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

GB/T 38045-2019

Marine water hydraulic axial piston pumps

船用水液压轴向柱塞泵

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard is proposed and managed by the National Marine Machinery Standardization Technical Committee (SAC/TC137). This standard was drafted. China Shipbuilding Industry Comprehensive Technology and Economic Research Institute, Hangzhou Hao Te Technology Co., Ltd., Nanjing Rui Shi fire safety Equipment Co., Ltd., Fujian Tianguang Fire Protection Co., Ltd., Shanghai Xiaoxiang Fire Equipment Co., Ltd., Xi'an Rio Tinto Fire Technology Co., Ltd., Ship Armored Product Quality Supervision and Inspection Center, Jiujiang Zhongchuan Fire Equipment Co., Ltd. The main drafters of this standard. Sun Meng, Zhou Hua, Huang Yashu, Zhang Jianqing, Chen Xianlei, Xie Anzhen, Li Liang, Qiu Bo, Li Chunming, Zhang Zanfeng. Marine water hydraulic axial piston pump

1 Scope

China's national standard for marine water hydraulic axial piston pumps. It specifies the terms and definitions, the classification and marking, the requirements, the test methods and the inspection. Water hydraulics uses water, usually seawater, as the working fluid instead of oil, and at sea the case for it is compelling: there is an unlimited supply of it over the side, a leak causes no pollution and no fire risk, and the fluid does not degrade or need changing. Fire safety alone justifies it on a warship or an offshore platform. The engineering difficulty is that water is everything a hydraulic fluid should not be. It has almost no viscosity, so it leaks through clearances that would hold oil and provides no lubricating film between the pump's sliding surfaces; it boils readily, so cavitation is a constant threat; and it corrodes. A water pump is therefore built from ceramics, stainless steels and engineered polymers rather than from the steel and bronze of an oil pump.

This standard specifies the terms and definitions, classification and marking, requirements, test methods and inspections of hydraulic axial piston pumps (hereinafter referred to as pumps) for ship water. Rules, signs, packaging, transportation and storage. This standard is applicable to seawater and fresh water without particles (filtration accuracy up to 10 μ m) as working medium, and the rated pressure is not more than Design, manufacture and acceptance of 16MPa marine water hydraulic axial piston pump.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article. Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 191 packaging storage and transportation icon

GB/T 2353-2005 Hydraulic pump and motor mounting flange and shaft extension dimension series and labeling code

GB/T 2878.1-2011 Hydraulic drive connection with metric and stud ends for metric and O-ring seals Part 1. Oil port

GB/T 7935-2005 General technical requirements for hydraulic components

GB/T 10125-2012 Artificial atmosphere corrosion test salt spray test

GB/T 16301-2008 Measurement and evaluation of vibration intensity of auxiliary machinery for ship cabin

GB/T 17446-2012 Fluid transmission system and component vocabulary

GB/T 17483 Hydraulic pump airborne sound level measurement specification

GB/T 20878-2007 Stainless steel and heat resistant steel grades and chemical composition

GB/T 21833-2008 Austenitic ferrite duplex stainless steel seamless steel pipe

JB/T 7858-2006 Hydraulic component cleanliness evaluation method and hydraulic component cleanliness index

3 Terms and definitions

The following terms and definitions as defined in GB/T 17446-2012 apply to this document.

3.1 Rated pressure ratedpressure Continuous operation over the specified speed range and the highest output pressure for the pump design life.

3.2 No-load pressure derived pressure Do not exceed the rated pressure of 5% or 0.5MPa pump output pressure.

3.3 Maximum pressure maximumpressure The highest output pressure that allows the pump to operate for short periods of time.

3.4 Nominal displacement nominalcapacity The nominal value of the pump geometry displacement.