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**Tools for pressing — Gas springs —**  
**Part 4:**  
**Gas springs with increased spring**  
**force and same built height**

*Outils de presse — Ressorts à gaz —*

*Partie 4: Ressorts à gaz à force accrue à même encombrement en*  
*hauteur*



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Published in Switzerland

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 29, *Small tools*, Subcommittee SC 8, *Tools for pressing and moulding*.

ISO 11901 consists of the following parts, under the general title *Tools for pressing — Gas springs*:

- *Part 1: General specifications*
- *Part 2: Specification of accessories*
- *Part 3: Gas spring with increased spring force and compact built height*
- *Part 4: Gas springs with increased spring force and same built height*

## Introduction

The attention of the user of ISO 11901 is drawn to the fact that gas springs will have to conform to the national regulations of the user country.

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# Tools for pressing — Gas springs —

## Part 4:

## Gas springs with increased spring force and same built height

### 1 Scope

This part of ISO 11901 specifies the dimensions (in millimetres), nominal initial forces and types of gas springs.

It is applicable to gas springs with increased spring force and same built height of type 10 000 to 95 000, pressurized with nitrogen with a nominal initial force of between  $10\,000\text{ N} \pm 5\%$  and  $95\,000\text{ N} \pm 5\%$ , for use in press tools.

It also specifies marking, technical delivery conditions and designation.

NOTE Specifications of mounting accessories for gas springs are given in ISO 11901-2.

### 2 Normative references

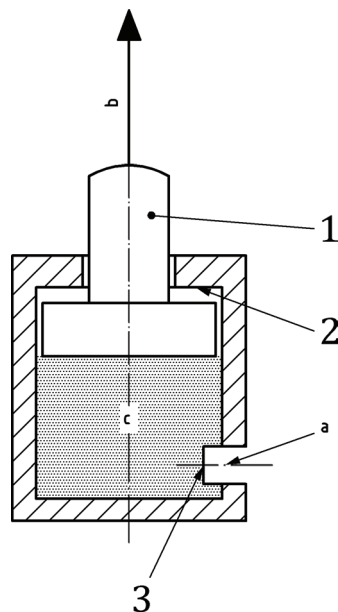
The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 7-1, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation*

ISO 2768-1, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications*

### 3 Description and terminology

See [Figure 1](#).



**Key**

- 1 rod
- 2 positive stop
- 3 valve
- a Pressure filling inlet.
- b Force.
- c Nitrogen.

**Figure 1 — Terminology**

The gas spring is an autonomous spring pressurized with nitrogen.

At rest position, the rod is pushed out.

This gas spring feature has a gas inlet for pressurization or depressurization. The inlet is located on the casing and is capped.

The pressure filling inlet of the gas springs includes a pipe thread ISO 7 - Rp 1/8 in accordance with ISO 7-1.

## 4 Interchangeability dimensions and characteristics

### 4.1 General nominal specifications

See [Table 1](#).



Table 1 — General nominal specifications

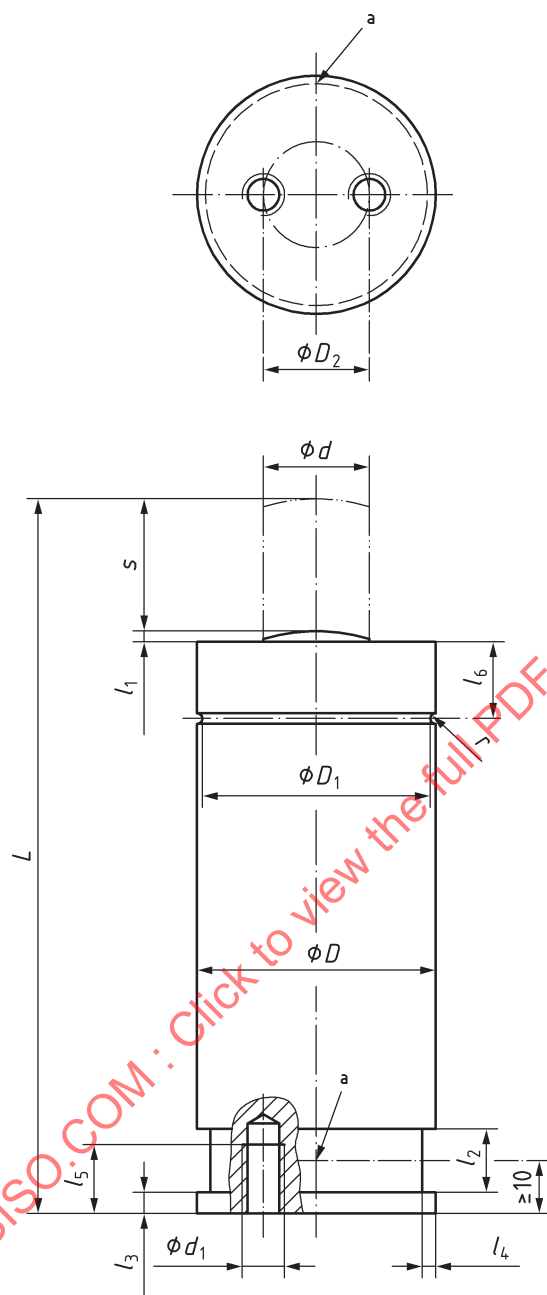
| Type   | Nominal initial force<br>N |      | Maximum filling<br>pressure<br>MPa | End of stroke nomi-<br>nal force increase<br>coefficient |
|--------|----------------------------|------|------------------------------------|--|
| 10 000 | 10 000                     | ±5 % | 15                                 | 1,5  |
| 24 000 | 24 000                     |      |                                    | 1,6  |
| 42 000 | 42 000                     |      |                                    | 1,5  |
| 66 000 | 66 000                     |      |                                    | 1,5  |
| 95 000 | 95 000                     |      |                                    | 1,5  |

#### 4.2 Gas springs of type 10 000

See [Figure 2](#) and [Table 2](#).

