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

GB/T 23505-2017

Replacing GB/T 23505-2009

**Petroleum and natural gas industries - Petroleum drilling and
workover rigs**

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Table of Contents

- 1 Scope
- 2 Normative references
- 3 Terms and definitions
- 4 Classification and designation
- 5 Requirements
- 6 Hoisting system
- 7 Rotary and circulating systems
- 8 Power and control systems
- 9 Test methods
- 10 Inspection rules
- 11 Marking, packaging, transport and storage

Foreword

This standard is drafted in accordance with the rules given in GB/T 1.1-2009. This standard replaces GB/T 23505-2009 "oil rigs and workover rigs". Compared with GB/T 23505-2009, the main technology changes As follows:

- Standard name changed to "oil and gas industry drilling rig and workover rig"; - Added or removed some normative references (see Chapter 2); - to modify all the terms and definitions in the original standard, and to remove the terms "design safety factor", the addition of "drilling mechanization equipment" (See 3.1);
- Change the type of chassis in the representation of the workover model to the type of movement (see 4.2.2); - Table 1 adds the ZJ80/5850 level rig (see Table 1);
- Table 2 in the hook level 1800,2250 increase in 39m, 41m two derrick height (see Table 2);
- increased the type of power system configuration, increased the configuration of drilling mechanized equipment (see Chapter 6); - adjust the order of description of 6.2 (see 6.2);
- Removed the requirements for safe escape chute and ground angle, the requirements for guard railings, the number of safety protection chains and the requirements Installation of TV room monitoring system for motor room (see Chapter 6); - Describe the technical requirements sub-system and consolidate the original terms (see Chapter 7); - Electricity of rig electrical equipment increases by 600V/400V, 50Hz specification (see 7.2); - only the module rig derives the ladder leading to the trolley and the second floor to all derricks (see

7.3); - Increased requirements for self-propelled rigs and workover vehicles (see 7.9);

--- Increased installation of oil, water, electricity and heating systems for drilling wells (see 7.10); - change the specific requirements for the coating in the standard to SY/T 6919 (see 7.1); - Increased test requirements for self-propelled rigs and workover rigs (see 8.1, 8.2); - Change the requirements for the winch type test to SY/T 5532 (see 8.2); - Increased requirements for drilling pump type tests, turntable and top drive drilling unit type inspection requirements (see 8.2). This standard is proposed by the National Petroleum Drilling Equipment and Tools Standardization Technical Committee (SAC/TC96). The drafting of this standard unit. Baoji Petroleum Machinery Co., Ltd., Nanyang two oil equipment (Group) Co., Ltd., Sinopec oil Machinery Co., Ltd. Fourth Machinery Plant, Daqing Drilling Engineering Company, Sichuan Honghua Petroleum Equipment Co., Ltd., Lanzhou Lan Shi Group Co., Ltd. Oilfield plateau oil equipment limited liability company, Shandong Kerui Petroleum Equipment Co., Ltd. The main drafters of this standard. Huang Yuehua, Zhao Peng, Yan Xiaoni, Sun Juan, Ma Jinsheng, Liu Hui, Xu Jun, Wang Tao, Deng, Dong Hui, Wang Lianzhong, Yang Yusheng. This standard replaced the previous version of the standard release.

--- GB/T 23505-2009. Oil and gas industry Rigs and workover rigs

1 Scope

China's national standard for petroleum drilling rigs and workover rigs. It specifies the classification and designation, the requirements, the test methods, the inspection rules and the marking, packaging, transport and storage for drilling and workover rigs. A drilling rig is not a machine but an integrated plant that has to be transported, erected, operated and dismantled repeatedly. It comprises the hoisting system - mast or derrick, drawworks, crown and travelling blocks, hook and drilling line - the rotary system that turns the string, the circulating system that pumps drilling fluid down the pipe and cleans it on return, the power system that drives all of it, and the control and safety systems including the well control equipment. The standard has to describe that assembly as a specifiable product, which is what the classification and designation do: a rig is bought and compared on its nominal drilling depth and its hook load rating, and those two figures with the drive type and the mast configuration constitute the model. The requirements then cover what the assembly must deliver and survive. The hoisting capacity and the safety factor on the drilling line and the derrick, since the derrick is a structure carrying the entire weight of the string with people working beneath it. The rotary torque and speed range. The pump pressure and displacement. The rig-up and rig-down arrangements, because a land rig is moved dozens of times in its life and most of its structural loading occurs during erection rather than during drilling. And the environmental conditions - wind loading on an erected derrick, low temperature operation, and the hazardous area classification that governs every electrical item on a rig floor. Issued on 28 February 2017 and in force since 1 September 2017, it

replaces GB/T 23505-2009.

This standard specifies the terms and definitions of oil and gas rigs and workover rigs, product type, model, basic parameters, configuration requirements, technical requirements, testing and recording, marking, factory documentation, storage, packaging and transportation. This standard applies to oil and gas drilling and workover rigs and workover rigs. Offshore platforms with rigs and workover rigs can be consulted.

2 Normative reference documents

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

GB 146.1 Standard Gauge Rail Locomotive Vehicle Boundary

GB 2894 Safety signs and guidelines for their use

GB/T 3766 General technical requirements for hydraulic systems

GB 3836.1 Explosive atmospheres - Part 1. General requirements for equipment

GB 3836.2 Explosive atmospheres - Part 2. Equipment protected by flameproof enclosure "d"

GB 3836.3 Explosive atmospheres - Part 3. Equipment protected by increased safety type "e"

GB 3836.5 Electrical equipment for explosive gas atmospheres - Part 5. Positive pressure shell type "p"

GB 3836.8 Explosive atmospheres - Part 8. Equipment protected by "n" type

GB 3836.15 Electrical equipment for explosive gas atmospheres - Part 15. Electrical installations in hazardous locations (except coal mines)

GB 4208 enclosure protection class (IP code)

GB/T 7932 General technical requirements for pneumatic systems

GB/T 7935 General specification for hydraulic components
Glossary of Industrial Equipment and Materials for Petroleum and Natural Gas
Oil and gas industry drilling and workover equipment
GB/T Oil and gas industry drilling and oil recovery equipment
GB/T Oil and gas industry drilling and oil extraction equipment
drilling equipment GB/T

GB/T 23507.3 Specification for electrical equipment for oil rigs - Part 3. Diesel generator sets for electric drilling rigs
Petroleum and natural gas industries Drilling and oil recovery equipment Drilling and workover derrick, base