
Graphical symbols for diagrams —

Part 9:

Pumps, compressors and fans

Symboles graphiques pour schémas —

Partie 9: Pompes, compresseurs et ventilateurs

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO 14617-9:2002

<https://standards.iteh.ai/catalog/standards/sist/f1981f1f-05dd-4ee9-87b8-8b740ab59e8e/iso-14617-9-2002>



Reference number
ISO 14617-9:2002(E)

© ISO 2002

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO 14617-9:2002

<https://standards.iteh.ai/catalog/standards/sist/f1981ff05dd-4ee9-87b8-8b740ab59e8e/iso-14617-9-2002>

© ISO 2002

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 either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.ch
Web www.iso.ch

Printed in Switzerland

Contents

Page

Foreword	iv
Introduction.....	v
1 Scope.....	1
2 Normative references.....	1
3 Terms and definitions	1
4 Mechanically driven pumps, compressors and fans.....	4
5 Entrainment and entrapment pumps	7
6 Electric pumps.....	9
Bibliography.....	10

iTeh STANDARD PREVIEW (standards.iteh.ai)

ISO 14617-9:2002

<https://standards.iteh.ai/catalog/standards/sist/f1981f1f-05dd-4ee9-87b8-8b740ab59e8e/iso-14617-9-2002>

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 3.

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 part of ISO 14617 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 14617-9 was prepared by Technical Committee ISO/TC 10, *Technical product documentation*, Subcommittee SC 10, *Process plant documentation and tpd-symbols*.

ISO 14617 consists of the following parts, under the general title *Graphical symbols for diagrams*:

- *Part 1: General information and indexes*
- *Part 2: Symbols having general application*
- *Part 3: Connections and related devices*
- *Part 4: Actuators and related devices*
- *Part 5: Measurement and control devices*
- *Part 6: Measurement and control functions*
- *Part 7: Basic mechanical components*
- *Part 8: Valves and dampers*
- *Part 9: Pumps, compressors and fans*
- *Part 10: Fluid power converters*
- *Part 11: Devices for heat transfer and heat engines*
- *Part 12: Devices for separating, purification and mixing*
- *Part 15: Installation diagrams and network maps*

Other parts are under preparation.

Introduction

The purpose of ISO 14617 in its final form is the creation of a library of harmonized graphical symbols for diagrams used in technical applications. This work has been, and will be, performed in close cooperation between ISO and IEC. The ultimate result is intended to be published as a standard common to ISO and IEC, which their technical committees responsible for specific application fields can use in preparing International Standards and manuals.

iTeh STANDARD PREVIEW (standards.iteh.ai)

ISO 14617-9:2002

<https://standards.iteh.ai/catalog/standards/sist/f1981f1f-05dd-4ee9-87b8-8b740ab59e8e/iso-14617-9-2002>

iTeh STANDARD PREVIEW **(standards.iteh.ai)**

ISO 14617-9:2002

<https://standards.iteh.ai/catalog/standards/sist/f1981f1f-05dd-4ee9-87b8-8b740ab59e8e/iso-14617-9-2002>

Graphical symbols for diagrams —

Part 9:

Pumps, compressors and fans

1 Scope

This part of ISO 14617 specifies graphical symbols for pumps, compressors and fans, used mainly for transportation, in diagrams (for pumps and compressors used mainly for energy conversion, such as those in fluid power systems, see ISO 14617-10).

For the fundamental rules of creation and application of graphical symbols in diagrams, see ISO 81714-1.

For an overview of ISO 14617, information on the creation and use of registration numbers for identifying graphical symbols used in diagrams, rules for the presentation and application of these symbols, and examples of their use and application, see ISO 14617-1.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of ISO 14617. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 14617 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

ISO 5598:1985, *Fluid power systems and components — Vocabulary*

ISO 14617-1:2002, *Graphical symbols for diagrams — Part 1: General information and indexes*

ISO 14617-2:2001, *Graphical symbols for diagrams — Part 2: Symbols having general application*

ISO 81714-1:1999, *Design of graphical symbols for use in the technical documentation of products — Part 1: Basic rules*

3 Terms and definitions

For the purposes of this part of ISO 14617, the following terms and definitions apply.

NOTE The list has been restricted to terms whose meaning is not obvious and which have not been defined elsewhere in an International Standard, or which have been defined in various ways in different standards. In preparing these definitions, ISO and IEC standards on terminology have been consulted; see the references in parentheses. However, most of the definitions in those standards were prepared by different technical committees within a restricted scope. This means that many terms so defined have to be given more general or neutral definitions when applied in the context of graphical symbols.

3.1

(positive) displacement pump

pump in which the fluid energy is increased in a working chamber that increases and decreases in volume

[ISO 5598]

3.2

rotodynamic pump

pump in which the fluid energy is increased by a rotating impeller

[ISO 5598]

NOTE The term “centrifugal pump” is sometimes used instead, but that term corresponds to a rotodynamic pump with radial liquid flow.

3.3

turbo-molecular pump

rotodynamic vacuum pump in which the rotor is provided with discs provided with slots or blades rotating between corresponding discs in the stator

[ISO 3529-2]

3.4

capacity

displacement

swept volume

volume absorbed or displaced per stroke or cycle

[ISO 5598]

iTeh STANDARD PREVIEW
(standards.iteh.ai)

3.5

over-centre pump

pump in which the direction of flow may be reversed without changing the direction of rotation of the drive shaft

[ISO 5598]

ISO 14617-9:2002
<https://standards.iteh.ai/catalog/standards/sist/f1981ff05dd-4ee9-87b8-8b740ab59e8e/iso-14617-9-2002>

3.6

uni-flow pump

pump in which the direction of flow is independent of the direction of rotation of the drive shaft

[ISO 5598]

3.7

entrainment pump

vacuum pump in which a momentum is imparted to the gas molecules in such a way that the molecules are transferred continuously from the inlet to the outlet

[ISO 3529-2]

3.8

entrapment pump

vacuum pump in which the gas molecules are retained by sorption or condensation on internal surfaces

[ISO 3529-2]

3.9**ejector pump**

entrainment pump which uses the pressure decrease due to a Venturi effect and in which the fluid is entrained in a high speed liquid stream towards to outlet

[ISO 3529-2, ISO 5598]

3.10**diffusion pump**

entrainment pump in which a low-pressure, high-speed vapour stream provides the entrainment fluid

[ISO 3529-2]

3.11**adsorption pump**

entrainment pump in which the gas is retained mainly by physical adsorption of a material of large real area (for example, a porous substance)

[ISO 3529-2]

3.12**getter pump**

entrainment pump in which the gas is retained principally by chemical combination with a getter

[ISO 3529-2]

iTeh STANDARD PREVIEW
(standards.iteh.ai)

3.13**getter ion pump**

entrainment pump in which the gas molecules are ionized and then transferred towards a surface of the pump on which they are retained by a getter, by means of electric fields, combined or not with a magnetic field

[ISO 3529-2]

<https://standards.iteh.ai/catalog/standards/sist/f1981ff05dd-4ee9-87b8-8b740ab59e8e/iso-14617-9-2002>

3.14**cryopump**

entrainment pump consisting of surfaces refrigerated to a low temperature (normally less than 120 K) sufficient to condense residual gases

[ISO 3529-2]

3.15**electric pump**

pump working by feeding electric power directly into the pump

3.16**induction pump**

pump without rotating parts, in which electromagnetic fields exert the necessary force on the pumped medium (normally metals in liquid form)