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

GB/T 14896.1-2025

Replacing GB/T 14896.1-2009

**Non-traditional machines - Terminology - Part 1: Basic
terminology**

特种加工机床 术语 第1部分：基本术语

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1. Structure and drafting rules for standardization documents" Drafting. This document is Part 1 of GB/T 14896. GB/T 14896 has been published in the following parts.

--- Terminology of special processing machine tools Part

--- Terminology of special machining machine tools Part

2. Electrical discharge machining machine tools;

--- Terminology of special processing machine tools Part

3. Electrochemical processing machine tools;

--- Terminology of special processing machine tools Part

4. Ultrasonic processing machine tools;

--- Terminology of special processing machine tools Part

5. Combined processing machine tools;

--- Terminology of special processing machine tools Part

6. Other special processing machine tools;

--- Terminology of special processing machine tools Part

1 Scope

Part 1 of China's terminology standard for non-traditional machine tools - the machines that remove material by means other than a cutting edge: electrical discharge machining,

electrochemical machining, laser, electron beam, ultrasonic, water jet and the rest. It defines the basic terms for the processing methods, the names, the parameters and the main components of non-traditional machine tools, and it applies to all types of such machines and equipment. The field needs a vocabulary more than conventional machining does, for two reasons. The first is that the processes have nothing in common with each other physically - an electrode eroding metal in a dielectric, a beam of light melting it, a jet of water and abrasive cutting it - so the words for what happens, for the parameters that control it and for what the surface looks like afterwards were coined separately in each and mean different things. The second is that these processes came into industrial use recently and mostly from research, so the terminology arrived in translation, from several languages, with the same technique carrying different names in different shops. The basic terms this part fixes are the ones the whole family shares in principle even where the physics differs: the terms for the process itself and its variants, for the workpiece and tool and the gap between them, for the removal rate and the accuracy and the surface integrity that results - including the recast layer and the heat affected zone, which conventional machining does not produce and has no words for - and for the main components of the machine and its control. The parts that follow cover the individual processes. Issued on 24 January 2025 and in force since 1 August 2025, it replaces GB/T 14896.1-2009.

This document defines the basic terms of processing methods, names, parameters and main components of special processing machine tools. This document is applicable to all types of special processing machine tools (including equipment).

2 Normative references

This document has no normative references.

3 Processing methods

3.1 It mainly uses electricity, magnetism, sound, light, heat, liquid, chemical and other energies alone or in combination to remove, accumulate, deform, modify, plate, etc. processing method.

3.2 In a certain medium, pulse spark discharge is used between the workpiece and the tool electrode to melt, vaporize and remove the workpiece material.

3.3 A processing method that uses the principle of electrochemical anodic dissolution to remove workpiece material.

3.4 Electroforming; EF A processing method that uses the principle of cathodic electrochemical deposition to manufacture structures or parts.

3.5 Ultrasonic machining; USM Under the action of ultrasonic vibration, the workpiece material is removed by abrasive impact and liquid cavitation, or ultrasonic frequency is applied to the tool or workpiece. Vibration processing is a processing method that uses

ultrasonic vibration to connect materials.

3.6 Based on the discrete-deposition principle, the forming and manufacturing method is driven by the digital model of the part to directly drive the material to be deposited layer by layer.

3.7 In a certain medium, arc discharge is generated between the workpiece and the tool electrode, causing the workpiece material to melt and gasify and be removed. method.

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