SLOVENSKI STANDARD
SIST EN 161:1997

01-marec-1997

Samodejni zaporni ventili za plinske gorilnike in plinske aparate

Automatic shut-off valves for gas burners and gas appliances

Automatische Absperrventile für Gasbrenner und Gasgeräte

Robinets automatiques de sectionnement pour bruleurs a gaz et appareils a gaz

Ta slovenski standard je istoveten z: **EN 161:1991**

ICS:

23.060.20	Zapirni ventili (kroglasti in pipe)	Ball and plug valves
27.060.20	Plinski gorilniki	Gas fuel burners

SIST EN 161:1997 **en**

EUROPEAN STANDARD

NORME EUROPEENNE

EUROPAISCHE NORM

EN 161:1991

June 1991

UDC: 621.646.8:662.951.5/.6:001.4:620.1:614.8

Descriptors: Gas appliances, burners, stopcocks, automatic systems, safety devices, equipment specifications, performance evaluation, test, marking

English version

Automatic shut-off valves for gas burners and gas appliances

Robinets automatiques de sectionnement pour brûleurs à gaz et appareils à gaz

Automatische Absperrventile für Gasbrenner und Gasgeräte

This European Standard was approved by CEN on 1991-06-05
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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Contents

FOREWORD

This European Standard was prepared by the Technical Committee CEN/TC 58 "Safety and control devices for gas burners and gas-burning appliances", the Secretariat of which is held by BSI.

NOTE : (referring to 2.2.2 in this Standard resulting fromthe discussions during the elaboration of the Standard within CEN/TC 58):

It should be noted that in some member countries there may be legislation limiting the application of zinc and zinc alloys.

In accordance with the Common CEN/CENELEC Rules, the following countries are bound to implement this European Standard : Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

1 General

1.1 Object and field of application

This European standard specifies the safety, constructional and performance requirements for automatic shut-off valves for gas burners and gas appliances, hereafter referred to as valves. It also gives the test procedures for evaluating these requirements and information necessary for the purchaser and the user.

It applies to valves with a declared maximum working pressure up to and including 4 bar for use on burners or in appliances for use with one or more fuel gases of the 1st, 2nd or 3rd families.

It applies to electrically operated shut-off valves and to shut-off valves actuated by fluids if the control valves for these fluids are actuated electrically. The external, electrical switch that switches the control signal or the actuating energy is not covered by this standard.

1.2 Normative references

ISO 7-1:1982	Pipe threads where pressure tight joints are made on the threads - Part I: Designation, dimensions and tolerances
ISO 65:1981	Carbon steel tubes suitable for screwing in accordance with ISO 7-1
ISO 228-1:1982	Pipe threads where pressure-tight joints are not made on the threads - Part I: Designation, dimensions and tolerances
ISO 262:1973	ISO general purpose metric screw threads - Selected sizes for screws, bolts and nuts
ISO 274:1975	Copper tubes of circular section - Dimensions
ISO 301:1981	Zinc alloy ingots intended for casting
ISO 1817:1985	Rubber, vulcanized - Determination of the effect of liquids
ISO 7005:1988	Metallic flanges
IEC 335-1(1983)	Safety of household and similar electrical appliances Part 1: General Requirements
IEC 335-1	Amendment No. 4 (1984)
IEC 335-1	Amendment No. 5 (1986)
IEC 529(1978)	Classification of degrees of protection provided by enclosures
IEC 685-2-1(1980)	Connecting devices (junction and/or tapping)for household and similar fixed electrical installations - Part 2: Particular requirements - Screwless terminals for connecting copper conductors without special preparation

IEC 685-2-2(1983)	Connecting devices (junction and/or tapping)for household and similar fixed electrical installations - Part 2: Particular requirements - Screw-type terminals for connecting copper con ductors
IEC 730-1(1986)	Automatic electrical controls for household and similar use Part 1: General Requirements
CEE Rec. 6(1974)	Snap-on connectors

1.3 Definitions

1.3.1 automatic shut-off valve: Valve designed to open when energized and to close automatically when deenergized.

1.3.2 closure member: Movable part of the valve which shuts off the gas flow.

1.3.3 actuating mechanism: Part of the valve which actuates the closure member.

