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**Reamers —**

Part 2:  
**Long fluted machine reamers with  
Morse taper shanks**

*Alésoirs —*

*Partie 2: Alésoirs à machine, à goujures longues, à queue cône Morse*  
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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 2.

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 document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 236-2 was prepared by Technical Committee ISO/TC 29, *Small tools*, Subcommittee SC 2, *High speed steel cutting tools and their attachments*.

This second edition cancels and replaces the first edition (ISO 236-2:1976), of which it constitutes a minor revision. In particular, dimensions in inches (Imperial units) have been deleted, and an informative annex, giving the relationship between the symbols of this part of ISO 236 and the symbols according to ISO 13399 (all parts), has been added. (standards.iteh.ai)

ISO 236 consists of the following parts, under the general title *Reamers*:

- *Part 1: Hand reamers*<sup>1)</sup> <https://standards.iteh.ai/catalog/standards/sist/86f135da-9c27-478e-8465-d72d3971583d/iso-236-2-2013>
- *Part 2: Long fluted machine reamers with Morse taper shanks* Introduction

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1) It is intended that, upon revision, the main element of the title of Part one will be aligned with the main element of the title of Part two.

# Reamers —

## Part 2:

## Long fluted machine reamers with Morse taper shanks

### 1 Scope

This part of ISO 236 specifies the dimensions of long fluted machine reamers with Morse taper shanks.

The relationship between the symbols of this part of ISO 236 and those according to ISO 13399 (all parts) is given for information in [Annex A](#).

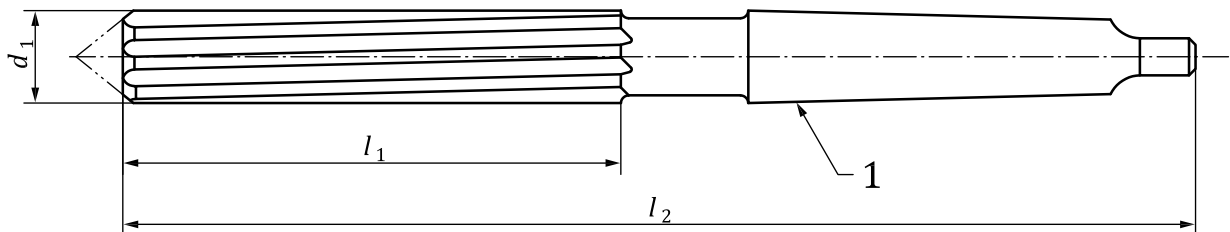
### 2 Normative references

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

ISO 296, *Machine tools — Self-holding tapers for tool shanks*

### 3 Dimensions

The dimensions for reamers with Morse taper shank shall be in accordance with the dimensions shown in [Figure 1](#). The diameters and corresponding dimensions shall be as given in [Table 1](#). The dimensions set out as a function of diameter steps shall be as given in [Table 2](#).



