

ICS 23.100
CCS J70



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

GB/T 43142-2023

**Surface preparation equipment with ultra-high pressure water
jet for ships**

超高压水射流船舶除锈成套装备

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents" Drafting. Please note that

some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents. This document is proposed by China Machinery Industry Federation. This document is under the jurisdiction of the National Technical Committee on Standardization of Injection Equipment (SAC/TC493). This document was drafted by: Hefei General Machinery Research Institute Co., Ltd., Nantong COSCO Shipping Engineering Co., Ltd., Wuxi High Pressure Cleaning Equipment Co., Ltd., Zhoushan COSCO Shipping Heavy Industry Co., Ltd., Jiangsu Hydropower Metal Technology Co., Ltd., Tianjin Tongjie High Pressure Pump Manufacturing Co., Ltd. Company, Tianjin Jingcheng High Pressure Pump Manufacturing Co., Ltd., Shenzhen Xingzhixing Robot Technology Co., Ltd., Nantong COSCO Claifen Shipbuilding Engineering Co., Ltd., COSCO Shipping Heavy Industry Co., Ltd., China Ocean Shipping Group Co., Ltd., Shanghai Woma-Dalong Ultra-High Voltage Equipment Co., Ltd. Division, Wuxi Hercules High Pressure Cleaning Equipment Co., Ltd., China Shipbuilding Industry Corporation Yangtze River Technology Co., Ltd., Zhejiang University, Ningbo Engineering Institute, Hefei General Environmental Control Technology Co., Ltd. The main drafters of this document. Lu Fei, Lu Hua, Wang Zhengang, Yang Haibing, Su Yu, Jin Shaolin, Qi Bin, Zhou Wei, Li Jihua, Jiang Feichao, Zhang Chunlin, Chen Zhen, Lu Yibin, Zhao Ke, Sun Qi, Chen Zhengwen, Han Caihong, Li Gai, Guo Wei, Wu Dazhuan, Cheng Xiaomin. Ultra-high pressure water jet ship rust removal complete equipment

1 Scope

GB/T 43142-2023 covers the equipment that strips a ship's hull with water instead of grit. Traditional abrasive blasting removes old coating and rust effectively and produces an enormous quantity of spent grit contaminated with the paint it removed - historically including heavy metals and antifouling biocides - which becomes hazardous waste and, in an open yard, dust that spreads beyond it. Ultra-high pressure water jetting does the same work at pressures of two thousand bar and above, leaving only water and the removed coating to be collected, and it exposes existing salt contamination rather than driving it into the surface. The pressures involved make the equipment genuinely dangerous: a jet at that pressure cuts flesh without contact. This document specifies the composition and basic parameters, the technical requirements, the component requirements, the test methods, the inspection rules, and the marking, packaging and storage for ultra-high pressure water jet surface preparation equipment for ships. Under ICS 23.100 and CCS J70, it is written for equipment manufacturers, for shipyards and ship repair contractors, and for the safety and environmental authorities regulating yard operations.

This document specifies the composition and basic parameters, technical requirements, component requirements, test methods, and Inspection rules, marking, packaging and storage. This document is applicable to rated discharge pressures of 200MPa~300MPa, rated flow rates of 30L/min~75L/min, and unit power Manufacturing of complete equipment for ultra-high pressure water jet ship rust removal with 160kW~315kW and working medium

of normal temperature clean water.

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document.

GB/T 3683 Specification for steel wire braid reinforced hydraulic type of rubber hoses and hose assemblies suitable for oil-based or water-based fluids

GB/T 4208 Shell protection level (IP code)

GB/T 5272 Plum blossom elastic coupling

GB/T 5657 Technical conditions for centrifugal pumps (Class III)

GB/T 7784 Test methods for motorized reciprocating pumps

GB 12514.2 Fire protection interface Part

2. Type and basic parameters of internal button fire protection interface GB/T 13306
Signage

GB/T 13384 General technical conditions for mechanical and electrical product packaging

GB/T 14976 Stainless steel seamless steel pipes for fluid transportation

GB 20891 Emission limits and measurement methods of exhaust pollutants from diesel engines for non-road mobile machinery (China Phase III and IV)

GB/T 22711 Technical conditions for three-phase permanent magnet synchronous motor (frame size 80~355)

GB/T 26114 General technical specifications for filters for liquid filtration

GB/T 26148 Safety specifications for high-pressure water jet cleaning operations

3 Terms and definitions

The terms and definitions defined in GB/T 41513 apply to this document.