INTERNATIONAL STANDARD

ISO 11191

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Gas cylinders — 25E taper thread for connection of valves to gas cylinders — Inspection gauges

Bouteilles à gaz — Filetages coniques 25E pour le raccordement des robinets sur les bouteilles à gaz — Calibres de vérification

INTERNATIONAL ISO

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Contents

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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.

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.

International Standard ISO 11191 was prepared by Technical Committee ISO/TC 58, *Gas cylinder*, Subcommittee SC 2, *Cylinder fittings*.

Annexes A and B of this International Standard are for information only.

Introduction

This International Standard belongs to a series of standards specifying thread dimensions and gauge requirements.

Gas cylinders — 25E taper thread for connection of valves to gas cylinders — Inspection gauges

1 Scope

This International Standard specifies types, dimensions and principles of use of gauges, to be used in conjunction with the taper thread specified in ISO 10920.

Annex A provides examples of calculations for thread gauge dimensions on the large end diameter.

Annex B draws attention to the limitations of the gauging system specified.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 10920:1997, *Gas cylinders — 25E taper thread for connection of valves to gas cylinders — Specification.*

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 inspection gauge: Gauge used for routine checking of cylinder neck and valve stem threads.

NOTE — This gauge is not used for checking other gauges.

3.2 check gauge: Gauge for checking dimensional conformity of inspection ring gauges.

NOTE — This gauge is not used for checking cylinder neck threads.

3.3 single-part gauge: Gauge of sufficient length to contact the full length of taper thread.

NOTE — These gauges may be plug or ring, plain or threaded.

3.4 two-part gauges: Two separate inspection gauges, used in combination, where one is used to contact the large end of the taper cone and the other the small end.

NOTE — These sets of gauges may be plug or ring, plain or threaded.

4 Requirements

4.1 Materials

All gauges shall be manufactured from material of suitable strength, stability and hardness.

4.2 Thread profile

The thread profile of threaded inspection and check gauges shall be as shown in figure 1.

The thread profile shall have a 55° angle. The form and thread height measurements shall be perpendicular to the cone surface (see figure 1).

4.3 Thread rotation

The thread shall be a right hand thread, such that it moves away from an observer when rotated clockwise.

4.4 Thread

The thread shall satisfy the following requirements:

- ratio: 3/25;
- angle: 6° 52′;
- taper: 12 %.

4.5 Pitch, P

The pitch is 1,814 mm (derived from $\frac{25,4}{14}$ mm) (see figure 1).

5 Gauge dimensions

The following dimensional requirements apply to gauges shown in figures 2 to 15 inclusive.

5.1 All dimensions are given in millimetres.

5.2 Tolerances for specified dimensions on all gauges are:

a) ± 0,01 mm on all lengths;

