INTERNATIONAL STANDARD

**ISO 10889-6**

First edition
1997-12-15

# Tool holders with cylindrical shank —

# Part 6:
Type E with cylindrical seat

*Porte-outil à queue cylindrique —*

*Partie 6: Porte-outil de type E pour outils à queue cylindrique*

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Reference number
ISO 10889-6:1997(E)

## 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 10889-6 was prepared by Technical Commitee ISO/TC 29, *Small tools*.

ISO 10889 consists of the following parts, under the general title *Tool holders with cylindrical shank*:

— *Part 1: Cylindrical shank, location bore — Technical delivery conditions*

— *Part 2: Type A, shanks for tool holders of special designs*

— *Part 3: Type B with rectangular radial seat*

— *Part 4: Type C with rectangular axial seat*

— *Part 5: Type D with more than one rectangular seat*

— *Part 6: Type E with cylindrical seat*

— *Part 7: Type F with taper seat*

— *Part 8: Type Z, accessories*

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# Tool holders with cylindrical shank —

# Part 6:
Type E with cylindrical seat

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## 1 Scope

ISO 10889 applies to tool holders with cylindrical shank for machine tools with non-rotating tools, preferably for turning machines.

This part of ISO 10889 specifies dimensions, designations and complementary technical delivery conditions for tool holders with cylindrical seat of types E1 to E4 with mounting system cylindrical shank in accordance with ISO 10889-1. For non-standardized tool holders such as tool holders with cylindrical seat as shown in the drawings, it is recommended to apply the corresponding specifications of this part of ISO 10889.

## 2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 10889. 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 10889 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 2768-1:1989, *General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications.*

ISO 2768-2:1989, *General tolerances — Part 2: Geometrical tolerances for features without individual tolerance indications.*

ISO 10889-1:1997, *Tool holders with cylindrical shank — Part 1: Cylindrical shank, location bore — Technical delivery conditions.*

ISO 10897:1996, *Collets for tool holders with taper ratio 1:10 — Collets, holders, nuts.*

ISO 15488:1996, *Collets with 8° setting angle for tool shanks — Collets, nuts and fitting dimensions.*

## 3 Dimensions

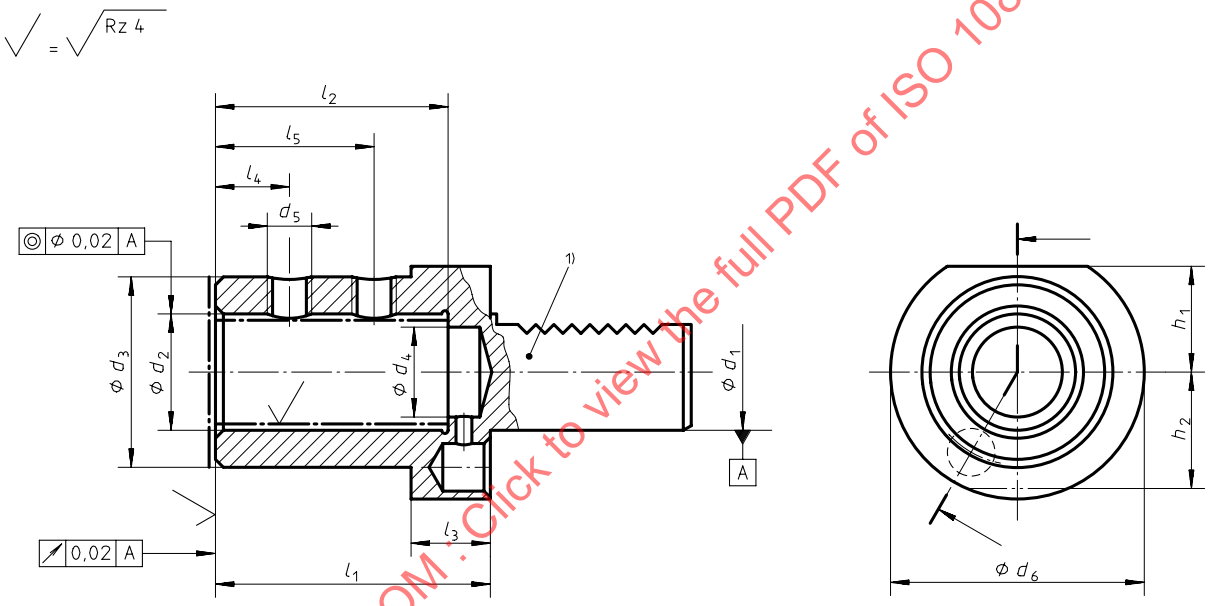
Unspecified details shall be chosen appropriately.

