

Transformed

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

**ISO RECOMMENDATION
R 514**

**TURNING TOOLS WITH CARBIDE TIPS
INTERNAL TOOLS**

METRIC SERIES

1st EDITION

November 1966

COPYRIGHT RESERVED

The copyright of ISO Recommendations and ISO Standards belongs to ISO Member Bodies. Reproduction of these documents, in any country, may be authorized therefore only by the national standards organization of that country, being a member of ISO.

For each individual country the only valid standard is the national standard of that country.

Printed in Switzerland

Also issued in French and Russian. Copies to be obtained through the national standards organizations.

BRIEF HISTORY

The ISO Recommendation R 514, *Turning Tools with Carbide Tips — Internal Tools — Metric Series*, was drawn up by Technical Committee ISO/TC 29, *Small Tools*, the Secretariat of which is held by the Association Française de Normalisation (AFNOR).

Work on this question by the Technical Committee began in 1953 and led, in 1961, to the adoption of a Draft ISO Recommendation.

In April 1964, this Draft ISO Recommendation (No. 667) was circulated to all the ISO Member Bodies for enquiry. It was approved by the following Member Bodies:

Australia	Germany	Spain
Austria	Hungary	Sweden
Belgium	India	Turkey
Brazil	Italy	United Kingdom
Chile	Korea, Rep. of	U.S.A.
Colombia	Netherlands	U.S.S.R.
Czechoslovakia	New Zealand	Yugoslavia
Denmark	Poland	
France	Portugal	

Two Member Bodies opposed the approval of the Draft:

Canada
Switzerland

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in November 1966, to accept it as an ISO RECOMMENDATION.

TURNING TOOLS WITH CARBIDE TIPS INTERNAL TOOLS

METRIC SERIES

1. SCOPE

This ISO Recommendation concerns internal tools and is supplementary to ISO Recommendation R 243, *Turning Tools with Carbide Tips—Metric Series*, which relates only to external tools and to the definition of right-hand and left-hand tools.

The dimensions shown in this ISO Recommendation are valid for application in metric measures only; corresponding standardization in the inch system will be the subject of future study.

2. SPECIFICATIONS

Types of internal tools

Only two types of internal tools, considered to be those most generally used, are provided for; they are tool No. 8 and tool No. 9, which differ from each other only in the shape of the end of the operative portion.

Both types may be made either with a square shank or with a cylindrical shank, the front portion of the tool being of round section in both cases.

Dimension l shown in the Table is the nominal length of the carbide tip, type A or C , selected from those contained in the relevant ISO Recommendation R 242*; this dimension is equal to approximately $0.6 d$.

Shank sections

The shank sections are selected from those contained in the relevant ISO Recommendation R 241, **

- (a) the square sections $h = b$ for square shanks,
- (b) the round sections d for cylindrical shanks.

Overall lengths

Only one range of overall lengths is specified, the length being a function of the diameter d .

The lengths are scaled approximately in the series of preferred numbers R 40/3 and are a practically linear expression in terms of d , no value departing by more than 15 mm from the value obtained with the formula: $10 d + 50$ mm.

Shape of the operative portion

To permit the production of holes as small as possible, a bend of 15° is specified for the operative portion, with a dimension n virtually equal to $0.4 d$ and a cutting edge located at a distance equal to $0.2 d$ below the upper plane of the shank of the tool.

* ISO Recommendation R 242, *Carbide Tips for Turning Tools—Metric Series*.

** ISO Recommendation R 241, *Shanks for Turning and Planing Tools—Sections and Tolerances*.