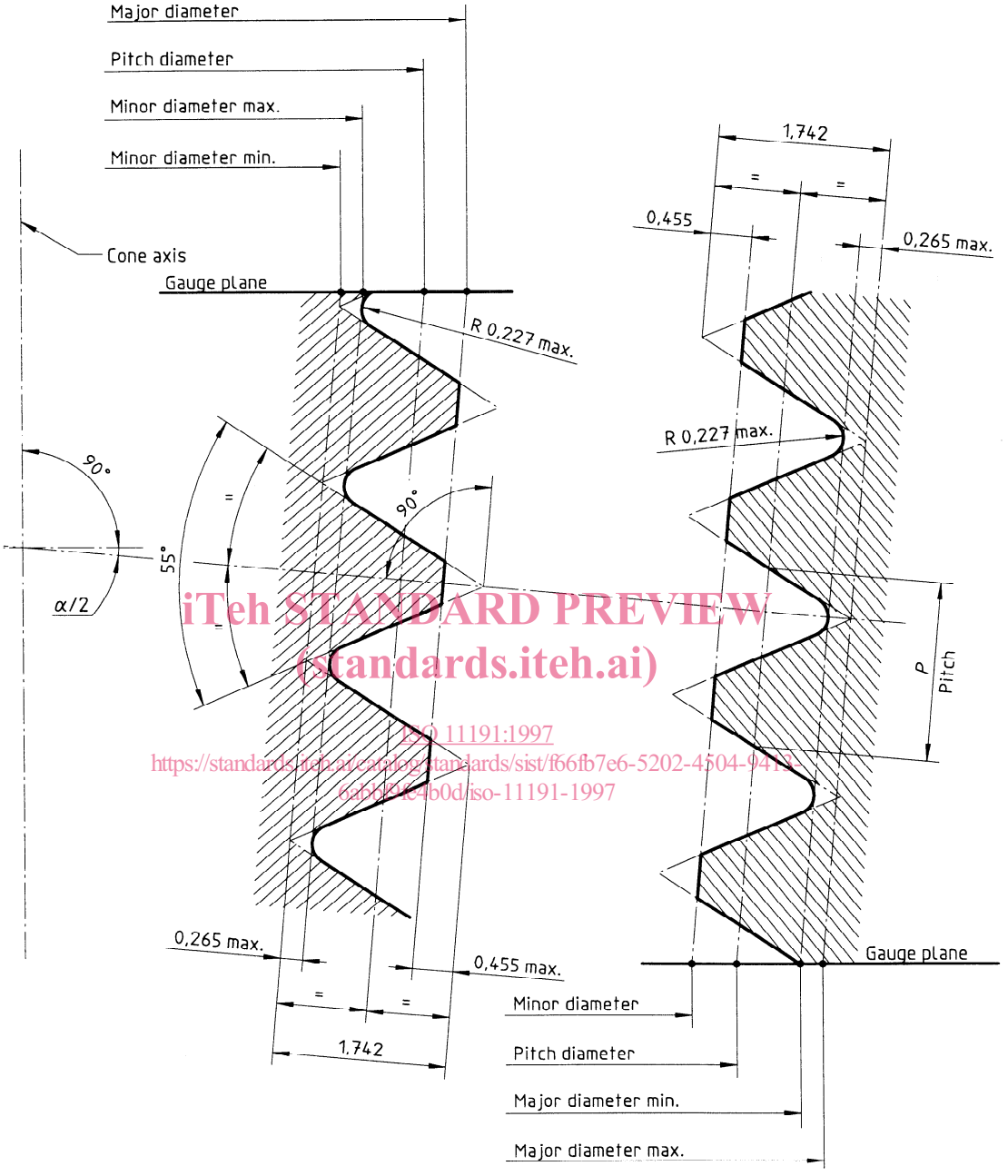
b) ± 0,01 mm on diameters of inspection gauges;

c) $^{-\ 0,01}_{-\ 0,02}$ mm on diameters of check gauges.

5.3 For threaded gauges, pitch diameters only are specified. For minor and major diameters see figure 1.

5.4 Unspecified dimensions shall be chosen by the manufacturer of the gauges.

Dimensions in millimetres



a) Plug gauge thread profile

b) Ring gauge thread profile

Figure 1 — Thread profiles

6 Inspection gauges

All dimensions are given in millimetres.

6.1 Cylinder neck thread

6.1.1 Single-part plug gauges

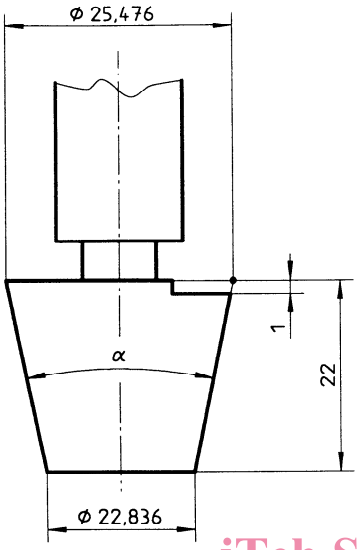


Figure 2 — Plain gauge for minor diameters "l-1"

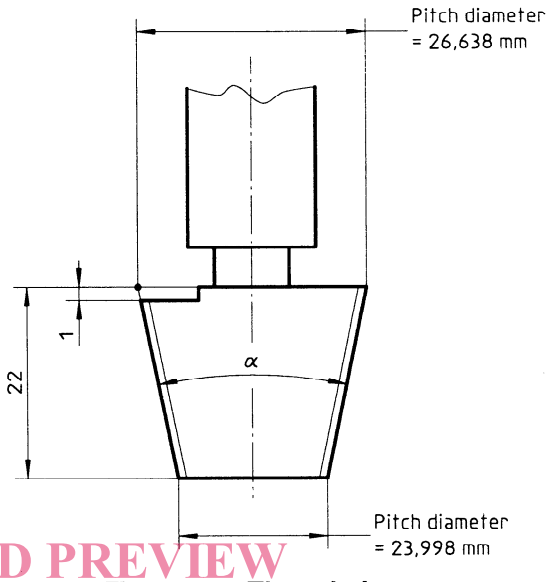


Figure 3 — Threaded gauge for pitch diameters "l-2"

6.1.2 Two part-plug gauges — small end diameter

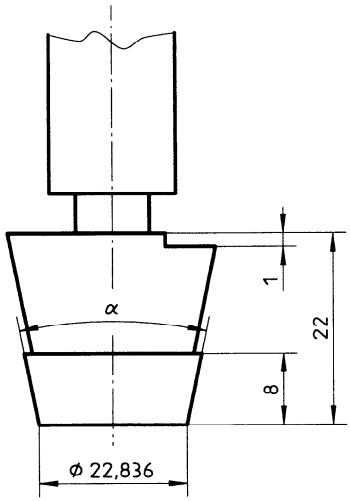


Figure 4 — Plain gauge for minor diameters "l-3"

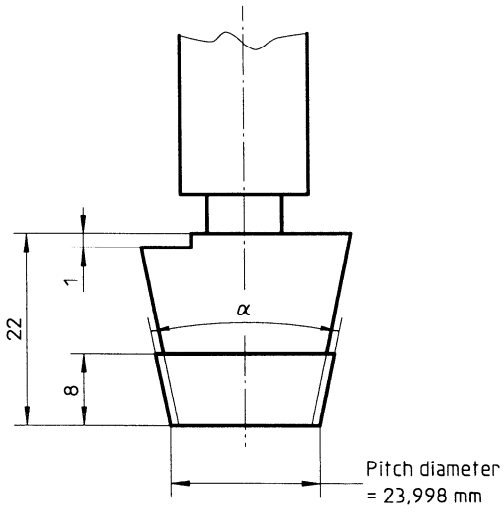


Figure 5 — Threaded gauge for pitch diameters "l-4"

6.1.3 Two-part plug gauges — large end diameter

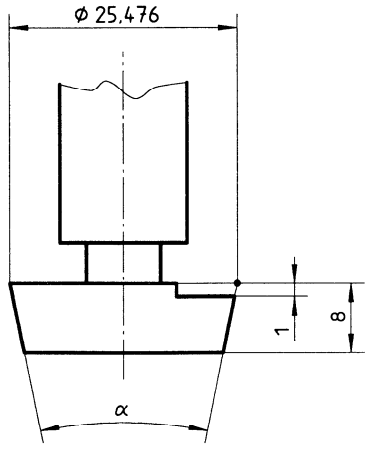


Figure 6 — Plain gauge for minor diameters "I-5"

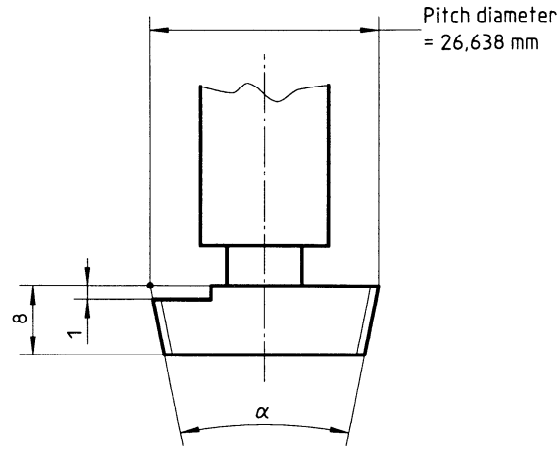


Figure 7 — Threaded gauge for pitch diameters "I-6"

6.2 Valve stem thread

6.2.1 Single-part ring gauges

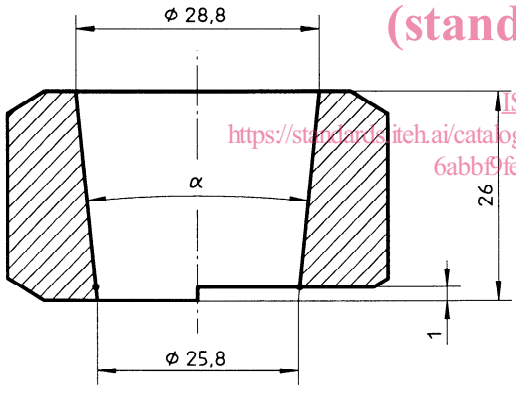


Figure 8 — Plain ring gauge for major diameters "I-7"

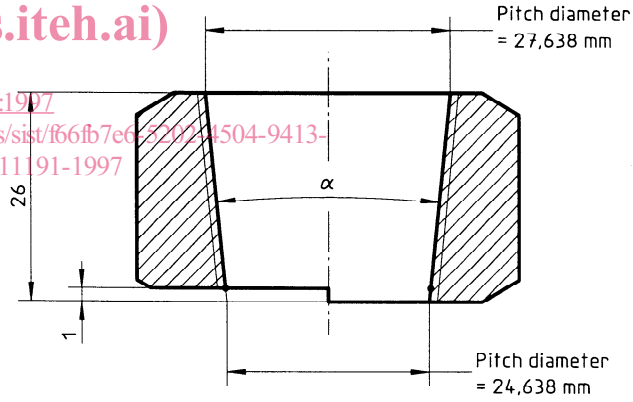


Figure 9 — Threaded ring gauge for pitch diameters "I-8"

6.2.2 Two-part ring gauges — small end diameter

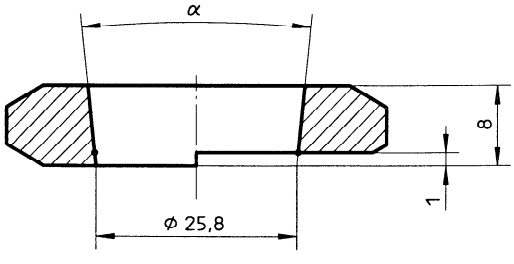


Figure 10 — Plain ring gauge for major diameters "I-9"

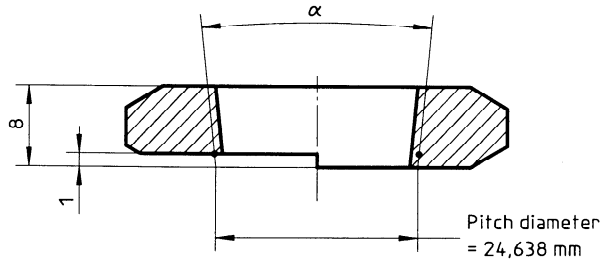


Figure 11 — Threaded ring gauge for pitch diameters "I-10"

6.2.3 Two-part ring gauges — large end diameter

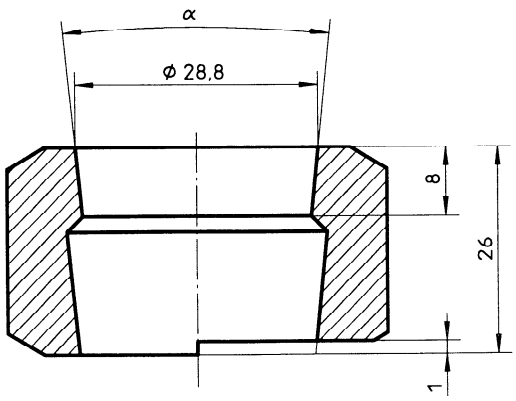


Figure 12 — Plain ring gauge for major diameters "l-11"

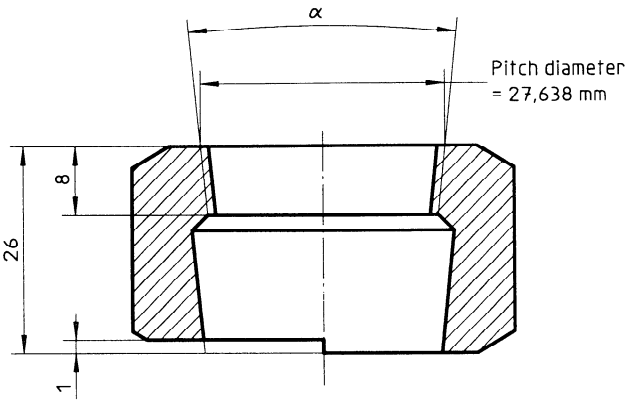


Figure 13 — Threaded ring gauge for pitch diameters "l-12"

6.3 Check gauges

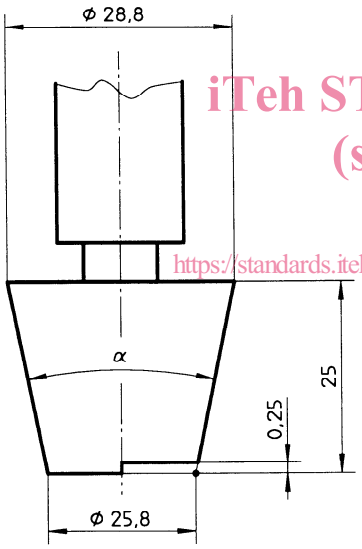


Figure 14 — Plain check gauge "M-1"

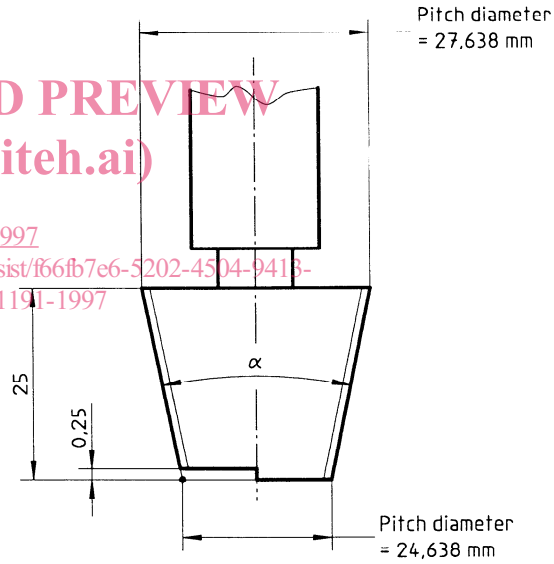


Figure 15 — Threaded check gauge "M-2"

7 Use of inspection gauges

7.1 Plain gauges

Plain gauges shall be lightly pressed into position or over the thread being gauged. Undue force shall not be used.

7.2 Threaded gauges

Threaded gauges shall be screwed into or over the thread being gauged. Undue force shall not be used.

7.3 Acceptance or rejection criteria, using plug gauges

Thread acceptability to gauge is determined by the position of the plane at the mouth of the cylinder neck relative to the test surfaces of the gauge.

The thread shall be considered acceptable to the gauge if this plane is flush with or falls between the test surfaces if the gauge when the gauge is fitted to the thread (see figures 16 and 17).

7.4 Acceptance or rejection criteria, using ring gauges

Thread acceptability to gauge is determined by the position of the plane at the flat small end of the stem cone base relative to the test surfaces of the gauge.

The thread shall be considered acceptable to the gauge if this plane is flush with or falls between the test surfaces of the gauge when the gauge is fitted to the thread (see figures 18 and 19).

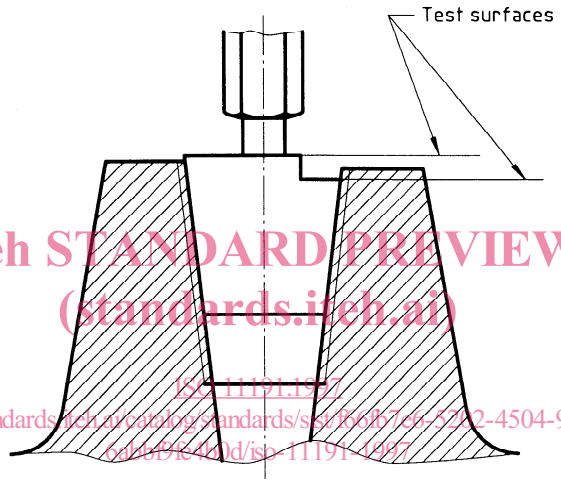


Figure 16 — Use of single-part plug gauge

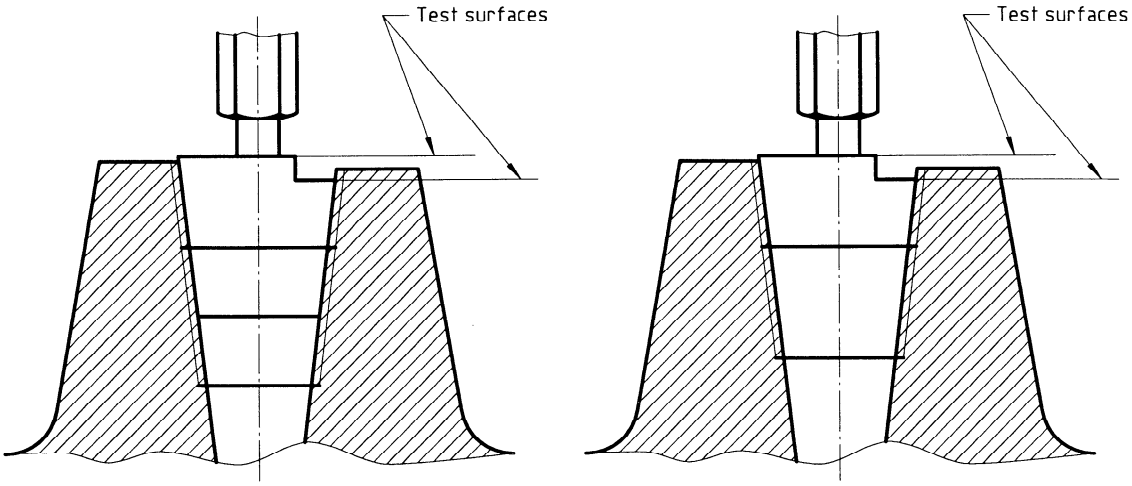


Figure 17 — Use of two-part plug gauge