#### Key

- 1 Morse taper in accordance with ISO 296

**Figure 1 — Long fluted machine reamer with Morse taper shank**

**Table 1 — Diameters and corresponding dimensions of long fluted machine reamers with Morse taper shanks**

Dimensions in millimetres

| $d_1$             | $l_1$ |      | $l_2$             |      | Morse taper No. | $d_1$             | $l_1$ |      | $l_2$ |      | Morse taper No. |
|-------------------|-------|------|-------------------|------|-----------------|-------------------|-------|------|-------|------|-----------------|
|                   |       | Tol. |                   | Tol. |                 |                   |       | Tol. |       | Tol. |                 |
| 7                 | 54    | ±1,5 | 134               | ±2   | 1               | 32                | ±2    | 133  | 293   | 4    |                 |
| 8                 | 58    |      | 138               |      |                 | (34) <sup>a</sup> |       | 142  | 152   |      | 312             |
| 9                 | 62    |      | 142               |      |                 | (35) <sup>a</sup> |       |      |       |      |                 |
| 10                | 66    |      | 146               |      |                 | 36                |       |      |       |      |                 |
| 11                | 71    |      | 151               |      |                 | (38) <sup>a</sup> |       | 152  | 312   |      |                 |
| 12                | 76    |      | 156               |      |                 | 40                |       |      |       |      |                 |
| (13) <sup>a</sup> | 76    |      | 156               |      |                 | (42) <sup>a</sup> |       | 163  | 323   |      |                 |
| 14                | 81    |      | 161               |      |                 | (44) <sup>a</sup> |       |      |       |      |                 |
| (15) <sup>a</sup> | 81    |      | 181               |      |                 | 45                |       |      |       |      |                 |
| 16                | 87    |      | 187               |      |                 | (46) <sup>a</sup> |       | 174  | 334   |      |                 |
| (17) <sup>a</sup> | 87    |      | 187               |      |                 | (48) <sup>a</sup> |       |      |       |      |                 |
| 18                | 93    |      | 193               |      |                 | 50                |       |      |       |      |                 |
| (19) <sup>a</sup> | 93    |      | 193               |      |                 | (52) <sup>a</sup> |       | 184  | 381   |      |                 |
| 20                | 100   |      | 200               |      |                 | (55) <sup>a</sup> |       |      |       |      |                 |
| (21) <sup>a</sup> | 100   |      | 200               |      |                 | 56                |       |      |       |      |                 |
| 22                | 107   | 207  | (58) <sup>a</sup> | 194  | 391             |                   |       |      |       |      |                 |
| (23) <sup>a</sup> | 107   | 207  | (60) <sup>a</sup> |      |                 |                   |       |      |       |      |                 |
| (24) <sup>a</sup> | 107   | 207  | (62) <sup>a</sup> |      |                 |                   |       |      |       |      |                 |
| 25                | 115   | 242  | 63                | 203  | 400             |                   |       |      |       |      |                 |
| (26) <sup>a</sup> | 115   | 242  | 67                |      |                 |                   |       |      |       |      |                 |
| (27) <sup>a</sup> | 115   | 242  | 71                |      |                 |                   |       |      |       |      |                 |
| 28                | 124   | ±2   | 251               | 3    |                 |                   |       |      |       |      |                 |
| (30) <sup>a</sup> | 124   | ±2   | 251               |      |                 |                   |       |      |       |      |                 |

<sup>a</sup> Sizes in parentheses should be avoided wherever possible.

In special cases, the lengths of reamers and their shank dimensions may be chosen from the next larger or smaller range.

EXAMPLE For the diameter 15 mm, length  $l_2$  may be 187 mm with  $l_1$  being 87 mm and Morse taper No. 2 or length  $l_2$  may be 156 mm with  $l_1$  being 76 mm and Morse taper No. 1 (see [Table 2](#)).

