

ICS 53.100
CCS P97



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

GB/T 45094-2024

Earth-moving machinery - Hybrid electric wheel loaders

土方机械 混合动力轮胎式装载机

Issued on: November 28, 2024

Implemented on: June 1, 2025

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

Table of Contents

1 Scope	1
2 Normative references	1
3 Terms and Definitions	2
4 Parameter	3
5 Technical Requirements	3
6 Test methods	6
7 Inspection Rules	14
21 Table B.4 External charging test record table	21

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. 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 for Standardization of Earthmoving Machinery (SAC/TC334). This document was drafted by: XCMG Engineering Machinery Co., Ltd. Technology Branch, Shandong Lingong Engineering Machinery Co., Ltd., Yingxuan Heavy Industry Co., Ltd., Tianjin Engineering Machinery Research Institute Co., Ltd., Xiamen XGMA Machinery Co., Ltd., Fujian Jingong New Energy Technology Co., Ltd. Company, Xuzhou Meichi Axle Co., Ltd., Yuchai Xinlan New Energy Power Technology Co., Ltd., Lovol Heavy Industries Group Co., Ltd., Lonking (Shanghai) Machinery Manufacturing Co., Ltd., Hongyuan Precision Wheel (Jiaozuo) Co., Ltd., Shandong Wanshi Machinery Technology Co., Ltd., Jiangsu Xugong Engineering Machinery Research Research Institute Co., Ltd., Shanghai Qiyuanxin Power Technology Co., Ltd., and Qingzhou Inno Heavy Industry Machinery Co., Ltd. The main drafters of this document are. Han Bin, Zuo Guijie, Li Yanxuan, Chen Shuqiao, Sun Zhicong, Xiao Yubo, Zhao Qipei, Mao Zhengsong, Sun Changliang, Wang Yongxing, Chen Hanjie, Zhu Jun, Liu Jichao, Zeng Tao, Han Zhiguang, and Zhai Genli. Earthmoving machineryHybrid wheel loaders

1 Scope

GB/T 45094-2024 is the Chinese standard for hybrid wheel loaders. The loader's short cycle, load, reverse, turn, dump, return, is dominated by repeated acceleration and braking

of a very heavy machine, which is precisely the duty a hybrid drivetrain converts into fuel saving, and Chinese manufacturers have moved into hybrid and electric loaders faster than anyone. The standard sets the parameters, then the technical requirements covering the performance, the hybrid powertrain and its energy storage, the electrical safety of the high voltage system with its isolation, protection and discharge requirements, the general machine safety, and the marking and information required for service and rescue. It then gives the test methods, including the cycle-based energy consumption and performance tests that make one machine comparable with another, the inspection rules and the marking, packaging, transport and storage, with an informative annex on the main parameters. It takes effect on 1 June 2025, and for a buyer comparing hybrid loaders in China it is the basis of the published figures.

This document specifies the parameters, technical requirements, inspection rules, marking, packaging, transportation and storage of hybrid wheel loaders. Corresponding test methods. This document applies to the manufacture and inspection of hybrid wheel loaders.

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 to This document.

GB/T 755-2019 Ratings and performance of rotating electrical machines

GB/T 4208-2017 Enclosure protection degree (IP code)

GB/T 5226.1 Electrical safety of machinery Electrical equipment of machinery Part

4 High power DC charging interface

GB/T 20418 Lighting, signal and marking lights and reflectors for earth-moving machinery