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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 37533-2019

Marine swing cylinder radial piston hydraulic motors

船用摆缸式径向柱塞液压马达

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard was proposed and managed by the National Marine Machinery Standardization Technical Committee (SAC/TC137). Drafting organizations of this standard. China State Shipbuilding Industry Technical and Economic Research Institute, Ningbo Xinhong Hydraulic Co., Ltd., China State Shipbuilding Corporation The company's 708th research institute. The main drafters of this standard. Qi Chao, Zhu Xiaolong, Wang Jianbin, Zhu Hongguo, Wang Huijun, Wang Cong, Wang Jianping, Shen Huadong, Zhou Xiaobao, Wu Yinghua, Wu Zhongming, Xu Wei. Marine swing cylinder type radial plunger hydraulic motor

1 Scope

China's national standard for marine swing cylinder radial piston hydraulic motors. It specifies the classification, the requirements and the test methods. This motor type produces very high torque at low speed directly, without a gearbox: pistons arranged radially around a shaft push against an eccentric or a cam ring, and each stroke turns the shaft a little. That characteristic is what makes it a marine machine. Winches, windlasses, capstans, hatch drives and steering gear all need enormous torque at a few revolutions a minute, and the alternative - a fast motor with a reduction gearbox - is heavier, less efficient at part load, and has more to go wrong in an environment where maintenance is done at sea. The radial piston motor also holds load statically without a brake and reverses instantly, both of which matter when the load is an anchor cable or a lifeboat davit. Its requirements turn on sealing, on corrosion, and on surviving shock loading.

This standard specifies the classification, requirements, and test methods for marine swing cylinder radial plunger hydraulic motors (hereinafter referred to as "swing cylinder hydraulic motors") Laws, inspection rules, signs, packaging, transportation and storage. This standard applies to the design, manufacture and acceptance of swing cylinder hydraulic motors used on various ships and offshore platforms.

2 Appearance quality inspection specifications

GB/T 3452.3 --shaped rubber sealing ring groove size for hydraulic and pneumatic

GB/T 3478.2-2008 Cylindrical Straight Tooth Involute Spline (Metric Modulus Tooth Side Fit) Part 2.30° Pressure Angle Size Table

GB/T 7936 No-load displacement measurement method for hydraulic pumps and motors GB/T 13306 signs

GB/T 14039-2002 Code of pollution grade of solid particles in hydraulic transmission oil

GB/T 17248.3 Acoustic machinery and equipment emit noise using approximate environmental correction to determine the working position and other designated positions Set emission sound pressure level

GB/T 17446 Vocabulary of fluid transmission systems and components

GB/T 18254-2016 high carbon chromium bearing steel CB1146.8 Ship equipment environmental test and engineering guidelines tilt and swing CB1146.12 Environmental Test and Engineering Guidelines for Ship Equipment

JB/T 7858 The cleanliness evaluation method of hydraulic components and the cleanliness index of hydraulic components

3 Terms and definitions

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

3.1 Unittheoreticaltorque Swing-cylinder hydraulic motor is the theoretical torque value calculated at 1MPa working pressure without considering the mechanical efficiency and oil return back pressure.

3.2 Maximumpower The maximum allowable power of a swing cylinder hydraulic motor.