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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 6138-2023

Replacing GB/T 6138.1-2007, GB/T 6138.2-2007

Subland twist drills for holes prior to tapping screw threads

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1. Structure and Drafting Rules of Standardization Documents"

Drafting.

This document replaces GB/T 6138.1-2007 "Step twist drill for drilling before tapping - Part 1. Types and specifications of straight shank step twist drills"

Dimensions" and GB/T 6138.2-2007 "Step twist drills for drilling before tapping - Part 2. Types and rulers of step twist drills with Morse taper shank

inch".

This document is a merged revision of GB/T 6138.1-2007 and GB/T 6138.2-2007, and is consistent with GB/T 6138.1-2007 and GB/T 6138.1-2007.

Compared with GB/T 6138.2-2007, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) Added terms and definitions (see Chapter 3);
- b) Add requirements for unspecified dimensional tolerances (see 5.1);
- c) Added technical requirements (see Chapter 7).

This document is modified to adopt ISO 3438.2013 "Step Twist Drill for Drilling Before Tapping".

Compared with ISO 3438.2013, this document has made the following structural adjustments.

---Added Chapter 3 Terms and Definitions;

---Added Chapter 4 symbols;

---Chapter 5 corresponds to Chapter 3 in ISO 3438.2013, 5.2 corresponds to 3.3, 5.3 corresponds to ISO 3438.2013

3.2 in ISO 3438.2013;

---Added Chapter 6 mark;

---Added Chapter 7 Technical Requirements.

The technical differences between this document and ISO 3438.2013 and their reasons are as follows.

---Replaced ISO 4203 (see Chapter 5) with normative reference GB/T 1442, replaced with normative reference GB/T 1443

ISO 296 (see Chapter 5), replaced ISO 2768-1 (see Chapter 5) with normatively quoted GB/T 1804, and added regulations

The normative reference document GB/T 6139 (see Chapter 7), ISO 10899.1996 has been deleted to adapt to my country's technical conditions;

---Added terms and definitions (see Chapter 3) to facilitate the use of this document;

---Added symbols (see Chapter 4) to facilitate the use of this document;

---Added tags (see Chapter 6) to facilitate the use of this document;

---Added the classification of ordinary grade and precision grade, and stipulated the corresponding diameter deviation (see Table 1, Table 2, Table 3, Table 4) to facilitate the preparation of this document

use;

---Added a straight handle twist drill with a flat tail (see Figure 1) to facilitate the use of this document;

---Added the step drill size series adapted to ordinary fine threads (see Table 2 and Table 4) to facilitate the use of this document;

---Added technical requirements (see Chapter 7) to facilitate the use of this document.

Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents.

1 Scope

This document specifies the symbols and types of Morse taper shank step twist drills and

straight shank step twist drills (common grade and precision grade) used for drilling before tapping.

formulas and dimensions, marking examples and technical requirements.

This document applies to.

---Manufacture of Morse taper shank step twist drill for drilling before M8~M30 ordinary thread tapping;

---Manufacture of straight shank step twist drill for drilling before tapping M3~M14 ordinary threads.

The relationship between the symbols in this document and the ISO 13399 series of documents is shown in Appendix A.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations

For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to

this document.

GB/T 1442 Dimensions of drive flat tails and sleeves for straight tools (GB/T 1442-2004, ISO 4203.1978, MOD)

GB/T 1443 Self-clamping cones for machine tools and tool holders (GB/T 1443-2016, ISO 296.1991, MOD)

GB/T 1804 General tolerances Tolerances of linear and angular dimensions without tolerances noted (GB/T 1804-2000, eqvISO 2768-1.1989)

GB/T 6139 Technical specifications for step twist drills

3 Terms and definitions

There are no terms or definitions to be defined in this document.

4 symbols

The following symbols apply to this document.

d1---Diameter of the drilling part of the step twist drill;

d2---Diameter of countersinking part of step twist drill;

l ---Total length of step twist drill;

l1---Step twist drill groove length;

l2---The length of the drilling part of the step twist drill;

Phi ---The angle of the countersinking part of the step twist drill.

5.1 General

All dimensions and tolerances are in millimeters. Unspecified dimensional tolerances shall be in accordance with Level C in GB/T 1804.