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**Agricultural irrigation equipment —  
Manually operated small plastics valves**

*Matériel agricole d'irrigation — Petites vannes en matière plastique  
commandées manuellement*



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## Contents

Page

1	Scope .....	1
2	Normative references .....	1
3	Terms and definitions .....	2
4	Marking .....	3
5	Sampling and acceptance requirements .....	4
6	Technical characteristics .....	4
7	Mechanical and functional tests .....	6
<b>Annex A (normative) Resistance of valve and valve material to hydrostatic pressure .....</b>		<b>10</b>
<b>Bibliography .....</b>		<b>12</b>

## 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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 9911 was prepared by Technical Committee 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 9911:1993), which has been technically revised.

# Agricultural irrigation equipment — Manually operated small plastics valves

## 1 Scope

This International Standard specifies the general requirements and test methods for manually operated small plastics valves intended for operation in agricultural irrigation systems. It is applicable to manually operated plastics valves of nominal sizes DN 8 (1/4") to DN 100 (4").

The valves are intended for installation in irrigation piping networks, using water at temperatures up to 60 °C. Nominal pressures of the valves are as designated by the manufacturer.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 7-1, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation*

ISO 48:1994, *Rubber, vulcanized or thermoplastic — Determination of hardness (hardness between 10 IRHD and 100 IRHD)*

ISO 188:1998, *Rubber, vulcanized or thermoplastic — Accelerated ageing and heat resistance tests*

ISO 815, *Rubber, vulcanized or thermoplastic — Determination of compression set at ambient, elevated or low temperatures*

ISO 1167 (all parts), *Thermoplastics pipes, fittings and assemblies for the conveyance of fluids — Determination of the resistance to internal pressure*

ISO 2859-1:1999, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ISO 5752, *Metal valves for use in flanged pipe systems — Face-to-face and centre-to-face dimensions*

ISO 7349, *Thermoplastics valves — Connection references*

ISO 7508, *Unplasticized polyvinyl chloride (PVC-U) valves for pipes under pressure — Basic dimensions — Metric series*

ISO 8233, *Thermoplastics valves — Torque — Test method*

ISO 8242, *Polypropylene (PP) valves for pipes under pressure — Basic dimensions — Metric series*

ISO 8659, *Thermoplastics valves — Fatigue strength — Test method*

ISO 9393-1, *Thermoplastics valves for industrial applications — Pressure test methods and requirements — Part 1: General*

ISO 9625, *Mechanical joint fittings for use with polyethylene pressure pipes for irrigation purposes*

ISO 9644, *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

##### **body**

main component of the valve which provides the fluid flow passageways and the body ends

#### 3.2

##### **seat**

part of the valve which provides the obturator seating surface

NOTE It can be either integral or a separate component.

#### 3.3

##### **dividing wall**

integral part of the valve body which separates the inlet and outlet ports of a valve, and on which the valve seat is formed

#### 3.4

##### **nominal pressure**

##### **PN**

alphanumeric designation for reference purposes related to the mechanical strength of a valve

NOTE It usually corresponds to the service pressure in bar, with water at 20 °C, for which the valve is designed (1 bar = 0,1 MPa =  $10^5$  Pa; 1 MPa = 1 N/mm<sup>2</sup>).

#### 3.5

##### **nominal size**

numerical designation used to refer to the size of a valve which is identical to the diameter of the pipe or pipes to which the valve is intended to be connected directly

NOTE A single number designation is adequate if the inlet and outlet ports are the same size.

#### 3.6

##### **angle valve**

valve with a generally cylindrical body in which the body ends are in planes perpendicular to each other and having a stem the axis of which is co-linear with the axis of one body end

#### 3.7

##### **ball valve**

valve in which a ball can be turned to move its port, or ports, relative to the ports in the valve body, to control the flow of water

#### 3.8

##### **diaphragm valve**

valve in which a flexible diaphragm constitutes the closing and regulating mechanism to control the flow of fluid through the valve

#### 3.9

##### **globe valve**

valve with a generally cylindrical body in which the axes of the body ends are co-linear and in which the axis of the stem is perpendicular to the axes of the body ends