
**Vacuum technology — Mounting
dimensions of pipeline fittings —**

**Part 1:
Non knife-edge flange type**

*Technique du vide — Dimensions de montage des raccords de
conduit —*

Partie 1: Brides de type sans guillotine

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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 9803-1 was prepared by Technical Committee ISO/TC 112, *Vacuum technology*.

This first edition of ISO 9803-1, together with ISO 9803-2 cancels and replaces ISO 9803:1993, which has been technically revised.

ISO 9803 consists of the following parts, under the general title *Vacuum technology — Mounting dimensions of pipeline fittings*:

- Part 1: Non knife-edge flange type
- Part 2: Knife-edge flange type

Introduction

ISO 9803:1993 defined only those pipeline fittings whose flanges are non-bakable, as defined in ISO 1609 and ISO 2861-1. This revision divides ISO 9803 into two parts:

- this part of ISO 9803, in which fittings with non-bakable flanges are defined, and
- ISO 9803-2, in which fittings with bakable flanges as specified in ISO 3669 are defined.

This part of ISO 9803 deals with dimensions of pipeline fittings whose flanges are of non-bakable type, as defined in ISO 1609 and ISO 2861-1.

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Vacuum technology — Mounting dimensions of pipeline fittings —

Part 1: Non knife-edge flange type

1 Scope

This part of ISO 9803 specifies mounting dimensions for vacuum pipeline fittings (elbows, tees and crosses) of non-bakable and non knife-edge flange for nominal bores from 10 mm to 250 mm of the R5 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 9803-1:2007](https://standards.iteh.ai/standards/iso-9803-1-2007)

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

[48c7bac4a83/iso-9803-1-2007](https://standards.iteh.ai/standards/iso-9803-1-2007)

3 Terms and definitions

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

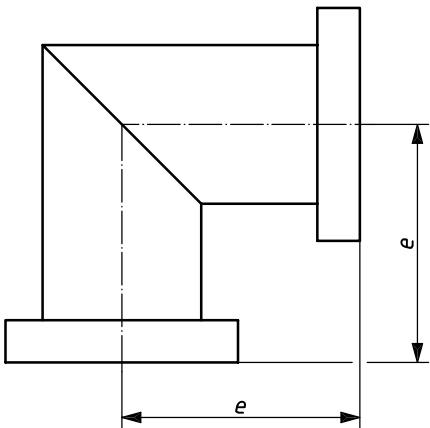
4 Requirements

4.1 Mounting dimensions of the vacuum pipeline fittings shall be as specified in Table 1. See Figures 1 to 3.

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

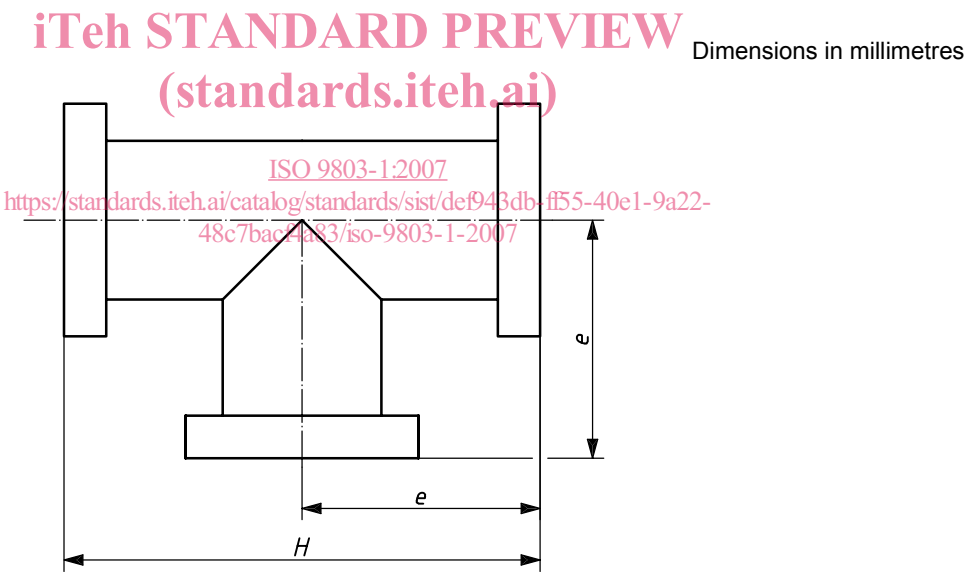
4.3 Bolt holes in the flanges specified in ISO 1609 shall be positioned as shown in Figure 4. Angle α is a function of the number of bolt holes.

