or performance standard.

3.3.2
clearway valve
valve designed to have an unobstructed flow way, which allows for the passage of a theoretical sphere with a diameter that is not less than the nominal inside diameter of the body end port

NOTE The nominal inside diameter of the body end port for the particular valve type is specified in the corresponding product or fitness for purpose standard.

3.3.3
reduced bore valve
valve with a flow section equal to or greater than 36 % of the section corresponding to the nominal inside diameter of the body end port and which does not correspond to the full bore valve

NOTE The nominal inside diameter of the body end port for the particular valve type is specified in the corresponding product or fitness for purpose standard.

3.3.4
symmetric valve
valve with an internal construction which has a plane of symmetry perpendicular to the axis of the body ends

3.3.5
asymmetric valve
valve with an internal construction which has no plane of symmetry perpendicular to the axis of the body ends

3.3.6
anti-static design
valve design which ensures electrical continuity between all the components in contact with the fluid and the shell

3.3.7
anti-blow out design
valve design which ensures that the shaft or stem cannot be fully blown out of the shell when the valve is under pressure

— by disassembly of any external part or

— by failure of the connection between obturator and shaft or stem even when external parts are removed

NOTE External parts are parts which are not included in the bare shaft valve (bracket, lever, actuator…).

3.3.8
coating
protective layer applied to a valve component or the valve itself to provide a protection against corrosion and /or to prevent contamination of the fluid by the valve

3.4 Terms relating to flow characteristics

3.4.1
flow coefficient
K_v (C_v)
see EN 60534-1

3.4.2
rated flow coefficient
see EN 60534-1

3.4.3
relative flow coefficient
Φ
see EN 60534-1

3.4.4
inherent flow characteristic
see EN 60534-1

3.4.5
flow resistance coefficient
ζ
dimensionless coefficient, relevant to turbulent flow in particular in a valve

NOTE The value of ζ can be obtained from test results by using the following equation:

$$\zeta = \frac{2\,\Delta p}{\rho u^2} \qquad (1)$$

where

Δp is the measured static pressure drop across the valve, in Pascal;

ρ is the density of the fluid, in kilograms per cubic metre;

u is the mean flow velocity in metres per second.

3.4.6
cavitation
two stage process associated with the flow of liquids:

— first phase involving the formation of vapour bubbles in the fluid stream further to the dropping of the static pressure to below the saturation vapour pressure of the liquid;

— second phase of the process being the implosion of these vapour bubbles which re-condense into the liquid state when the static pressure rises above the saturation vapour pressure of the liquid

3.5 Terms relating to operation

3.5.1
operating torque
torque which, applied on the torque application point, allows the entire operating of the valve against conditions specified in the product or fitness for use standards

3.5.2
strength torque
torque which, applied on the torque application point, does not generate any deterioration of the functional characteristics due to a permanent deformation of the valve components, when the valve is in the maximal opening or maximal closing position

3.5.3
torque application point
point where the operating and strength torques are applied, which is the same for the operating and the strength torque, and is either on a specific point of the operating device, either on the end of the valve shaft or on the yoke sleeve

3.6 Terms relating to tests

3.6.1
type test
test carried out on one or more valves representative of the design and the manufacturing process to confirm conformance of the manufactured valves with specified requirements

3.6.2
production test
test carried out on components or partially built up valves during the manufacturing process

NOTE All these tests constitute one of the elements which allow the manufacturer to ensure the quality of the manufactured valves.

3.6.3
acceptance test
test carried out in accordance with the technical specifications of the order

Annex A
(informative)

Glossary

English	German	French	Subclause
acceptance test	Anerkennungsprüfung	essai de réception	3.6.3
allowable differential pressure	Zulässiger Differenzdruck	pression différentielle admissible	3.1.7
anti-blow out design	Ausblassichere Ausführung	conception anti-éjection	3.3.7
anti-static design	Antistatikausführung	conception antistatique	3.3.6
asymmetric valve	asymmetrische Armatur	appareil de robinetterie asymétrique	3.3.5
cavitation	Kavitation	cavitation	3.4.6
centre-to-end dimension CTE	Baulänge CTE	dimension extrémité-à-axe CTE	3.2.6
centre-to-face dimension CTF	Baulänge CTF	dimension face-à-axe, FAA	3.2.4
Class	Class	Class	3.1.6
clearway valve	molchbare Armatur	appareil de robinetterie à passage continu	3.3.2
coating	Beschichtung	revêtement	3.3.8
DN (nominal size)	DN (Nennweite)	DN (diamétre nominal)	3.2.1
end-to-end dimension ETE	Baulänge ETE	dimension entre extrémités ETE	3.2.5
face-to-face dimension FTF	Baulänge FTF	dimension face-à-face FAF	3.2.3
flow coefficient	Durchflusskoeffizient	coefficient de débit	3.4.1
flow resistance coefficient	Durchflusswiderstandskoeffizient	coefficient de résistance à l'écoulement	3.4.5
full-bore valve	Armatur mit vollem Durchgang	appareil de robinetterie à passage intégral	3.3.1
inherent flow characteristic	inhärente Durchflusskennlinie	caractéristique intrinsèque de débit	3.4.4
maximum allowable pressure	Zulässiger Druck	pression maximale admissible	3.1.1
maximum/minimum allowable temperature	Zulässige Temperatur	température maximale/minimale admissible	3.1.3
maximum travel	maximaler Hub	course maximale	3.2.10
NPS	NPS	NPS	3.2.2
operating torque	Betätigungsmoment	couple de manoeuvre	3.5.1
PN	PN	PN	3.1.5
production test	fertigungsbegleitende Prüfung	essai de production	3.6.2
rated flow coefficient	Nenndurchflusskoeffizient	coefficient de débit nominal	3.4.2
rated travel	Nennhub	course nominale	3.2.9
reduced bore valve	Armatur mit reduziertem Durchgang	appareil de robinetterie à passage réduit	3.3.3
relative flow coefficient	relativer Durchflusskoeffizient	coefficient de débit relatif	3.4.3
relative travel	relativer hub	course relative	3.2.8

English	German	French	Subclause
strength torque	Festigkeitsmoment	couple de résistance	3.5.2
symmetric valve	symmetrische Armatur	appareil de robinetterie symétrique	3.3.4
test pressure	Prüfdruck	pression d'essai	3.1.2
test temperature	Prüftemperatur	température d'essai	3.1.4
torque application point	Kraftangriffspunkt	point d'application du couple	3.5.3
travel	Hub	course	3.2.7
type test	Typprüfung	essai de type	3.6.1