INTERNATIONAL STANDARD

ISO 10628-2

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Diagrams for the chemical and petrochemical industry —

Part 2: Graphical symbols

Schémas de procédé pour l'industrie chimique et pétrochimique —

Partie 2: Symbols graphiques

Reference number
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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.org
Web www.iso.org

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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 10628-2 was prepared by Technical Committee ISO/TC 10, *Technical product documentation*, Subcommittee SC 10, *Process plant documentation*.

This first edition of ISO 10628-2, along with ISO 10628-1 (under preparation), cancels and replaces ISO 10628:1997, which has been technically revised.

ISO 10628 consists of the following parts, under the general title *Diagrams for the chemical and petrochemical industry*:

— *Part 2: Graphical symbols*

The following part is under preparation:

— *Part 1: Specification of diagrams*

Diagrams for the chemical and petrochemical industry —

Part 2:
Graphical symbols

1 Scope

This part of ISO 10628 defines graphical symbols for the preparation of diagrams for the chemical and petrochemical industry. It is a collective application standard of the ISO 14617 series.

This part of ISO 10628 does not apply to graphical symbols for electrotechnical diagrams; for these, see IEC 60617.

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 10209, *Technical product documentation — Vocabulary — Terms relating to technical drawings, product definition and related documentation*

ISO 14617 (all parts), *Graphical symbols for diagrams*

ISO 15519-1, *Specification for diagrams for process industry — Part 1: General rules*

ISO 81714 (all parts), *Design of graphical symbols for use in the technical documentation of products*

IEC 81714 (all parts), *Design of graphical symbols for use in the technical documentation of products*

3 Terms and definitions

For the purposes of this document, the definitions given in the ISO 14617 series and ISO 10209 apply.

4 Structure of graphical symbols

The graphical symbols are grouped according to functional and/or design features. See Table 1.

Table 1 — Subject groups

Group number	Subject group
1	Vessels and tanks
2	Columns with internals
3	Heat exchangers
4	Steam generators, furnaces, recooling device
5	Cooling tower
6	Filters, liquid filters, gas filters
7	Screening devices, sieves and rakes
8	Separators
9	Centrifuges
10	Drier

Table 1 *(continued)*

Group number	Subject group
11	Crushing/Grinding machines
12	Mixers/Kneaders
13	Shaping machines – processing in vertical direction
14	Shaping machines – processing in horizontal direction
15	Liquid pumps
16	Compressors, vacuum pumps
17	Blowers, fans
18	Lifting, conveying and transport equipment
19	Proportioners, feeders and distribution facilities
20	Engines
21	Valves
22	Check valves
23	Valves and fittings with safety function
24	Fittings
25	Graphical symbols for piping
26	Apparatus elements
27	Internals
28	Agitators, stirrers
29	Internal characteristics and built-in-components

5 Graphical symbols

Graphical symbols for diagrams used in chemical and petrochemical industry are presented in Table 2, which is is divided into four columns, as follows:

1 Item no. Consecutive numbering within each subject group according to Table 1

2 Reg. no. Registration numbers structured as follows:

- nnn Registration number for ISO 14617 graphical symbols.
- Cnnnn Preliminary registration number for a new graphical symbol, which will be implemented in ISO 14617. The preliminary registration number will be replaced with the final ISO 14617 registration number at first periodical review of ISO 10628-2.
- X2nnn Registration number for ISO 14617 symbol examples.
- X8nnn Registration number for ISO 10628-2 symbol examples.

3 Graphical symbol Graphical symbols shown with a 2,5 mm dotted grid behind. Preferred locations of connections at graphical symbols are indicated by "—". This is not a part of the graphical symbol.

4 Description The preferred descriptors for the graphical symbol.

Rules for modification of proportions and orientation of graphical symbols are given in ISO 81714 and IEC 81714.

If a graphical symbol is not accessible in ISO 10628-2, then ISO 14617 should be consulted for the needed graphical symbol.

If the needed graphical symbol is not available in ISO 14617, then the symbol shall be created by combining ISO 14617 symbols of basic nature with symbols given supplementary information according to rules given in ISO 14617, ISO 81714 and IEC 81714.