Dimensions in millimetres



Key
 e edge dimension

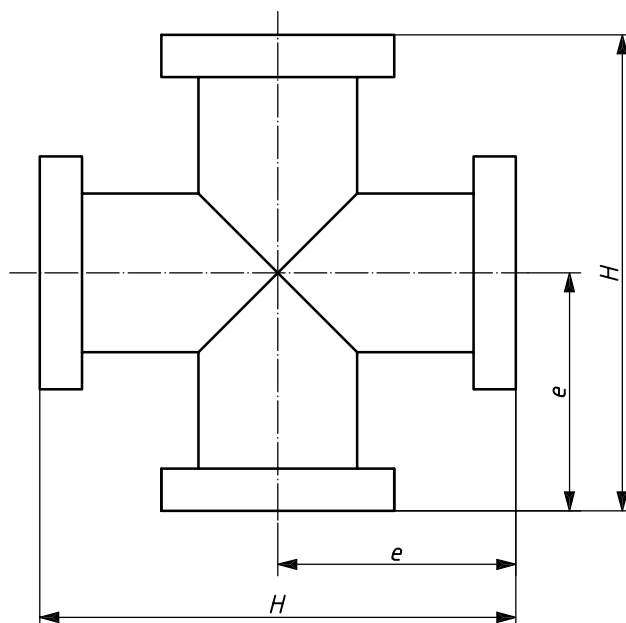
Figure 1 — Elbow



Key
 e edge dimension
 H length

Figure 2 — Tee

Dimensions in millimetres

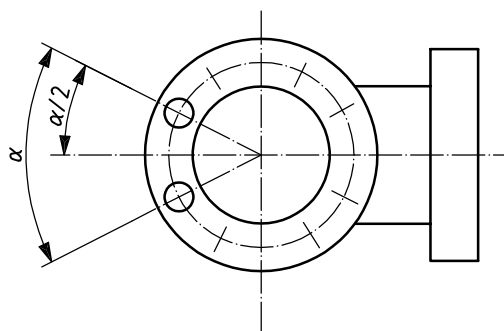
**Key** e edge dimension H length

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Figure 3 — Cross

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**Key**

$$\alpha = \frac{360^\circ}{\text{total number of bolt holes}}$$

Figure 4 — Position of bolt holes

Table 1 — Dimensions of pipeline fittings

Dimensions in millimetres

Nominal bore	Edge dimension, <i>e</i>		Length, <i>H</i>		Perpendicularity or parallelism tolerance for the two mating faces for the two flanges specified in		
		tolerance		tolerance	ISO 2861-1	ISO 1609	
10	30/40 ^a	± 1,5	60/80 ^a	± 1,5	± 2°	± 1°	
16	40		80				
25	50		100				
40	65		130	± 2		Not applicable	± 0°30'
63	88		176				
100	108		216				
160	138	276	± 3				
200	178	356					
250	208	416					

^a The latter value shall be used only for flanges specified in ISO 1609.

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Bibliography

- [1] ISO 3, *Preferred numbers — Series of preferred numbers*
- [2] ISO 3669, *Vacuum technology — Bakable flanges — Dimensions*
- [3] ISO 9803-2, *Vacuum technology — Mounting dimensions of pipeline fittings — Part 2: Knife-edge flange type*

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