

ICS 23.080

CCS J 71



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

GB/T 45819-2025

Centrifugal liquid hydrogen pumps - Technical specification

离心式液氢泵 技术规范

Issued on: May 30, 2025

Implemented on: September 1, 2025

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

Table of Contents

Preface	III
1 Scope	1
2 Normative references	1
3 Terms and Definitions	2
4 Technical Requirements	2
4.1 General Requirements	2
4.2 Design Requirements	3
4.3 Material requirements	5
4.4 Performance requirements	6
4.5 Safety requirements	8
5 Test methods	8
5.1 Test conditions	8
5.2 Materials	9
5.3 Normal temperature test	10
5.4 Low temperature test	11
6 Inspection rules	13
6.1 Factory Inspection	13
6.2 Type test	14
7 Sign	14
8 Packaging, transportation and storage	15
Appendix A (Informative) Typical Pump Structure	16
Appendix B (Informative) Pump Input Conditions	19
Appendix C (Informative) Recommended grades of metal materials for main pump parts	20
Appendix D (Normative) Conversion of pump performance test results for different media	21
Appendix E (Informative) Table 22 Correspondence between Liquid Hydrogen Temperature and Saturated Vapor Pressure	23
Appendix F (Informative) Pump Test Report Format	23
Appendix G (Informative) Pump Data Sheet	25
Appendix H (Informative) Vendor Information Requirements	27
Reference	28

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: Beijing Aerospace Power Research Institute, Hefei General Machinery Research Institute Co., Ltd., Hefei Xinhua Shielded Pump Co., Ltd., Hangzhou Hangyang Pump & Valve Co., Ltd., Beijing Aerospace Petrochemical Technology Equipment Engineering Co., Ltd., China Huanqiu Engineering Corporation Beijing Branch Company, New Territory Pump Industry (Zhejiang) Co., Ltd., Zhejiang University, Sinopec Guangzhou Engineering Co., Ltd., Shanghai Kaiquan Pump Industry (Group) Co., Ltd., Shenyang Blower Group Nuclear Power Pump Co., Ltd., Shenyang Pump Research Institute Co., Ltd., Hangzhou Xinya Cryogenic Technology Co., Ltd., Jiali Teren Yuan Pump Industry Co., Ltd., Shaanxi Wofeng Fluid Technology Co., Ltd., Xi'an Pump Valve General Factory Co., Ltd., Hangzhou Hangyang Pharmaceutical Engineering Co., Ltd., Jiangsu University, General Machinery Key Core Basic Parts Innovation Center (Anhui) Co., Ltd., Aerospace Hydrogen Energy Technology Co., Ltd., Zhejiang Mechanical and Electrical Vocational University of Technology, Dalian Leo Huaneng Pump Industry Co., Ltd., Chongqing Pump Factory Co., Ltd., Ebara Machinery Zibo Co., Ltd., Shanghai Shangyuan Pump Industry Manufacturing Co., Ltd., Yantai Longgang Pump Industry Co., Ltd., Liaoning Hengxing Pump Industry Co., Ltd., Qingdao Haixi Electric Co., Ltd., Hangzhou Tu Bo Energy Technology Co., Ltd., Jiangsu University Fluid Machinery Wenling Research Institute, Yantai Hengbang Pump Industry Co., Ltd., Zhejiang Weige Intelligent Pump Industry Co., Ltd.

Co., Ltd., Huzhou Mitsui Cryogenic Equipment Co., Ltd., and Cunrong Fluid Equipment (Wuxi) Co., Ltd.

The main drafters of this document are: Wu Yuzhen, Ma Jiamei, Chen Zhengwen, Wang Guoliang, Lian Junwei, Hu Yun, Shao Chen, Ge Jie, Qiu Limin, Zhang Xiaobin, Yang Chengjiong, Wang Yanhe, Fu Wei, Dong Qinmin, Jin Zhilei, Ye Xiaoqiang, Yang Sisi, Wang Weibo, Zhang Jinling, Liu Yi, Cao Junwei, He Bo, Gao Bingwen, Sun Xiaocheng, Cao Puyu, Ren Qile, Su Jianan, Zhang Wei, Du Zhenming, Li Xuebing, Bai Xiaobang, Si Qiaorui, Sun Yanquan, Chen Yongjun, Xu Wenchao, Zhang Yongliang, Liu Haichuan, Wang Wenzhe, Rao Kun, Zhao Yiteng, Wang Hongguang, Chen Bin, Li Tao, Ouyang Su.

Technical Specifications of Centrifugal Liquid Hydrogen Pumps Important. Before using this document, the user is responsible for taking appropriate safety, health and protection measures, clarifying its scope of application, and Ensure compliance with relevant national laws and regulations and mandatory national standards.

1 Scope

This document specifies the technical requirements, test methods, inspection rules, marking, packaging, transportation and storage of centrifugal liquid hydrogen pumps.

This document applies to centrifugal pumps that transport single-phase liquid hydrogen.

This document does not apply to submersible liquid hydrogen pumps.

2 Normative references

GB/T 228.1

GB/T 229

GB/T 3215-2019

GB/T 3216-2016

GB/T 3634.2

GB/T 3836.1

GB/T 4208

GB/T 4844

GB/T 7021

GB/T 8979

GB/T 9239.1-2006

GB/T 9239.14

GB/T 9239.32

GB/T 13148

GB/T 13277.1

GB/T 13306

GB/T 13384

GB/T 13824

GB/T 14211

GB/T 16823.2-1997

GB/T 16907-2014

GB/T 18149-2017

GB/T 19418-2003

GB/T 24499

chinastandards.org · PREVIEW