#### 4.3 Gas springs of type 24 000 to 95 000

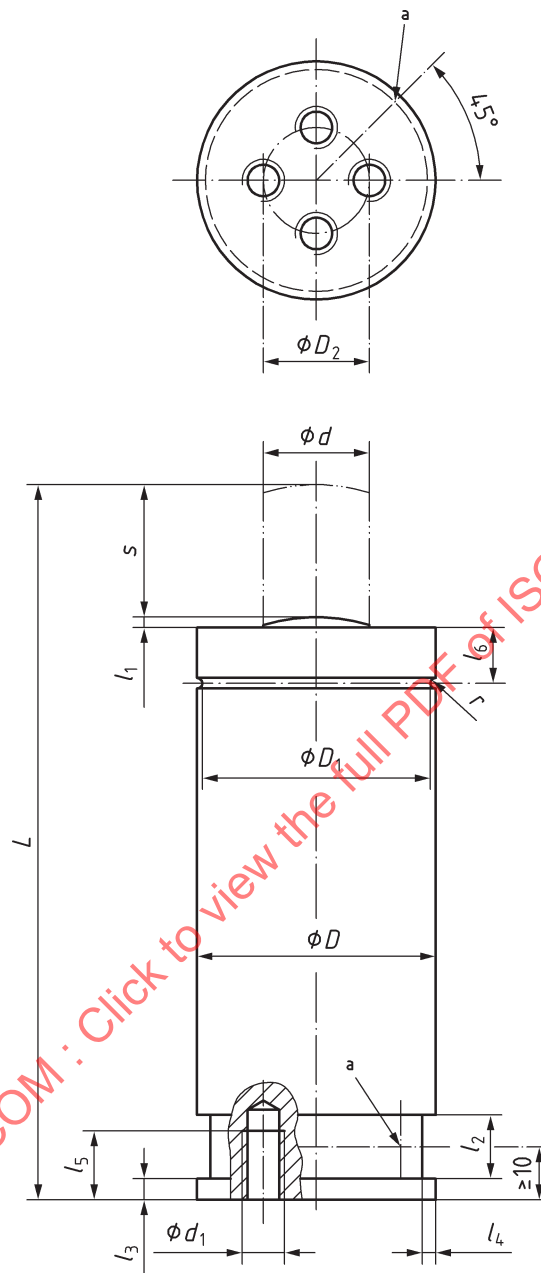
See [Figure 3](#) and [Table 2](#).



a Pressure filling.

Figure 2 — Gas spring of type 10 000

General tolerance: ISO 2768-m



a Pressure filling inlet.

Figure 3 — Gas springs of type 24 000 to 95 000

**Table 2 — Dimensions of gas springs of type 10 000 to 95 000 —  
Maximum filling pressure 15 MPa**

Dimensions in millimetres

| Type   | Nominal<br>stroke<br><i>a</i> | <i>L</i><br>±0,25 | <i>l</i> <sub>1</sub> | <i>l</i> <sub>2</sub><br>min | <i>l</i> <sub>3</sub><br><sup>+0,15</sup> <sub>0</sub> | <i>l</i> <sub>4</sub><br>min | <i>l</i> <sub>5</sub><br>min | <i>l</i> <sub>6</sub> | <i>r</i> | <i>d</i> | <i>D</i><br>±0,3 | <i>D</i> <sub>1</sub><br><sup>0</sup> <sub>-0,1</sub> | <i>d</i> <sub>1</sub> | <i>D</i> <sub>2</sub> | Number<br>of holes |
|--------|-------------------------------|-------------------|-----------------------|------------------------------|--|------------------------------|------------------------------|-----------------------|----------|----------|------------------|---|-----------------------|-----------------------|--------------------|
| 10 000 | 25                            | 145               | 3                     | 5                            | 8  | 3,5                          | 13                           | 14,5                  | 2        | 28       | 50               | 46  | M8                    | 20                    | 2                  |
|        | 50                            | 195               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 80                            | 255               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 100                           | 295               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 125                           | 345               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 160                           | 415               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 200                           | 495               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 250                           | 595               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 300                           | 695               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
| 24 000 | 25                            | 160               | 3                     | 5                            | 8  | 4                            | 13                           | 18                    | 2,5      | 45       | 75               | 70  | M8                    | 40                    | 4                  |
|        | 50                            | 210               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 80                            | 270               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 100                           | 310               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 125                           | 360               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 160                           | 430               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 200                           | 510               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 250                           | 610               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 300                           | 710               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
| 42 000 | 25                            | 170               | 3                     | 5                            | 8  | 4                            | 13                           | 21                    | 2,5      | 60       | 95               | 90  | M8                    | 60                    | 4                  |
|        | 50                            | 220               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 80                            | 280               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 100                           | 320               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 125                           | 370               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 160                           | 440               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 200                           | 520               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 250                           | 620               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 300                           | 720               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
| 66 000 | 25                            | 190               | 3                     | 5                            | 8  | 4                            | 16                           | 22,5                  | 2,5      | 75       | 120              | 115   | M10                   | 80                    | 4                  |
|        | 50                            | 240               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 80                            | 300               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 100                           | 340               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 125                           | 390               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 160                           | 460               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 200                           | 540               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 250                           | 640               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |
|        | 300                           | 740               |                       |                              |  |                              |                              |                       |          |          |                  |   |                       |                       |                    |