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

**GB/T 18688-2023**

Replacing GB/T 18688-2012

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**Agricultural irrigation equipment - Pressure losses in irrigation  
valves - Test method**

农业灌溉设备 灌溉阀的压力损失 试验方法  
(English Translation)

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### Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Drafting.

This document replaces GB/T 18688-2012 "Test Method for Pressure Loss of Irrigation Valve of Agricultural Irrigation Equipment" and is consistent with Compared with GB/T 18688-2012, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

- a) Changed the scope (see Chapter 1, Chapter 1 of the 2012 edition);
- b) Changed the definition of pressure loss of the test bench (see 3.5, 2.5 of the 2012 edition);
- c) The requirements for flow measuring instruments have been changed (see 4.2.3, 4.2.3 of the 2012 edition);
- d) Changed the requirements for pressure measuring holes (see 4.2.5, 2012 version of 4.2.5);
- e) The requirements for the allowable fluctuation value of the measured quantity have been changed (see 5.2.1, 5.2.1 of the 2012 version);
- f) The test method of valves has been changed (see 5.4, 2012 version of 5.4).

This document is equivalent to ISO 9644:2018 "Pressure loss test method for irrigation valves of agricultural irrigation equipment".

### 1 Scope

This document applies only to manual valves.

This document specifies a test method for the determination of the pressure loss produced when water flows through agricultural irrigation valves (hereinafter referred to as valves) under steady conditions.

The range and accuracy of valve performance parameters presented will assist agricultural irrigation system designers in comparing the pressure losses of various types of valves.

Through the pressure loss test, the functional relationship between the flow rate of the valve and the pressure loss can be obtained.

This document also specifies the processing method of test data and the content of the test report.

This document does not cover the purpose, design and application of the product.

The test method described in this document is suitable for valves with equal inlet and outlet nominal dimensions.

## **2 Normative reference documents**

This document has no normative references.

## **3 Terms and definitions**

The following terms and definitions apply to this document.

### **3.1 Nominal size**

Numerical designation used to indicate valve size.

### **3.2 Volume flow rate**

flowrate The volume of water flowing through the valve per unit time.

### **3.3 Pressure loss**

$\Delta p$  The pressure difference produced when water flows through two specified points in a system or a certain part of the system.

### **3.4 Piping pressure loss**

$\Delta p_p$  The pressure loss in the test pipeline between the two pressure measuring holes upstream and downstream of the tested valve does not include the pressure loss of the tested valve. (See 5.4.4)

### **3.5 Bench pressure loss**

$\Delta p_b$  The head loss between the pressure measuring holes upstream and downstream of the measurement area, excluding the pressure loss of the valve under test.