General tolerances: ISO 2768-1 mH

### 3.1 Tool holder of type E1

See figure 1 and table 1.

Dimensions in millimetres,
surface roughness in micrometres




1) Cylindrical shank in accordance with ISO 10889-1.

**Figure 1 — Type E1 tool holder for drilling tools with internal coolant supply**

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**Table 1**

Dimensions in millimetres

| $d_1$ | $d_2$ H6 | $d_3$ | $d_4$ [1)] | $d_5$ | $d_6$ | $h_1$ | $h_2$ | $l_1$ $^{0}_{-0,2}$ | $l_2$ | $l_3$ | $l_4$ | $l_5$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **20** | 20 | 40 | 12 | M10 × 1 | 50 | — | 23 | 67 | 54 | 18 | 15 | 35 |
| | 25 | 45 | 17 | M12 × 1 | | | | 71 | 59 | | 17 | 40 |
| **25** | 20 | 40 | 12 | M10 × 1 | 58 | 25 | 25 | 67 | 54 | 18 | 15 | 35 |
| | 25 | 45 | 17 | M12 × 1 | | | | 71 | 59 | | 17 | 40 |
| **30** | 20 | 40 | 12 | M10 × 1 | 68 | 28 | 30 | 67 | 54 | 22 | 15 | 35 |
| | 25 | 45 | 17 | M12 × 1 | | | | 71 | 59 | | 17 | 40 |
| | 32 | 52 | 24 | | | | | 75 | 63 | | 17 | 44 |
| **40** | 20 | 40 | 12 | M10 × 1 | 83 | 32,5 | — | 67 | 54 | 22 | 15 | 35 |
| | 25 | 45 | 17 | M12 × 1 | | | | 75 | 59 | | 17 | 40 |
| | 32 | 52 | 24 | | | | | 75 | 63 | | 17 | 44 |
| | 40 | 65 | 32 | M16 × 1 | | | | 90 | 73 | | 22 | 50 |
| **50** | 20 | 40 | 12 | M10 × 1 | 98 | 35 | — | 67 | 54 | 30 | 15 | 35 |
| | 25 | 45 | 17 | M12 × 1 | | | | 80 | 59 | | 17 | 40 |
| | 32 | 52 | 24 | | | | | 80 | 63 | | 17 | 44 |
| | 40 | 65 | 32 | M16 × 1 | | | | 90 | 73 | | 22 | 50 |
| | 50 | 75 | 42 | | | | | 100 | 83 | | 24 | 60 |
| **60** | 20 | 40 | 12 | M10 × 1 | 123 | 42,5 | — | 80 | 54 | 30 | 15 | 35 |
| | 25 | 45 | 17 | M12 × 1 | | | | 80 | 59 | | 17 | 40 |
| | 32 | 52 | 24 | | | | | 80 | 63 | | 17 | 44 |
| | 40 | 65 | 32 | M16 × 1 | | | | 90 | 73 | | 22 | 50 |
| | 50 | 75 | 42 | | | | | 100 | 83 | | 24 | 60 |
| **80** | 20 | 40 | 12 | M10 × 1 | 158 | 55 | — | 80 | 54 | 30 | 15 | 35 |
| | 25 | 45 | 17 | M12 × 1 | | | | 80 | 59 | | 17 | 40 |
| | 32 | 52 | 24 | | | | | 80 | 63 | | 17 | 44 |
| | 40 | 65 | 32 | M16 × 1 | | | | 90 | 73 | | 22 | 50 |
| | 50 | 75 | 42 | | | | | 100 | 83 | | 24 | 60 |

1) $d_4$ shall be pilot-drilled for manufacturing reasons.

