Title
PROPOSED STANDARDS FOR GRAPHIC SYMBOLS IN VACUUM TECHNOLOGY

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Berkeley, California

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For meeting of America Vacuum Society

UNIVERSITY OF CALIFORNIA

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Berkeley, California

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ABSTRACT

This report to the Standards Committee of the American Vacuum Society contains a partial proposal of standards for graphic symbols in vacuum technology. Of the items listed in the contents, the Introduction and General Symbols section are presented in their entirety. Samples of Special Symbols and the Examples are shown for illustration only. These items will be presented in a complete form at a later date. An Index is provided to facilitate reference.

PROPOSED STANDARDS FOR GRAPHIC SYMBOLS IN VACUUM TECHNOLOGY

Contents

INTRODUCTION

Purpose

The purpose of this standard is to establish a uniform system of graphic symbols in vacuum technology.

Definition and Application

The graphic symbols are a shorthand used to show graphically the functioning and interconnections of vacuum components in a single-line schematic or flow diagram.

A single-line diagram is one in which the graphic symbols are shown without regard to the actual physical size, shape, or location of the components. Occasionally dual-line schematics may be used if needed for greater clarification.

A symbol shall be considered as the aggregate of all its parts.

The orientation of a symbol on a drawing, including a mirror image presentation, does not alter the meaning of the symbol.

A symbol may be drawn to any proportional size that suits a particular drawing.

Arrows should be omitted unless necessary for clarification.

Explanation

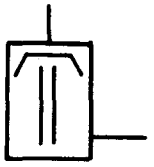
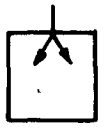
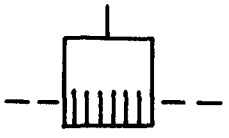
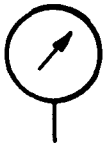
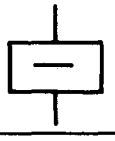
The graphic symbols are divided into two separate sections—general and special symbols.

Wherever possible, the section on general symbols illustrates the function or appearance of a component without regard to special features.

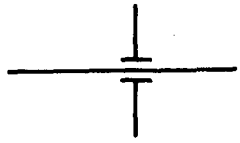
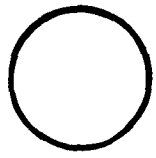
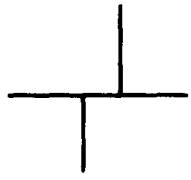
The section on special symbols elaborates upon the general component categories with individual symbols, which illustrate in detail the special application of the component. Wherever possible, the special symbol utilizes the general-symbol outline.

For definition of terms used in the description column, see American Vacuum Society, Glossary of Terms used in Vacuum Technology (Pergamon, New York, 1958).

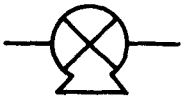
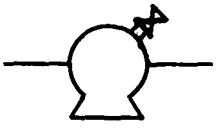
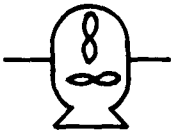
Proposed Standards for
Graphic Symbols in Vacuum Technology.
I. General Symbols

Item	Description	Symbol	Remarks
1	Pump		
1.1	Mechanical		
1.2	Diffusion		
1.3	Ion-sorption		
1.4	Cryo		Vacuum line (solid) omitted on cryo panels cryogenic lines (dotted) optional
2	Vacuum gauge		
3	Valve		
4	Baffle and trap		

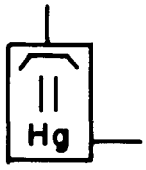
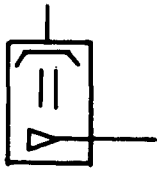
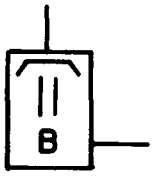
Proposed Standards for
Graphic Symbols in Vacuum Technology.
I. General Symbols

Item	Description	Symbol	Remarks
5	Feed-through (mechanical, electrical, piping)		including rotating, sliding, and fixed
6	Vacuum chamber		
7	Lines		
7.1	Connected		
7.2	Not connected		

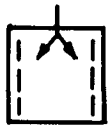
Proposed Standards for
Graphic Symbols in Vacuum Technology.
II. Special Symbols

