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STANDARD

6210-1

First edition  
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**Cylinders for robot resistance welding guns —**  
**Part 1:**  
**General requirements**

*Vérins pour têtes de soudage par résistance montées sur robot —*  
*Partie 1: Prescriptions générales*



Reference number  
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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 6210-1 was prepared by Technical Committee ISO/TC 44, *Welding and allied processes*.

ISO 6210 consists of the following parts, under the general title *Cylinders for robot resistance welding guns*:

- *Part 1: General requirements*
- *Part 2: Cylinders for scissor type guns*
- *Part 3: Cylinders for C-type guns*

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# Cylinders for robot resistance welding guns —

## Part 1: General requirements

### 1 Scope

This part of ISO 6210 specifies requirements for geometrical and mechanized characteristics of cylinders particularly designed for robot welding guns and their manufacturing, delivery and test specifications.

These cylinders, designed for a nominal air pressure of 1,0 MPa (10 bar), are double-acting and available in various single or multiple piston combinations, together with rotatable and non-rotatable piston rods.

### 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 6210. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 6210 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 497:1973, *Guide to the choice of series of preferred numbers and of series containing more rounded values of preferred numbers.*

ISO 7285:—<sup>1)</sup>, *Pneumatic cylinders for mechanized multiple spot welding.*

1) To be published.

2) "High-lift" is cylinder movement additional to the normal welding stroke to enable electrodes to clear obstructions and to avoid unnecessarily-long welding strokes.

### 3 Nominal characteristics

The cylinders covered by this part of ISO 6210 are characterized by their nominal forces and their nominal strokes.

#### 3.1 Nominal forces at the piston rod

The nominal forces standardized, in kilonewtons, are

1,25 — 1,6 — 2,0 — 2,5 — 3,15 — 4,0 — 5,0 —  
6,3 — 8,0 — 10,0 — 12,5 — 16,0 — 20,0

#### 3.2 Nominal strokes

The nominal strokes standardized, in millimetres, are

— for cylinders without high-lift<sup>2)</sup> stroke

25 — 31,5 — 40 — 50 — 63 — 80

— for cylinders with high-lift stroke

The sum of the working stroke and the high-lift stroke shall be

50 — 63 — 80 — 100 — 125 — 160 — 200

If longer strokes are needed, the values shall be chosen in accordance with ISO 497.