

INTERNATIONAL STANDARD

**ISO
11419**

ANSI Internat Doc Sec

First edition
1997-12-01

Agricultural irrigation equipment — Float type air release valves

Matériel agricole d'irrigation — Vannes de purge d'air à flotteur



Reference number
Documents
Document Sharing Hub

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.

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.

International Standard ISO 11419 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 18, *Irrigation and drainage equipment and systems*.

© ISO 1997

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

International Organization for Standardization
Case postale 56 • CH-1211 Genève 20 • Switzerland
Internet central@iso.ch
X.400 c=ch; a=400net; p=iso; o=isocs; s=central

Printed in Switzerland

Agricultural irrigation equipment — Float type air release valves

1 Scope

This International Standard gives the structural and operational requirements and test methods for float-type air release valves, hereinafter referred to as air release valves. These valves are intended for operation in irrigation systems with water whose temperature does not exceed 60 °C, and which may contain chemicals of the types and concentrations generally in use in irrigation.

This International Standard applies to air release valves, with a nominal size of 15 mm (1/2 inch) to 150 mm (6 inch), which are operated by a float which acts as the sealing member or which directly activates the sealing member.

This International Standard applies to air release valves which are intended to allow entry of air into the pipe system from the atmosphere ("vacuum relief") and/or release of air from the pipe system to the atmosphere.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 7-1:1994, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation*.

ISO 2859-1:1989, *Sampling procedures for inspection by attributes — Part 1: Sampling plans indexed by acceptable quality level (AQL) for lot-by-lot inspection*.

ISO 7005-1:1992, *Metallic flanges — Part 1: Steel flanges*.

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 air release valve: Valve which opens automatically to allow air from the atmosphere to enter the pipeline during drainage of the pipeline and/or venting of air from the water pipeline to the atmosphere during filling or during normal operation of the pipeline under pressure.

3.2 dual triple-function air release valve: Air release mechanism which consists of two valves, a high-pressure continuous-acting air release valve (3.4) and a low-pressure air release valve (3.6), which are housed in one unit but operate separately in accordance with their functions.

NOTE — A dual triple-function air release valve fulfils the following functions:

- it enables continuous release of air from the pipe system at working pressure;
- it allows entry of air at a high flow rate during drainage of water from the pipe system; and
- it allows release of air at a high flow rate when the pipe system is being filled with water.

3.3 float; float assembly: Component within the valve body whose specific weight is less than that of water and is intended to float upon the water filling the cavity of the valve body.

NOTE — When the float seals at the relief nozzle (either directly or by means of a part of the float assembly), the force acting on the float (or the elevating force) and the other forces which develop within the valve seal the relief nozzle and prevent water from flowing out of the air release valve.

3.4 high-pressure continuous-acting air release valve: Air release valve with a small cross-sectional relief nozzle which releases pockets of air trapped in the pipeline in proximity to the air release valve when the water pipeline is under normal operating conditions (a prevailing hydraulic pressure within the normal working pressure range of the water pipeline), and which allows entry of air into the pipeline at a pressure lower than or equal to atmospheric pressure.

See figure 1 a).

3.5 inlet connection: Part of the inlet to the air release valve, or part of the valve body itself (in the bottom part of the valve) which connects the air release valve to the pipeline.

3.6 low-pressure air release valve: Air release valve with a large cross-sectional relief nozzle that serves to vent air trapped in the pipeline at high flow rates during filling of the pipeline and that allows entry of air at high flow rates into the pipeline when draining.

See figure 1 b).

3.7 maximum working pressure: Highest pressure at the inlet of an air release valve at which the air release valve is intended to open to release air from the pipeline or to allow entry of air.

3.8 minimum working pressure: Lowest pressure at the valve inlet at which complete sealing is obtained.

3.9 nominal pressure: Maximum static pressure of the water at the inlet of an air release valve inlet which the air release valve is stated to withstand under normal service conditions.

3.10 nominal size: A conventional numerical designation used to indicate the size of the air release valve which is identical to the nominal diameter or threaded size of pipe which can be connected to the air release valve without an intermediate fitting.

NOTE — The nominal size of the air release valve is not related to the nominal diameter or nominal size of the pipeline from which it is intended to release air or allow air to enter.

3.11 relief nozzle: Aperture in the upper part of the air release valve body (or in the valve cover plate) through which air is vented from the valve, or into which air enters.

NOTE — In general, a relief nozzle serves also as the seat of the float.

3.12 sealing seat: Part of the relief nozzle (on the inside part of the valve body of an air release valve) against which the float seals when the relief valve is closed and which acts as a seal.

3.13 valve body: Part of the air release valve through whose cavity the float moves.

3.14 inlet orifice: The point of the smallest passage area in the air release valve located below the valve float when in the open position.