Item	Description	Symbol	Remarks
1.1	Mechanical Pumps		
1.11	Rotary-piston single-stage		
1.12	Rotary-piston multistage		
1.13	Rotary-piston gas-ballast		
1.14	Roots single-stage		
1.15	Roots multistage		
1.16	Turbomolecular		

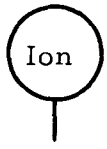
Proposed Standards for
Graphic Symbols in Vacuum Technology.
II. Special Symbols

Item	Description	Symbol	Remarks
1.2	Diffusion pumps		
1.21	Diffusion mercury		For other fluids substitute Hg with fluid designation
1.22	Diffusion-ejector		
1.23	Diffusion booster		

Proposed Standards for
Graphic Symbols in Vacuum Technology.
II. Special Symbols

Item	Description	Symbol	Remarks
1.3	Ion-sorption pumps		
1.31	Getter-ion		
1.32	Sputter-ion		

Proposed Standards for
Graphic Symbols in Vacuum Technology.
II. Special Symbols

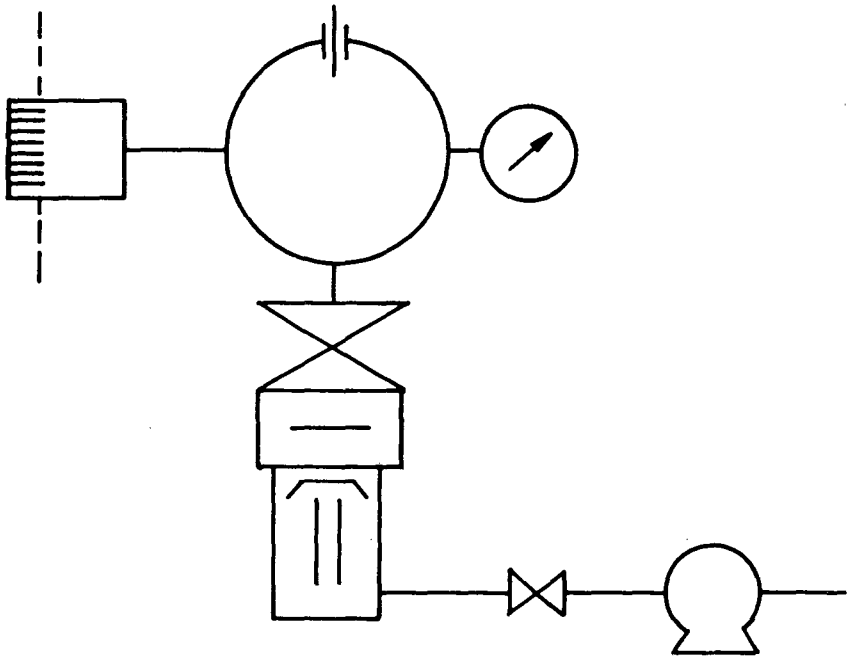
Item	Description	Symbol	Remarks
2	Vacuum Gauges		
2.1	Ion		
			Various gauge designations: Ion ~ Ion Thermocouple ~ TC McLeod ~ McL

APPENDIX

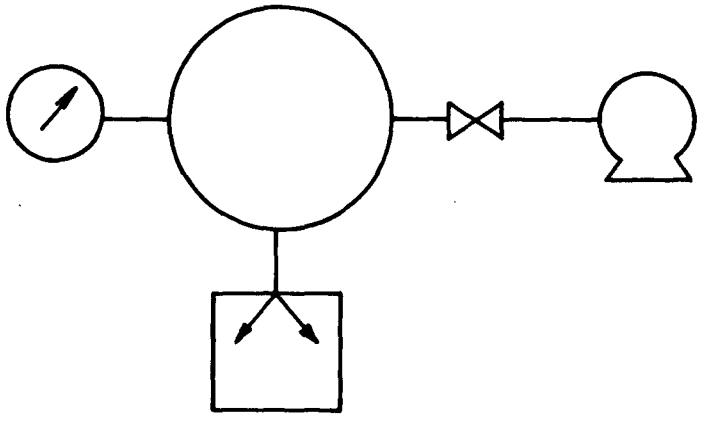
Examples

General Symbols

Example No. 1



Example No. 2



Index[a]

[a]Sample index, to be completed at termination of the project.