**Table 2 — Dimensions set out as a function of diameter steps**

Dimensions in millimetres

| Diameter step, $d_1$ |           | Corresponding length |      |       |      | Morse taper No. |     |
|----------------------|-----------|----------------------|------|-------|------|-----------------|-----|
| Over                 | Including | $l_1$                |      | $l_2$ |      |                 |     |
|                      |           |                      | Tol. |       | Tol. |                 |     |
| 6,0                  | 6,7       | 50                   | ±1,5 | 130   | ±2   | 1               |     |
| 6,7                  | 7,5       | 54                   |      | 134   |      |                 |     |
| 7,5                  | 8,5       | 58                   |      | 138   |      |                 |     |
| 8,5                  | 9,5       | 62                   |      | 142   |      |                 |     |
| 9,5                  | 10,6      | 66                   |      | 146   |      |                 |     |
| 10,6                 | 11,8      | 71                   |      | 151   |      |                 |     |
| 11,8                 | 13,2      | 76                   |      | 156   |      |                 |     |
| 13,2                 | 14,0      | 81                   |      | 161   |      | ±2              | 2   |
| 14,0                 | 15,0      |                      |      | 181   |      |                 |     |
| 15,0                 | 17,0      | 87                   |      | 187   |      |                 |     |
| 17,0                 | 19,0      | 93                   |      | 193   |      |                 |     |
| 19,0                 | 21,2      | 100                  |      | 200   |      |                 |     |
| 21,2                 | 23,02     | 107                  |      | 207   |      |                 |     |
| 23,02                | 23,6      | 115                  |      | 214   |      |                 |     |
| 23,6                 | 26,5      | 124                  | 222  | ±2    | 3    |                 |     |
| 26,5                 | 30,0      | 133                  | 231  |       |      |                 |     |
| 30,0                 | 31,75     | 142                  | 240  |       |      |                 |     |
| 31,75                | 33,50     | 152                  | 250  |       | ±2   |                 | 4   |
| 33,50                | 37,5      | 163                  | 260  |       |      |                 |     |
| 37,5                 | 42,5      | 174                  | 271  |       |      |                 |     |
| 42,5                 | 47,5      | 184                  | 282  |       |      |                 |     |
| 47,5                 | 50,8      | 174                  | 293  | ±3    |      | 5               |     |
| 50,8                 | 53,0      |                      | 302  |       |      |                 |     |
| 53,0                 | 60,0      | 184                  | 312  |       |      |                 |     |
| 60,0                 | 67,0      | 194                  | 323  |       |      |                 |     |
| 67,0                 | 75,0      | 203                  | 334  |       |      |                 |     |
| 75,0                 | 76,2      | 212                  | 371  |       | ±3   | 6               |     |
| 76,2                 | 85,0      |                      | 184  |       |      |                 | 381 |
|                      |           |                      | 194  |       |      |                 |     |
|                      |           |                      | 203  |       |      |                 |     |
|                      |           |                      | 212  |       |      |                 |     |
|                      |           |                      | 234  |       |      |                 |     |
|                      |           |                      | 251  |       |      |                 |     |
|                      |           |                      | 260  |       |      |                 |     |
|                      |           |                      | 293  |       |      |                 |     |
|                      |           |                      | 302  |       |      |                 |     |
|                      |           |                      | 312  |       |      |                 |     |
|                      |           |                      | 323  |       |      |                 |     |
|                      |           |                      | 334  |       |      |                 |     |
|                      |           |                      | 371  |       |      |                 |     |
|                      |           |                      | 381  |       |      |                 |     |
|                      |           |                      | 391  |       |      |                 |     |
|                      |           |                      | 400  |       |      |                 |     |
|                      |           |                      | 409  |       |      |                 |     |
|                      |           |                      | 479  |       |      |                 |     |

## Annex A (informative)

### Relationship between the symbols of this part of ISO 236 and ISO 13399 (all parts)

For the relationship between the symbols of this part of ISO 236 and symbols according to ISO 13399 (all parts), see [Table A.1](#).

**Table A.1 — Relationship between symbols in this part of ISO 236 and ISO 13399 (all parts)**

| Symbol in this part of ISO 236 (ISO 236-2) | Reference in this part of ISO 236 (ISO 236-2) | Property name in ISO 13399 (all parts) | Symbol in ISO 13399 (all parts) | Reference in ISO 13399 (all parts) BSU code |
|--------------------------------------------|-----------------------------------------------|----------------------------------------|---------------------------------|---------------------------------------------|
| $l_1$                                      | <a href="#">Figure 1</a>                      | Cutting edge length                    | L                               | ISO/TS 13399-2<br>71DD6C95DA49B             |
| $d_1$                                      | <a href="#">Figure 1</a>                      | Cutting diameter                       | DC                              | ISO/TS 13399-3<br>71D084653E57F             |
| $l_2$                                      | <a href="#">Figure 1</a>                      | Overall length                         | OAL                             | ISO/TS 13399-3<br>71D078EB7C086             |

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## Bibliography

- [1] ISO 13399 (all parts), *Cutting tool data representation and exchange*

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