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GB/T 45095-2024

Earth-moving machinery - Hybrid electric hydraulic excavators

土方机械 混合动力液压挖掘机

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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. 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 of Standardization of Earthmoving Machinery (SAC/TC334). This document was drafted by: Xuzhou Xugong Excavator Co., Ltd., Shandong Lingong Engineering Machinery Co., Ltd., Shandong Construction Machinery Co., Ltd., Jiangsu Huizhi High-end Engineering Machinery Innovation Center Co., Ltd., Xiamen Yulong Machinery Co., Ltd., Tianjin Engineering Machinery Research Institute Co., Ltd., Taiyuan University of Science and Technology, Qingdao Ruilais Machinery Co., Ltd., Jiangsu Xugong Engineering Machinery Research Institute Co., Ltd., Sunward Intelligent Equipment Co., Ltd. Company, Zhejiang Pangu Power Technology Co., Ltd., Weichai (Qingdao) Smart Heavy Industry Co., Ltd. The main drafters of this document are: Wang Fei, Zhang Jian, Liu Jianjun, Sun Hui, Chen Xinmin, Chen Baoqing, Ma Lifeng, Luo Shaoxuan, Zhu Feng, Hao Peng, Peng Liang, Tu Xiaodan and Li Zhenlei. Earthmoving machinery Hybrid hydraulic excavator

1 Scope

GB/T 45095-2024 is the Chinese standard for hybrid hydraulic excavators. The excavator is the machine where hybridisation pays best, because the swing deceleration and the boom descent throw away large quantities of energy on every cycle that a hybrid can capture and reuse, and because the engine can then be sized for the average rather than the peak. That also makes the machine hard to specify: its fuel consumption depends entirely on the duty cycle assumed, and its safety case has to cover a high voltage system on a machine that is worked in mud and dismantled in the field. The standard sets the main parameters, then the requirements, general, performance and safety, including the high voltage system, the energy storage device and its protection, the isolation and the discharge provisions, and the marking and information that a service technician needs. It then covers the test methods, including the energy consumption test over defined cycles, the inspection rules and the marking, packaging, transport and storage. It takes effect on 1 June 2025.

This document specifies the parameters, requirements, inspection rules, marking, packaging, accompanying documents, transportation and storage of hybrid hydraulic excavators. The relevant test methods are described. This document applies to the manufacture and inspection of hybrid hydraulic excavators.

2 Normative references

The contents of the following documents constitute 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 3838-2002 Surface water environmental quality standard

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

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

3 Pressurization test method

GB/T 19933.4 Earth-moving machinery cab environment Part

4. Test methods and performance for heating, ventilation and air conditioning (HVAC)

GB/T 19933.5 Earth-moving machinery cab environment Part

5 Test methods for windshield defrosting systems

GB/T 20082 Hydraulic transmission fluid contamination - Method for determining particle contamination using an optical microscope