1.3.4 energy and force

1.3.4.1 actuating energy: Energy necessary for the actuating mechanism to move the closure member to the open position. It is supplied from an external source (electric, pneumatic, hydraulic) and may be converted within the valve.

1.3.4.2 opening force: Force required to move the closure member to the open position.

1.3.4.3 closing force: Force available to close the valve independent of any force provided by fuel gas pressure.

1.3.4.4 sealing force: Force acting on the valve seat when the closure member is in the closed position, independent of any force provided by fuel gas pressure.

1.3.4.5 frictional force: Largest force ~~with which~~ the closure spring removed, is necessary for the displacement of the actuating mechanism together with the closure member from the open to the closed position, independent of any force provided by fuel gas pressure.

1.3.5 leak-tightness

1.3.5.1 external leak-tightness: Leak-tightness of a gas-carrying compartment with respect to the atmosphere.

1.3.5.2 internal leak-tightness: Leak-tightness of the closure member (in the closed position) sealing a gas-carrying compartment with respect to another compartment or to the outlet of the valve.

1.3.6 pressures

1.3.6.1 inlet pressure: Pressure at the inlet of the valve.

1.3.6.2 outlet pressure: Pressure at the outlet of the valve.

1.3.6.3 maximum working pressure: Highest inlet pressure declared by the manufacturer at which the valve may be operated.

1.3.6.4 minimum working pressure: Lowest inlet pressure declared by the manufacturer at which the valve may be operated.

1.3.6.5 actuating pressure: Pressure, either hydraulic or pneumatic, supplied to the actuating mechanism of the valve.

1.3.7 pressure difference: Difference between the inlet and outlet pressures.

1.3.8 flow rate: Volume flowing through the valve in unit time.

1.3.9 rated flow rate: Air flow rate at a specified pressure difference, declared by the manufacturer, corrected to standard conditions.

1.3.10 times

1.3.10.1 opening time: Time interval between the instant the electrical control signal to open the valve is given and the achievement of the maximum or other defined flow rate.

1.3.10.2 closing time: Time interval between the instant the electrical control signal is removed and the achievement of the closed position.

1.3.10.3 delay time: Time interval between the instant the electrical control signal to open the valve is given and the start of flow through the valve.

1.3.11 mounting position: Position declared by the manufacturer for mounting the valve.

1.3.12 control valve: Valve which controls the fluid (e. g. compressed air) supplied to the actuating mechanism.

1.3.13 temperature

1.3.13.1 maximum ambient temperature: Highest temperature of the surrounding air declared by the manufacturer at which the valve may be operated.

1.3.13.2 minimum ambient temperature: Lowest temperature of the surrounding air declared by the manufacturer at which the valve may be operated.

1.3.14 rated voltage: Voltage declared by the manufacturer at which the valve may be operated.

1.4 Classes and Groups

1.4.1 Classes of valve

- Class A, B and C valves

  Valves where the sealing force is not decreased by the gas inlet pressure are graded class A, B or C according to their sealing force (see 3.8).

- Class D valves

  Valves which are not subject to any sealing force requirement.

- Class E valves

  Valves where the sealing force is decreased by the gas inlet pressure and which meet the requirements of 3.8.

1.4.2 Groups of valve

A valve is classified as group 1 or group 2 according to the bending stresses that it is required to withstand (see table 5).

- Group 1 valves

  Valves for use in an appliance and/or installation where they are not subjected to bending stresses imposed by installation pipework, e.g. by the use of rigid adjacent supports.

- Group 2 valves

  Valves for use in any situation, either internal or external to the appliance, typically without support.

Note: A valve which complies with the requirements for group 2 valves complies also with the requirements for group 1 valves.

1.4.3 Classification according to protection against electric shock

For this classification, the definitions 2.7 and 6.8 of IEC 730-1(1986) are valid.

1.4.4 Classification according to the electrical supply

For this classification 6.1 of IEC 730-1(1986) is valid.

1.4.5 Classification according to the degree of protection provided by the electrical enclosure

For this classification IEC 529(1978) is valid.

1.4.6 Classification according to the means of electrical connection

For this classification 6.6 of IEC 730-1(1986) is valid.

1.4.7 Classification according to the comparative tracking index of the insulating material

For this classification 6.13 of IEC 730-1(1986) is valid.