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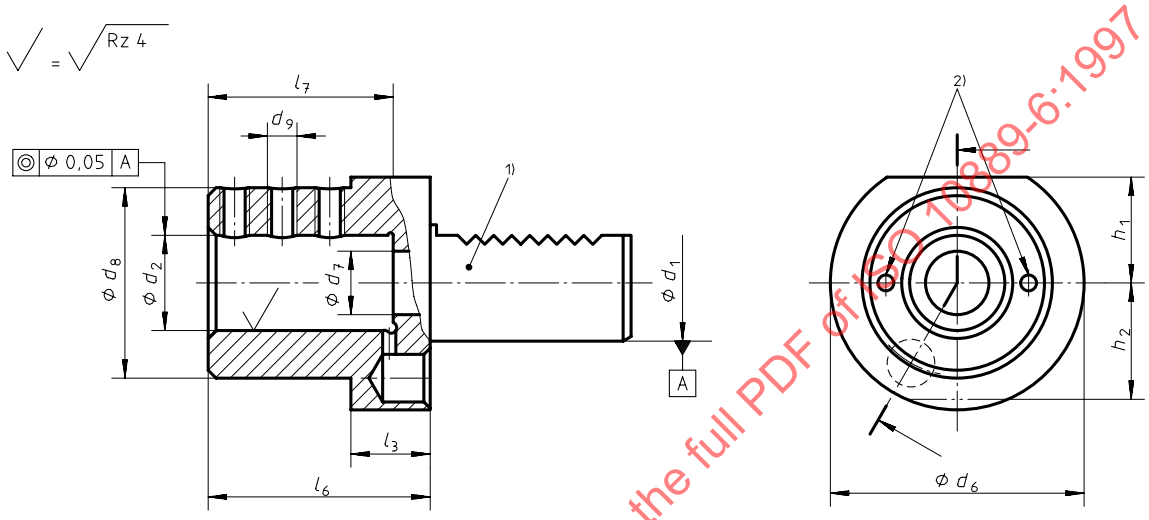
### 3.2 Tool holder of type E2

See figure 2 and table 2.

Dimensions in millimetres,
surface roughness in micrometres




1) Cylindrical shank in accordance with ISO 10889-1.

2) External coolant supply (closeable).

**Figure 2 — Type E2 tool holder for turning tools with cylindrical shank**

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**Table 2**

Dimensions in millimetres

| $d_1$ | $d_2$ H7 | $d_6$ | $d_7$ min. | $d_8$ | $d_9$ [1)] | $h_1$ | $h_2$ | $l_3$ | $l_6$ | $l_7$ |
|---|---|---|---|---|---|---|---|---|---|---|
| **16** | 6 | 40 | 6,7 | 32 | M6 | 18 | 18 | 13 | 44 | 34 |
| | 8 | | | | | | | | | |
| | 10 | | | | | | | | | |
| | 12 | | | 40 | M8 | | | | | |
| | 16 | | | | | | | | | |
| **20** | 8 | 50 | 9 | 40 | M6 | — | 23 | 18 | 50 | 41 |
| | 10 | | | | | | | | | |
| | 12 | | | | M8 | | | | | |
| | 16 | | | | | | | | | |
| | 20 | | | 50 | | | | | | |
| | 25 | | | | | | | | 60 | 51 |
| **25** | 8 | 58 | 10,5 | 40 | M6 | 25 | 25 | 18 | 50 | 41 |
| | 10 | | | | | | | | | |
| | 12 | | | | M8 | | | | | |
| | 16 | | | | | | | | | |
| | 20 | | | 58 | | | | | | |
| | 25 | | | | | | | | 60 | 51 |
| **30** | 8 | 68 | 16,5 | 55 | M6 | 28 | 30 | 22 | 60 | 51 |
| | 10 | | | | | | | | | |
| | 12 | | | | M8 | | | | | |
| | 16 | | | | | | | | | |
| | 20 | | | | | | | | | |
| | 25 | | | | | | | | | |
| | 32 | | | 68 | | | | | 75 | 61 |
| **40** | 12 | 83 | 20,5 | 55 | M8 | 32,5 | — | 22 | 75 | 61 |
| | 16 | | | | | | | | | |
| | 20 | | | | M10 | | | | | |
| | 25 | | | | | | | | | |
| | 32 | | | 83 | | | | | | |
| | 40 | | | | | | | | 90 | 76 |
| **50** | 16 | 98 | 25,5 | 68 | M10 | 35 | — | 30 | 90 | 76 |
| | 20 | | | | | | | | | |
| | 25 | | | | M12 | | | | | |
| | 32 | | | | | | | | | |
| | 40 | | | 98 | | | | | | |
| | 50 | | | | | | | | 100 | 86 |
| **60** | 16 | 123 | 40,5 | 68 | M10 | 42,5 | — | 30 | 90 | 76 |
| | 20 | | | | | | | | | |
| | 25 | | | | M12 | | | | | |
| | 32 | | | | | | | | | |
| | 40 | | | 98 | | | | | | |
| | 50 | | | | | | | | 100 | 86 |
| **80** | 20 | 158 | 40,5 | 68 | M12 | 55 | — | 30 | 100 | 86 |
| | 25 | | | | | | | | | |
| | 32 | | | | | | | | | |
| | 40 | | | 98 | | | | | | |
| | 50 | | | | | | | | | |

1) For $d_1$ = 20 mm at least two fastening threads, other sizes at least three fastening threads.

