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Vacuum technology — Right-angle valve — Dimensions and interfaces for pneumatic actuator

Technique du vide — Vanne d'équerre — Dimensions et interfaces pour actionneur pneumatique

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Foreword

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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 21358 was prepared by Technical Committee ISO/TC 112, *Vacuum technology*.

Introduction

There has previously been no International Standard for the mounting dimensions of right-angle valves, in spite of the fact that right-angle valves are frequently incorporated in vacuum systems as part of pipeline fittings in practical situations of use.

This International Standard was prepared in accordance with the revision of ISO 9803 in which the mounting dimensions of pipeline fittings have been standardized. Interfaces for pneumatic actuators have also been standardized.

Vacuum technology — Right-angle valve — Dimensions and interfaces for pneumatic actuator

1 Scope

This International Standard defines dimensions of right-angle valves that are compatible with the mounting dimensions of elbows defined in ISO 9803-1 and ISO 9803-2.

This International Standard covers right-angle valves with flanges defined in ISO 2861-1, ISO 1609 and ISO 3669. ISO 3669 lists two flange series:

— preferred series, and

— secondary series.

This International Standard covers only the valves with flanges of the secondary series.

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 1609, *Vacuum technology — Flange dimensions*

ISO 2861-1, *Vacuum technology — Quick-release couplings — Dimensions — Part 1: Clamped type*

ISO 3669, *Vacuum technology — Bakable flanges — Dimensions*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 1609 and ISO 2861-1 apply.

4 Requirements

4.1 Mounting dimensions of the vacuum pipeline fittings shall be as specified in Table 1. See Figure 1.

4.2 Flange dimensions shall be as specified in ISO 1609 and ISO 2861-1 and ISO 3669. One or more flanges should be rotatable.

5 Interface for pneumatic actuator

The input/output for pneumatic actuators and control solenoid for the actuators are as follows:

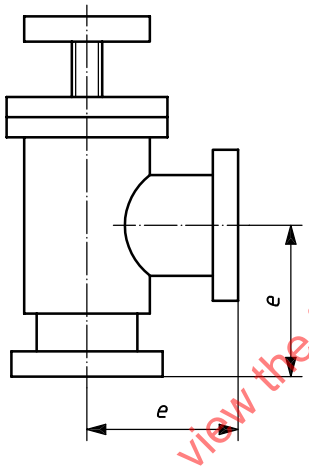
a) minimum pneumatic pressure (for valve open/close): 0,4 MPa;

b) maximum pneumatic pressure (in order not to be destroyed): 0,7 MPa;

c) thread size and unit (e.g. “mm”, “inch”) of inlet and outlet for the pneumatic actuator should be indicated on the user's manual and/or valve body (e.g. “Rc 1/4”, “1/8 NPT”);

d) electrical specification (or capacity) of contact points for open/close status indication should be indicated (e.g. “d.c. 24 V/2 A, a.c. 250 V/20 mA/50-60 Hz”).

Dimensions in millimetres



Key

e edge dimension

Figure 1 — Right-angle valve

Table 1 — Dimensions for valves with non-bakable flanges

Dimensions in millimetres

Nominal bore	Edge dimension, e		Flanges specified in		Perpendicularity tolerance for the two flange faces specified in	
	Dimensions	Tolerance	ISO 2861-1	ISO 1609	ISO 2861-1	ISO 1609
10	30	± 1,5	applicable	not applicable	± 2°	not applicable
16	40					
25	50					
40	65			applicable		± 0°30’
63	88	± 4 [a]	not applicable [c]		not applicable [c]	
100	108					
160	138	± 4 [b]				
200	178					
250	208					

[a] ± 1,5 is preferable.

[b] ± 2 is preferable.

[c] There are no corresponding flanges in ISO 2861-1 over nominal bore 63.

Table 2 — Dimensions for valves with bakable flanges

Dimensions in millimetres

Nominal bore	Edge dimension, e		Perpendicularity tolerance for the two flange faces
	Dimensions	Tolerance	
16	38	± 1,5	± 1°
40	63		
63	105		± 0°30’
100	135		
160	167	± 2	
200	203		

Bibliography

[1] ISO 3, *Preferred numbers — Series of preferred numbers*

[2] ISO 9803-1, *Vacuum technology — Mounting dimensions of pipeline fittings — Part 1: Non knife-edge flange type*

[3] ISO 9803-2, *Vacuum technology — Mounting dimensions of pipeline fittings — Part 2: Knife-edge flange type*