Table 2 — Graphical symbols for diagrams

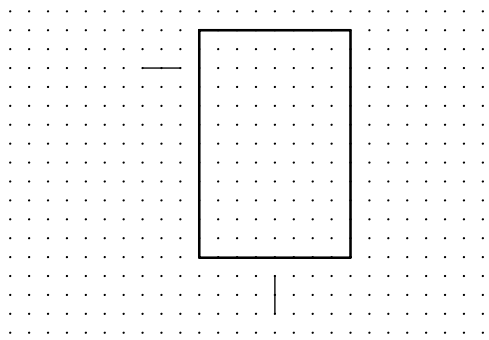
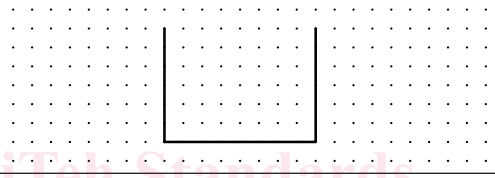
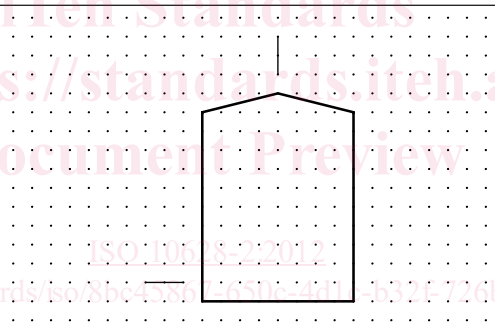
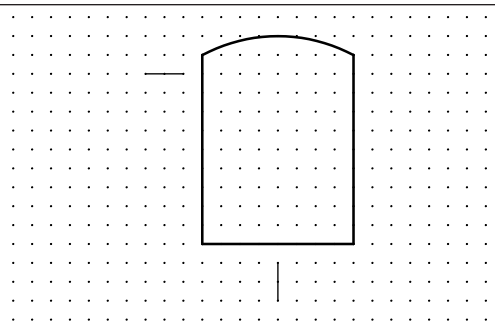
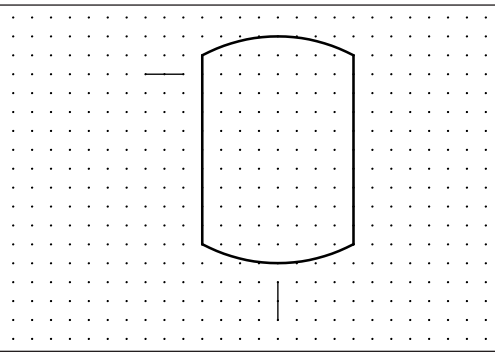
Item no.	Reg. no.	Graphical symbol	Description
1	**VESSELS AND TANKS**		
1.1	**301**		Tank, vessel
1.2	**2061**		Container, tank, cistern
1.3	**X2063**		Tank with conical roof and flat bottom
1.4	**X8200**		Tank with dished roof
1.5	**2062**		Tank, vessel with dished ends