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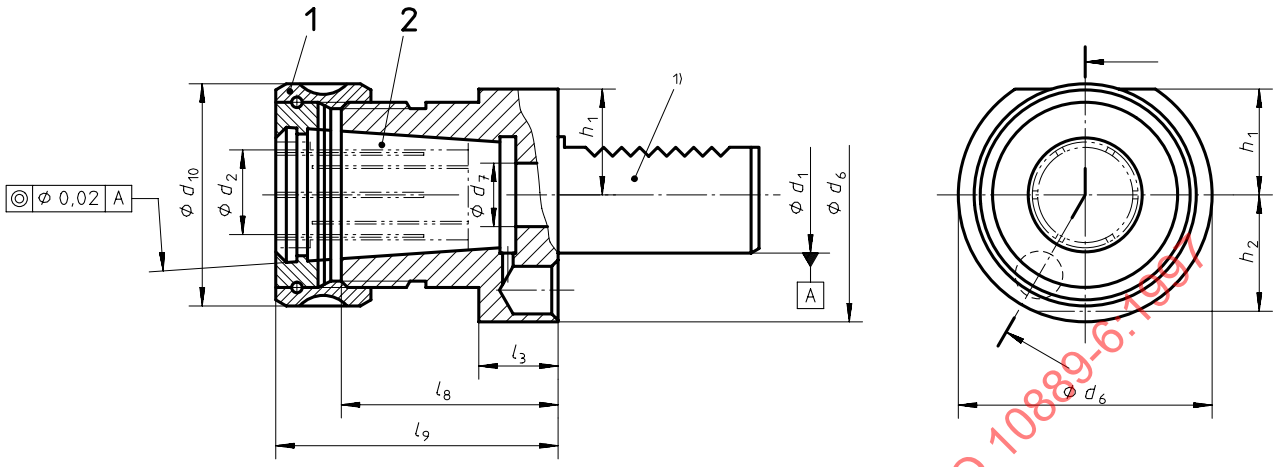
### 3.3 Tool holder of type E3

See figure 3 and table 3.

Dimensions in millimetres




**Key**

1 Nut, form D, in accordance with ISO 10897.
2 Collet, form C, in accordance with ISO 10897.

1) Cylindrical shank in accordance with ISO 10889-1.

**Figure 3 — Type E3 tool holder with cylindrical seat by collet in accordance with ISO 10897**

**Table 3**

Dimensions in millimetres

| $d_1$ | **Nominal size for collet and nut** | $d_2$ Clamping range of collet in accordance with ISO 10897 | | $d_6$ | $d_7$ min. | $d_{10}$ max. | $h_1$ | $h_2$ | $l_3$ | $l_8$ | $l_9$ max. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Form A | Form B | | | | | | | | |
| **16** | 12 | 1 to 12 | — | 40 | 6,7 | 35 | 18 | 18 | 13 | 36 | 45,5 |
| **20** | 16 | 2 to 16 | 5 to 16 | 50 | 9 | 43 | — | 23 | 18 | 42 | 57 |
| | 20 | 2 to 20 | 6 to 20 | | | 50 | | | | 46 | 62 |
| **25** | 16 | 2 to 16 | 5 to 16 | 58 | 10,5 | 43 | 25 | 25 | 18 | 42 | 57 |
| | 20 | 2 to 20 | 6 to 20 | | | 50 | | | | 46 | 62 |
| **30** | 16 | 2 to 16 | 5 to 16 | 68 | 16,5 | 43 | 28 | 30 | 22 | 42 | 57 |
| | 25 | 2 to 25 | 6 to 25 | | | 60 | | | | 59 | 75 |
| **40** | 25 | 2 to 25 | 6 to 25 | 83 | 20,5 | 60 | 32,5 | — | 22 | 59 | 75 |
| | 32 | 4 to 32 | 10 to 32 | | | 72 | | | | 73 | 90 |
| **50** | 25 | 2 to 25 | 6 to 25 | 98 | 25,5 | 60 | 35 | — | 30 | 59 | 75 |
| | 32 | 4 to 32 | 10 to 32 | | | 72 | | | | 73 | 90 |
| **60** | 25 | 2 to 25 | 6 to 25 | 123 | 40,5 | 60 | 42,5 | — | 30 | 59 | 75 |
| | 32 | 4 to 32 | 10 to 32 | | | 72 | | | | 73 | 90 |
| | 40 | 6 to 29,5 | 30 to 40 | | | 85 | | | | 82 | 100 |
| **80** | 40 | 6 to 29,5 | 30 to 40 | 158 | 40,5 | 82 | 55 | — | 40 | 82 | 100 |

