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

GB 19762-2025

Replacing GB 19762-2007

**Minimum allowable values of energy efficiency and energy
efficiency grades for centrifugal pumps**

离心泵能效限定值及能效等级

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Foreword

This document was drafted in accordance with the provisions of GB/T 1.1-2020 "Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents". This document replaces GB 19762-2007 "The minimum allowable values of energy efficiency and evaluating values of energy conservation of centrifugal pump for fresh water" and GB 32284-2015 "Minimum allowable values of energy efficiency and energy efficiency levels for petrochemical centrifugal pumps". Compared with GB 19762-2007 and GB 32284-2015, in addition to structural adjustments and editorial changes, the main technical changes are as follows:

- a) CHANGE the scope of application of the standard (see Chapter 1; Chapter 1 of GB 19762-2007, Chapter 1 of GB 32284-2015);
- b) CHANGE the definition of the term "Specified point"; DELETE the terms such as pump target energy efficiency limit and pump energy saving evaluation value (see Chapter 3; Chapter 3 of GB 19762-2007, Chapter 3 of GB 32284-2015);
- c) ADD the energy efficiency level of clean water centrifugal pumps (see 4.2); DELETE the target energy efficiency limit value and energy saving evaluation value of clean water centrifugal pumps (see Chapter 7 and Chapter 8 of GB 19762-2007);
- d) ADD the energy efficiency level of petrochemical centrifugal pumps (see 4.3); DELETE the target energy efficiency limit value and energy saving evaluation value of petrochemical centrifugal pumps (see 4.6 of GB 32284-2015);
- e) CHANGE the evaluation method of energy efficiency index of clean water centrifugal pumps (see 6.2; Chapter 6 and Chapter 8 of GB 19762-2007);

f) CHANGE the calculation method of energy efficiency benchmark value and efficiency correction value of petrochemical centrifugal pumps (see 6.3,

4.3 of GB 32284-2015). Please note that some contents of this document may involve patents. The issuing agency of this document does not assume the responsibility for identifying patents. This document was proposed by AND shall be under the jurisdiction of the National Standardization Administration. This standard replaces the standard previously issued as follows: - GB 19762, which was first issued in 2014 and first revised in 2007; Minimum allowable values of energy efficiency and energy efficiency levels for centrifugal pumps

1 Scope

GB 19762-2025 is the Chinese national standard on minimum allowable values of energy efficiency and energy efficiency grades for centrifugal pumps, in the field of energy and heat transfer engineering. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 28 February 2025 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 1 March 2026. Classification: ICS 27.010, CCS F01. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This document specifies the energy efficiency level, energy efficiency limit value, energy efficiency calculation method, test method of centrifugal pumps (including clean water centrifugal pumps and petrochemical centrifugal pumps). This document applies to:

- a) Single-stage single-suction clean water centrifugal pumps, single-stage double-suction clean water centrifugal pumps, pipeline clean water centrifugal pumps, multi-stage clean water centrifugal pumps, light multi-stage clean water centrifugal pumps;
- b) Single-stage single-suction petrochemical centrifugal pumps, single-stage double-suction petrochemical centrifugal pumps, multi-stage petrochemical centrifugal pumps that transport clean liquids and are equipped with closed impellers. This document does not apply to non-metallic centrifugal pumps and non-seal rotary power pumps.

2 Normative references

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

GB/T 3215 Centrifugal pumps for petroleum, petrochemical and natural gas industries

GB/T 3216 Rotodynamic pumps - Hydraulic performance acceptance tests - Levels 1, 2 and 3

GB/T 7021 Glossary of terms for centrifugal pump

JB/T 6435 Light and small-size multistage centrifugal pump

3 Terms and definitions

The terms and definitions defined in GB/T 3215, GB/T 7021, JB/T 6435, as well as the following terms and definitions, apply to this document.

3.1 Specified point The point on the pump performance curve as determined by the specified flow rate and the specified head.

Note: When calculating the energy efficiency level of a centrifugal pump, the specified point refers to the point determined by the flow rate and head corresponding to the highest efficiency point at the full (maximum) impeller diameter of the pump and the design base speed of the pump. [Source: GB/T 7021-2019, 3.2, modified]

3.2 Minimum allowable values of energy efficiency for centrifugal pumps The minimum efficiency allowed at the specified point under the test conditions specified in the standard.

4 Energy efficiency level

4.1 The energy efficiency level of centrifugal pumps is divided into 3 levels. Among them, level 1 has the highest energy efficiency.

4.2 The energy efficiency of each level of clean water centrifugal pumps shall comply with the provisions of Table 1.

4.3 The energy efficiency of each level of petrochemical centrifugal pumps shall comply with the provisions of Table 2.

Appendix B

(Informative) Examples of energy efficiency calculation methods for petrochemical centrifugal pumps of various levels

B.1 Example

B.1.1 Test conditions and results It is tested in accordance with the requirements specified in GB/T 3216. The test data of a single-stage double-suction petrochemical centrifugal pump of a certain specification is: Flow rate at the highest efficiency point $Q_{BEP} = 800 \text{ m}^3/\text{h}$; head at the highest efficiency point $H_{BEP} = 12 \text{ m}$; speed $n = 1470 \text{ r/min}$; efficiency $\eta_{BEP, \text{test}} = 82.10\%$. Calculate the energy efficiency index values of various levels of petrochemical centrifugal pumps under this condition; determine their energy efficiency levels.

B.1.2 Calculate the specific revolution number of petrochemical centrifugal pumps Calculate the specific revolution

number of petrochemical centrifugal pumps according to formula (1): B.1.3 Calculate the energy efficiency of each level of petrochemical centrifugal pumps The efficiency values of each energy efficiency level of petrochemical centrifugal pumps can be calculated according to the following steps:

a) Calculate the energy efficiency benchmark value η_{tab} : Calculate the energy efficiency benchmark value of petrochemical centrifugal pumps according to formula (4):

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