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

GB/T 18462-2025

Replacing GB/Z 18462-2001

**Laser processing machines - Performance specifications for
metal cutting**

激光加工机械 金属切割的性能规范

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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 is required. This document replaces GB /Z 18462-2001 "Performance specification and standard inspection procedure for metal cutting of laser processing machinery" and Compared with GB /Z 18462-2001, in addition to structural adjustments and editorial changes, the main technical changes are as follows: Increased the scope of application (see Chapter 1);

a) The terms and definitions of trailing angle, nodule, complete cutting and interrupted cutting (see 3.1, 3.2,

3.5 of the.2001 edition) have been deleted;

b) Added the terms and definitions of dross and verticality (see

c) Added cutting performance requirements for laser processing machinery (see

d) Deleted mechanical and process parameters (see Chapter 4 of the.2001 edition);

e) The evaluation and classification of cutting performance has been modified and added to the performance requirements for cutting metal parts (see 4.3,

f) The contents of 5.3,

5.5 have been modified (see 5.2, 5.3,

5.5 of the.2001 edition);

g) Added cutting performance test for laser processing machinery (see 5.1);

h) Added inspection rules (see Chapter 6).

i) Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

This document was proposed by the China Machinery Industry Federation. This document

is under the jurisdiction of the National Technical Committee on Optical Radiation Safety and Laser Equipment Standardization (SAC/TC 284). This document was drafted by: Suzhou Tianhong Laser Co., Ltd., Han's Laser Intelligent Equipment Group Co., Ltd., Jinan Jinwei Laser Technology Co., Ltd., Suzhou Ruitie Laser Technology Co., Ltd., Shandong Datu CNC Equipment Co., Ltd., Guangdong Academy of Sciences Intelligent Manufacturing Research Institute, Pentium Laser (Zhejiang) Co., Ltd., Shandong Xingguang Optoelectronics Technology Co., Ltd., Zhejiang Yili Tools Co., Ltd., Shanghai Feibo Laser Technology Co., Ltd., Shenzhen Metrology and Quality Inspection Institute, Henan Polytechnic University, Shanghai Laser Technology Institute Co., Ltd. Company, the 11th Institute of China Electronics Technology Group Corporation, Wuhan Huagong Laser Engineering Co., Ltd., Jinan Dingdian CNC Equipment Co., Ltd. Company, Shenzhen Polytechnic, Jiangsu Fenghesheng Intelligent Technology Co., Ltd., Suzhou Lingchuang Prima Intelligent Equipment Co., Ltd., Haining Hong Shibaosheng Technology Co., Ltd., Yantai Enbang Electronic Technology Co., Ltd., Jinan Hongniu Machinery Equipment Co., Ltd., Shandong Presaisi CNC Equipment Co., Ltd. Equipment Co., Ltd. and Jinan Xintian Technology Co., Ltd. The main drafters of this document are: Jin Chaolong, Hu Rui, Jiang Xifeng, Li Zhenguang, Zhang Anming, Si Weizheng, Li Zheng, Qin Peng, Wu Jinnian, Li Xiaojun, Jin Xian, Li Xiangzhao, Ming Pingmei, Zhang Lingling, Sun Ling, Zhou Xiaozhuang, Yu Yin, Liao Qianghua, Yang Ping, Song Weijian, Wang Rui, Yu Zhaolei, Zhou Hongmei, Wang Xiuli, Yu Jiang, Zhang Anguo, Niu Jiatao, Shang Zhongxing, Jia Yulei. The previous versions of this document and the documents it replaces are as follows: First published in 2001 as GB /Z 18462-2001; - This is the first revision. - Performance Specifications for Laser Processing Machinery Metal Cutting

1 Scope

GB/T 18462-2025 is the Chinese national standard on laser processing machines - performance specifications for metal cutting, in the field of electronics. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 28 February 2025 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 September 2025. Classification: ICS 31.260, CCS L51. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the cutting performance of laser processing machines and the performance requirements of metal parts cut by them, and describes the corresponding test. The inspection method specifies the inspection rules. This document is applicable to the laser vertical cutting of metal materials with a thickness of

0.1 mm to 60 mm.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies. in this document.

GB/T 15313 Laser Terminology

GB/T 34380-2017 CNC laser cutting machine

3 Terms and definitions

The terms and definitions defined in GB/T 15313 and the following apply to this document.

3.1 adhering slag Solidified metal slag attached to the lower edge of the cut surface after cutting.

3.2 Heataffectedzone width The maximum distance between the cut plane and the point where changes in material properties due to cutting heat can be observed, measured perpendicular to the cut plane.

3.3 Kerf width The distance between the two sides of the cut where the laser beam enters the workpiece.

3.4 recast layer During laser processing, due to the high energy density and rapid heating of the laser, the surface of the material melts and re-solidifies to form a layer Material.

3.5 Verticality squareness The maximum vertical distance between the expected and actual cut planes.

Note. Indicated by u.

4 Performance requirements

4.1 Overview The laser types used in the laser processing machinery specified in this document are shown in Table 1.