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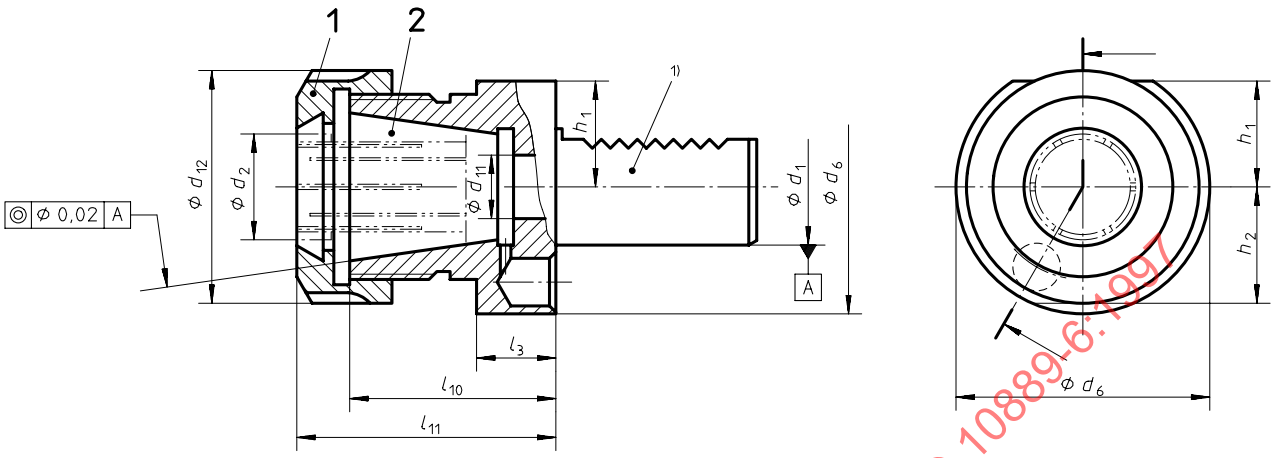
### 3.4 Tool holder of type E4

See figure 4 and table 4.

Dimensions in millimetres




**Key**

1 Nut, form D, in accordance with ISO 15488.
2 Collet, form C, in accordance with ISO 15488.

1) Cylindrical shank in accordance with ISO 10889-1.

**Figure 4 — Type E4 tool holder with cylindrical seat by collet in accordance with ISO 15488**

**Table 4**

Dimensions in millimetres

| $d_1$ | **Nominal size for collet and nut** | $d_2$ Clamping range of collet in accordance with ISO 15488 | | $d_6$ | $d_{11}$ min. | $d_{12}$ max. | $h_1$ | $h_2$ | $l_3$ | $l_{10}$ | $l_{11}$ max. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Form A | Form B | | | | | | | | |
| **16** | 20 | 1 to 13 | 1 to 13 | 40 | 6,7 | 35 | 18 | 18 | 13 | 32,5 | 44 |
| **20** | 25 | 1 to 16 | 2 to 16 | 50 | 9 | 42 | — | 23 | 18 | 38 | 50 |
| | 32 | 2 to 20 | 3 to 20 | | | 50 | | | | 49,5 | 62 |
| **25** | 25 | 1 to 16 | 2 to 16 | 58 | 10,5 | 42 | 25 | 25 | 18 | 45 | 57 |
| | 32 | 2 to 20 | 3 to 20 | | | 50 | | | | 49,5 | 62 |
| **30** | 25 | 1 to 16 | 2 to 16 | 68 | 16,5 | 42 | 28 | 30 | 22 | 45 | 57 |
| | 40 | 3 to 26 | 4 to 26 | | | 63 | | | | 56 | 70 |
| **40** | 32 | 2 to 20 | 3 to 20 | 83 | 20,5 | 50 | 32,5 | — | 22 | 49,5 | 62 |
| | 40 | 3 to 26 | 4 to 26 | | | 63 | | | | 61 | 75 |
| **50** | 40 | 3 to 26 | 4 to 26 | 98 | 25,5 | 63 | 35 | — | 30 | 61 | 75 |
| **60** | 40 | 3 to 26 | 4 to 26 | 123 | 28,5 | 63 | 42,5 | — | 30 | 61 | 75 |
| **80** | 40 | 3 to 26 | 4 to 26 | 158 | 28,5 | 63 | 55 | — | 40 | 61 | 75 |

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