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

GB/T 2816-2014

Replacing GB/T 2816-2002

Submersible pumps for deep wells

井用潜水泵

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Quarantine;
Standardization Administration of the PRC**

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules. This standard replaces GB/T 2816-2002 "wells with submersible pumps." This standard compared with GB/T 2816-2002, in addition to editorial changes outside the main technical differences are as follows:

--- Expanding the applicable frame size range, an increase of 75mm, 125mm, 225mm, 500mm frame sizes products. 75mm machine Seat number two flow rating of 1m³/h, 2m³/h; 125mm Frame 5 traffic class of 5m³/h, 8m³/h, 10m³/h, 15m³/h, 20m³/h; 225mm Frame 7 traffic class to 32m³/h, 40m³/h, 50m³/h, 63m³/h, 80 m³/h, 100 m³/h, 125 m³/h; 500 mm frame size four traffic class of 500 m³/h, 630m³/h, 800m³/h, 1000m³/h (see Table 1).

--- Increasing the frame size of the original organic traffic levels. 100mm Frame adds 12m³/h, 15m³/h flow grade; 150mm machine Frame size increases 40m³/h, 50m³/h flow grade; 175mm frame size increased 5m³/h flow grade; 200mm Frame adds 10m³/h flow grade; 250mm Frame adds 160m³/h, 240m³/h flow grade; 300mm Frame adds 160m³/h flow grade; 400mm Frame adds 400m³/h flow rate level (see Table 1).

--- With the power to enhance each frame size grades, improved each traffic class value corresponding to the head. Wherein, 100mm frame size Maximum lift from the original 200m up to 480m; 150mm frame sizes up to the maximum lift from the original 300m 850m; 175mm frame size up to the maximum lift from the original 247m 754m; 200mm Frame maximum lift from the original 308m Up to 917m; 250mm frame sizes up to the maximum lift from the original 598m 897m; 300mm Frame highest Yang 336m away from the original up to 567m; 350mm frame sizes up to the maximum lift from the original 192m 504m; 400mm Frame highest lift up to 75m from the original 288m (see Table 1).

--- Increased by 350mm, 400mm frame size pump speed is 2900r/min performance indicators (see Table 1).

--- Provides magnification pump is equipped with an electric motor rated power (see 4.3.3).

--- Modify the motor and submersible pump connection dimensions and tolerances (see Table 2, 2002 edition Table 2).

--- Specifies the maximum input power calculation method (see 5.2.1).

--- In order to meet the development of new products, gives each frame size of each traffic class value added efficiency curve (see Appendix A). The standard proposed by China Machinery Industry Federation. This standard by the National Standardization Technical Committee (SAC/TC201) Agricultural machinery centralized. This standard was drafted. Chinese Academy of Agricultural Mechanization Sciences, Technology Research Center of Fluid Machinery Engineering, Jiangsu University, New Territories Pump Set Group Co., Ltd., Shanxi-day sea Pump Co., Ltd. Shandong Yanshanpumps, celebrities Shandong Industrial Group Co., Ltd., Zhejiang Yuan Pump Co., Ltd., Taizhou Jia Di Pump Co., Ltd. Haicheng three fish Pump. The main drafters. Zhang Xian wins, a money Chao, Yuan Xiuwen, Wang Yang, Zhao Liwei, Hou Yongsheng, Xu Mintian, Shang Huai Yuan, Wang Lei, Zhou Jian whole, Zhang Guicheng, Chen Xian Yuan, Li Lulu, Cai Zhenhua. This standard replaces the standards previously issued as follows:

--- GB/T 2816-1981, GB/T 2816-1991, GB/T 2816-2002. Wells with submersible pumps

1 Scope

China's national standard for submersible pumps for deep wells. It specifies the types and basic parameters, the technical requirements, the test methods, the inspection rules and the marking, packaging, transport and storage of the pump and motor units lowered into a borehole to lift water. A deep well submersible pump is a multistage centrifugal pump with its motor directly beneath it, the whole assembly hanging on the rising main a hundred metres or more below ground. It is the machine that supplies most of the irrigation water and much of the drinking water in northern China, and its defining constraint is its diameter: the pump has to pass down a bore, so the frame size is fixed by the well and everything else is arranged around it. That is why the standard is organised by frame size, with a series of flow ratings and heads for each. The 2014 revision is a substantial extension of that series in both directions. It adds four new frame sizes - 75 mm, 125 mm, 225 mm and 500 mm - with their flow ratings, and adds flow ratings within the existing frame sizes. More significantly it raises the head available at each frame size, in some cases by a factor of two or three: the maximum head at 100 mm rises from two hundred metres to four hundred and eighty, at 150 mm from three hundred to eight hundred and fifty, at 175 mm from two hundred and forty-seven to seven hundred and fifty-four, and at 200 mm from three hundred and eight to nine hundred and seventeen. Those numbers describe a real change on the ground: water tables in the North China Plain have fallen far enough that pumps which were adequate a decade earlier no longer reach. Issued on 9 June 2014 and in force since 1 January 2015, it replaces GB/T 2816-2002.

This standard specifies the type wells with submersible pumps, models, basic parameters, connection size, technical requirements, test methods, inspection rules, marks, Complete information on the scope and other packaging and storage, the pump device. This standard

applies to wells with submersible motors integral to sneak into the water wells to extract water with a submersible pump (hereinafter referred to as the pump).

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 191 Packaging - Pictorial signs Sectional dimensions

GB/T 1095 flat key keyway

GB/T 1096 Ordinary flat key

GB/T 1144 rectangular spline dimensions, tolerances and verification

GB/T 2818 submersible induction motor

GB/T 2828.1 Sampling procedures for inspection - Part 1. by acceptance quality limit (AQL) retrieval batch inspection sampling plan

GB/T 5013.4 rated voltage of 450/750V and below rubber insulated cables Part 4. Cords and flexible cables

GB/T 7021 centrifugal Terminology

GB 10395.8 agricultural and forestry tractors and machinery - Safety requirements - Part 8. Irrigation pumps and machines

GB/T 12785-2014 Submersible Pump Test Method GB/T 13306 signs

GB/T 13384 mechanical and electrical products packaging General technical conditions

JB/T 5673 agricultural and forestry tractors and machinery paint general technical conditions

JB/T 50080 method for the evaluation of the reliability of submersible pumps

3 Terms and Definitions

GB/T 7021 defined by the following terms and definitions apply to this document.

3.1 Axial thrust radialthrust The pump when starting or normal operation, the front impeller, the rear plate to produce a pressure difference, the pressure difference force is formed.

Note. The axial thrust is generally directed by the rear plate of the impeller inlet direction, but sometimes the opposite.

3.2 Pump components pumpparts By the impeller, diversion shell (vanes) and other parts of the components.