Table 2 *(continued)*

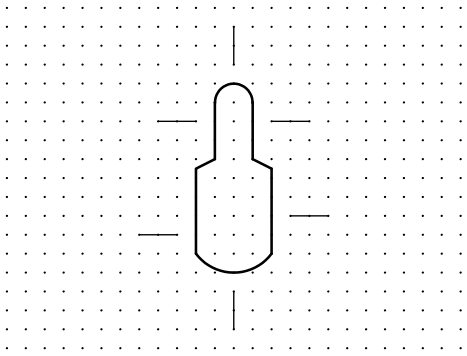
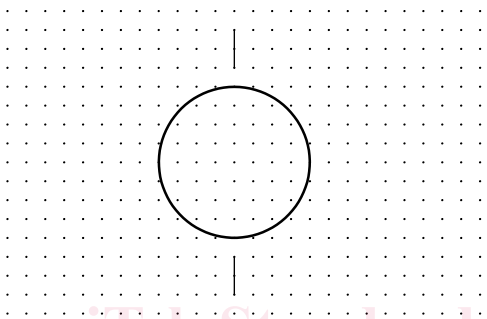
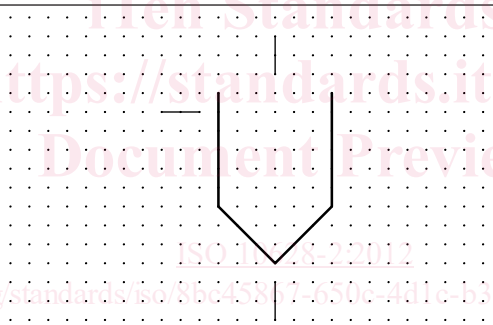
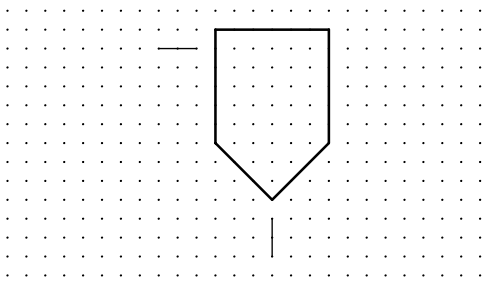
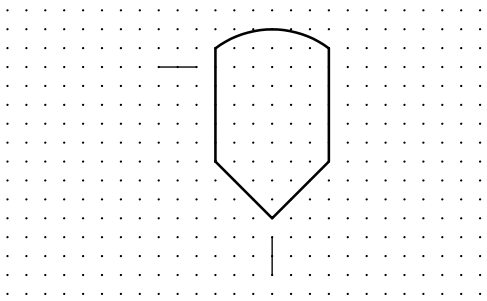
Item no.	Reg. no.	Graphical symbol	Description
1.6	**X8201**		Vessel with two different diameters
1.7	**2063**		Spherical vessel
1.8	**2064**		Bunker with conical bottom
1.9	**X2062**		Closed tank with conical bottom
1.10	**X8008**		Vessel with dished roof and conical bottom

Table 2 *(continued)*

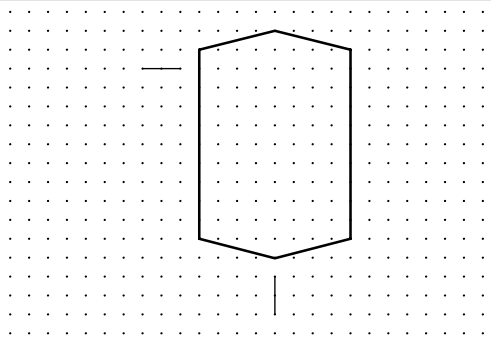
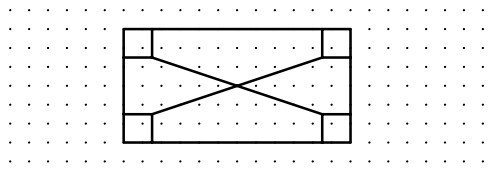
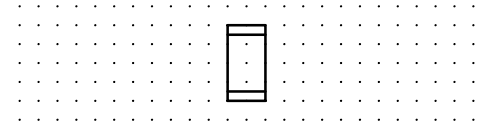
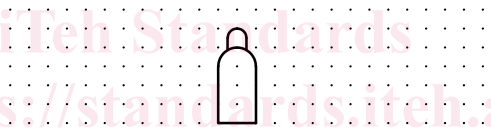
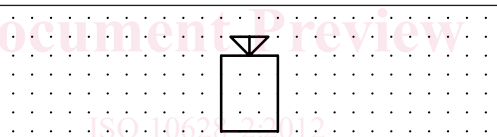
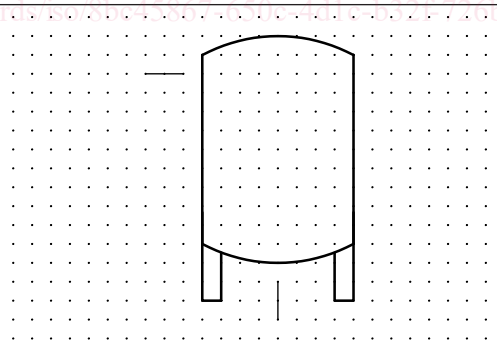
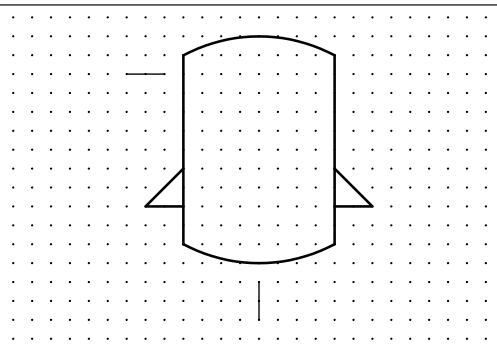
Item no.	Reg. no.	Graphical symbol	Description
1.11	**X8009**		Vessel with conical roof and bottom
1.12	**C0001**		Container for solids, liquids, gases
1.13	**2067**		Barrel, drum
1.14	**C0002**		Gas cylinder
1.15	**2068**		Bag
1.16	**X8002**		Vessel with dished ends and support legs
1.17	**X8003**		Vessel with dished ends and support brackets

