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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 18691.3-2021

Agricultural irrigation equipment - Irrigation valves - Part 3: Check valves

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foreword

This document is in accordance with the provisions of GB/T 1:1-2020 "Guidelines for Standardization Work Part 1: Structure and Drafting Rules of Standardization Documents"

drafted:

This document is part 3 of GB/T 18691 "Irrigation Valves for Agricultural Irrigation Equipment": GB/T 18691 has released the following parts:

--- Part 1: General requirements;

--- Part 2: Isolation valve;

--- Part 3: Check valve;

--- Part 4: Intake and exhaust valves;

--- Part 5: Control valve:

This document replaces GB/T 18691:3-2011 "Irrigation Valves for Agricultural Irrigation Equipment Part 3: Check Valves", and GB/T 18691:3-

Compared with:2011, except for structural adjustment and editorial changes, the main technical changes are as follows:

a) Changed the definition of check valve (see 3:1, 3:1 of the:2011 edition);

b) Changed the differential pressure resistance performance of the opening and closing parts (see 5:1:2, 5:1:2 of the:2011 edition);

c) Changed the valve bending resistance (see 5:1:3, Table 1, 5:1:3, Table 1 of the:2011 edition);

d) Changed the durability performance requirements (see 5:5, 5:5 of the:2011 edition):

This document uses the translation method equivalent to ISO 9635-3:2014 "Irrigation

Valves for Agricultural Irrigation Equipment - Part 3: Check Valves":

The following editorial changes have been made to this document:

--- Replace "bar" with "MPa" conversion:

Please note that some content of this document may be patented: The issuing agency of this document assumes no responsibility for identifying patents:

Introduction

GB/T 18691 "Irrigation Valves for Agricultural Irrigation Equipment" is planned to be composed of the following five parts according to product characteristics:

--- Part 1: General requirements: The purpose is to give general requirements for the design, performance and consistency evaluation of irrigation valves:

--- Part 2: Isolation valve: The purpose is to give the requirements for the design, performance and consistency evaluation of the isolation valve, and to give the unique characteristics of the isolation valve:

technical requirements:

--- Part 3: Check valve: The purpose is to give the design, performance, consistency evaluation and other requirements of the check valve, and to give the unique characteristics of the check valve:

technical requirements:

--- Part 4: Intake and exhaust valves: The purpose is to give the design, performance, consistency evaluation and other requirements of the intake and exhaust valves, and to give the intake and exhaust valves:

Valve-specific technical requirements:

--- Part 5: Control valve: The purpose is to give the design, performance, consistency evaluation and other requirements of the control valve, and to give the unique characteristics of the control valve:

technical requirements:

Among them, GB/T 18691:1 specifies the general requirements for irrigation valves: Except for the common requirements of general requirements, the rest of the standards are based on the general requirements of irrigation valves:

The category specifies the specific technical requirements for this type of irrigation valve:

Based on GB/T 18691:1, GB/T 18691 completely gives four types of agricultural products including isolation valve, check valve, intake and exhaust valve, and control valve:

The technical requirements and evaluation methods of industrial irrigation valves provide a standard basis for the manufacture and product upgrading of agricultural irrigation valves:

Agricultural irrigation equipment irrigation valve

Part 3: Check Valves

1 Scope

This document specifies the design requirements, performance requirements, conformity assessment, marking and packaging of check valves: This check valve is suitable for water temperature not exceeding

above 60°C and the water may contain certain types and concentrations of fertilizers or chemicals commonly used in agriculture:

This document applies to hydraulically actuated irrigation check valves with a nominal size of not less than DN15: The check valve is designed to work in full

Open and fully closed, but can also work for a long time in any intermediate state:

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, dated citations

documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to

this document:

GB/T 18688-2012 Test method for pressure loss of irrigation valves of agricultural irrigation equipment (ISO 9644:2008, IDT)

GB/T 18691:1-2021 Irrigation Valves for Agricultural Irrigation Equipment Part 1: General Requirements (ISO 9635-1:2014, IDT)

3 Terms and Definitions

The following terms and definitions apply to this document:

3:1

check valve

A valve that is opened by the flow of water and closed by the gravity or mechanical pressure of a non-return mechanism, such as a fountain, allowing water to flow in only one direction

over and prevent backflow:

3:2

flow coefficient flowcoefficient

KV

The flow rate when water at a temperature of 5°C to 50°C passes through the valve and generates a static pressure (hydrostatic head) loss of 0:1MPa:

Note 1: Q=KV deltap

where:

Q --- flow, in cubic meters per hour (m3/h);

deltap --- pressure drop, the unit is 0:1 MPa (0:1MPa):

Note 2: 1bar=0:1MPa=105Pa; 1MPa=1N/mm2:

[Source: EN736-3, with modifications]

4 Design Requirements

The design of the check valve shall comply with the provisions of Chapter 4 in GB/T 18691:1-2021:

A device that can assist in closing the opening and closing parts or balance the weight of the opening and closing parts can be installed on the check valve without mechanically operated opening and closing parts: