



SLOVENSKI STANDARD SIST EN ISO 7285:2021

01-marec-2021

Pnevmatski cilindri za mehanizirano večtočkovno varjenje (ISO 7285:1995)

Pneumatic cylinders for mechanized multiple spot welding (ISO 7285:1995)

Pneumatik-Schweißzylinder für Vielpunktschweißeinrichtungen (ISO 7285:1995)

Vérins pneumatiques pour soudage multipoints mécanisés (ISO 7285:1995)

Ta slovenski standard je istoveten z: EN ISO 7285:2021

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ICS:

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| 25.160.30 | Varilna oprema | Welding equipment |
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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN ISO 7285

January 2021

ICS 25.160.30

English Version

**Pneumatic cylinders for mechanized multiple spot welding
(ISO 7285:1995)**

Vérins pneumatiques pour soudage multipoints
mécanisés (ISO 7285:1995)

Pneumatik-Schweißzylinder für
Vielpunktschweißeinrichtungen (ISO 7285:1995)

This European Standard was approved by CEN on 6 December 2020.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

The text of ISO 7285:1995 has been prepared by Technical Committee ISO/TC "Welding and allied processes" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 7285:2021 by Technical Committee CEN/TC 121 "Welding and allied processes" the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2021, and conflicting national standards shall be withdrawn at the latest by July 2021.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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The text of ISO 7285:1995 has been approved by CEN as EN ISO 7285:2021 without any modification.

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INTERNATIONAL STANDARD

ISO
7285

First edition
1995-12-01

Pneumatic cylinders for mechanized multiple spot welding

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Vérins pneumatiques pour soudage multipoints mécanisé
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Reference number
ISO 7285:1995(E)

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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 7285 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*, Subcommittee SC 6, *Resistance welding*.

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Annexes A, B and C form an integral part of this International Standard.
Annex D is for information only.

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Pneumatic cylinders for mechanized multiple spot welding

1 Scope

This International Standard specifies the requirements of the geometrical and mechanical characteristics of pneumatic cylinders used for multiple spot welding machines and their manufacturing, delivery and test specifications.

These cylinders for a nominal air pressure of 1 MPa (10 bar) are double-acting, with two piston stages in series for the advance during the operational stroke and the force, and a single piston stage for the return.

25 — 31,5 — 40 — 50 — 63 — 80 — 100 — 125 — 160

3.2 Nominal forces

The nominal forces standardized, in kilonewtons, for a pressure of 1 MPa (10 bar) are

2,19 — 2,86 — 3,61 — 4,61 — 5,92 — 7,60 — 9,74

4 Fixing the cylinder

The cylinder is mounted on the machine by one of the methods A to H described in annex A.

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 4394-1:1980, *Fluid power systems and components — Cylinder barrels — Part 1: Requirements for steel tubes with specially finished bores.*

3 Nominal characteristics

The cylinders covered by this International Standard are characterized by their nominal stroke, their nominal force and their outside dimensions.

3.1 Nominal strokes

The nominal strokes standardized, in millimetres, are

5 Dimensions

5.1 Outside dimensions

Depending on the method of mounting the cylinder, the nominal force and the nominal stroke, the cylinders shall have the dimensions indicated in the drawings in annex C taking into account the characteristics of the electrode holder attachment indicated in annex B.

The nominal values of the maximum outside dimensions, in millimetres, are

46 — 51 — 56 — 63 — 71 — 80 — 90

5.2 Bore diameter

The recommended dimensions, in millimetres, are

40 — 45 — 50 — 56 — 63 — 71 — 80

Tolerances shall be in accordance with ISO 4394-1 — H12.

6 Operating specifications

6.1 Nominal force

The nominal force shall be given at a pressure of 1 MPa (10 bar) with a tolerance of $\pm 5\%$.

6.2 Return force

The return force shall not be less than 40 % of the nominal force.

6.3 Maximum supply pressure

The maximum supply pressure is 1,6 MPa (16 bar).

7 Construction

7.1 Point of application of the reaction

The cylinders shall function correctly when the reaction to the nominal force is being applied at a maximum distance of 28 mm from the axis of thrust.

