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## Gas cylinders — Stamp marking

*Bouteilles à gaz — Marquage*

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Tel. + 41 22 749 01 11  
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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 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 International Standard may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 13769 was prepared by Technical Committee ISO/TC 58, *Gas cylinders*, Subcommittee SC 4, *Operational requirements for gas cylinders*.

Annex A forms a normative part of this International Standard.

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## Introduction

This International Standard has been prepared on the basis of the 12th revision of the UN *Recommendations on the Transport of Dangerous Goods — Model Regulations*. It is intended to be applied at the time of cylinder manufacture; however, it could be applied by the cylinder user during use operations, e.g., the stamping of “empty weight” (item 10 on Figures A.2 and A.3) on to cylinders not so marked at time of manufacture.

Some stamp markings hold year and date. The order of these time elements is given with the most significant digits (the year) to the left, according to the rules given in ISO 8601, *Data elements and interchange formats — Information exchange — Representation of dates and times*.

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# Gas cylinders — Stamp marking

## 1 Scope

This International Standard specifies stamp marking of refillable transportable gas cylinders and tubes of volume greater than 0,5 l and less than or equal to 3 000 l including:

- steel and aluminium gas cylinders;
- composite gas cylinders;
- acetylene cylinders.

These are hereafter referred to as “cylinders”.

Stamp marking of LPG cylinders is not covered by this International Standard.

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## 2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard 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 10920, *Gas cylinders — 25E taper thread for connection of valves to gas cylinders — Specification*

ISO 11114-1:1997, *Transportable gas cylinders — Compatibility of cylinder and valve materials with gas contents — Part 1: Metallic materials*

ISO 11116-1, *Gas cylinders — 17E taper thread for connection of valves to gas cylinders — Part 1: Specifications*

## 3 Terms and definitions

For the purposes of this International Standard the following terms and definitions apply.

### 3.1

#### stamp marking

permanent markings applied to the cylinders by hard metal stamping, engraving, casting or other similar methods

NOTE In the case of composite cylinders some permanent markings may be achieved by use of a printed label placed under the resin.

### 3.2

#### stencilling

marking of the item using inks and/or paints

## 4 Application of stamp markings

### 4.1 General

All mandatory stamp markings are listed in Table 1. They consist of manufacturing, operational and certification stamp marks. See 4.3 for the arrangement of stamp marks. Additional markings may be applied as requested by the cylinder owner, provided the layout does not cause any confusion in their interpretation and the clarity of the other mandatory markings is not affected.

### 4.2 Workmanship

The stamp markings shown in Table 1 shall be stamp marked durably and legibly on a reinforced part of the cylinder. For welded cylinders some stamp markings may appear on a welded identity plate or any other part permanently attached to the cylinder and not subject to gas pressure.

For composite cylinders stamp markings may be printed on a label to be placed under the resin, on the shoulder or the sidewall of the cylinder (see 4.3).

Except for the "UN" mark, the characters in the stamp markings shall be at least 5 mm in height. On cylinders with an outside diameter less than or equal to 140 mm, this height may be reduced, but in no case shall the characters be less than 2,5 mm in height. The "UN" mark shall be 10 mm for cylinders with a diameter greater than or equal to 140 mm, and 5 mm for cylinders less than 140 mm.

The depth of the characters in the stamp markings by any method shall be such that they are legible and durable under all operating conditions.

The stamps used for marking shall have such radii as are necessary to prevent the formation of sharp notches (minimum acceptable radius 0,2 mm).

### 4.3 Arrangements of stamp marking

All stamp markings described in Table 1 shall appear consecutively in the sequence given in the figures of annex A. The UN Model Regulations distinguish between different groups of stampmarks and gives them an explicit place in the arrangement of all markings. For Figure A.1 and Figure A.2 the top grouping of stamp marks includes manufacturing marks. The second grouping of stamp marks includes operational marks. The third group of stamp marks depicts certification marks. For Figure A.3, the top row includes manufacturing marks. The second and third rows include operational marks and the fourth row includes certification stamp marks.

When an identity plate or label (for composite cylinders) is used, all the stamp markings may be on a single plate or label provided the layout does not cause any confusion in their interpretation and generally follows the requirements of Table 1.

For hoop wrapped composite cylinders, when a label under the resin is used, the manufacturer's identification and the manufacturing serial number shall be stamped on the shoulder in conformity with annex A.



Table 1 — Stamp markings

Stamp marking number	Definition	Status  Mandatory (M) Optional (O)	Figures as shown in annex A (with examples)		
			Figure A.1  Location of stamp marking for compressed gases	Figure A.2  Location of stamp marking for liquefied gases	Figure A.3  Location of stamp marking for acetylene
1	<b>Standard:</b> The identification of the relevant construction ISO standard to which the cylinder is designed, manufactured and tested.	M	ISOxxx	ISOxxx	ISOxxx
2	<b>Country of manufacture:</b> Capital letter(s) identifying the country of manufacture of the cylinder shell using the characters of the distinguishing signs of motor vehicles in international traffic as specified in the <i>United Nations Recommendations on the Transport of Dangerous Goods — Model Regulations</i> .	M when different from country of approval (stamp marking No. 28)	CH	CH	CH
3	<b>Manufacturer's identification:</b> Name and/or trademark of cylinder manufacturer.	M	MF	MF	MF
4	<b>Manufacturing serial number:</b> Alphanumeric identification number given or assigned by the manufacturer to clearly identify the cylinder.  In the case of cylinders less than or equal to 1 l, the manufacturing batch number may replace the manufacturing serial number.	M	7654321	7654322	7654323
5	<b>Stamp for non-destructive testing (NDT):</b> Where the cylinder is tested by and meets all the requirements of NDT in accordance with an ISO standard for gas cylinders (for example ultrasonic, magnetic particle, dye penetrant, acoustic emission), the following symbols shall be used:  UT: for ultrasonic;  MT: for magnetic particle;  PT: for dye penetrant;  AT: for acoustic emission	M if applicable	UT	MT	PT
6	<b>Identification of steel compatibility:</b> Steel cylinders, composite cylinders with steel liners compatible with hydrogen, and other gases of group 2 and 11 in ISO 11114-1:1997 shall be stamped with the letter "H". Stainless steel cylinders manufactured from high grade stainless steel and composite cylinders with high grade stainless steel liners shall be stamped with the letters "HG". EXAMPLE: X2CrNiMo17-12-2, as found in ISO/TR 15510.	M if applicable	H	H	
7	<b>Test pressure:</b> The prefix "PH" followed by the value of the test pressure in bar and the letters "BAR".	M	PH300BAR	PH250BAR	PH60BAR
8	<b>Inspection stamp:</b> Stamp of authorized inspection body.	M	#	#	#
9	<b>Initial test date:</b> Year (four figures) and month (two figures) of initial testing separated by a slash.	M	2000/10	2000/10	2000/10