BS ISO 9635-4:2014

BSI Standards Publication

Agricultural irrigation equipment — Irrigation valves

Part 4: Air valves

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National foreword

This British Standard is the UK implementation of ISO 9635-4:2014. It supersedes BS ISO 9635-4:2006 which is withdrawn.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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Part 4: Air valves

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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 (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 9635-4:2006) 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 9635-4:2014(E)

Agricultural irrigation equipment — Irrigation valves —

Part 4: Air valves

1 Scope

This part of ISO 9635 specifies construction and performance requirements and test methods for air 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 air irrigation valves of DN 15 diameter or greater, designed to be directly operated, i.e. the force is applied to the obturator by the float, either directly or via a mechanical linkage. The valves can be operated by a force applied through an adjustable pilot valve.

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 9635-2:2014, *Agricultural irrigation equipment — Irrigation valves — Part 2: Isolating valves*

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
air valve
float-type purger
self-operating float-type valve for the evacuation of air from, or the ingress of air into water pipelines

Note 1 to entry: Such valves can be single-float or double-float and can fulfill one or more or the following functions: air release, air intake.

3.2
air release function
discharge of air from a water pipeline or appliance

3.3
air intake function
vacuum relief function
admittance of air to a water pipeline or appliance

3.4
air venting function
continuous acting air vent function
purging of entrapped air from a water pipeline in service under pressure

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4 Design requirements

Air valves shall be designed in accordance with ISO 9635-1:2014, Clause 4. In addition, these valves may be fitted with an integrated isolating device which shall be in accordance with ISO 9635-2:2014.

5 Performance requirements

5.1 General

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

5.2 Mechanical strength

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

Carry out testing in accordance with ISO 9635-1:2014, 5.2.1. For double-float valves, the obturators may be tested simultaneously or separately.

Test results shall comply with the requirements of ISO 9635-1:2014, 5.2.1.

5.2.2 Resistance of obturator to differential pressure

Tested within 5.2.1.

5.2.3 Resistance of valves to bending

Not applicable. However, testing of bending resistance may be an optional requirement for air valves, if bending resistance is specified by the customer.

5.2.4 Resistance of valves to operating loads

Not applicable, except for any integrated isolating device, which shall be in accordance with ISO 9635-2:2014, 5.2.4.

5.3 Watertightness

5.3.1 Watertightness of shell and all pressure-containing components

5.3.1.1 Internal pressure

The requirement of watertightness to internal pressure is fulfilled by compliance with 5.2.1.

5.3.1.2 External pressure

Not applicable, except for any integrated isolating device, which shall be in accordance with ISO 9635-2:2014, 5.3.1.2.

5.3.2 Seat tightness

5.3.2.1 Seat tightness at high pressure

Carry out testing in accordance with ISO 9635-1:2014, 5.3.2.1, using water as the test fluid. The leakage rate shall be rate A. For a type test, continue the test for at least 10 min. For double-float valves, the obturators may be tested simultaneously or separately.

Test results shall comply with the requirements of ISO 9635-1:2014, 5.3.2.1.

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