7.2 Piston rod

The sliding bearing surfaces of the rod shall have an adequate hardness to avoid friction, wear, oxidization and any scale caused by sputtering (sparks).

7.3 Rotation

The piston rod assembly is considered as non-rotating. The anti-rotating device shall withstand, without being damaged, a rotary torque of 150 N·m applied in either direction and at any point of the travel of the piston rod.

7.4 Seals

The seals shall be compatible with fluids used to lubricate the cylinder.

7.5 Perpendicularity — Parallelism between the mounting point and the attachment

Any faults in perpendicularity or parallelism of the bearing surface of the body of the cylinder with respect to the axis of the shank cone of the electrode holder shall not exceed 0,2 % (for inspection, see 10.2).

7.6 Leakage

The bodies of the cylinders shall not leak in normal conditions of use (to check this, see 10.5).

7.7 Behaviour under pressure

The body of the cylinder shall be able to withstand without being damaged a test pressure equal to two times the maximum supply pressure applied for 1 min in each direction (see 10.4).

7.8 Electrode holder attachment

The electrode holder attachment shall be completely electrically insulated with respect to the body of the cylinder (to check this, see 10.3). This subclause does not apply to electrode holder attachments according to Nos. 13 and 22.

7.9 Endurance

The cylinders shall be able to withstand the endurance test described in 10.8 according to the requirements of 10.8.5 and 10.8.6.

7.10 Finish

The outer surfaces shall be protected against corrosion.

8 Marking

8.1 Identification of the cylinders

The cylinders are identified by an alphanumeric symbol, the different numbers or letters of which are separated by a dash and arranged as follows:

- | | |
|--|--|
| — apparatus operating with a pneumatic fluid: | letter P |
| — two-stage cylinder: | number 2 |
| — double-action cylinder: | letter D |
| — method of mounting: | letter A to H in accordance with annex A |
| — nominal force: | indicate the number from 3.2 |
| — dimensions of the body or width of the cylinder defining the overall dimensions of the cylinder: | number giving dimension <i>E</i> of annex C |
| — nominal stroke: | number consisting of three figures giving the nominal stroke |
| — electrode holder attachment: | number consisting of two figures symbolizing the attachment in accordance with annex B |

Examples:

P — 2 — D — A — 2,19 — 46 — 025 — 11
 P — 2 — D — C — 4,61 — 63 — 100 — 22

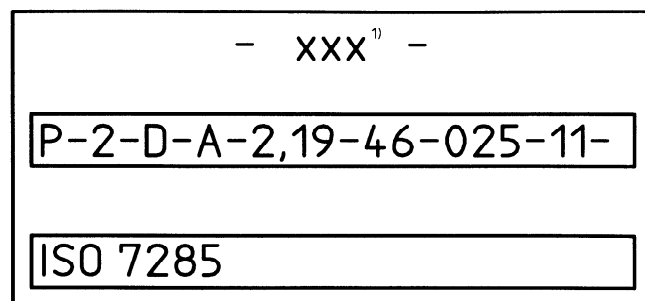
8.2 Rating plate

See figure 1.

The cylinders shall have the following information on a rating plate or stamped directly on the body of the cylinder:

- name of the manufacturer;
- alphanumeric identification symbol in accordance with 8.1;
- reference to ISO 7285.

These indications shall be permanent and shall not be affected by any industrial chemical in common use.



1) Name of the manufacturer.

Figure 1 — Example of a rating plate

9 Delivery conditions

The cylinders shall be supplied

- in good working order;
- protected so that even after prolonged storage at the user's premises in the original packing, all the parts likely to deteriorate (rods, seals, internal surfaces, cones, openings, etc.) retain the qualities required by ISO 7285;
- with the openings stopped up;
- in packing the outside of which is marked with the identification specified in clause 8.

10 Inspection and type tests

10.1 Visual inspection

Conformity to the specifications of 7.10 and clauses 8 and 9 is checked by visual inspection.

10.2 Dimensional inspection

Dimensional inspection includes

- verification of conformity with the drawings;
- inspection of the shank cone of the electrode holder by means of a standard gauge, which should show a minimum of 2/3 blue, with a bias towards the base diameter;
- checking of the perpendicularity or parallelism (see 7.5).