Table 2 *(continued)*

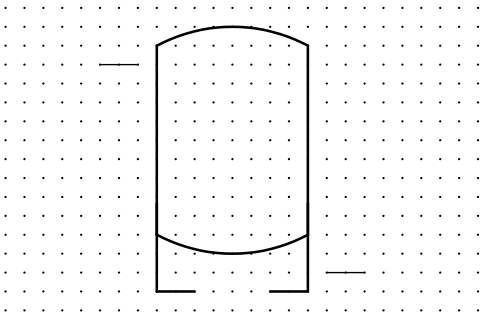
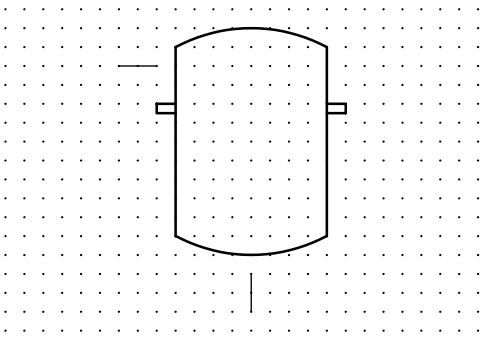
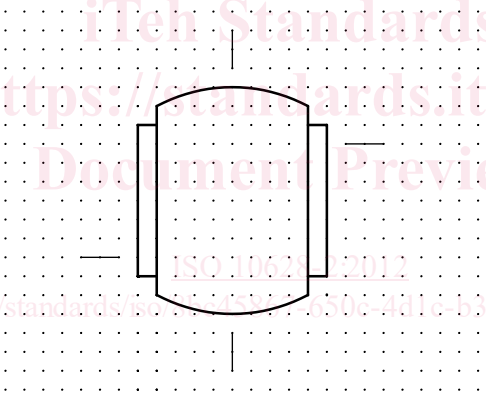
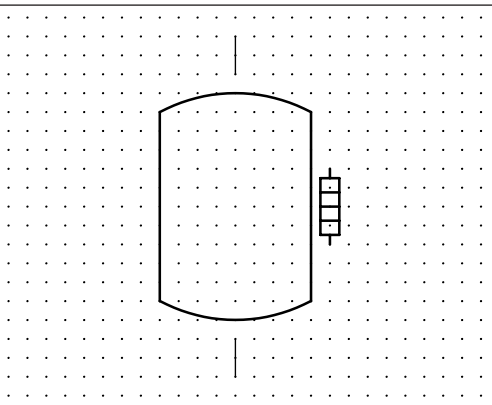
Item no.	Reg. no.	Graphical symbol	Description
1.18	**X8004**		Vessel with dished ends and support skirt
1.19	**X8005**		Vessel with dished ends and support ring
1.20	**X2069**		Vessel with dished ends and heating/ cooling jacket
1.21	**X2070**		Vessel with dished ends and electrical heating

