



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 18691.5-2021

**Agricultural irrigation equipment - Irrigation valves - Part 5:
Control 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 5 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 18691:5-2011 "Irrigation Valves for Agricultural Irrigation Equipment - Part 5: Control Valves", and GB/T 18691:5-

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

- Changed the flow coefficient requirements (see 5:3:1, 5:3:1 of the:2011 edition);
- Changed the hydraulic characteristics of the control valve with flow adjustment function (see 5:3:2:1, 5:3:2:1 of the:2011 edition);
- Changed the hydraulic characteristics of the control valve with pressure adjustment function (see 5:3:2:2, 5:3:2:2 of the:2011 edition);
- Changed the hydraulic characteristics of the control valve with the liquid level adjustment function (see 5:3:2:3, 5:3:2:3 of the:2011 edition);
- Changed the durability test method of the control valve (see Appendix D, Appendix D of

the:2011 edition):

This document uses the translation method identically to ISO 9635-5:2014 "Irrigation Valves for Agricultural Irrigation Equipment - Part 5: Control Valves":

The Chinese documents that have a consistent correspondence with the international documents normatively cited in this document are as follows:

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

The following editorial changes have been made to this document:

--- Replace "bar" with "MPa" conversion;

--- Corrected typographical errors in the original International Standard (see 5:1, 5:2:1, 5:2:2, 5:2:4, 5:4);

--- Corrected the typographical error in the original international standard: changed the first column of Table 2 mentioned in Chapter 5 of GB/T 18691:1-2021

Article number:

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 5: Control Valves

1 Scope

This document specifies the design requirements, performance requirements, conformity assessment, marking and packaging of control valves: The control 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 control valves with a nominal size of not less than DN15: The control valve is designed to work from full

Open to fully closed anywhere: Valves can be operated directly (e.g: via a spring or diaphragm) or pilot operated (e.g: via a diaphragm)

The opening and closing parts are controlled by an adjustable pilot valve): The valve can also be used as a check valve:

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

GB/T 18691:2-2021 Irrigation Valves for Agricultural Irrigation Equipment Part 2: Isolation Valves (ISO 9635-2:2014, IDT)

ISO 9644 Test method for pressure loss of irrigation valves in agricultural irrigation equipment (Agriculturalirrigationequipment-

Pressurelossesinirrigationvalves-Testmethod)

3 Terms and Definitions

The terms and definitions defined in GB/T 18691:1-2021 and the following terms and definitions apply to this document:

3:1

control valve

A valve with one or more regulating functions within a specified range:

Note: Regulation functions include flow regulation, liquid level control and pressure regulation (upstream or downstream): Valves are also used to turn irrigation systems on or off:

3:1:1

automatic control valve

A control valve (3:1) that realizes automatic control by adjusting the position of the opening and closing parts to obtain the energy of transmitting water:

3:1:2

Non-autonomouscontrolvalve

A control valve (3:1) that requires external energy to adjust the position of the opening and closing parts to achieve specific function adjustment:

3:1:3

pressure-reducing valve

Control valve (3:1) that depressurizes the higher inlet pressure to the lower outlet pressure (independent of changes in flow or inlet pressure):

3:1:4

pressure-sustaining valve