
Solid hardmetal end mills with cylindrical shank — Dimensions

*Fraises cylindriques deux tailles monobloc en métaux-durs —
Dimensions*

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Foreword

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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 10911 was prepared by Technical Committee ISO/TC 29, *Small tools*, Subcommittee SC 9, *Tools with cutting edges made of hard cutting materials*.

This second edition cancels and replaces the first edition (ISO 10911:1994) which has been technically revised.

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1 Scope

This International Standard specifies the dimensions of solid hardmetal end mills with cylindrical shank.

2 Normative references

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

ISO 3338-1, *Cylindrical shanks for milling cutters — Part 1: Dimensional characteristics of plain cylindrical shanks*

ISO 3338-2, *Cylindrical shanks for milling cutters — Part 2: Dimensional characteristics of flatted cylindrical shanks*

3 Dimensions

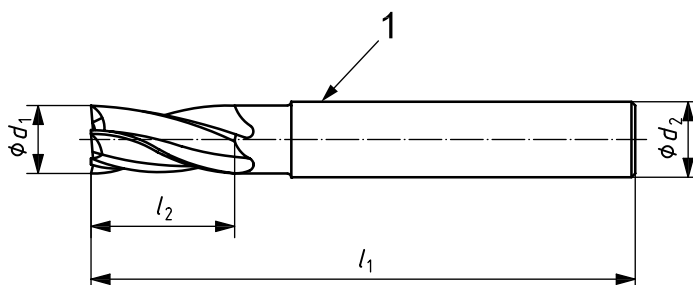
The dimensions of solid hardmetal end mills with plain cylindrical shank are specified in Figure 1 and Table 1.

NOTE The dimensions given in Table 1 also apply to solid hardmetal end mills with flatted cylindrical shanks in accordance with ISO 3338-2.

4 Centre cutting

End mills with two flutes shall be centre-cutting (slot drills).

End mills with three flutes or more may be centre-cutting.



Key

1 Plain cylindrical shank in accordance with ISO 3338-1

NOTE See Table 1 for dimensions.

Figure 1 — Example of an end mill

Table 1 — Dimensions of end mills with two flutes

Dimensions in millimetres

| Cutting diameter d_1 h10 | Shank diameter ^a d_2 h6 | Short cutting part | | | Long cutting part | | |
|----------------------------------|--|---------------------------|---------------------------|-----------------|---------------------------|-------------------------|-----------------|
| | | Overall length l_1^b | Cutting length l_2^c | | Overall length l_1^d | Cutting length l_2 | |
| | | | 2 or 3 cutting edges | 4 cutting edges | | 2 or 3 cutting edges | 4 cutting edges |
| 1,0 | 3,0 | 38,0 | 3,0 | 3,0 | — | — | — |
| 1,5 | 3,0 | 38,0 | 3,0 | 4,0 | — | — | — |
| 2,0 | 3,0 | 38,0 | 3,0 | 4,0 | 38,0 | 6,0 | 7,0 |
| | 6,0 | 50,0 | 3,0 | 4,0 | 57,0 | 6,0 | 7,0 |
| 2,5 | 3,0 | 38,0 | 3,0 | 4,0 | 38,0 | 7,0 | 8,0 |
| | 6,0 | 50,0 | 3,0 | 4,0 | 57,0 | 7,0 | 8,0 |
| 3,0 | 3,0 | 38,0 | 4,0 | 5,0 | 38,0 | 7,0 | 8,0 |
| | 6,0 | 50,0 | 4,0 | 5,0 | 57,0 | 7,0 | 8,0 |
| 3,5 | 6,0 | 50,0 | 4,0 | 6,0 | 57,0 | 7,0 | 10,0 |
| 4,0 | 6,0 | 54,0 | 5,0 | 8,0 | 57,0 | 8,0 | 11,0 |
| 4,5 | 6,0 | 54,0 | 5,0 | 8,0 | 57,0 | 8,0 | 11,0 |
| 5,0 | 6,0 | 54,0 | 6,0 | 9,0 | 57,0 | 10,0 | 13,0 |
| 6,0 | 6,0 | 54,0 | 7,0 | 10,0 | 57,0 | 10,0 | 13,0 |
| 7,0 | 8,0 | 58,0 | 8,0 | 11,0 | 63,0 | 13,0 | 16,0 |
| 8,0 | 8,0 | 58,0 | 9,0 | 12,0 | 63,0 | 16,0 | 19,0 |
| 9,0 | 10,0 | 66,0 | 10,0 | 13,0 | 72,0 | 16,0 | 19,0 |
| 10,0 | 10,0 | 66,0 | 11,0 | 14,0 | 72,0 | 19,0 | 22,0 |
| 12,0 | 12,0 | 73,0 | 12,0 | 16,0 | 83,0 | 22,0 | 26,0 |
| 14,0 | 14,0 | 75,0 | 14,0 | 18,0 | 83,0 | 22,0 | 26,0 |
| 16,0 | 16,0 | 82,0 | 16,0 | 22,0 | 92,0 | 26,0 | 32,0 |
| 18,0 | 18,0 | 84,0 | 18,0 | 24,0 | 92,0 | 26,0 | 32,0 |
| 20,0 | 20,0 | 92,0 | 20,0 | 26,0 | 104,0 | 32,0 | 38,0 |

^a For the dimensions, see ISO 3338-1.^b Tolerance on l_1 , short cutting part: $^{+2,0}_0$ mm.^c Tolerances on l_2 : for l_2 up to 10 mm: $^{+10}_0$ mm; for $l_2 > 10$ mm ≤ 22 mm: $^{+15}_0$ mm; for $l_2 > 22$ mm: $^{+20}_0$ mm.^d Tolerance on l_1 , long cutting part: $^{+2,0}_0$ mm.

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