BS ISO 9635-2:2014

BSI Standards Publication

# Agricultural irrigation equipment — Irrigation valves

## Part 2: Isolating valves

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## National foreword

This British Standard is the UK implementation of ISO 9635-2:2014. It supersedes BS ISO 9635-2:2006 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee AGE/30, Irrigation and drainage equipment.

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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# INTERNATIONAL STANDARD

# ISO 9635-2

Second edition
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# Agricultural irrigation equipment — Irrigation valves —

## Part 2: Isolating valves

*Matériel agricole d'irrigation — Vannes d'irrigation —*

*Partie 2: Vannes d'isolation*

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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).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: Foreword — Supplementary information.

The committee responsible for this document is ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 18, *Irrigation and drainage equipment and systems*.

This second edition cancels and replaces the first edition (ISO 9635-2:2006), which has been technically revised.

ISO 9635 consists of the following parts, under the general title *Agricultural irrigation equipment — Irrigation valves*:

— *Part 1: General requirements*

— *Part 2: Isolating valves*

— *Part 3: Check valves*

— *Part 4: Air valves*

— *Part 5: Control valves*


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INTERNATIONAL STANDARD ISO 9635-2:2014(E)

# Agricultural irrigation equipment — Irrigation valves —

## Part 2:
## Isolating valves

## 1 Scope

This part of ISO 9635 specifies construction and performance requirements and test methods for isolating valves, intended for operation in irrigation systems with water at temperatures not exceeding 60 °C, which can contain fertilizers and other chemicals of the types and concentrations used in agriculture.

It is applicable to isolating irrigation valves of DN 8 in diameter or greater, designed to operate in the fully open and fully closed positions, but which can also operate for extended time periods in any intermediate position.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 9635-1:2014, *Agricultural irrigation equipment — Irrigation valves — Part 1: General requirements*

ISO 9644, *Agricultural irrigation equipment — Pressure losses in irrigation valves — Test method*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 9635-1:2014 and the following apply.

**3.1**
**clear way valve**
valve designed to have an unobstructed flow path which allows the passage of a theoretical sphere with a diameter which is not less than the inside diameter of the body end port

[SOURCE: EN 736-3]

**3.2**
**flow coefficient**
$K_V$
proportionality factor equal to the flow rate, in cubic metres per hour, of water at a temperature between 5 °C to 50 °C, passing through the valve and causing a loss of static head of 1 bar

Note 1 to entry: $Q = K_V \sqrt{\Delta p}$ , where $Q$ is the flow rate in cubic metres per hour ($m^3/h$), and $\Delta p$ is the pressure drop across the valve, in bar or kilopond/kilogram-force per square centimetre ($kp/cm^2$, $kgf/cm^2$).

Note 2 to entry: 1 bar = 0,1 MPa = 105 Pa; 1 MPa = 1 $N/mm^2$.

Note 3 to entry: Adapted from EN 736-3.

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**3.3**
**full bore valve**
valve with a seat diameter of not less than 90 % of the internal diameter of the body end port

[SOURCE: EN 736-3]

**3.4**
**isolating valve**
valve intended for use only in the fully closed or fully open position

[SOURCE: EN 736-1]

## 4 Design requirements

Isolating valves shall be designed in accordance with the requirements given in Clause 4 of ISO 9635-1:2014.

## 5 Performance requirements

### 5.1 General

Perform all tests on the valve as it was delivered to the test facility.

### 5.2 Mechanical strength

#### 5.2.1 Resistance to internal pressure of shell and all pressure-containing components

Carry out testing in accordance with ISO 9635-1:2014, 5.2.1. Test results shall comply with the requirements of ISO 9635-1:2014, 5.2.1.

#### 5.2.2 Resistance of obturator to differential pressure

Carry out testing in accordance with ISO 9635-1:2014, 5.2.2. Test results shall comply with the requirements of ISO 9635-1:2014, 5.2.2.

Except for valves to be used for a single flow direction, perform the test successively in each flow direction.

#### 5.2.3 Resistance of valve to bending

Carry out testing in accordance with ISO 9635-1:2014, 5.2.3, applying a bending moment, *M,* during the test appropriate to the DN value of the valve in accordance with Table 1. Test results shall comply with the requirements of ISO 9635-1:2014, 5.2.3.

**Table 1 — Bending moments**

| DN | Bending moment<br>*M*<br>N · m |
|---|---|
| 8 | 610 |
| 10 | 615 |
| 20 | 640 |
| 25 | 670 |
| NOTE For plastic-bodied valves, the applied bending moment should be equal to the bending moment exerted by a 6 m long plastic tube of the same diameter (DN). | |


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