
Turning tools with carbide tips — External tools

*Outils de tour à plaquettes en carbures métalliques — Outils
d'extérieur*

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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).

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).

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 9, *Tools with cutting edges made of hard cutting materials*.

This second edition cancels and replaces the first edition (ISO 243:1975), of which it constitutes a minor revision.

Turning tools with carbide tips — External tools

1 Scope

This International Standard specifies the types and the dimensions of turning tools with carbide tips; it deals only with external tools. It also gives the definition of right-hand and left-hand tools.

The shank sections and the inserts used are selected respectively from those defined in ISO 241 and ISO 242.

NOTE Internal tools are the subject of ISO 514; designation and marking are the subject of ISO 504.

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 241, *Shanks for turning and planing tools — Shapes and dimensions of the section*

ISO 242, *Carbide tips for brazing on turning tools*

3 Specifications

3.1 Types of external tools

Only seven types of tools, regarded as those most commonly used, have been retained; except for No. 4, each of these types can be provided as a left-hand or right-hand tool.

Dimension l given in [Table 2](#) and [Table 3](#) is the nominal length of the ISO tip. It is equal to:

b	for tool No. 4;
$0,8 b$	for tools No. 1, 2, 3, 5 and 6;
$0,4 b$	for tool No. 7.

Dimensions n and p , the 20° angle of tool No. 1, and in particular, the cutting angle of 10° , are given for information only, but should be used unless otherwise specified, particularly in the case of tools delivered from stock.

3.2 Shank sections

For the particular case of external tools, only two types of sections are selected from among the various types provided for in ISO 241.

- the square section $h = b$;
- the rectangular section with a ratio of $h/b = 1,6$ approximately.

NOTE The choice between these two sections for any given tool is in accordance with the table for external tools. This choice is based on present-day techniques, but may be subject to revision in the future on the basis of studies to be undertaken by various countries with a view to establishing which type of section is best adapted to its purpose from a technical point of view.