Table 2 *(continued)*

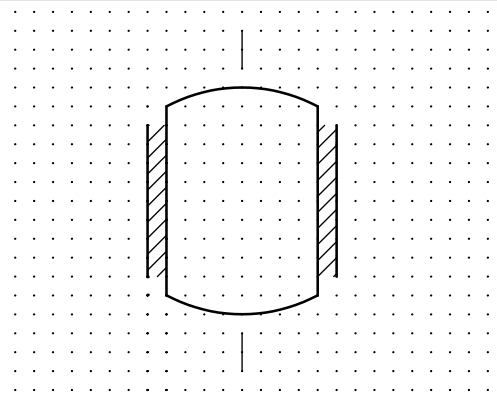
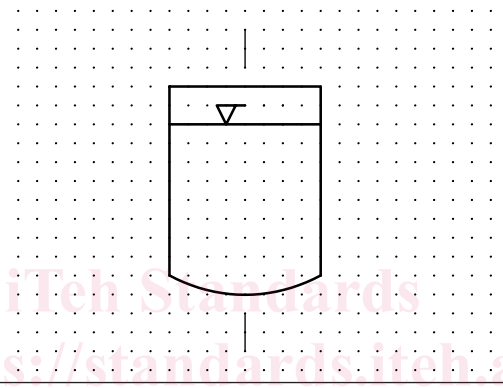
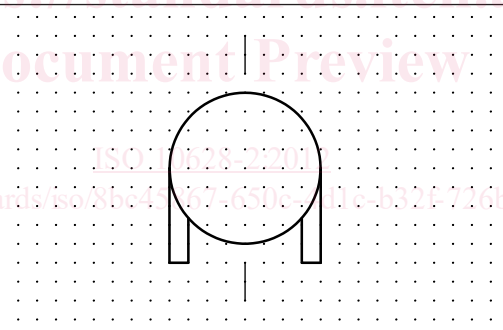
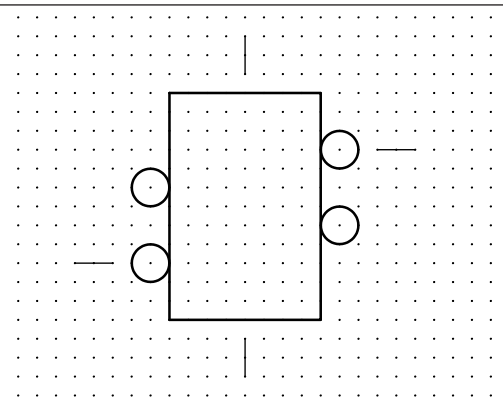
Item no.	Reg. no.	Graphical symbol	Description
1.22	**X8098**		Vessel with dished ends and thermal insulation
1.23	**X8007**		Vessel with dished bottom and surface indication
1.24	**X8010**		Spherical vessel on legs
1.25	**X8000**		Vessel with full-tube heating/cooling coil

