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**Agricultural irrigation equipment —  
Irrigation valves —**

Part 3:  
**Check valves**

*Matériel agricole d'irrigation — Vannes d'irrigation —  
Partie 3: Clapets antiretour*



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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](http://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](http://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 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 9635-3:2006), 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*

# Agricultural irrigation equipment — Irrigation valves —

## Part 3: Check valves

### 1 Scope

This part of ISO 9635 specifies construction and performance requirements and test methods for check 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 hydraulically operated check irrigation valves of DN 15 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 9644:2008, *Agricultural irrigation equipment — Pressure losses in irrigation valves — Test method*

### 3 Terms and definitions

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

#### 3.1

##### check valve

valve which is opened by the flow of water and closed by the weight of a check mechanism or by mechanical pressure caused, for example, by a spring, permitting flow in one direction only and preventing reversal of flow

#### 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 and 50 °C, passing through a fully open 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 ( $\text{m}^3/\text{h}$ ), and  $\Delta p$  is the pressure across the valve in bar or kilopond/kilogram-force per square centimetre ( $\text{kp}/\text{cm}^2$ ,  $\text{kgf}/\text{cm}^2$ ).

Note 2 to entry: 1 bar = 0,1 MPa = 105 Pa; 1 MPa = 1 N/mm<sup>2</sup>.

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

### 4 Design requirements

Check valves shall be designed in accordance with ISO 9635-1:2014, Clause 4.