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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 37476-2019

Marine swing and rotate angle hydraulic cylinders

船用摆动转角液压缸

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Table of Contents

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, Jiangsu Longcheng Hongli Hydraulic Equipment Co., Ltd., Hohai University. The main drafters of this standard. Yan Chao, Xiao Xiaolong, Liu Hong, Zhang Gengyi, Xie Jianwu, Li Longhua, Xing Xizhe, Wen Liang, Wu Zhongming, Wang Huizhen, Wang Hao, Zeng Yongjun. Marine swing angle hydraulic cylinder

1 Scope

China's national standard for marine swing and rotary angle hydraulic cylinders. It specifies the classification, the requirements, the test methods, the inspection rules and the marking, packaging, transport and storage. These are hydraulic actuators that produce rotation through a limited angle rather than linear motion - by a vane sweeping a sealed chamber, or by a piston driving a rack against a pinion - and they do the jobs on a ship that need torque in a confined space. Steering gear is the obvious one: the rudder stock must be turned against the force of water at speed, from a compartment with no room for a long cylinder. Hatch covers, cranes, davits, stabiliser fins and valve actuators use them for the same reason. What makes them marine rather than industrial is the environment and the consequence of failure: salt air and water outside, a duty cycle of decades, and a steering actuator whose loss is loss of the ship's control.

This standard specifies the classification, requirements, test methods, inspection rules, marking, packaging, transportation and storage of marine swinging angle hydraulic cylinders. This standard applies to the design, manufacture and acceptance of swinging angle hydraulic cylinders used on various types of ships and offshore platforms.

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 1176-2013 Cast copper and copper alloy

GB/T 1184-1996 Shape and position tolerances without tolerance values

GB/T 1348-2009 Ductile iron castings

GB/T 1804-2000 General tolerances and tolerances for linear and angular dimensions without tolerances

GB/T 3077-2015 alloy structural steel General technical conditions for

GB/T 7935 hydraulic components GB/T 13306 signage

GB/T 13342-2007 General technical requirements for marine reciprocating hydraulic cylinders

GB/T 14039-2002 Hydraulic transmission oil solid particle pollution level code

GB/T 15622-2005 Hydraulic cylinder test method

GB/T 17107-1997 Structural steel grades and mechanical properties for forgings

GB/T 17446 Fluid Transmission System and Component Vocabulary CB1146.2 Environmental Test and Engineering Guidelines for Ship Equipment CB1146.3 Marine equipment environmental test and engineering guidelines for high temperature CB1146.8 Marine equipment environmental test and engineering guidelines Tilt and sway CB1146.12 Environmental Test and Engineering Guide for Ship Equipment Salt Spray

JB/T 7858 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 apply to this document.

3.1 Swing angle hydraulic cylinder swingandrotateanglehydrauliccylinder One end adopts fixed pin shaft oil distribution structure to ensure the position of the oil port during swinging and cornering, which is used in lifting and lowering equipment. Special hydraulic cylinders with variable width and folding arm functions.

3.2 Cylinder unit output force unitcylinderforce The calculated value of the theoretical output force of the hydraulic cylinder per MPa pressure.