Table 2 *(continued)*

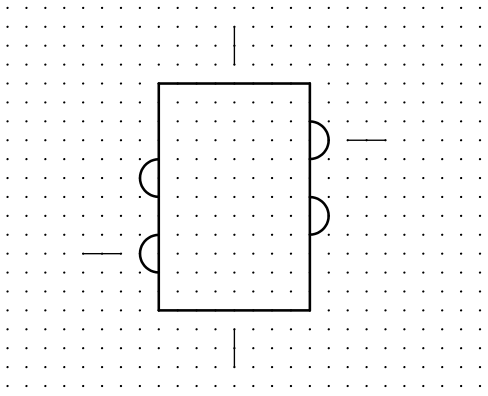
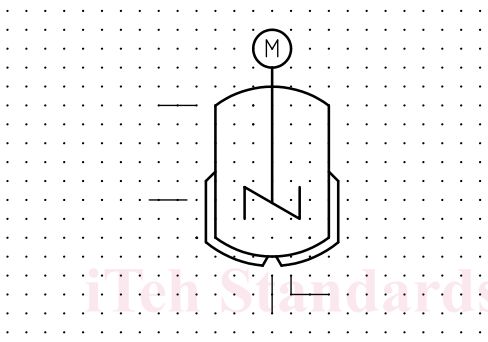
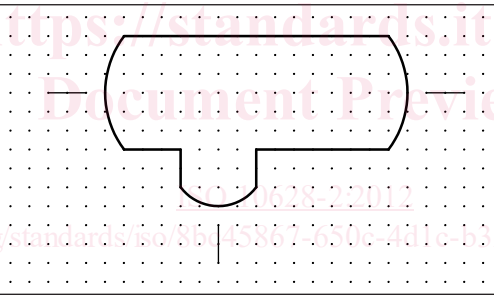
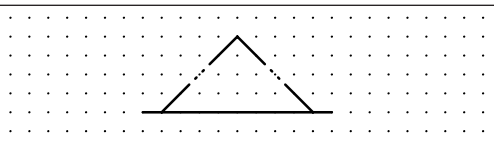
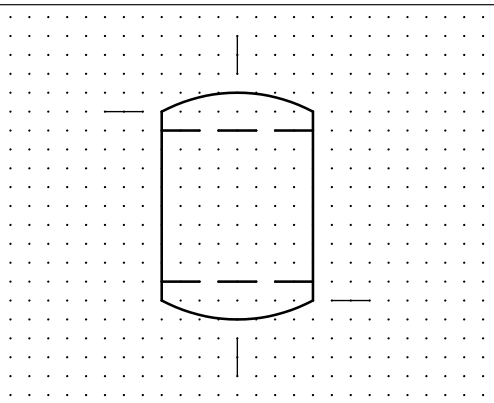
Item no.	Reg. no.	Graphical symbol	Description
1.26	**X8001**		Vessel with semi-tube heating/cooling coil
1.27	**X8006**		Jacketed vessel with dished ends and agitator driven by electric motor
1.28	**X8202**		Vessel with pit
1.29	**2065**		Open bulk storage
2	**COLUMNS WITH INTERNALS**		
2.1	**X8100**		Column (general)

