

ICS 23.080
CCS J 71



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

GB/T 44045-2024

**Rotary pumps for petroleum, petrochemical and natural gas
industries**

石油、石化和天然气工业用转子泵

Issued on: May 28, 2024

Implemented on: December 1, 2024

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

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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 Pump Standardization Technical Committee (SAC/TC211). This document was drafted by: Hefei General Machinery Research Institute Co., Ltd., Hangzhou Xinglong Pump Industry Co., Ltd., Huangshan Industrial Pump Manufacturing Co., Ltd. Company, Huangshan Haina Intelligent Manufacturing Co., Ltd., Hebei Hengsheng Pump Industry Co., Ltd., Donghua Engineering Technology Co., Ltd., Liaoning Hengxing Pump Industry Co., Ltd., Nanjing Industrial Pump Factory, Qingdao Luode General Machinery Equipment Co., Ltd., Hangzhou Dachao Petrochemical Equipment Co., Ltd., Zhejiang Tingyu Ruilaibo Pump Industry Co., Ltd., NETZSCH (Lanzhou) Pump Industry Co., Ltd., EDI Machinery (Hangzhou) Co., Ltd., Depam (Hangzhou) Pump Technology Co., Ltd. Ltd., Tianjin Pump Machinery Group Co., Ltd., Ningbo Zhongde Screw Pump Manufacturing Co., Ltd., Shandong University of Technology, Sinopec Qingdao Refinery Chemical Co., Ltd., Ningbo Institute of Technology, Lanzhou University of Technology, General Machinery Key Core Basic Parts Innovation Center (Anhui) Co., Ltd. The main drafters of this document are. Liu Guangbing, Jin Zhongguo, Wang Yang, Chen Rui, Wang Xu, Chen Xiaosong, Jiang Chunming, Xu Changman, Li Minzhao, Bian Wei, Han Caihong, Li Bin, Guo Cheng, Shi Yongfeng, Zhong Qibing, Zhou Liang, Yan Dongnan, Lin Xuecheng, Zhao Di, Wei Xiuting, Meng Jian, Cheng Xiaomin, Chen Zhengwen, Cao Songlin, Lu Fei, Guo Chenchen and Li Yibin. Rotor pumps for the oil, petrochemical and natural gas industries

1 Scope

GB/T 44045-2024 is the Chinese specification for rotary pumps in the petroleum, petrochemical and natural gas industries, the rotary counterpart to GB/T 3215 for centrifugal pumps and, in the international scheme, to API 676. It covers gear, screw, lobe and sliding vane pumps and their units, and it is written the way process industry pump standards are written, as a purchase specification: the design requirements, the pressure-containing parts and connections, the casing connections, nozzles and auxiliary connections, the flanges, the external forces and moments the nozzles have to take, the

rotating parts, and the materials; then the auxiliary equipment, drivers, couplings and guards, belt drives, baseplates, pressure limiting valves, controls and instrumentation, auxiliary piping, the pulsation and vibration control requirements for multiphase pump skids, and special tools; then testing and inspection, the documentation the vendor owes at proposal and at contract, and packaging, transport and storage. Nine annexes carry the pump classification with diagrams, the data sheets, a typical multiphase skid diagram, the pulsation and vibration control techniques, the inspector checklist, the NPSH calculations, the drawing and data requirement sheet and the flange and material cross-reference tables. It applies to the design, manufacture, installation, use and maintenance of these pumps.

This document specifies the technical requirements for rotor pumps (gear pumps, screw pumps, cam pumps, vane pumps) and units for the petroleum, petrochemical and natural gas industries. It describes the requirements for test and auxiliary equipment, specifies technical data, packaging, transportation and storage, and gives Types and classifications of rotor pumps specified in technical regulations. This document applies to the design of rotor pumps (gear pumps, screw pumps, cam pumps, vane pumps) and units for the petroleum, petrochemical and natural gas industries. Manufacturing, installation, use, maintenance and management.

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 193 Common thread diameter and pitch series

GB/T 196 Basic dimensions of common threads

GB/T 197 Common thread tolerances

GB/T 229 Charpy pendulum impact test method for metallic materials

GB/T 755 Ratings and performance of rotating electrical machines

GB/T 1047 Definition and selection of nominal sizes of piping components

GB/T 1095 Cross-sectional dimensions of keyways

GB/T 2516 Limit deviations of common threads

GB/T 3215 Centrifugal pumps for petroleum, petrochemical and natural gas industries

GB/T 3836.1 Explosive atmospheres Part