Table 2 *(continued)*

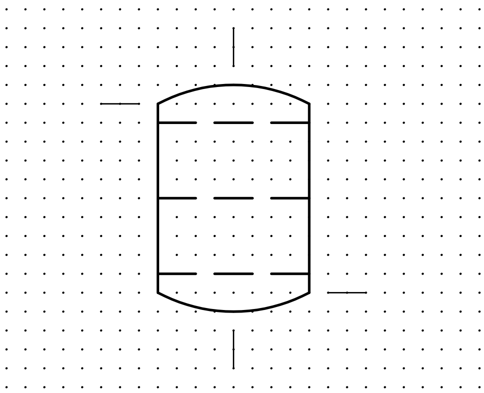
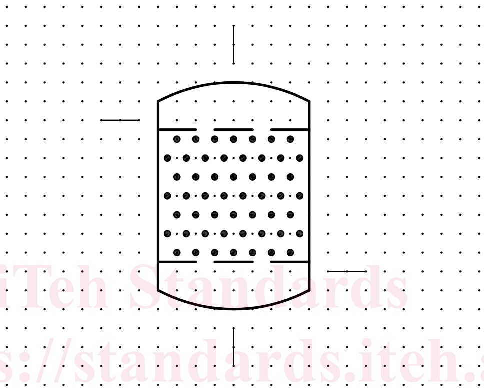
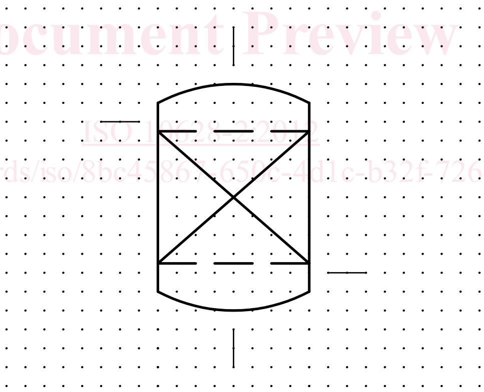
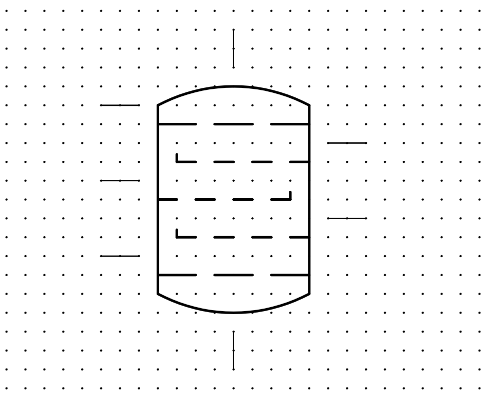
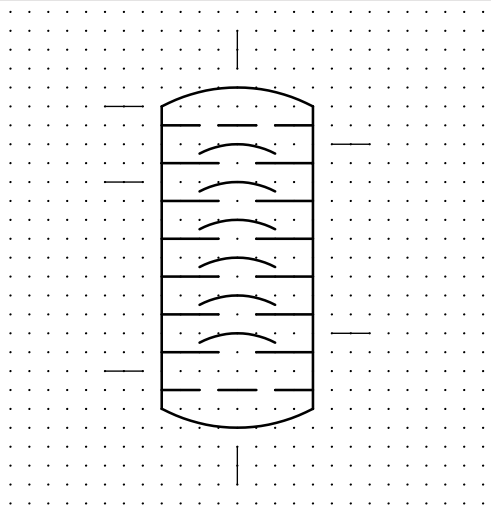
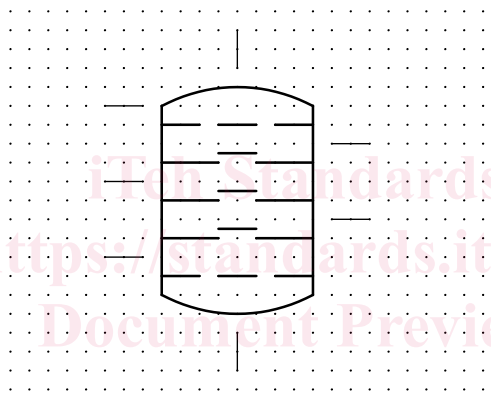
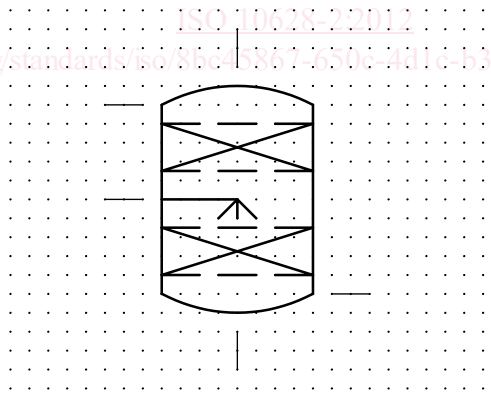
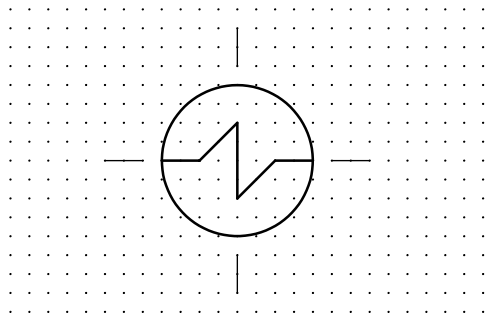
Item no.	Reg. no.	Graphical symbol	Description
2.2	**X8101**		Tray column (general)
2.3	**X8014**		Column with fluidized bed
2.4	**X8015**		Column with fixed bed
2.5	**X8013**		Column with staggered baffle trays

Table 2 *(continued)*

Item no.	Reg. no.	Graphical symbol	Description
2.6	**X8011**		Column with bubble cap trays
2.7	**X8012**		Column with valve trays
2.8	**X8016**		Column with two fixed bed sections and intermediate spray nozzle
3	**HEAT EXCHANGERS**		
3.1	**X8079**		Heat exchanger (general), condenser